2501 Richmond
Transportation Impact Assessment (Version 2)

June 2024

Background

Bunt & Associates, a licensed third-party engineer, submitted a Version 1 Transportation Impact Assessment (TIA) for the 2501 Richmond project in November 2023. The initial TIA evaluated up to 2,500 residential units on the site and indicated the development could be accommodated with several upgrades to the road network.

The City of Calgary provided formal comments in February 2024 and requested further analysis to answer key questions and evaluate additional scenarios. The following Version 2 TIA was conducted to evaluate if 2,500 residential units could be accommodated on the site.

Updated Capacity Findings

Version 2 TIA determined that 2,500 units of development can be accommodated at the subject site with several upgrades to the road network. These findings are consistent with those of the Version 1 TIA.

The June 2024 revised concept that is being prepared for resubmission this summer proposes 1,250 residential units, which is the 50% build-out scenario for the site.

Key Terms

50% build out: 1,250 units

75% build out: 1,875 units

100% build out: 2,500 units

2028 Horizon: Refers to the year 2028

2048 Horizon: Refers to the year 2048

Next Steps

City of Calgary engineers will review the Version 2 TIA and provide further comments in due course as revised applications at the site progress.


minto
Communities

TRANSPORTATION PLANNERS AND ENGINEERS

2501 Richmond

Transportation Impact Assessment

Version 2

Prepared for

Minto Communities

Date

April 25, 2024

Project Number

02-22-0203

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CORPORATE AUTHORIZATION

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Engineer's Stamp

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CHANGE LOG

This report has been updated to address comments provided by the City of Calgary in relation to Bunt & Associates' *Viscount Bennett Transportation Impact Assessment* (Version 1). City of Calgary comments are identified in *italics*. Our responses are outlined below.

Overarching comment

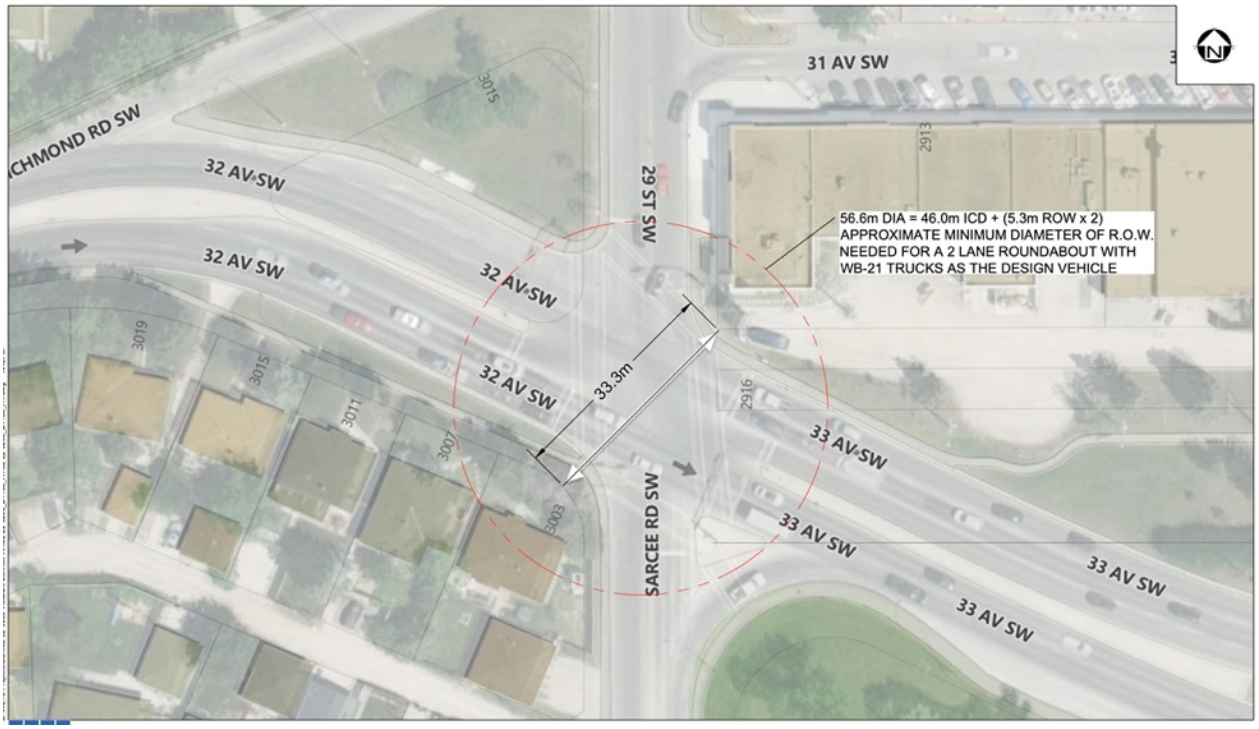
As we discussed at our meeting on December 19th, an updated horizon of the TIA will be required using the forecasting data that was discussed during that meeting and as outlined in your December 20th e-mail.

This TIA includes additional traffic analysis with 2048 City traffic forecasts.

Also as discussed, we want to see a scenario with the 25th Street connection to 33rd Avenue, and perhaps a different intersection type at 29th Street / 33rd Avenue. Please reach out to discuss this further.

A scenario with 25 Street SW connecting to 33 Avenue is provided in this study.

The feasibility of providing a roundabout was reviewed for 29 Street & 33 Avenue SW. The minimum dimensions required to accommodate a dual-lane roundabout could not be provided within the available roadway right-of-way. The high-level review considered only minimum dimensions. Actual requirements would likely be higher due to roadway angles and spacing of accesses. Therefore, analysis is completed only with the existing traffic signal control in place.



TIA Comments

Table 4.7, Intersection of 29th Street and 33rd Avenue SW

Can you provide a bit more discussion about the performance of this intersection. I measure that it has approximately 40m of storage for the queue. The existing horizon shows queue lengths for the southbound left turn of 75m in the AM peak, and 45m in the PM peak. Does this queue clear every cycle? Table 4.6 shows there is no impact to the performance of 29th Street and Richmond Road. There also is no queue for the SB movement at 29th/Sarcee in the AM peak, despite the 75m length for the 29th Street / 33rd Ave intersection extending past this intersection. Can you please provide a bit more explanation on how the 75m queue in the AM peak impacts the intersection of 29th and Sarcee?

