

2822 25 Street SW

Transportation Impact Statement

Version 5

Prepared for
Unitii Corp.

Date
May 14, 2025

Project Number
02-24-0152

City File Number
LOC2024-0292

Bunt & Associates acknowledges and respects the Traditional Territories upon which our work spans, and from which we benefit. We are grateful for the unique cultures and histories of Indigenous Peoples that enrich our understanding and connection to the lands we call home. We honour learning, listening, and truth in our journey to reconciliation.

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APEGA Company Permit to Practice

Engineer's Stamp

Written with respect and gratitude for the Traditional Territories upon which we work and live.

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1. EXECUTIVE SUMMARY

Change Log

- **Version 2 (January 2025)** – New signal warrant analysis with 2024/2025 count data (Section 3.3).
- **Version 3 & 4 (February 2025)** – Addition of further background information (Section 3), fix to road name typo (Table 3.3), and update to match 2501 Richmond application revisions (Section 3.2.1).
- **Version 5 (May 2025)** – Update to Figure 5.1 (On-Street Parking Restrictions) to account for parking restriction changes, Table 5.1 (Bylaw Parking Requirement) to account for live-work units, and Figure 2.2 (Site Plan) to match plan revisions.

A land use redesignation is proposed to accommodate a 97 unit residential development (3 live-work + 94 multi-family) at 2822 25 Street SW. A Transportation Impact Statement (TIS) was prepared to provide a transportation overview of the proposal. Study findings are outlined below.

Vehicles

Trip Generation	- The development will generate 39 peak hour vehicle trips.
TIA	- The <i>2501 Richmond Transportation Impact Assessment (TIA)</i> assessed long term traffic conditions in the area and identified traffic improvements required to accommodate different development thresholds. As the combined density (2501 Richmond + 97 units) remains within the development scenarios assessed in the TIA, new long term 2048 horizon traffic analysis was not required.
Signal Warrants	- Signal warrant analysis was completed to confirm if the two new traffic signals identified in the <i>2501 Richmond TIA</i> are triggered by the proposed 97 unit development. This analysis confirmed neither signal is warranted.
25 Street SW	- The <i>2501 Richmond TIA</i> identified a need to widen 25 Street SW (26 to 30 Avenue) Widening of the roadway pavement (9.4m to 10.8m) along the site frontage can be accommodated within the existing road right-of-way (20.12m). This widening would allow for a Collector standard pavement width and a separate sidewalk adjacent to the site. Widening of other portions of the road would occur through the 2501 Richmond application.

Active Transportation

Pedestrian	- Sidewalk and crosswalk connectivity is provided. A curb extension is being provided at 25 Street & Richmond Road SW to reduce crossing distances.
Cycling	- A cycling route is provided on 26 Avenue SW, which is being improved by the City in 2026. The Minto 2501 Richmond application includes a new multi-use pathway on Richmond Road SW (25 Street to Crowchild Trail).
Transit	- Bus service is provided on 26 Avenue SW (#6) and Crowchild Trail SW (MAX Yellow BRT, #20, #66). Improvements to the southbound Crowchild Trail SW bus stop are proposed through area applications.

Parking

Bylaw	- Parking requirements will be met.
On-Street	- A Residential Parking Permit (RPP) zone is in place. As development residents will not be eligible for residential parking permits, the current permit restrictions along the immediate site frontage will need to be removed per City of Calgary policies.

2. INTRODUCTION

2.1 Scope of Work

The scope of this study is identified below.

Vehicles

- **Trip Generation** – Calculate anticipated new development trips and compare with Transportation Impact Assessment (TIA) guidelines.
- **2501 Richmond TIA** – Identify the density assumptions and traffic improvements identified in the 2501 Richmond TIA.
- **Signal Warrants** – Assess if any new traffic signals identified in the 2501 Richmond TIA are triggered by the proposed development.
- **25 Street SW Cross-Section** – Identify changes required to accommodate a Collector standard pavement width along the site frontage.

Active Transportation

- **Pedestrian** – Review sidewalk connectivity and crossing controls near the site.
- **Cycling** – Review connectivity to cycling facilities.
- **Transit** – Review service levels and connectivity to transit stops.

Parking

- **Bylaw Requirement** – Calculate vehicle and bicycle parking requirements.
- **On-Street Parking** – Identify area parking restrictions.

2.2 Site Context

The site is in the community of Richmond and bounded by 25 Street SW to the west, a 3-storey senior residence to the north, a Lane to the east, and Richmond Road SW to the south. The site context is illustrated in **Figure 2.1**.

The site is near a recent 5-storey development to the east (Cascade¹) and a proposed major redevelopment to the south (2501 Richmond² – Minto Communities). Transportation studies for these developments were previously completed by Bunt & Associates.

2.3 Development

The anticipated density is 97 residential units (3 live-work + 94 multi-family). The site plan is illustrated in **Figure 2.2**.

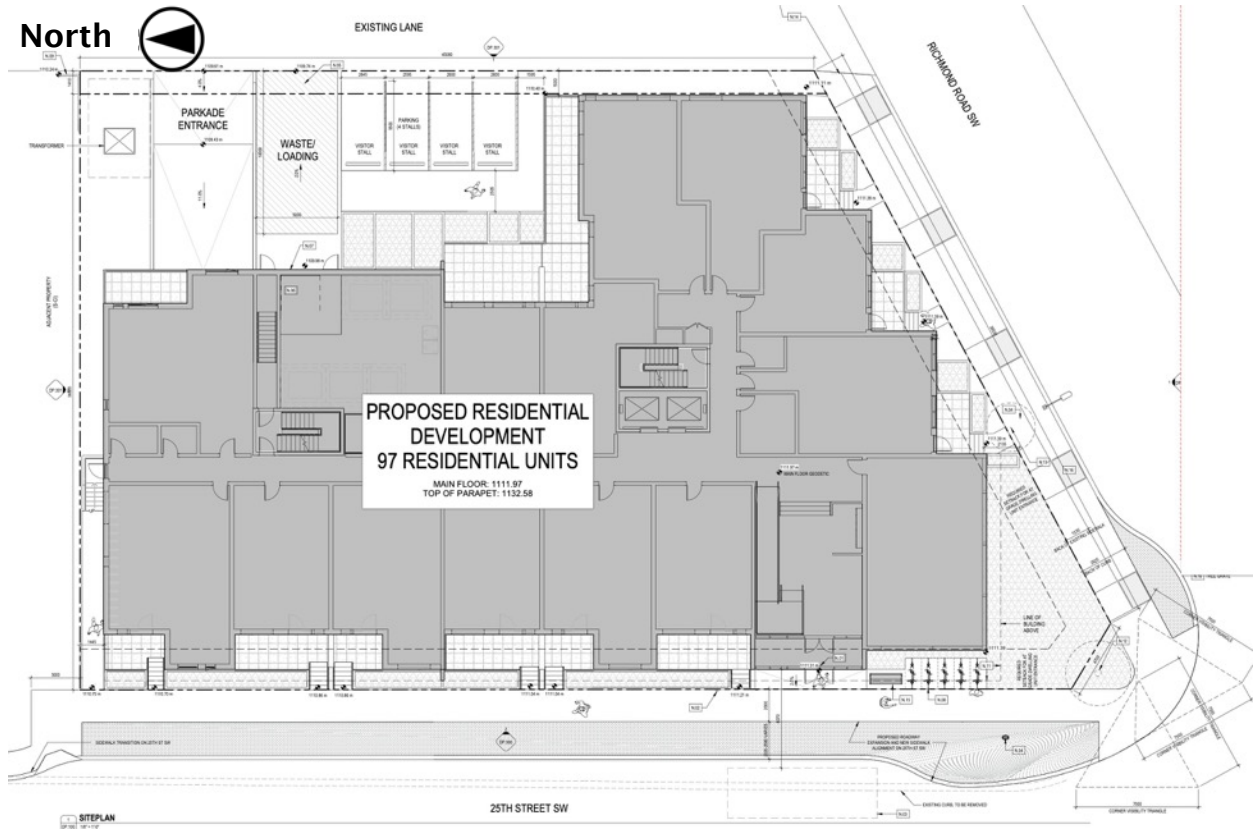
¹ 2823 24A St SW Transportation Impact Statement, Bunt & Associates (Project #02-19-0011), May 2019 (V2).

² 2501 Richmond Transportation Impact Assessment, Bunt & Associates (Project #02-22-0203), April 2024 (V2).

Figure 2.1: Site Context



Figure 2.2: Site Plan



3. TRAFFIC

3.1 Development Trip Generation

The City of Calgary's *Transportation Impact Assessment (TIA) Guidelines* state a TIA will be required if a development has the potential for generating more than 100 new hourly trips. The expected vehicle trips generated by the development is summarized in **Table 3.1**.

Table 3.1: Trip Generation (Vehicle)

USE	DENSITY	TRIP GENERATION RATES*		TRIP GENERATION	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Residential	97 units	0.34 per unit	0.40 per unit	33	39

*Residential trip generation rate source: 2501 Richmond TIA

The development will generate up to 39 new hourly trips, which is below the 100 trips per hour threshold identified by the City of Calgary for requiring a TIA. While not required based on TIA guidelines, network impacts are reviewed further in this study given the adjacent larger application (Minto 2501 Richmond).

3.2 2501 Richmond TIA

3.2.1 Density Assumptions

The *2501 Richmond Transportation Impact Assessment (TIA)*³ application provided traffic analysis for three development scenarios on the 2501 Richmond Road SW parcel (1250 units, 1875 units, and 2500 units). These development scenarios were on top of other planned/under construction developments (Currie Barracks, Cascade 24A Street, Richmond Green) and City forecasted population growth (2048 City population growth assumptions).

For the subject neighbouring area bounded by 29 Street/Crowchild Trail and 26 Avenue/33 Avenue SW, the City's 2048 forecast included a population growth of 562 residents, which is equivalent to 330 new multi-family apartment units (1.7 residents per unit). 2501 Richmond development associated population growth was included as a separate additional layer in the *2501 Richmond TIA*.

The 2501 Richmond outline plan identifies 1,231 anticipated residential units (446 minimum; 1,509 maximum). The proposed 2822 25 Street SW application would increase the anticipated residential count to 1,328 units accessed via Richmond Road/25 Street SW. This is in top of other development assumptions including the Cascade development and forecast growth.

As the combined density remains within the development scenarios previously assessed, new full build out analysis is not required. However, analysis is required to confirm, which of the improvements identified in the *2501 Richmond TIA* are triggered by the proposed 2822 25 Street SW development.

³ *2501 Richmond Transportation Impact Assessment Version 2*, Bunt & Associates (project # 02-22-0203), April 2024.