> Synchro analysis does not fully account for upstream queuing impacts. Therefore, the operation at 29 Street & Richmond Road SW is not fully accurate. To account for this, SimTraffic analysis is added to the report. The SimTraffic analysis identifies higher congestion at 29 Street & Richmond Road SW associated with southbound left turn queue.

For the 100% build-out scenario, the Eastbound Left degrades to a LOS F, with a queue jumping to 96m vs. LOS D and 51m queue in the 50% build-out scenario for the PM peak. However, the volumes for this movement only go from 210 (50% build-out, per Exhibit 4.4) to 253 (100% build-out, per Exhibit 4.5). Is this caused by a change in signal timing, to give more time/priority to the southbound movement for this leg? Just looking for clarity.

> It's a combination of southbound movement signal priority, the eastbound left turn movement having only a 10 second maximum protected green phase, and increased westbound volumes conflicting with permitted left turn movements. The three factors combine to result in the increased delay. A similar condition occurs during the 2048 horizon analysis.

Table 4.10, Intersection of 25th Street and 26th Avenue SW

Can the signal timing for the 100% build-out scenario be timed to give more time to the WB movement? Perhaps a leading left turn for a longer cycle length? How would that impact the performance of the other legs? I note that you recommend as a solution is to put in turning lanes, but I think with the planned upgrades to 26th Avenue (should have a finalized design in the next couple months I hear) we won't be able to fit left turn lanes in. We may need to see a different solution proposed here.

> Signal timing scenarios (e.g. split phasing, leading left turn arrow) were analyzed for the westbound movement. However, these were not sufficient to accommodate the volume expected.
>
> The recent phase 2 renderings include a westbound left turn bay subject to detailed design.



Section 5.1.3 Crowchild Trail Crossings

More discussion on this bridge should likely occur. I lean towards putting that investment into upgrading/enhancing the pedestrian realm on the existing 33rd Avenue bridge. I would have concerns about the origin/destination points on the east side of Crowchild, as well as any sort of available physical landing area for the bridge itself. I would assume the destination for pedestrians coming from the Viscount Bennet site is the retail in Marda Loop, in which case it may make more sense to upgrade/enhance the 33rd Ave structure.

> Discussion regarding a new Crowchild Trail pedestrian overpass remains, but the section has been revised to address draw and 33 Avenue interchange pedestrian realm improvements.

Section 5.2

I note that our 5A network plans both on-street cycling infrastructure, as well as a recommended pathway for Richmond Road. I am unsure why they recommend dual cycling infrastructure, hopefully we can get a design/plan confirmed for at least the frontage portion of Richmond Road for this project determined through this application process.

> Noted. Minor wording revision provided. The client has indicated that detailed street sections with pathway integration will be included in a future Outline Plan submission.

Section 6.2

This is interesting information, but ultimately not really relevant to the application unless Minto proposed to create a DC with separate bicycle parking requirements than what the stock districts contain. Otherwise if deviations from the bylaw requirements are desired, it can be discussed at DP with supporting information.

If this information will be used in support of a relaxation, we will need to see more details, such as occupancy rates of the buildings, do they charge for bicycle parking, etc….

> Section has been removed. Minto is not seeking any relaxations related to bicycle parkign.

1. EXECUTIVE SUMMARY

Minto communities is planning a 2,500 unit residential development at 2501 Richmond Road SW on the former Viscount Bennett High School site. The City of Calgary requested a Transportation Impact Assessment (TIA). Study findings are detailed below.

Vehicle

- **Volumes** – When compared to the historical school use, anticipated site traffic generation is lower during the weekday AM peak hour and higher during the weekday PM peak hour.
- **Intersection Analysis** – Analysis results are summarized in **Table 1.1** (2028) and **Table 1.2** (2048).
  - **2048 Analysis** – The analysis identifies several intersection improvements are required to accommodate forecasted 2048 baseline volumes (without development on 2501 Richmond). The net increase in traffic forecasted (with development on 2501 Richmond) does not result in additional intersection improvements being required.
  - **25 Street SW Connection** – Peak hour intersection analysis based on the current road network identified the southbound left turn movement at 29 Street & 33 Avenue SW would operate at capacity with 100% build out resulting in vehicles needing to wait one or more signal cycles. This has upstream impacts on Richmond Road SW. Scenario analysis with 25 Street SW connecting to 33 Avenue SW identified a significant improvement in operations at 29 Street & 33 Avenue SW. Based on analysis results, introducing a roadway connection of 25 Street SW to 33 Avenue SW is not required at 50% or 75% build out. However, at 100% build out, operations on 29 Street SW should be monitored to determine if anticipated delays materialize and compare those delays with the impact of this connection. The connection would result in an increase in traffic volumes along the 25 Street SW corridor, which is currently a Residential Street south of Richmond Road SW.
- **Signal Warrants** – The addition of the development requires new signals at:
  - 25 Street & 26 Avenue SW
  - 29 Street & Richmond Road SW
- **Road Classifications** – Upgrades to 25 Street SW (26 to 30 Avenue) will be required with development. Richmond Road SW will continue to operate within guidelines.
- **Collisions** – The addition of signals would address collision history at two intersections (25 Street & 26 Avenue SW and 29 Street & Richmond Road SW). Curb extensions at 25 Street & Richmond Road SW would address collisions occurring due the intersection angle.

Active

- ***Sidewalk*** – Frontage improvements will be provided.
- ***Crosswalks*** – Current controls meet guidelines. Curb extensions are recommended at 25 Street & Richmond Road SW.
- ***Crowchild Trail Overpass*** – Improvements to the 33 Avenue SW interchange and/or a new pedestrian overpass should be considered to provide enhanced pedestrian connectivity.
- ***Cycling*** – The site is serviced by bike lanes on 26 Ave SW. An upgraded pathway will be integrated through the site and tie-in to planned 5A network improvements on 26 Avenue SW.
- ***Transit*** – The site is serviced by bus stops on 26 Avenue SW (#6) and Crowchild Trail SW (Max Yellow BRT, #20, #66). Shifting the southbound Crowchild Trail SW stop closer to the site and adding BRT shelters would improve transit access.

Table 1.1: 2028 Intersection Analysis Summary

INTERSECTION		ANALYSIS SUMMARY			
		Background	50% Build Out	75% Build Out	100% Build Out
29 Street &	Richmond Rd SW	Operates acceptably.	Signal beneficial for westbound left. Impacted by 33 Avenue queuing*.	Signal required with turn lane (northbound right). Impacted by 33 Avenue queuing*.	
	31 Avenue SW	Impacted by 33 Avenue queuing during peak periods.		Due to queue spillback from 33 Ave, southbound left turn restrictions should be provided (peak hours or all times).	
	33 Avenue SW	Operates acceptably.	Southbound left turn arrow required.	Southbound left turn arrow required. Some movements near capacity.	Southbound left turn arrow required. Southbound left will operate at capacity with drivers waiting at least one cycle.
28 Street &	Richmond Rd SW	Operates acceptably.			
25A Street &	26 Avenue SW	Operates acceptably.			
	Richmond Rd SW	Operates acceptably.			
25 Street &	26 Avenue SW	Operates acceptably.	Signal required.	Signal required with turn lane (westbound left).	Signal required with turn lanes (westbound left + northbound right).
	Richmond Rd SW	Operates acceptably.			All-way stop required.
	30 Avenue SW	Operates acceptably.			

Table 1.2: 2048 Intersection Analysis Summary

INTERSECTION		ANALYSIS SUMMARY	
		Baseline	After Development
29 Street &	Richmond Rd SW	Signal required.	
	31 Avenue SW	Southbound left turn restrictions should be provided either through signage (peak hours) or at all times (median).	
	33 Avenue SW	Southbound left turn arrow required. Westbound through will operate at capacity during the PM.	
28 Street &	Richmond Rd SW	Operates acceptably.	
25A Street &	26 Avenue SW	Signal required.	
	Richmond Rd SW	Operates acceptably.	
25 Street &	26 Avenue SW	Signal required with turn lanes (westbound left + northbound right).	
	Richmond Rd SW	Operates acceptably.	
	30 Avenue SW	Operates acceptably.	

2. INTRODUCTION

2.1 Scope of Work

Based on discussions with the City of Calgary, the scope of work for this TIA is:

Development

- *Trip Generation* – Calculate development generated trips based on anticipated and sensitivity rates. Distribute to the network based on forecasted distributions.
- *Bylaw Parking* – Identify vehicle and bicycle parking requirements.

Vehicles

- *Volumes* – Identify weekday AM & PM peak hour traffic volumes for the following horizons:
  - *Existing* – Current volumes (Viscount Bennett Centre closed).
  - *2028 Horizon*
    - *Background* – With planned area developments.
    - *After Development* – With development traffic distributed per select zone forecasts.
    - *After Development Sensitivity* – With sensitivity development traffic scenarios.
  - *2048 Forecast*
    - *Baseline* – Without any development on Viscount Bennett.
    - *After Development* – With development on Viscount Bennett.
- *Intersection Capacity Analysis* – Complete weekday peak hour analysis at:
  - 29 Street & Richmond Road SW
  - 29 Street & 31 Avenue SW
  - 29 Street & 33 Avenue SW
  - 28 Street & Richmond Road SW
  - 25A Street & 26 Avenue SW
  - 25A Street & Richmond Road SW
  - 25 Street & 26 Avenue SW
  - 25 Street & Richmond Road SW
  - 25 Street & 30 Avenue SW
- *Signal Warrant Analysis* – Review needs for traffic signals:
  - 29 Street & Richmond Road SW
  - 25 Street & 26 Avenue SW.
- *Roadway Classifications* – Compare daily volumes with guidelines for 25 St SW and Richmond Rd SW.
- *Safety Analysis* – Review collision history at 29 Street study intersections.
- *25 Street Connection* – Assess impact of connecting 25 Street SW to 33 Avenue SW

Active Transportation

- *Pedestrians* – Review connectivity. Provide crossing warrants on Richmond Rd SW at 25 and 28 Street.
- *Cycling* – Review connectivity to cycling facilities. Identify improvements.
- *Transit* – Review service levels and connectivity to transit stops. Identify improvements.

2.2 Site Context

The site is in the community of Richmond bounded by Richmond Road SW to the north, Crowchild Trail SW to the east, 30 Avenue SW to the south, and 25 Street SW to the west. The site context is illustrated in **Figure 2.1**.

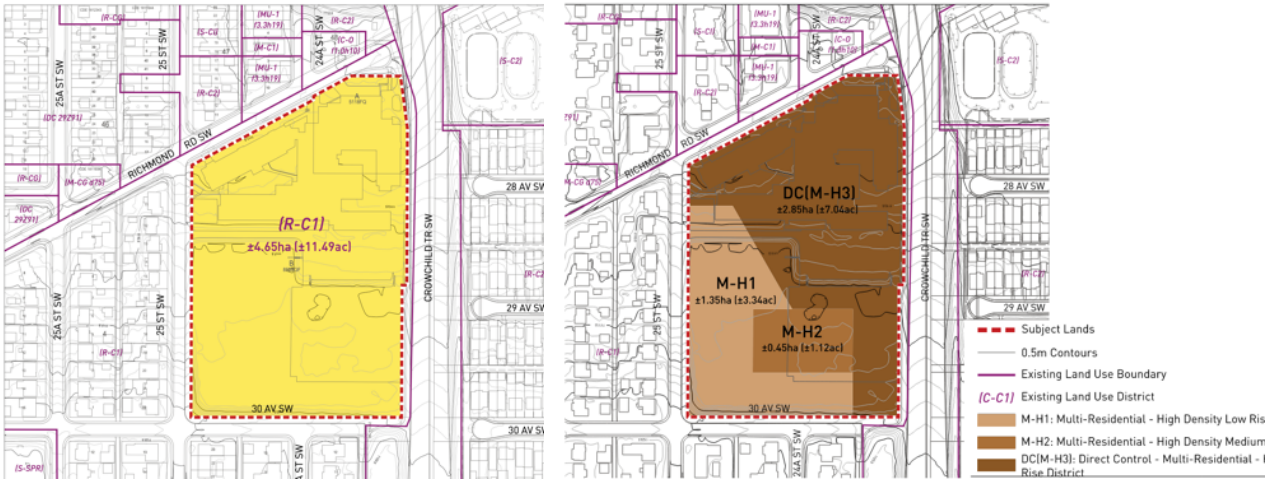
Figure 2.1: Site Context



3. DEVELOPMENT

The proposed land use plan is illustrated in **Figure 3.1**. The proposed density is 2,500 multi-family residential units.

Figure 3.1: Land Use Plan



Existing Land Use

Proposed Land Use

3.1 Historical Site Use

Density

Previous site uses are summarized in **Table 3.1**. After the High School was closed, it was converted into an adult learning facility. The site also housed a charter school for a decade.