3.2.2 Improvements

The following traffic improvements were identified in the *2501 Richmond TIA* to be necessary to accommodate up to 1875 units:

- **29 Street & Richmond Road SW** – New traffic signal with northbound right turn lane.
- **29 Street & 33 Avenue SW** – New southbound left turn signal arrow.
- **25 Street & 26 Avenue SW** – New traffic signal with turn lanes (westbound left; northbound right).
- **25 Street SW Widening (26 Avenue to 30 Avenue)** – Widening of the roadway pavement to provide a 10.8 metre driving width (2.1 m parking + 3.3m driving + 3.3m driving + 2.1 m parking).

3.3 Traffic Signal Warrant

Signal warrant analysis was completed 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. Analysis was completed to account for:

- **Existing Traffic** – Recent (2024 & 2025) traffic count data.
- **Approved/In Process Large Development Permits** – Cascade & Richmond Green.
- **2822 25 St SW Site Traffic** – Traffic associated with the proposed 97 units.
- **2501 Richmond Phase 1** – Traffic associated with a 120 unit phase 1 application.

Development Trip Generation

The peak hour trip generation rates used in this analysis are listed in **Table 3.2**. The trip distribution applied was consistent with previous studies. Existing observed factors were applied to convert anticipated site traffic volumes (AM+PM peak hour) into 6-hour volumes. Details are included in **Appendix A**.

Table 3.2: Trip Generation Rates

USE	TRIP GENERATION (VEHICLE)		DATA SOURCE
	AM Peak Hour	PM peak Hour	
Multi-Family	0.34 per unit (25% In, 75% Out)	0.40 per unit (65% In, 35% Out)	Previous TIA's
Townhomes	0.47 per unit (25% In, 75% Out)	0.57 per unit (65% In, 35% Out)	ITE 220
Retail	1.0 per 1,000 ft ² (60% In, 40% Out) 35% pass-by (Richmond Green)	3.5 per 1,000 ft ² (50% In, 50% Out) 35% pass-by (Richmond Green)	City (Urban) ITE 820

***Multi-Family Source** – Rate listed in City of Edmonton TIA guidelines (suburban multi-family). This rate was applied in previous analysis in the area (2501 Richmond TIA) as it resulted in the highest vehicle traffic generation assumptions. Data from other sources (City of Calgary, Institute of Transportation Engineers, Bunt & Associates) had lower traffic generation and therefore would generate lower traffic impacts.

***Townhome Source** – Rate obtained from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition).

***Retail Source** – Rate requested by the City of Calgary in previous TIA's for urban retail. Note, ITE provides a combined mixed-use mid-rise multi-family rate that accounts for retail and is sourced from local (Calgary) data. This mixed-use rate is lower than the suburban Edmonton multi-family rate applied. As such, the application of retail traffic on top of the multi-family rate provides a conservative (higher traffic) assumption.

Warrant Analysis

The signal warrant analysis is summarized in **Table 3.3** and included in **Appendix A**. Signal warrant analysis indicated that the proposed development will not warrant new traffic signals.

Table 3.3: Signal Warrant Analysis

INTERSECTION	HORIZON	WARRANT SCORE	COMMENT
25 Street & 26 Avenue SW	Existing (2024 Count)	47/100	Not warranted
	With Short-Term Developments (Existing + Cascade + Richmond Green + 97 unit '2822 25 St SW' + 120 unit '2501 Richmond')	67/100	
29 Street & Richmond Road SW	Existing (2025 Count)	43/100	Not warranted
	With Short-Term Developments (Existing + Cascade + Richmond Green + 97 unit '2822 25 St SW' + 120 unit '2501 Richmond')	51/100	

Full Build Out of 2501 Richmond

The *2501 Richmond TIA* confirmed that traffic signals would be required at full build out of 2501 Richmond based on a 1,250 unit density assumption, which is consistent with the current anticipated density of 1,231 units for 2501 Richmond.

Updated 2501 Richmond full build out signal warrant analysis is included in **Appendix A**. This analysis is not relevant to the subject 2822 25 Street SW application. The signal warrant score for 25 Street & 26 Avenue SW at this future horizon exceeds 100 (warranted). The signal warrant score for 29 Street & Richmond Road SW at this future horizon nears 100; a traffic signal was previously identified as required based on traffic analysis at this future horizon due to close intersection spacing impacts.

3.4 25 Street SW Widening

25 Street SW is classified as a Collector (26 Avenue to Richmond Road). The roadway has a right-of-way of 20.12 metres (66 feet). The existing pavement width of 25 Street SW (9.4 metres) does not meet current Collector standards (10.8 metres). The *2501 Richmond TIA* recommended widening the pavement of 25 Street SW to match current Collector standards.

Proposed modified cross-sections to accommodate a wider pavement are provided in **Appendix B**. As the existing curb location varies slightly along the roadway, three sections are provided to identify minor variations in boulevard widths (sections B and C are relevant to the subject application). The drawings identify widening can be accommodated within the existing right-of-way. A maintenance access agreement will be required to accommodate the separate sidewalk adjacent to the property line. Further details (e.g. underground utility/pipe locations) will be confirmed through the development permit application.

Widening of the pavement along the site frontage (2822 25 Street SW) will be required as part of the subject application. The development plan includes this widening.

3.5 Lane

As required by the MU-1 bylaw, all vehicle access to the site will be via the Lane. The subject Lane is accessed only from the south (Richmond Road SW) and is approximately half the length of a typical Lane.

3.5.1 Daily Volumes

The City of Calgary's design guidelines identify a daily traffic volume guideline of <1,500 vehicles per day for an inner city Lane. This daily volume is measured at the highest volume location, which would be at the intersection with Richmond Road SW.

Daily vehicle traffic generated by 2822 25 Street SW (subject site) and Cascade is estimated at 740 daily vehicle trips (PM peak hour traffic generation x standard factor of 10). The traffic generated by these developments would take approximately 50% of the capacity of the Lane assuming no on-street parking occurs. Daily traffic would remain below the City's guideline even with the conservative assumption that all other traffic associated with the remaining parcels occurs only via the Lane⁴ (i.e. no on-street parking).

3.5.2 Truck Movements

As the Lane is only accessed via one location, all site related truck movements (loading trucks, waste & recycling) would be required to turnaround using the subject site loading stall. The site plan accommodates this through the provision of a 90 degree Loading stall. Vehicle turning path details would be completed through the development permit application.

⁴ 350 Cascade + 390 '2822 25 St SW' + 100 Menno Court (ITE senior housing rate for 31 units) + 130 Buffalo 9 Brewing + 22 '2809-2811 24A St SW' = 988 daily trips.

4. ACTIVE TRANSPORTATION

4.1 Pedestrian

Pedestrian infrastructure within the study area is illustrated in **Figure 4.1**. A review identified:

- **Sidewalks** – There are no missing links impacting connectivity. Site frontage sidewalk improvements will be required.
- **Crossings** – The Richmond Road & 25 Street SW crosswalk (illustrated in **Figure 4.2**) has a large crossing distance due to the angled intersection. A curb extension was recommended to reduce this crossing distance in the *2501 Richmond TIA* and the portion along the site frontage (northeast corner of the intersection) will be completed through the 2822 25 Street SW application.

Figure 4.1: Pedestrian Network



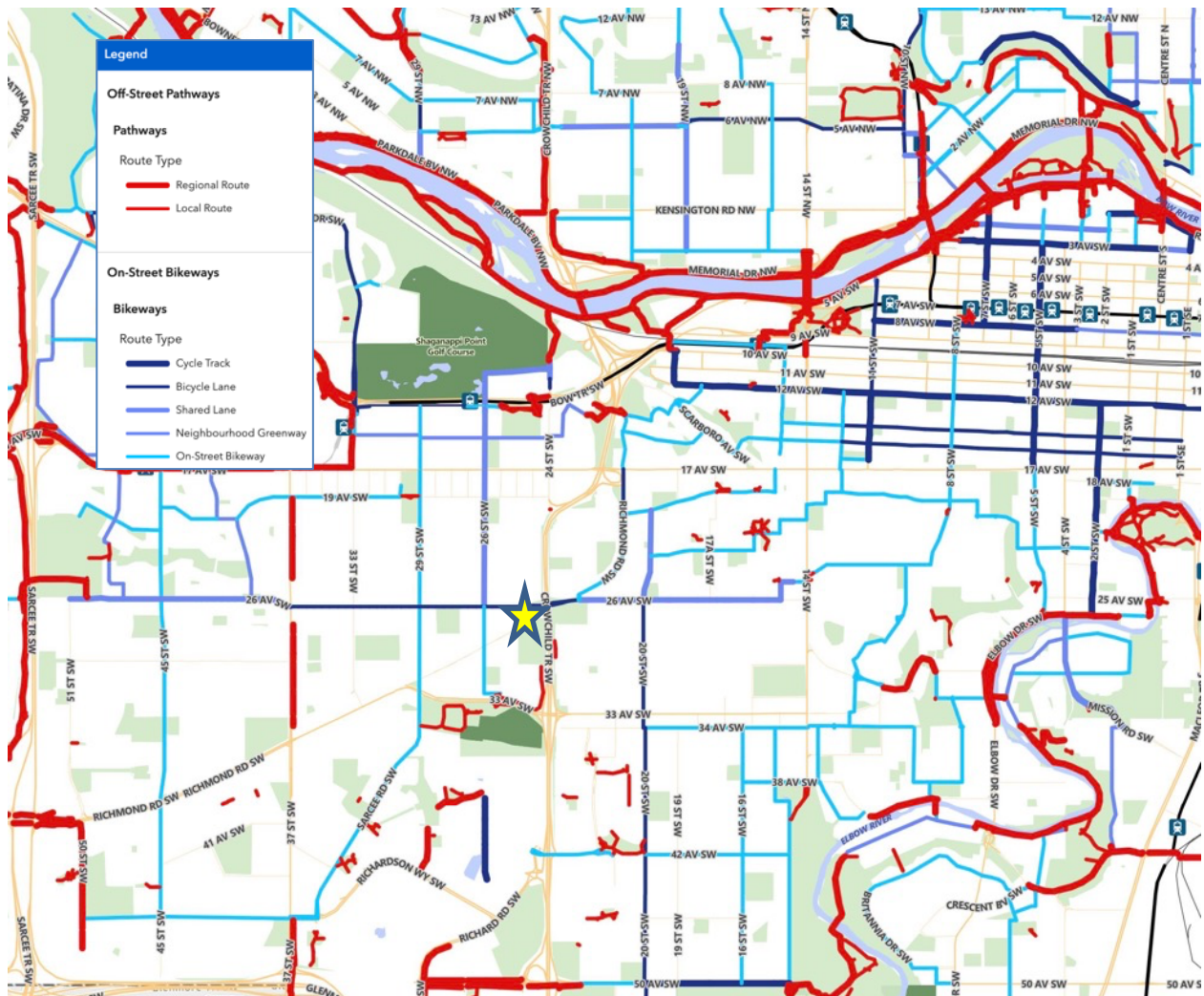
Figure 4.2: Crossing – 25 Street & Richmond Road SW



4.2 Cycling

Cycling facilities near the site are illustrated in **Figure 4.3**. Routes are provided to the north (26 Avenue SW – Bike Lanes) and west (26 Street SW – On-Street Bikeway).