Table 3.1: Previous Site Uses

NAME	TIME FRAME	USE	DENSITY
Viscount Bennett High School	1955-1985	High School	2,000 students
Viscount Bennett Centre	1990's-2018	Adult Learning Centre	*500 students
Westmount Charter School	2001-2011	Charter School	1,100 students

**Assumed in this analysis.*

Trip Generation

Trip rates identified in the Institute of Transportation Engineers *(ITE) Trip Generation Manual* (11th Edition) for previous site uses are summarized in **Table 3.2**. Resulting historical site traffic generation is summarized in **Table 3.3**.

Table 3.2: Trip Generation Rates (School)

USE	TRIP RATE			DATA SOURCE
	AM Peak Hour	PM Peak Hour	Daily	
High School	0.52 per student *(68% In, 32% Out)*	0.14 per student *(48% In, 52% Out)*	1.94 per student *(50% In, 50% Out)*	ITE 525 (High School)
Adult Learning Centre	0.11 per student *(81% In, 19% Out)*	0.11 per student *(56% In, 44% Out)*	1.15 per student *(50% In, 50% Out)*	ITE 540 (Junior/Community College)
Charter School	0.79 per student *(63% In, 37% Out)*	0.17 per student *(43% In, 57% Out)*	2.48 per student *(50% In, 50% Out)*	ITE 532 (Private K-12 School)

Table 3.3: Vehicle Trip Generation (Historical)

HORIZON	USE	DENSITY	AM PEAK HOUR			PM PEAK HOUR		
			Total	In	Out	Total	In	Out
1955-1985	High School	2,000 students	**1,040**	**707**	**333**	**280**	**134**	**146**
2001-2011	Adult Learning	*500 students	55	45	10	55	31	17
	Charter School	1,100 students	869	547	322	187	80	107
		2001-2011 Traffic	**924**	**592**	**333**	**242**	**111**	**124**

3.2 Proposed Use

Trip Generation

Table 3.4 identifies multi-family residential trip generation rates sourced from the ITE *Trip Generation Manual* and local observations. The highest observed rate (City of Edmonton TIA Guidelines) is used in this analysis. Resulting anticipated site vehicle traffic generation is summarized in **Table 3.5**. When compared to the previous use, anticipated trip generation is lower during the AM and higher during the PM.

Table 3.4: Trip Generation Rates (Multi-Family)

SOURCE	TYPE/CONTEXT	TRIP GENERATION RATE	
		AM Peak Hour	PM Peak Hour
City of Calgary	No LRT – 4 sites	0.21 per unit	0.31 per unit
ITE 222 (Multi-Family High Rise)	General Suburban (No rail transit)	0.27 per unit	0.32 per unit
Bunt & Associates	Established (No LRT) – 7 sites	0.31 per unit	0.38 per unit
ITE 221 (Multi-Family Mid Rise)	General Suburban (No rail transit)	0.35 per unit	0.39 per unit
City of Edmonton TIA Guidelines	**General Suburban (No LRT) Low-rise & medium-rise**	**0.34 per unit**	**0.40 per unit**

Table 3.5: Vehicle Trip Generation (Main Analysis)

USE	DENSITY	AM PEAK HOUR			PM PEAK HOUR		
		Total	In	Out	Total	In	Out
Multi-Family	2,500 units	850	213	637	1,000	650	350

Trip Distribution

Vehicle trips are distributed based on the select zone forecasts included in **Appendix A**. Vehicle access to the development will be provided from Richmond Road SW and 25 Street SW. The trip distribution used in this study is illustrated **Exhibit 3.1**. The resulting development generated traffic volumes are illustrated in **Exhibit 3.2**.

3.3 Sensitivity Analysis

The main analysis is completed using general suburban multi-family trip generation rates. Sensitivity analysis is completed using different rates. Sensitivity analysis is included in **Appendix D.**

Lower-Range (Lower Vehicle Usage)

The ITE 221 urban multi-family trip rate (no rail transit) is 0.23 per unit (AM) and 0.24 per unit (PM). This rate is consistent with observations completed at suburban transit-oriented locations (Somerset) and inner-city non-TOD locations (Rideau Park, Westgate prior to LRT).

Upper-Range (Higher Vehicle Usage)

The City of Calgary requested additional sensitivity analysis be completed using an hourly peak hour vehicle trip generation rate of 0.50 per unit (AM) and 0.60 per unit (PM). Sensitivity rates were based on the City of Calgary's generic multi-family rate. Unlike other jurisdictions (City of Edmonton) and industry standards, the City of Calgary's generic multi-family rate does not differentiate between unit types (townhouse vs. apartments) or location (suburban vs. established). The sensitivity analysis trip generation rate exceeds the suburban townhouse PM peak hour trip generation rate identified by ITE (0.57 per unit – attached single-family) and the City of Edmonton (0.58 per unit - rowhouse). Therefore, the rates do not provide realistic trip generation expectations.

Resulting sensitivity analysis trip generation is identified in **Table 3.6**.

Table 3.6: Vehicle Trip Generation (Sensitivity Analysis)

SCENARIO	DENSITY	AM PEAK HOUR			PM PEAK HOUR		
		Total	In	Out	Total	In	Out
Lower-Range	2,500 units	575	144	431	600	390	210
Main Analysis		850	213	637	1,000	650	350
Upper-Range		1,250	313	937	1,500	975	525

3.4 Access

Historical

The site had the previous vehicle driveway locations:

- **Richmond Road SW (2 Accesses)** – One access for north-facing covered parking and one access to the main parking lots (east side of site).
- **25 Street SW (4 Accesses)** – One driveway for the loading dock, one driveway for the west parking lot, one access to the main lot, and one field maintenance access

Proposed

The proposal is a single vehicle access point from the north (Richmond Road SW), west (25 Street SW), and south (30 Avenue SW).

3.5 Bylaw Parking Requirements

Land Use Bylaw 1P2007 (Part 6 – Multi-Residential) parking requirements are identified in **Table 3.7**. Parking supplies will be confirmed at the development permit stage. Requirements will be met or exceeded at the development permit stage.

Table 3.7: Bylaw Minimum Parking Requirements

STALL TYPE	BYLAW RATIO
Vehicle	0.46875 stalls per unit*
Bicycle (Class 1)	1.00 stalls per unit
Bicycle (Class 2)	0.10 stalls per unit
Loading	1 per building greater than 20 units (shared entrance)

*0.625 stalls per unit – 25% transit reduction

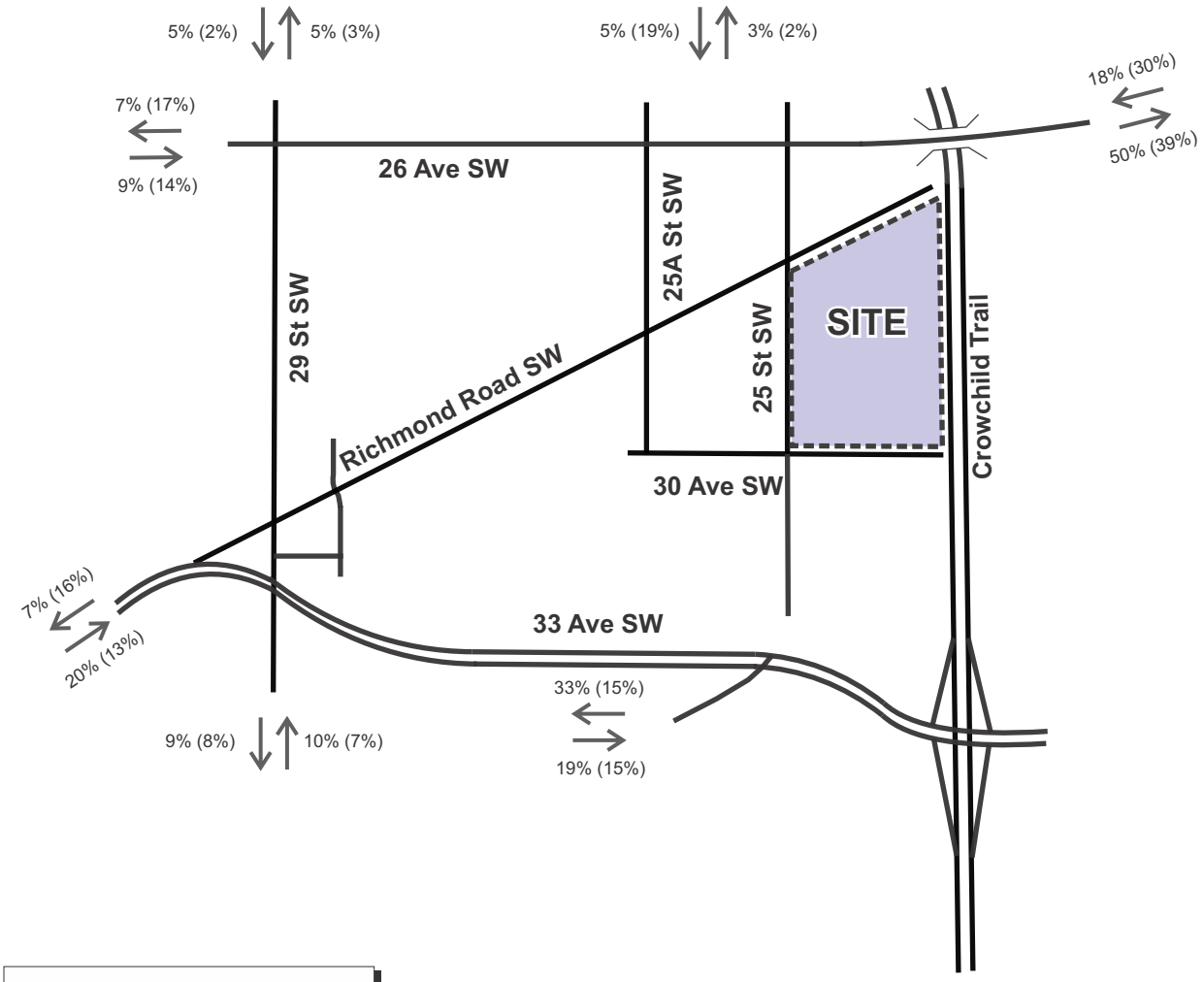


Exhibit 3.1

Site Traffic Distribution

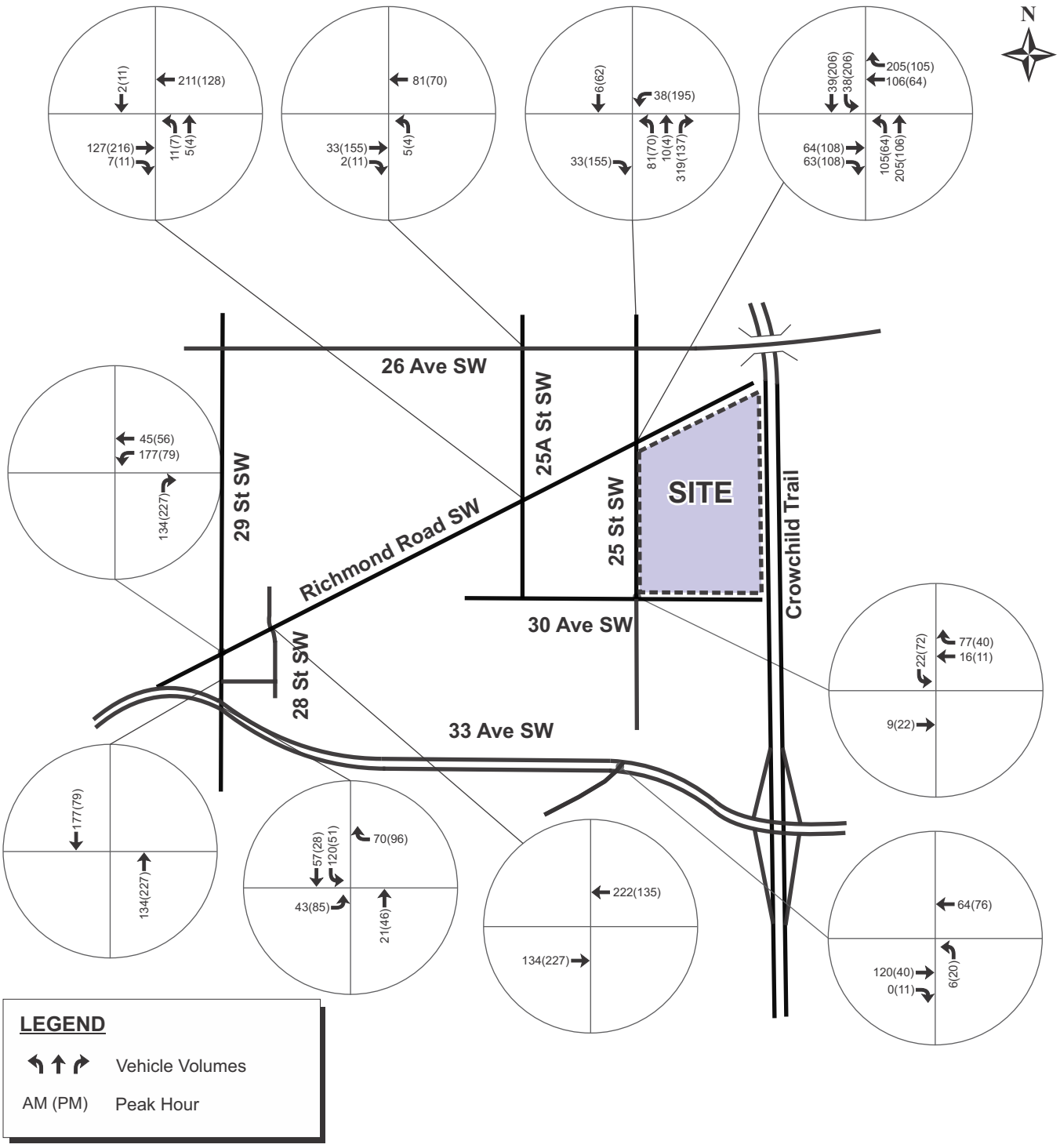


Exhibit 3.2

Site Traffic Volumes

4. VEHICLES

4.1 Road Network

Area roadway classifications are illustrated in **Figure 4.1**. The characteristics of roadways near the site are summarized in **Table 4.1**. Existing roadway sections are illustrated in **Figure 4.2** to **Figure 4.4**.

Figure 4.1: Roadway Classifications

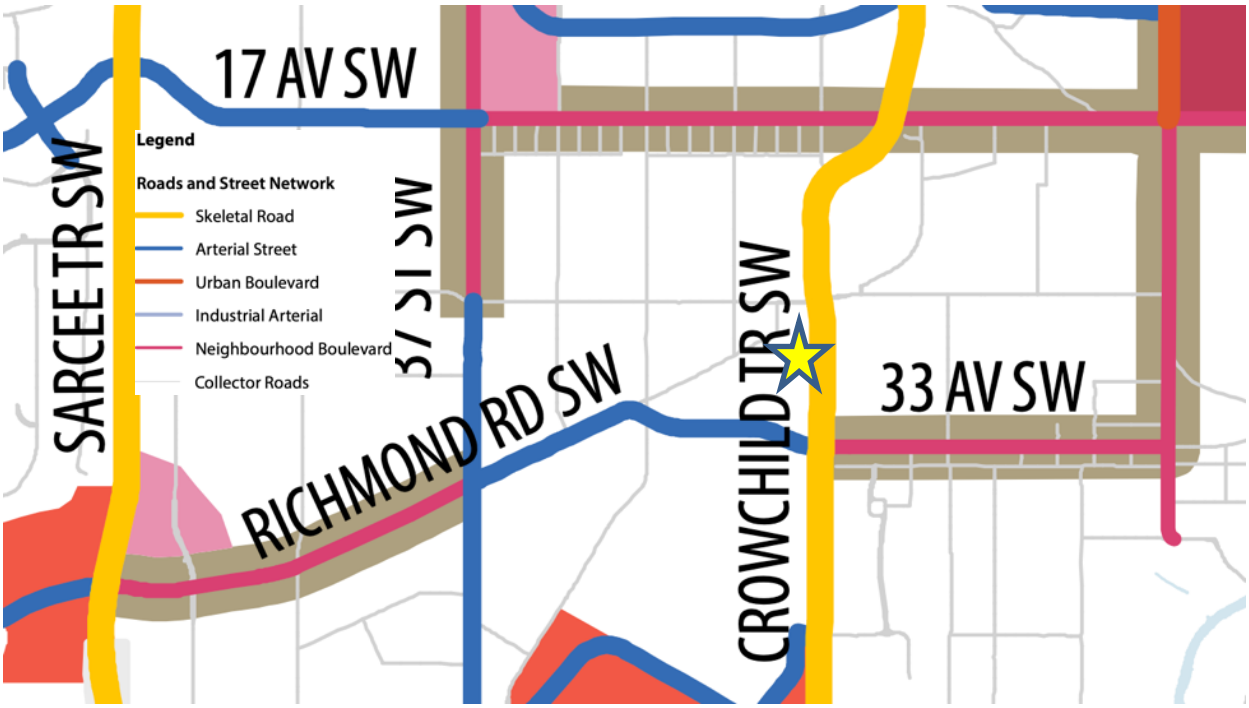


Table 4.1: Existing Roadway Characteristics

ROADWAY	SECTION	TYPE	LANES	POSTED SPEED*	FACILITIES		
					Parking	Bike Lanes	Bus Stops
Richmond Road SW	West of 25 St	Collector	2	40-50 km/h	Yes	No	No
	East of 25 St	Residential		40 km/h			
25 Street SW	N of Richmond Rd	Collector	2	40 km/h	Yes	No	No
	S of Richmond Rd	Residential					
26 Avenue SW		Collector	2	50 km/h	South	Yes	Yes

**Playground zone (30 km/h from 7:30-21:00) currently in effect along portions of the site frontage.*

Figure 4.2: Existing Roadway (Richmond Road SW)



Figure 4.3: Existing Roadway (25 Street SW)



Figure 4.4: Existing Roadway (26 Avenue SW)



Source: Apple Maps

4.2 Intersections

Existing intersection configurations and controls at study intersections are illustrated in **Exhibit 4.1**. Existing signal timing plans are included in **Appendix A**. The intersection of 29 Street & 33 Avenue SW is analyzed with a de-facto southbound left turn lane.

4.3 2028 Horizon Volumes

4.3.1 Existing

Traffic counts were completed at all study intersections on December 14, 2022 (Wednesday). Existing traffic volumes are summarized in **Exhibit 4.2**. Traffic count data is included in **Appendix A**.

4.3.2 Background (2028)

Traffic growth at the 2028 horizon associated with background developments is accounted for this study. The resulting Background volumes are illustrated in **Exhibit 4.3** with details provided in **Appendix A**.

Currie Barracks

Development traffic associated with 35% build out of the Currie Barracks development is included in this analysis. Site traffic volumes were obtained from the *Currie Barracks Phase 3 TIA* (Watt Consulting Group).