Figure 4.3: Existing Cycling Network



City Planned Improvements

The City of Calgary is in the detailed design process for 5A Network cycling improvements on 26 Avenue SW (37 Street to 14 Street). This design includes on-street wheeling lanes west of 25 Street SW and a multi-use pathway east of 25 Street SW.

The Calgary Transportation Plan (CTP) also recommends a future pathway or bikeway on Richmond Road SW. The Minto 2501 Richmond application proposes this on the south side of Richmond Road SW.

4.3 Transit

Transit services are provided on Crowchild Trail SW and 26 Avenue SW. Crowchild Trail SW is part of the City's identified Primary Transit Network.

Existing

Stops near the site are summarized in **Table 4.1**. Existing BRT stops are illustrated in **Figure 4.4**. The existing area transit network is illustrated in **Figure 4.5** and summarized in **Table 4.2**.

Table 4.1: Existing Transit Stops

STOP LOCATION			ROUTES SERVICED	DISTANCE
Roadway	Cross-Street	Direction		
Crowchild Trail SW	26 Avenue	North-South	Max Yellow, #20, #66	200m
26 Avenue SW	25 Street	East-West	#6	100m

Figure 4.4: BRT Stops

*Southbound
Stop*



*Northbound
Stop*



Source: Apple Maps & Google Maps

Figure 4.5: Existing Transit Service

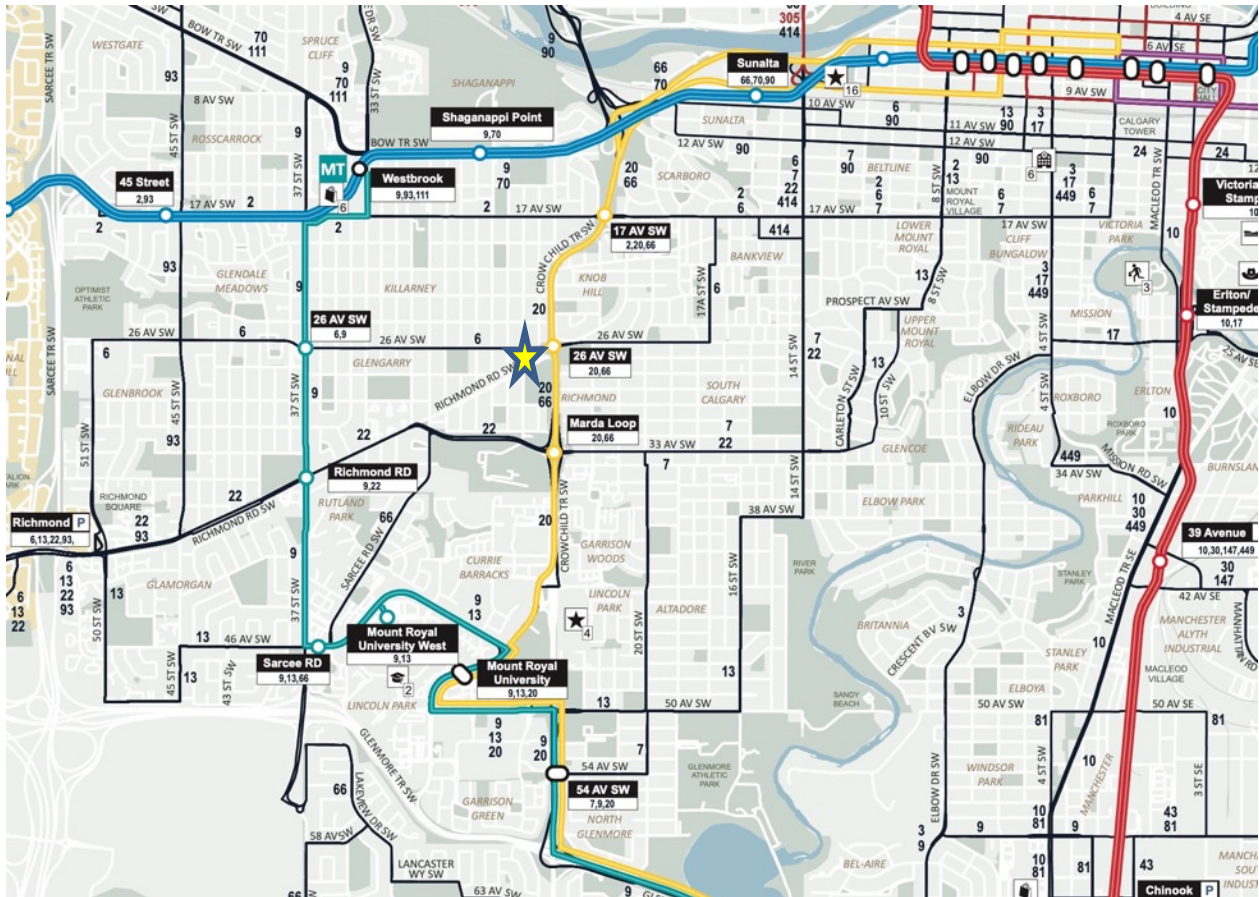


Table 4.2: Existing Transit Frequency

ROUTE		TYPE	FREQUENCY	
#	Name		Peak	Off-Peak
MAX Yellow	Woodpark/City Centre	BRT	10 min	18-20 min
#6	Killarney/26 Avenue	Bus	23 min	30 min
#20	Heritage/Northmount	Bus	13 min	20-30 min
#66	Lakeview/City Centre	Bus	23 min	23-33 min

Future

The *RouteAhead 10-Year Update* identifies a revised focus on Primary Transit Network frequency. The Primary Transit Network includes Crowchild Trail SW. Service improvements on these corridors to primary transit frequencies will support reduced auto reliance for development trips.

Through the Minto 2501 Richmond application, improvements to the southbound Crowchild Trail SW BRT stop are being proposed to add BRT shelters and shift the stop closer to Richmond Road SW.

5. PARKING

5.1 Bylaw

Bylaw parking requirements are calculated in **Table 5.1** in accordance with Land Use Bylaw 1P2007 (MU-1 district). The development will meet all bylaw parking requirements.

Table 5.1: Bylaw Parking Requirement

STALL TYPE		DENSITY	BYLAW MINIMUM RATIO	STALLS		
				Bylaw	Proposed	Difference
Vehicle	Resident (Multi-Family)	97 units (93 Multi + 3 Live-Work)	0.75 per unit -25% transit reduction	53	80	+26
	Resident (Live-Work)		0.50 per unit -25% transit reduction	2	2	-
	Visitor (Multi-Family)		0.10 per unit -25% transit reduction	7	7	-
	Visitor (Live-Work)	0.50 per unit -25% transit reduction	2	2	-	
	TOTAL			63	91	+28
	Bicycle	Class 1	97 units	0.50 per unit	49	100
Class 2		0.10 per unit		10	10	-
TOTAL			59	110	+51	

*Bicycle supportive reduction (0.25 per extra Class 1 stall) would reduce the resident vehicle parking requirement. This reduction was not applied in the above calculation.

5.2 On-Street

On-street parking restrictions are illustrated in **Figure 5.1**. The site is within Residential Parking Permit (RPP) zone T. As a multi-unit development exceeding 20 units, the development is not eligible for residential parking permits; therefore, current RPP signage along the immediate site frontage on 25 Street SW will need to be removed per City of Calgary Parking Policies.

Parking restrictions in the study area were largely removed recently due to low on-street occupancy. The City of Calgary has a process in place to re-introduce parking restrictions should on-street demand increase.

Figure 5.1: On-Street Parking Restrictions



APPENDIX A

Signal Warrants & Traffic Data



City of Calgary - Traffic Signal Warrant Analysis

Main Street (name) 26 Avenue

Side Street (name) 25 Street

Quadrant / Int # SW

for Warrant Calculation
Results, please hit 'Page
Down'

CHECK SHEET

Direction (EW or NS) EW

Direction (EW or NS) NS

Comments Existing

Road Authority: City of Calgary

City: Calgary

Analysis Date: 2025 Jan 13, Mon

Count Date: 2024 Oct 09, Wed

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	WB				1				1
26 Avenue	EB				1				1
25 Street	NB				1				
25 Street	SB				1				

Are the 25 Street NB right turns significantly impeded by through movements? (y/n) n

Are the 25 Street SB right turns significantly impeded by through movements? (y/n) n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue	EW	50	2.0%	y	0.0
25 Street	NS		1.0%	n	

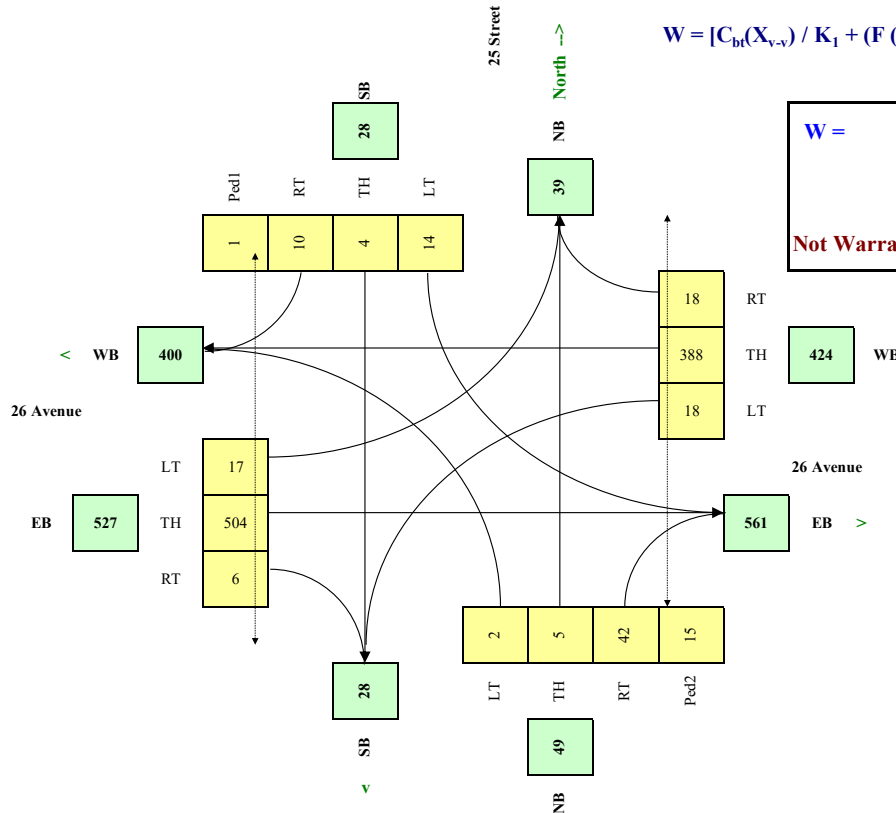
Set Peak Hours

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)	12	30	253	86	21	59	110	2329	105	101	3025	37	6	90	75	54
Total (6-hour peak)	12	30	253	86	21	59	110	2,329	105	101	3,025	37	6	90	75	54
Average (6-hour peak)	2	5	42	14	4	10	18	388	18	17	504	6	1	15	13	9

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,600,000
Central Business District	(y/n)	y

Average 6-hour Peak Turning Movements

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



W =	47	31	16
		Veh	Ped
Not Warranted - Vs<75			

RESET SHEET



City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)

26 Avenue

Direction (EW or NS)

EW

Side Street (name)

25 Street

Direction (EW or NS)

NS

Quadrant / Int #

SW

Comments

Existing + Cascade + Richmond
Green + 2822 25 St SW + 2501
Richmond Phase 1

for Warrant Calculation
Results, please hit 'Page
Down'

CHECK SHEET

Road Authority: City of Calgary

City: Calgary

Analysis Date: 2025 Jan 13, Mon

Count Date: 2024 Oct 09, Wed

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	WB				1				1
26 Avenue	EB				1				1
25 Street	NB				1				
25 Street	SB				1				

Are the 25 Street NB right turns significantly impeded by through movements? (y/n)

n

Are the 25 Street SB right turns significantly impeded by through movements? (y/n)

n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue	EW	50	2.0%	y	0.0
25 Street	NS		1.0%	n	

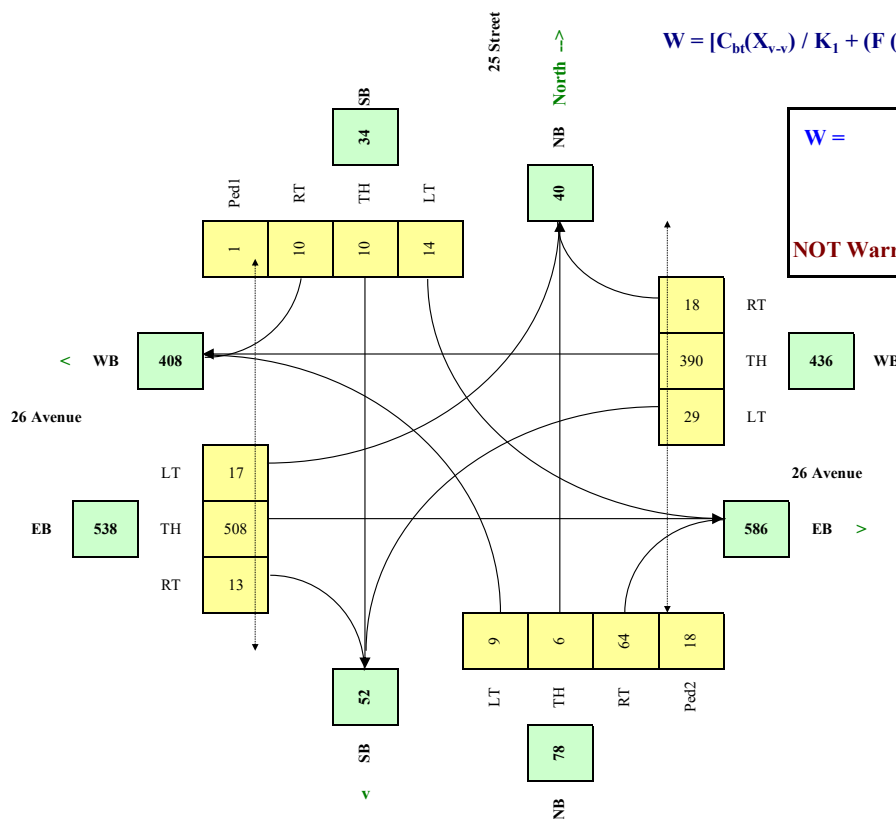
Set Peak Hours

Frame 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)	12	30	253	86	21	59	110	2329	105	101	3025	37	6	90	75	54
Cascade (6-Hour)	9	0	35		9		19					9				
Richmond Green (6-Hour)							8				24					
2822 25 St SW (6-hour)	12	2	44		12		21				14			10	5	5
2501 Richm. Ph1 (6-Hour)	19	2	51		16		26					16		10	5	5
Total (6-hour peak)	52	34	383	86	58	59	176	2,337	105	101	3,049	76	6	110	85	64
Average (6-hour peak)	9	6	64	14	10	10	29	390	18	17	508	13	1	18	14	11

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,600,000
Central Business District	(y/n)	y

Average 6-hour
Peak Turning
Movements

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



W = 67 47 20
Veh Ped

NOT Warranted

RESET SHEET



City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)

26 Avenue

Direction (EW or NS)

EW

Side Street (name)

25 Street

Direction (EW or NS)

NS

Quadrant / Int #

SW

Comments

Existing + Cascade + Richmond Green + 2822 25 St SW + 2501 Richmond Phase 1 + 2501 Richmond Phase 2 to Full Build

for Warrant Calculation Results, please hit 'Page Down'

CHECK SHEET

Road Authority: City of Calgary

City: Calgary

Analysis Date: 2025 Jan 29, Wed

Count Date: 2024 Oct 09, Wed

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	WB				1				1
26 Avenue	EB				1				1
25 Street	NB				1				
25 Street	SB				1				

Are the 25 Street NB right turns significantly impeded by through movements? (y/n)

n

Are the 25 Street SB right turns significantly impeded by through movements? (y/n)

n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue	EW	50	2.0%	y	0.0
25 Street	NS		1.0%	n	

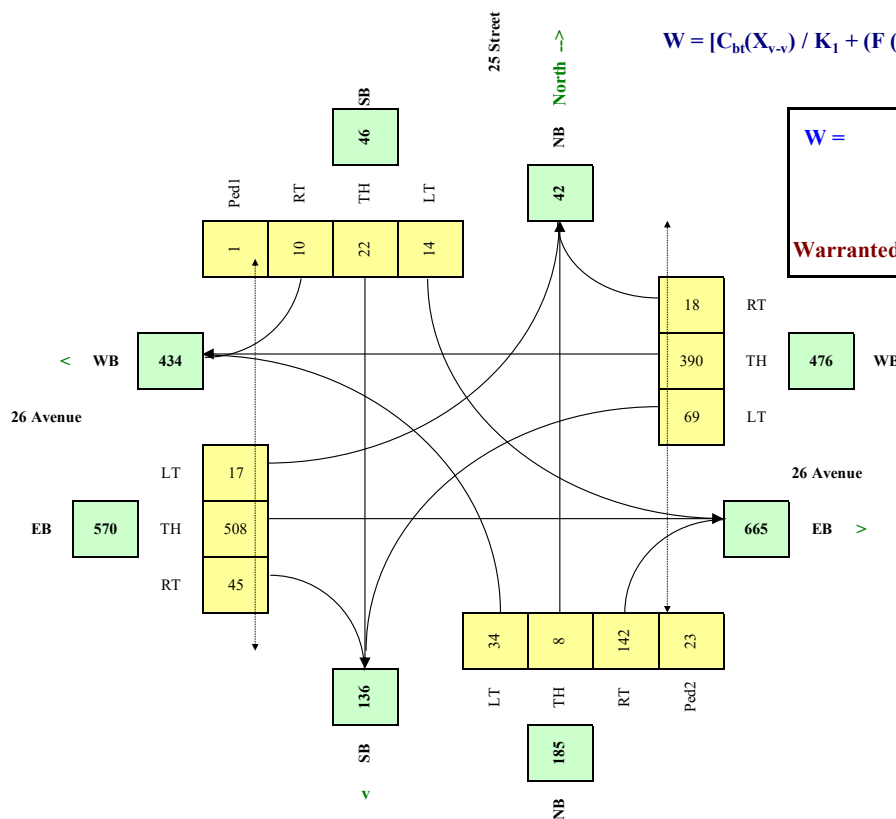
Set Peak Hours

Frame 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)	12	30	253	86	21	59	110	2329	105	101	3025	37	6	90	75	54
Cascade (6-Hour)	9	0	35		9		19					9				
Richmond Green (6-Hour)							8				24					
2822 25 St SW (6-hour)	12	2	44		12		21					14		10	5	5
2501 Richm. Ph1 (6-Hour)	19	2	51		16		26					16		10	5	5
2501 Richm. Full (6-Hour)	154	14	471		72		240					191		25	10	10
Total (6-hour peak)	206	48	854	86	130	59	416	2,337	105	101	3,049	267	6	135	95	74
Average (6-hour peak)	34	8	142	14	22	10	69	390	18	17	508	45	1	23	16	12

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,600,000
Central Business District	(y/n)	y

Average 6-hour Peak Turning Movements

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



W = 129 102 27
Veh Ped

Warranted

RESET SHEET



City of Calgary - Traffic Signal Warrant Analysis

Main Street (name) 29 Street

Side Street (name) Richmond Road

Quadrant / Int # SW

for Warrant Calculation
Results, please hit 'Page
Down'

CHECK SHEET

Direction (EW or NS) NS

Direction (EW or NS) EW

Comments Existing

Road Authority: City of Calgary

City: Calgary

Analysis Date: 2025 Jan 13, Mon

Count Date: 2025 Jan 09, 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
29 Street	NB				1				1
29 Street	SB				1				1
Richmond Road	WB	1				1			
Richmond Road	EB								

Are the Richmond Road WB right turns significantly impeded by through movements? (y/n)

Are the Richmond Road EB right turns significantly impeded by through movements? (y/n)

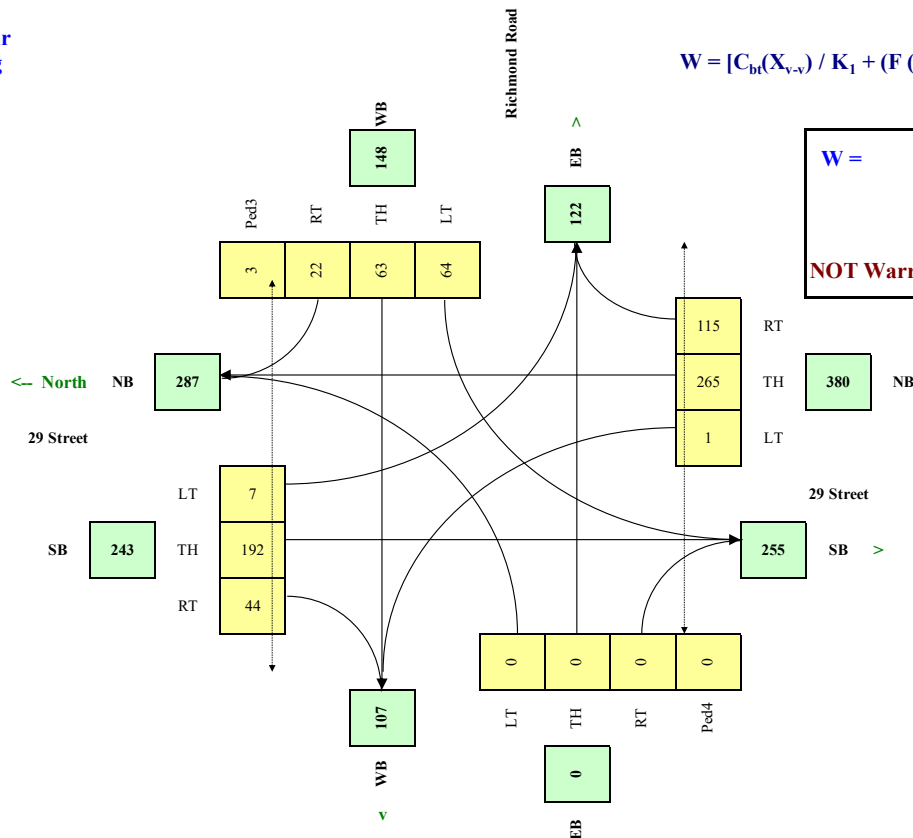
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
29 Street	NS	50	2.0%	n	0.0
Richmond Road	EW		1.0%	n	