24A Street SW

Traffic associated with the Cascade Development (2813 24A Street SW) and former Canada Post distribution building (2801 24A Street SW) is included per the traffic generation identified in **Table 4.2**. Trips are distributed using forecast distributions.

Table 4.2: Background Development (24A Street SW)

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	42 units	0.35	25%	75%	0.45	65%	35%	15	4	11	19	12	7
Commercial	5,700 ft^2	1.00	60%	40%	3.50	50%	50%	6	4	2	20	10	10
Office	6,400 ft^2	1.80	88%	12%	2.00	17%	83%	12	11	1	13	2	11
Internal Capture				0%			10%	0	0	0	-6	-3	-3
Total New External Trips								33	19	14	46	21	25

Richmond Green

Traffic associated with the Richmond Green development is included per the traffic generation identified **Table 4.3**. Trips were distributed to the road network per the *Richmond Green Development TIA* (Watt Consulting Group).

Table 4.3: Background Development (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	300 units	0.35	25%	75%	0.45	65%	35%	105	26	79	135	88	47
Townhomes	75 units	0.47	25%	75%	0.57	65%	35%	35	9	26	43	28	15
Commercial	5,704 ft^2	1.00	60%	40%	3.50	50%	50%	6	4	2	20	10	10
Internal Capture				0%			10%	0	0	0	-20	-10	-10
Total New External Trips								146	39	107	178	116	62

4.3.3 After Development (2028)

Development generated traffic volumes (Exhibit 3.2) were added to Background traffic volumes (Exhibit 4.3) to forecast the After Development traffic volumes illustrated in **Exhibit 4.4** (50% build), **Exhibit 4.5** (75% build), and **Exhibit 4.6** (100% build).

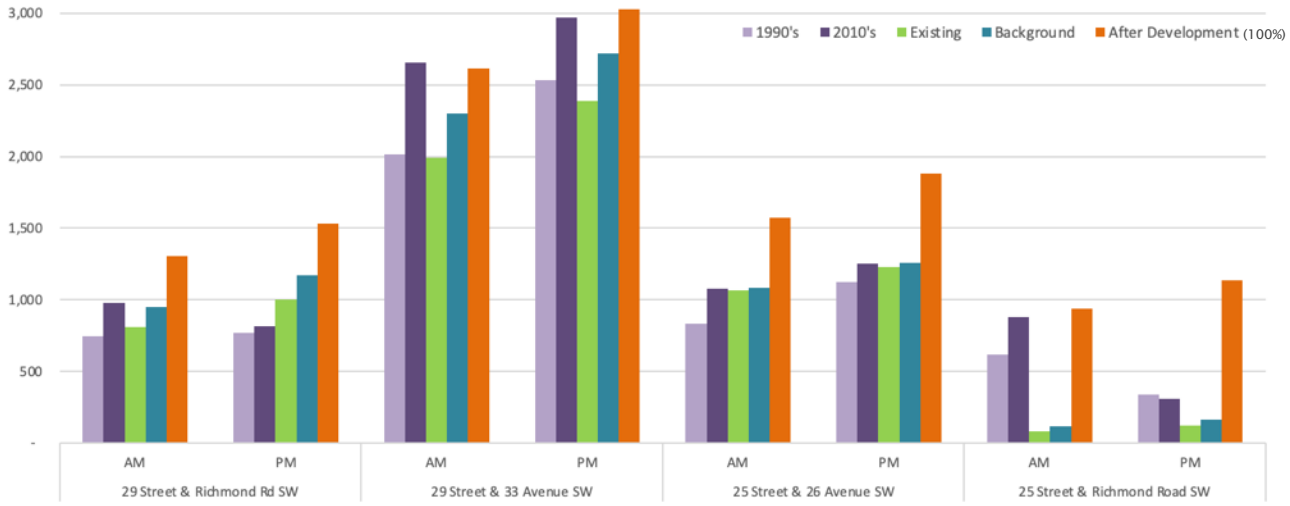
4.3.4 Historical Comparison

Historical, existing, and anticipated intersection traffic volumes are compared in **Table 4.4** and **Figure 4.5**. After Development volumes are higher than historical conditions at smaller intersections and are consistent with historical conditions at 29 Street & 33 Avenue SW.

Table 4.4: Historical vs. After Development Intersection Volumes

INTERSECTION	PEAK HOUR	ENTERING INTERSECTION VOLUME				
		Historical (1990's)	Historical (2010's)	Existing	Background	After Development (100%)
29 Street & Richmond Rd SW	AM	759	976	811	948	1,304
	PM	771	814	1,000	1,139	1,534
29 Street & 33 Avenue SW	AM	2,015	2,655	1,992	2,304	2,614
	PM	2,534	2,970	2,386	2,721	3,027
25 Street & 26 Avenue SW	AM	833	1,076	1,068	1,084	1,571
	PM	1,124	1,251	1,231	1,260	1,883
25 Street & Richmond Rd SW	AM	618	879	81	114	939
	PM	338	310	120	166	1,133