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,600,000
Central Business District	(y/n)	y

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
NB				SB			WB			EB			W Side	E Side	N Side	S Side
LT	Th	RT		LT	Th	RT	LT	Th	RT	LT	Th	RT				
Existing (6-Hour)	4	1590	687	43	1149	264	381	375	134				13	20	18	0
Total (6-hour peak)	4	1,590	687	43	1,149	264	381	375	134	0	0	0	13	20	18	0
Average (6-hour peak)	1	265	115	7	192	44	64	63	22	0	0	0	2	3	3	0

Average 6-hour
Peak Turning
Movements

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



$$W = 43 \quad 42 \quad 1$$

Veh Ped

NOT Warranted

RESET SHEET



City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)

29 Street

Direction (EW or NS)

NS

Side Street (name)

Richmond Road

Direction (EW or NS)

EW

Quadrant / Int #

SW

Comments

Existing + Cascade + Richmond
Green + 2822 25 St SW + 2501
Richmond Phase 1

for Warrant Calculation
Results, please hit 'Page
Down'

CHECK SHEET

Road Authority: City of Calgary

City: Calgary

Analysis Date: 2025 Jan 13, Mon

Count Date: 2025 Jan 09, 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
29 Street	NB				1				1
29 Street	SB				1				1
Richmond Road	WB	1				1			
Richmond Road	EB								

Are the Richmond Road WB right turns significantly impeded by through movements? (y/n)

n

Are the Richmond Road EB right turns significantly impeded by through movements? (y/n)

n

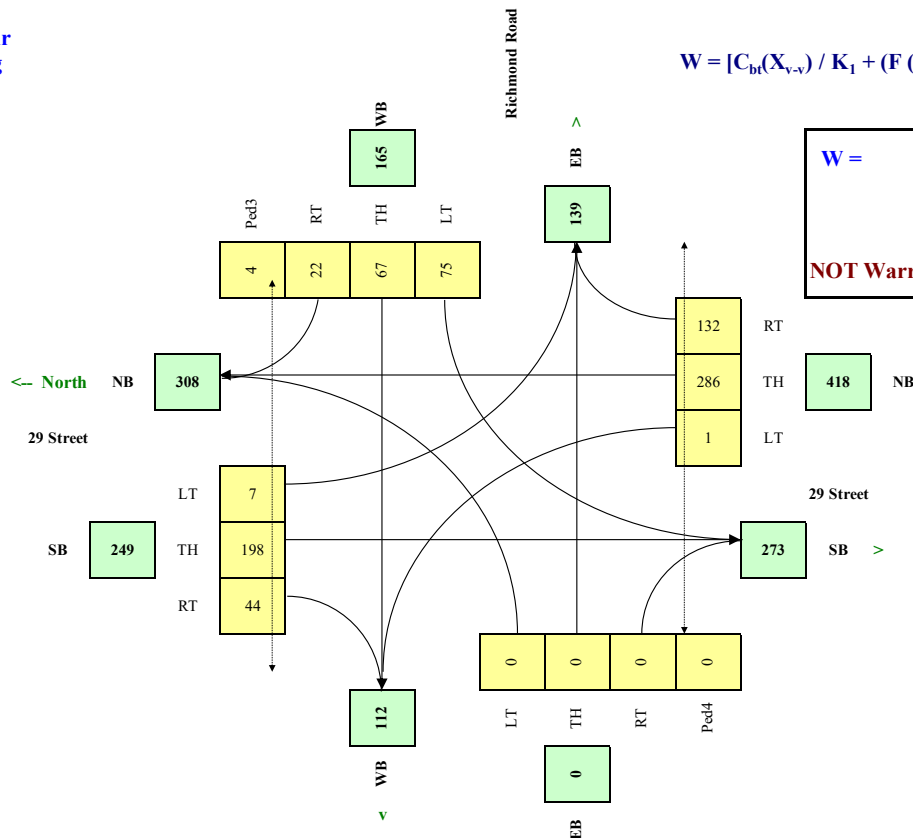
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
29 Street	NS	50	2.0%	n	0.0
Richmond Road	EW		1.0%	n	

Set Peak Hours

Frame 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)	4	1590	687	43	1149	264	381	375	134				13	20	18	0
Cascade (6-Hour)			34				17	7								
Richmond Green (6-Hour)		123			39								10	10	5	
2822 25 St SW (6-hour)			31				24	10								
2501 Richm. Ph1 (6-Hour)			39				29	12								
Total (6-hour peak)	4	1,713	791	43	1,188	264	451	404	134	0	0	0	23	30	23	0
Average (6-hour peak)	1	286	132	7	198	44	75	67	22	0	0	0	4	5	4	0

Average 6-hour Peak Turning Movements

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



$W =$ 51 49 2
 Veh Ped
NOT Warranted

RESET SHEET



City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)

29 Street

Direction (EW or NS)

NS

Side Street (name)

Richmond Road

Direction (EW or NS)

EW

Quadrant / Int #

SW

Comments

Existing + Cascade + Richmond Green + 2822 25 St SW + 2501 Richmond Phase 1 + 2501 Richmond Phase 2 to Full Build

for Warrant Calculation Results, please hit 'Page Down'

CHECK SHEET

Road Authority: City of Calgary

City: Calgary

Analysis Date: 2025 Jan 29, Wed

Count Date: 2025 Jan 09, 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
29 Street	NB				1				1
29 Street	SB				1				1
Richmond Road	WB	1				1			
Richmond Road	EB								

Are the Richmond Road WB right turns significantly impeded by through movements? (y/n)

n

Are the Richmond Road EB right turns significantly impeded by through movements? (y/n)

n

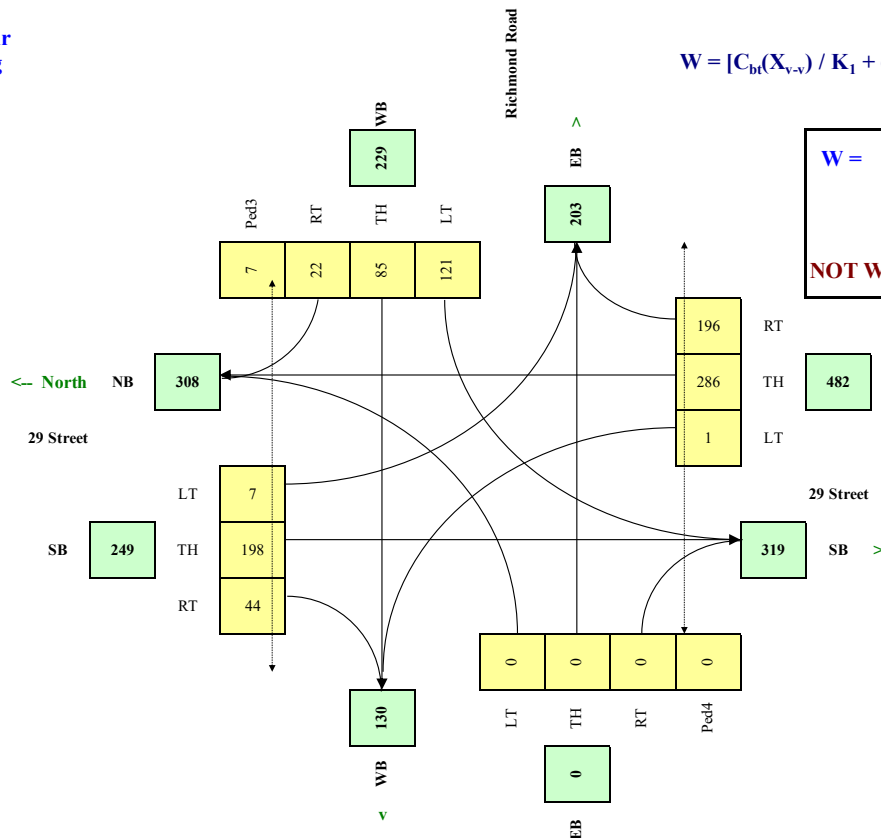
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
29 Street	NS	50	2.0%	n	0.0
Richmond Road	EW		1.0%	n	

Set Peak Hours

Frame 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)	4	1590	687	43	1149	264	381	375	134				13	20	18	0
Cascade (6-Hour)			34				17	7								
Richmond Green (6-Hour)		123			39								10	10	5	
2822 25 St SW (6-hour)			31				24	10								
2501 Richm. Ph1 (6-Hour)			39				29	12								
2501 Richm. Full (6-Hour)			386				277	108						20	20	
Total (6-hour peak)	4	1,713	1,177	43	1,188	264	728	512	134	0	0	0	23	50	43	0
Average (6-hour peak)	1	286	196	7	198	44	121	85	22	0	0	0	4	8	7	0

Average 6-hour Peak Turning Movements

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



W =	73	69	4
		Veh	Ped
NOT Warranted			

RESET SHEET

Traffic Count Reports

Calgary



Intersection Id: 6386

Study Date: Wednesday, 09 October 2024

Status: Valid

Location: 26 AV SW & 25 ST SW

Study Name: Miovision TMC

Weather: dry; 12.0°C

	North Approach						South Approach						East Approach						West Approach						Vehicle Total																	
Period Beginning	North Left	North Straight	North Right	North Truck	North Ped	North Bike	South Left	South Straight	South Right	South Truck	South Ped	South Bike	East Left	East Straight	East Right	East Truck	East Ped	East Bike	West Left	West Straight	West Right	West Truck	West Ped	West Bike																		
00:00	0	0	0	0	0	0	0	1	1	0	0	0	0	6	0	1	0	0	0	17	0	1	0	0	0	25																
00:15	1	0	1	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	3	0	0	0	0	0	13																
00:30	0	0	0	0	2	0	0	1	0	0	0	0	0	6	0	1	0	0	0	3	0	0	0	0	1	10																
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	4	0	0	0	0	0	8																
01:00	0	0	0	0	0	0	0	0	2	0	0	0	0	4	0	0	0	0	0	8	0	1	0	0	0	14																
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	3																
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	1	6																
01:45	2	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	2	0	0	0	0	0	7																
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2																
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	2	0	1	0	0	0	5																
02:30	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	2	0	0	0	0	0	6																
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	3																
03:00	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	0	0	0	0	4																
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2																
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2																
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2																
04:00	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																
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2																
04:30	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	4	0	0	0	0	0	7																
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	7	0	0	0	0	0	12																
05:00	0	0	0	0	0	0	0	0	1	0	0	0	1	3	0	0	0	0	0	10	0	1	0	0	0	15																
05:15	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	12	0	0	0	0	0	18																
05:30	1	0	0	0	0	0	0	0	4	0	0	0	1	9	1	0	0	0	0	18	0	1	0	0	0	34																
05:45	0	0	0	0	0	0	0	0	1	0	1	0	1	5	0	1	0	0	0	24	0	1	0	1	0	31																
06:00	0	0	0	0	0	0	0	0	3	0	1	0	1	5	0	0	0	0	0	21	0	0	0	0	1	30																
06:15	1	0	0	0	1	0	0	0	3	0	0	1	1	18	1	2	1	0	0	30	1	2	0	1	0	55																
06:30	1	0	0	0	1	0	0	0	7	0	0	0	0	24	0	1	3	1	0	55	0	1	0	0	0	88																
06:45	2	1	0	0	1	0	0	0	4	0	0	0	1	21	0	1	1	0	0	62	0	1	0	0	0	91																
07:00	0	0	2	0	4	0	0	1	2	0	2	1	0	28	0	1	1	0	0	88	0	3	0	3	0	123																
07:15	4	0	5	0	0	1	0	0	9	0	0	2	1	37	2	1	2	1	0	116	0	1	0	7	0	175																
07:30	2	1	2	0	2	2	1	1	12	1	0	0	1	47	2	2	0	1	0	168	0	7	0	5	0	241																
07:45	6	0	1	0	3	0	1	1	14	1	0	0	1	62	5	3	4	0	0	146	0	2	0	7	0	241																
08:00	2	0	4	0	16	0	1	0	19	0	4	1	2	78	2	3	13	4	0	191	2	1	0	5	0	303																
08:15	3	0	4	1	3	0	0	1	11	0	8	2	7	110	2	7	3	4	0	244	0	7	0	2	0	387																
08:30	6	0	0	0	0	0	0	1	16	1	2	1	3	111	7	3	7	1	0	214	1	8	0	1	0	364																
08:45	7	2	5	0	0	0	1	2	8	0	3	0	7	76	5	3	0	0	0	156	1	3	0	5	0	273																
09:00	3	1	2	1	2	0	0	1	11	0	1	0	6	71	2	4	3	3	0	132	2	2	0	0	0	234																
09:15	2	1	3	0	1	0	2	0	7	0	0	0	0	52	1	4	2	0	0	96	0	4	0	2	0	168																
09:30	3	0	1	0	0	0	1	1	8	0	0	0	4	60	2	4	1	0	0	103	0	2	0	2	0	185																
09:45	2	3	3	0	2	0	0	0	12	0	0	0	5	64	1	7	2	1	0	93	0	3	1	3	0	185																
10:00	2	4	1	0	2	0	0	2	9	1	0	0	4	52	6	2	3	0	0	69	1	3	0	0	0	152																
10:15	1	0	2	0	0	1	1	2	4	0	1	0	3	67	4	3	1	0	0	66	0	0	2	0	0	151																
10:30	2	0	4	0	2	0	1	2	6	0	1	0	4	64	1	1	4	1	0	69	0	0	0	0	0	154																
10:45	0	1	3	0	3	0	0	3	7	0	0	0	7	68	3	2	1	0	0	102	1	8	0	0	0	198																
11:00	1	1	1	0	2	0	0	0	7	0	2	0	4	59	2	3	1	1	0	79	2	1	0	4	0	156																
11:15	2	1	2	0	2	0	1	0	6	0	0	0	5	86	1	4	4	1	0	88	2	2	0	1	0	196																
11:30	2	0	0	0	5	0	1	1	4	0	0	1	3	66	1	2	3	2	0	90	2	4	0	0	0	179																
11:45	2	2	3	0	3	0	0	2	15	0	1	0	11	77	4	2	1	0	0	80	0	4	0	1	0	202																
TOTAL	60	18	51	2	57	4	11	23	214	4	27	9	87	1473	57	68	61	21	0	2688	15	75	3	53	0	4762																
PEAK	18	2	13	1	19	0	2	4	54	1	17	4	19	375	16	16	23	9	0	805	4	19	0	13	0	1327																
PHF	0.59		Peak Total		33		PHF	0.75		Peak Total		60		PHF	0.85		Peak Total		410		PHF	0.83		Peak Total		824																
Total Flow	1%						Total Flow						1.8%						Total Flow						11.9%						Total Flow						20.4%					
Truck Flow	1.55%						Truck Flow						1.61%						Truck Flow						4.21%						Truck Flow						2.71%					
Total Volume	129						Total Volume						248						Total Volume						1617						Total Volume						2768					
12:00	0	0	0	0	2	0	0	0	4	0	4	0	3	68	4	4	2	0	0	85	1	1	0	2	0	173																
12:15	5	0	1	0	5	0	1	1	13	0	0	0	7	89	2	0	2	0	0	78	2	3	0	1	0	202																
12:30	4	2	3	0	2	1	1	1	10	0	1	0	1	66	6	3	0	1	0	98	0	4	4	1	0	195																
12:45	2	2	2	1	2	0	0	3	9	0	3	0	2	75	3	2	3	2	0	90	4	5	0	1	0	196																
13:00	1	1	1	0	3	0	0	1	7	1	2	0	3	79	5	2	0	0	0	89	0	6	0	4	0	189																
13:15	2	0	0	0	0	0	0	2	10	0	0	0	3	65	1	4	1	0	0	68	0	3	0	1	0	154																
13:30	1	1	2	0	2	0	1	2	5	1	1	0	4	80																												

24hr miovision count

PHF (AM Peak Hour):	0.91
PHF (Mid-day Peak Hour):	0.91
PHF (PM Peak Hour):	0.93

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

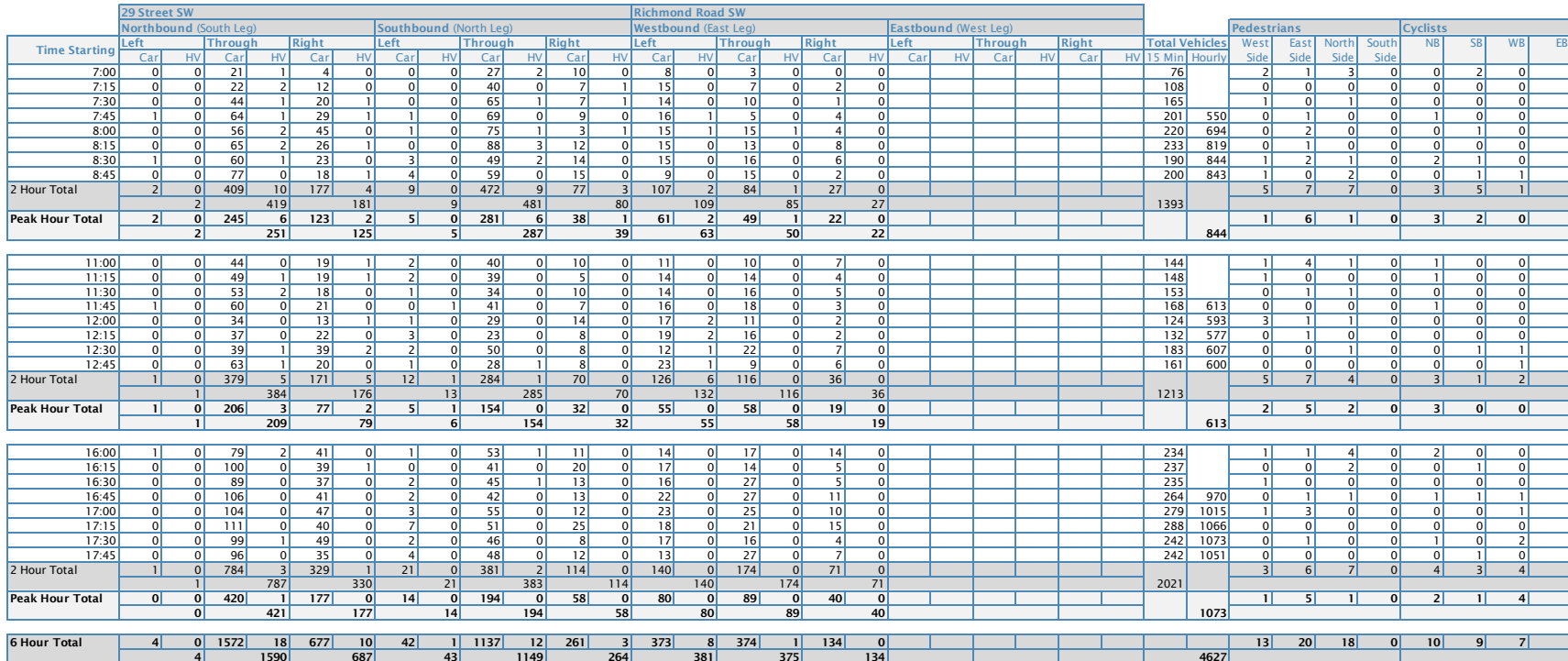
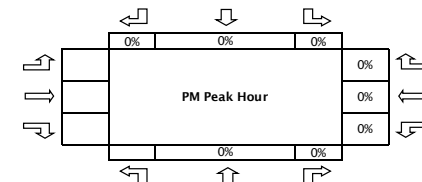
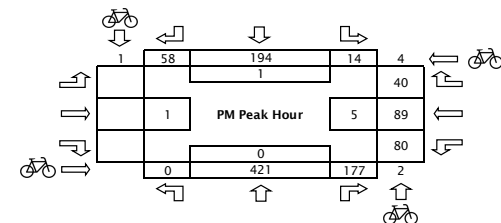
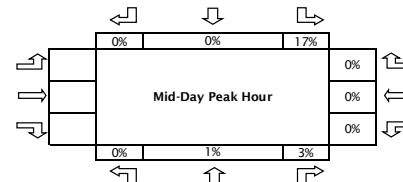
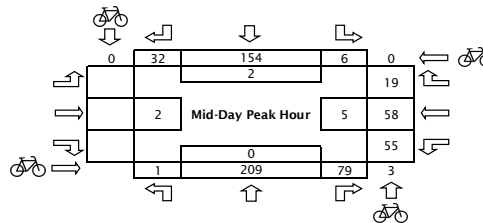


Diagram illustrating a four-lane intersection during the AM Peak Hour. The intersection is shown with four lanes, each with a specific traffic flow indicated by arrows and bicycle icons. The data table shows the number of vehicles in each lane for each movement.

Movement	Through	Left	Through	Right
Northbound	2	39	287	5
Southbound	1	0	22	50
Eastbound	0	2	251	125
Westbound	0	0	63	3



TRIP GENERATION

Cascade

Land Use	Density	Trip Rates						Trip Generation					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		Rate	In %	Out %	Rate	In %	Out %	Total	In	Out	Total	In	Out
Multi-Family	52 units	0.34	25%	75%	0.40	65%	35%	18	5	13	21	14	7
Commercial	5,700 ft²	1.00	60%	40%	3.50	50%	50%	6	4	2	20	10	10
Internal Capture		0%			10%			0	0	0	-6	-3	-3
Total New External Trips								24	9	15	35	21	14

Richmond Green

Land Use	Density	Trip Rates						Trip Generation					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		Rate	In %	Out %	Rate	In %	Out %	Total	In	Out	Total	In	Out
Multi-Family	364 units	0.34	25%	75%	0.40	65%	35%	124	31	93	146	95	51
Townhomes	36 units	0.47	25%	75%	0.57	65%	35%	17	4	13	21	14	7
Commercial	7,250 ft ²	1.00	60%	40%	3.50	50%	50%	7	4	3	25	13	12
Pass-by		35%			35%			-2	-1	-1	-10	-5	-5
Internal Capture		0%			0%			0	0	0	0	0	0
Total New External Trips								146	38	108	182	117	65

2822 25 St SW (The Bennett)

Land Use	Density	Trip Rates						Trip Generation					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		Rate	In %	Out %	Rate	In %	Out %	Total	In	Out	Total	In	Out
Multi-Family	97 units	0.34	25%	75%	0.40	65%	35%	33	8	25	39	25	14

2501 Richmond Phase 1

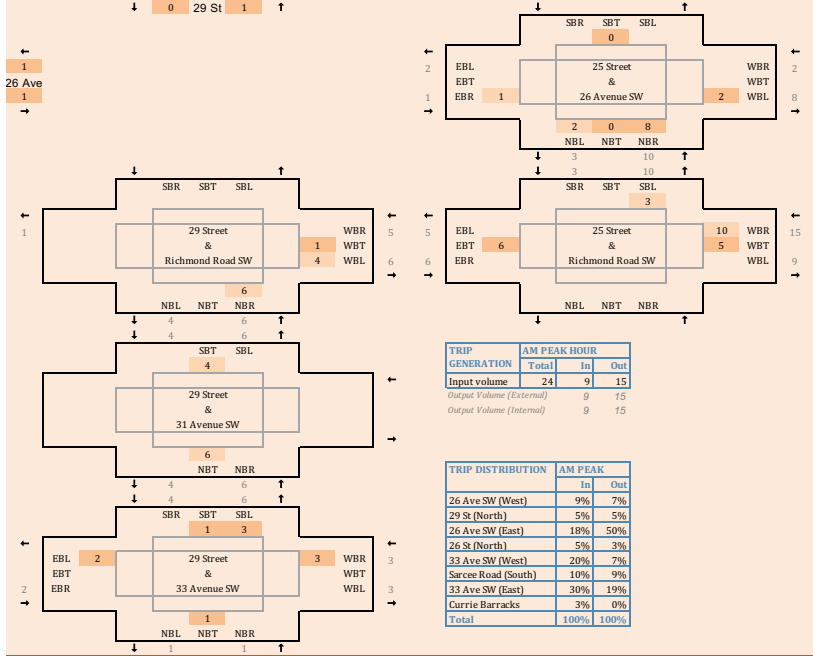
Land Use	Density	Trip Rates						Trip Generation					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		Rate	In %	Out %	Rate	In %	Out %	Total	In	Out	Total	In	Out
Multi-Family	120 units	0.34	25%	75%	0.40	65%	35%	41	10	31	48	31	17

2501 Richmond Phase 2 Onwards

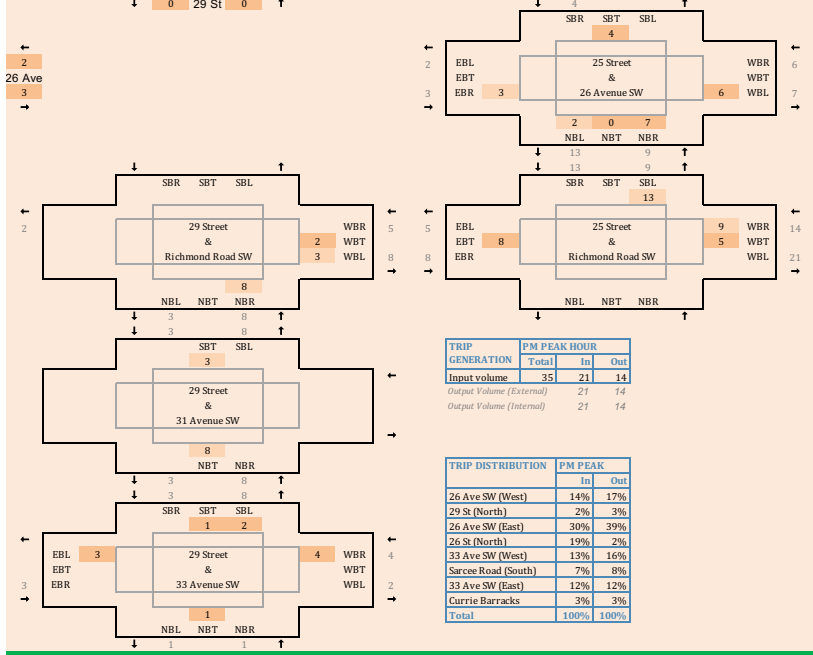
Land Use	Density	Trip Rates						Trip Generation					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		Rate	In %	Out %	Rate	In %	Out %	Total	In	Out	Total	In	Out
Multi-Family	1,111 units	0.34	25%	75%	0.40	65%	35%	377	94	283	443	288	155

Cascade Site Traffic
02-24-0152
AM Peak Hour

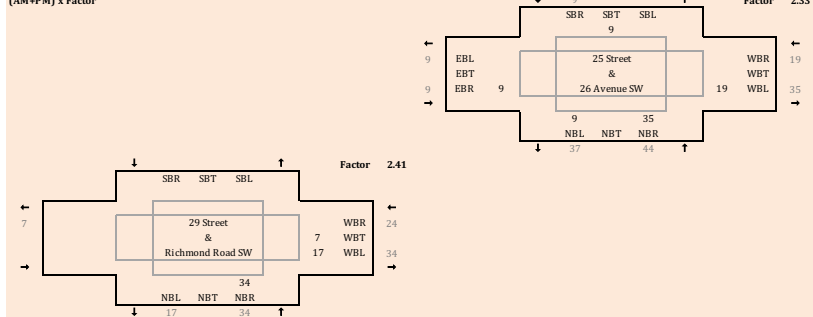
Site Traffic



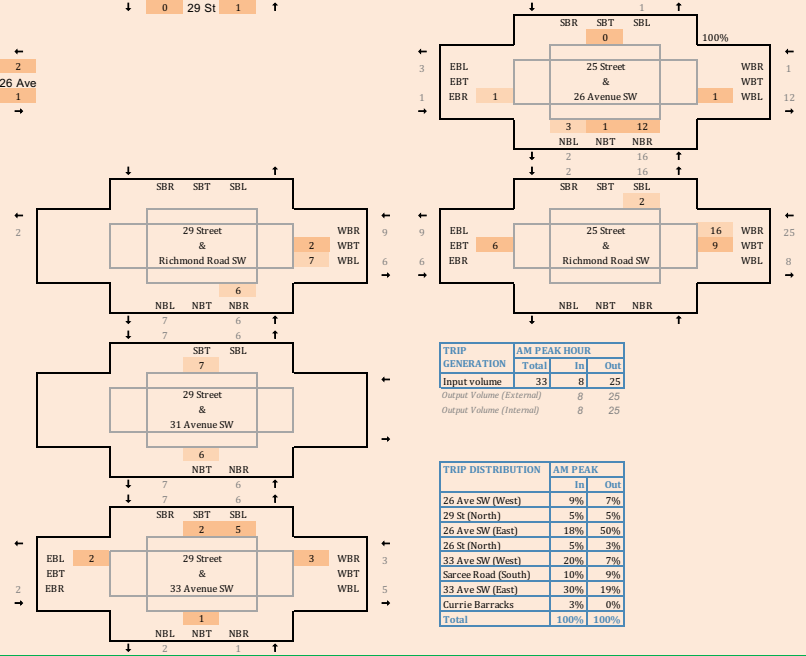
PM Peak Hour



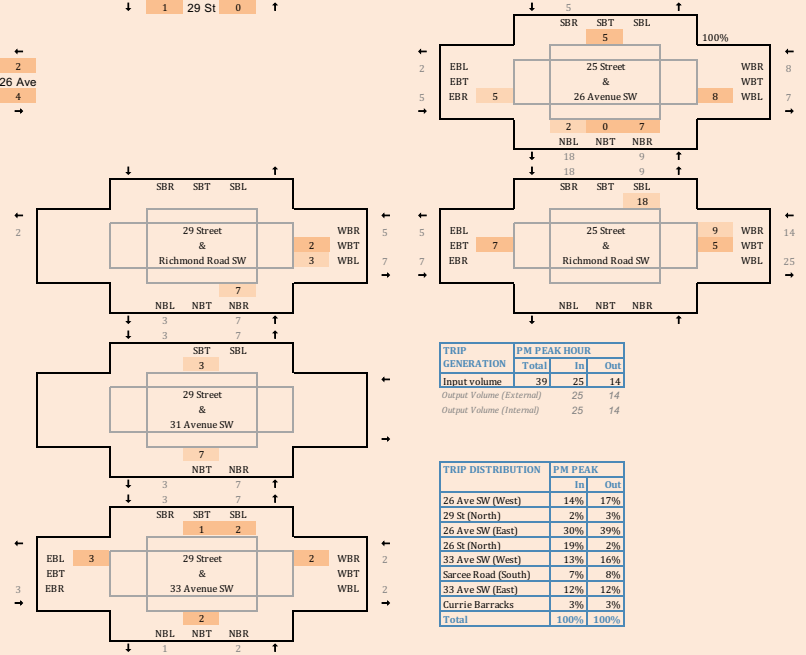
6-Hour Volumes
(AM+PM) x Factor



AM Peak Hour

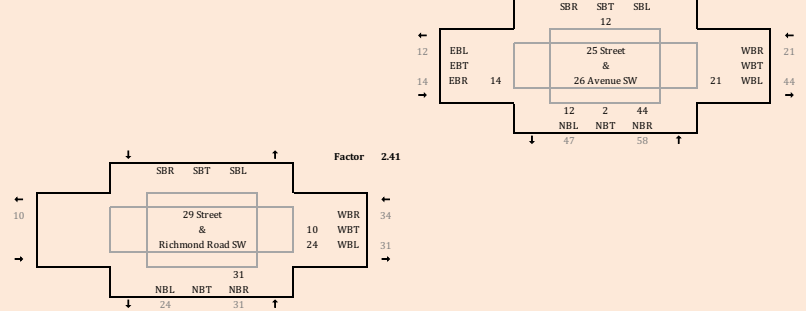


PM Peak Hour

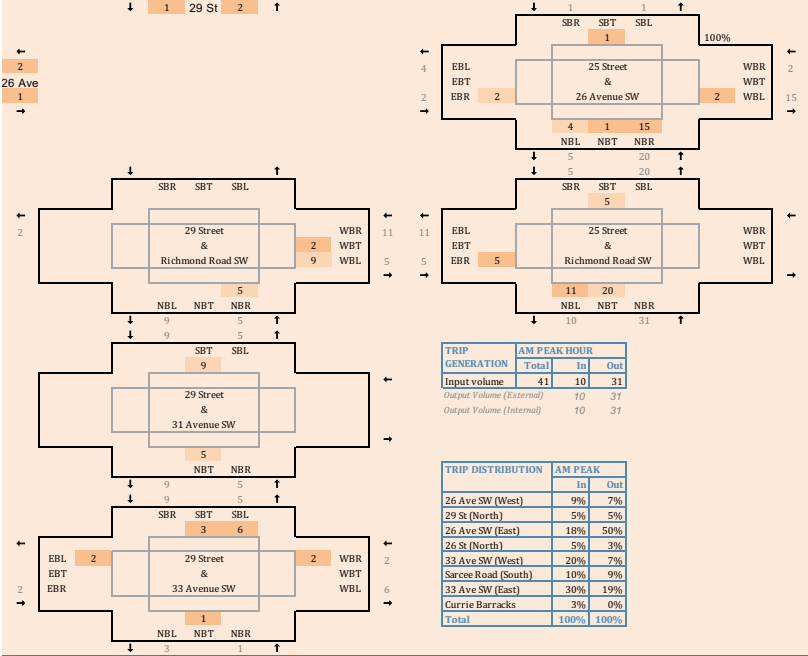


6-Hour Volumes

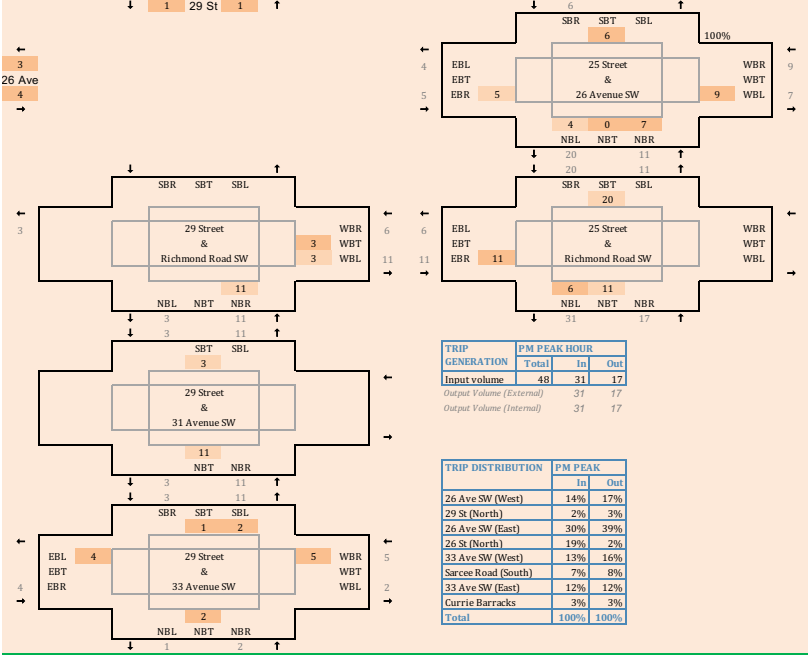
(AM+PM) x Factor



AM Peak Hour

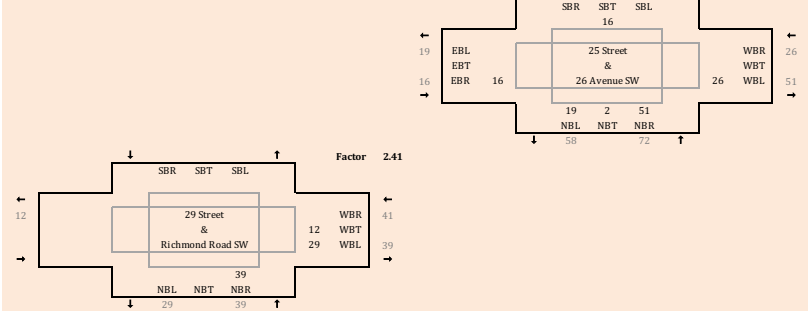


PM Peak Hour



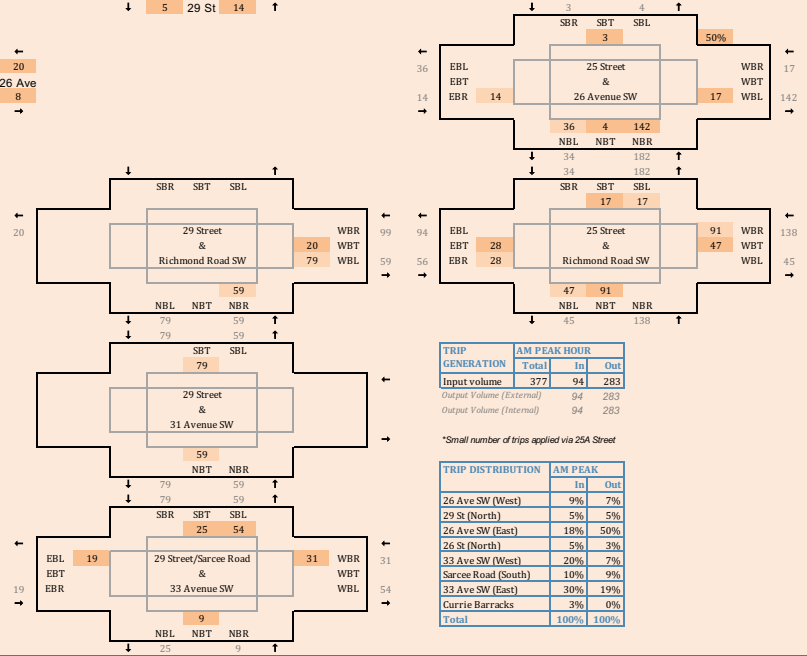
6-Hour Volumes

(AM+PM) x Factor

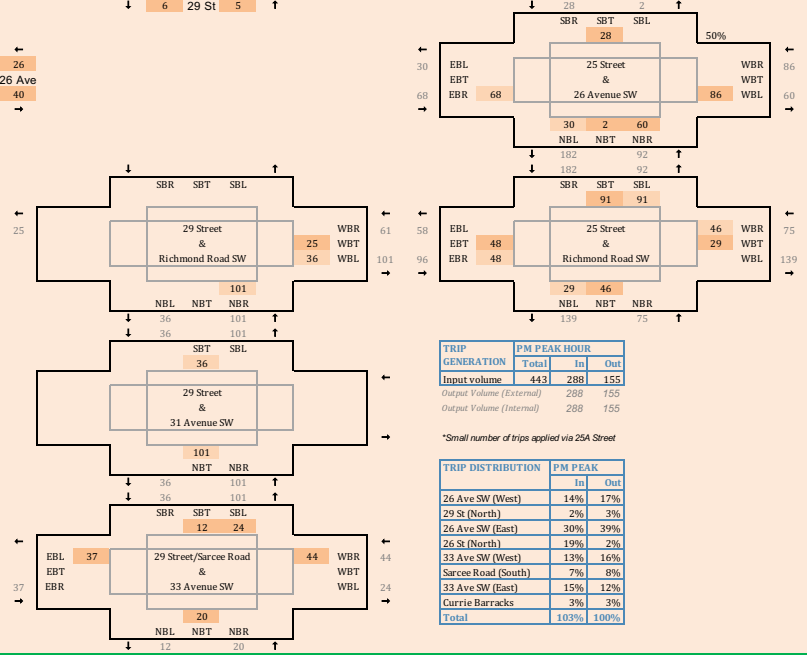


2501 Richmond Phase 2 to Full Build
02-22-0203

AM Peak Hour

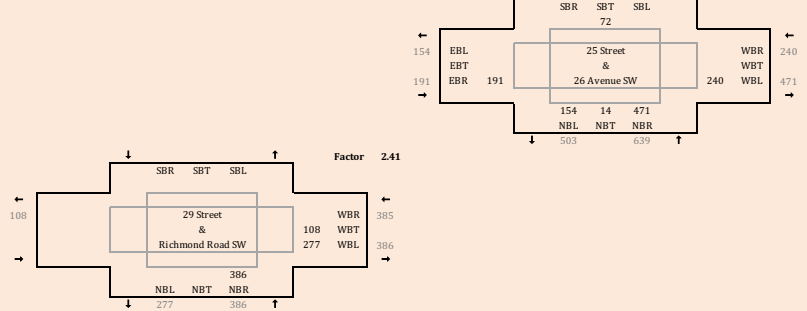


PM Peak Hour



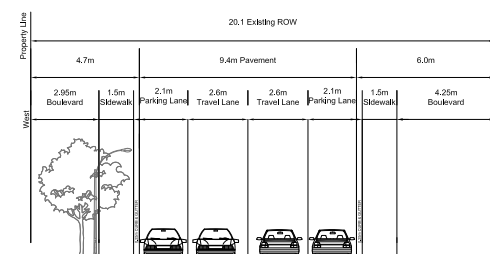
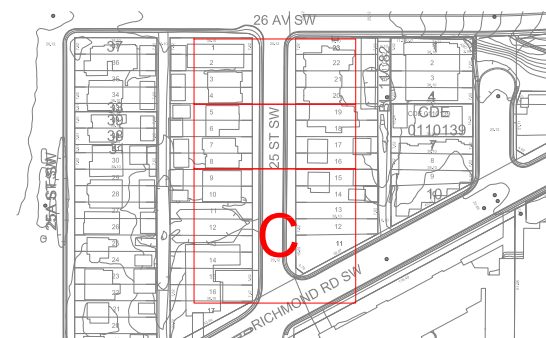
6-Hour Volumes

(AM+PM) x Factor

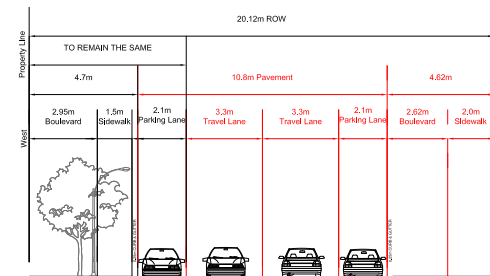


APPENDIX B

25 Street SW Cross-Section



Existing Collector - 25 Street SW (Section C)



Modified Collector - 25 Street SW (Section C)