Figure 4.5: Historical vs. After Development Intersection Volumes



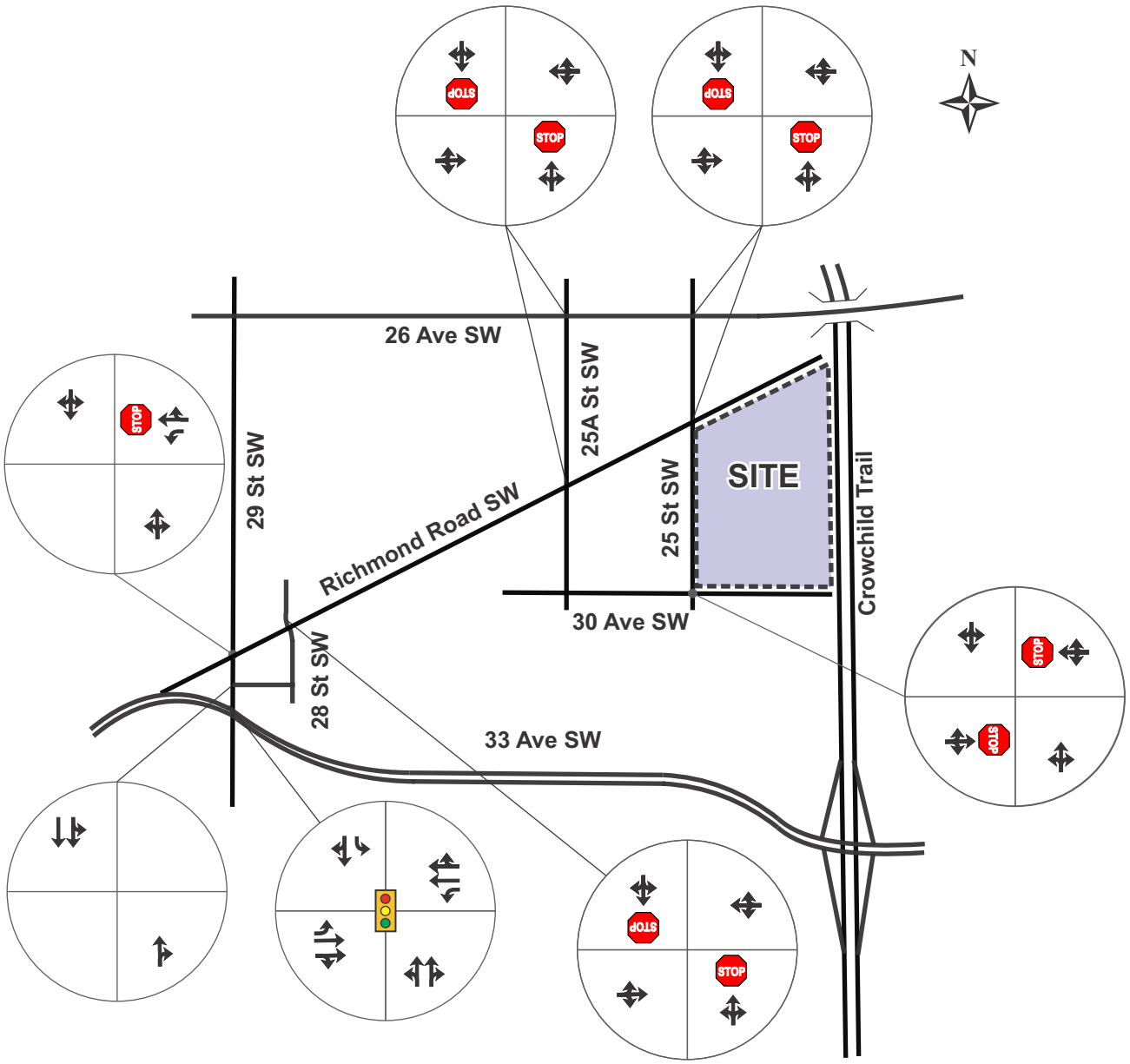


Exhibit 4.1

Existing Intersections Configuration

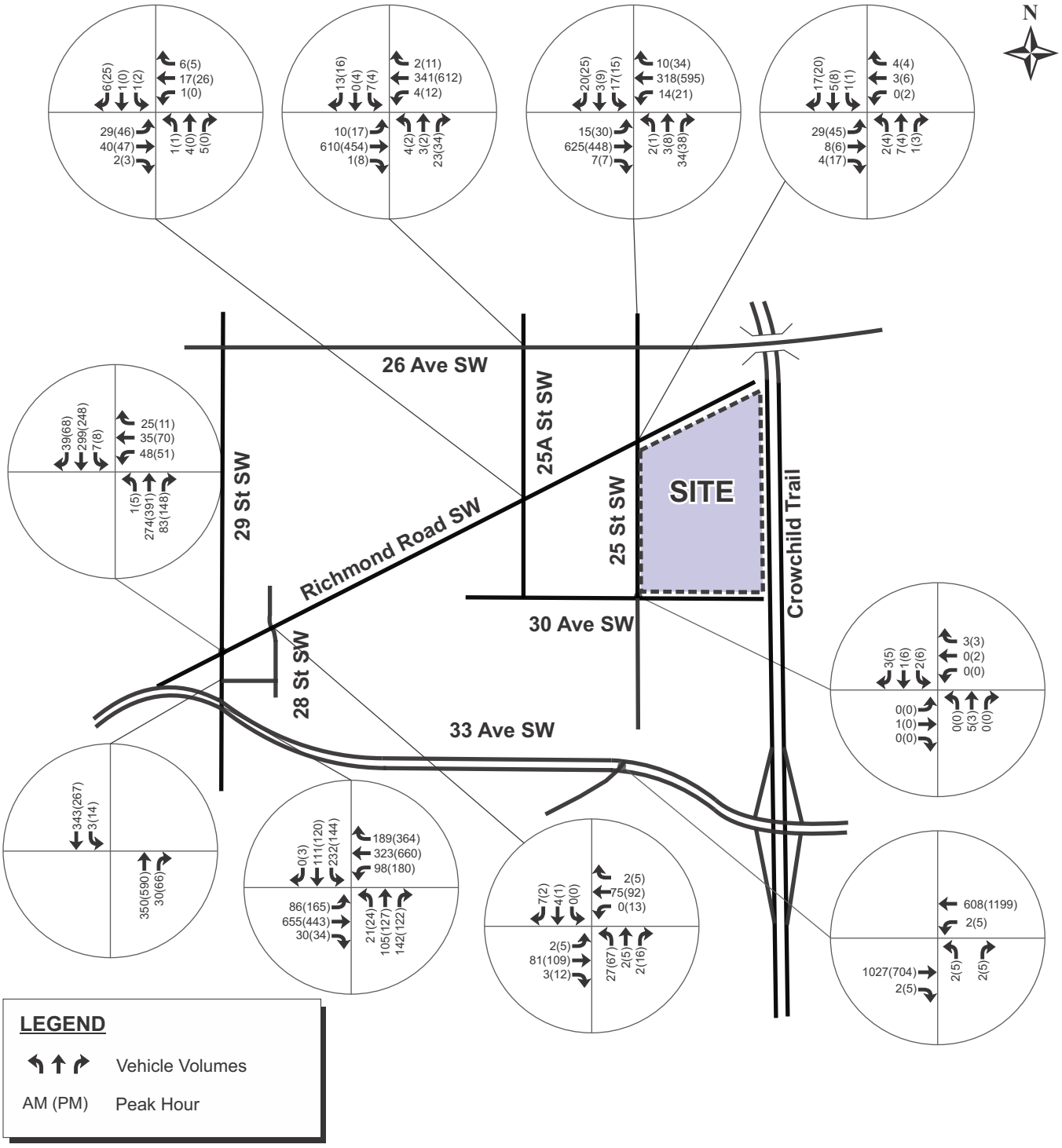


Exhibit 4.2

Existing Traffic Volumes

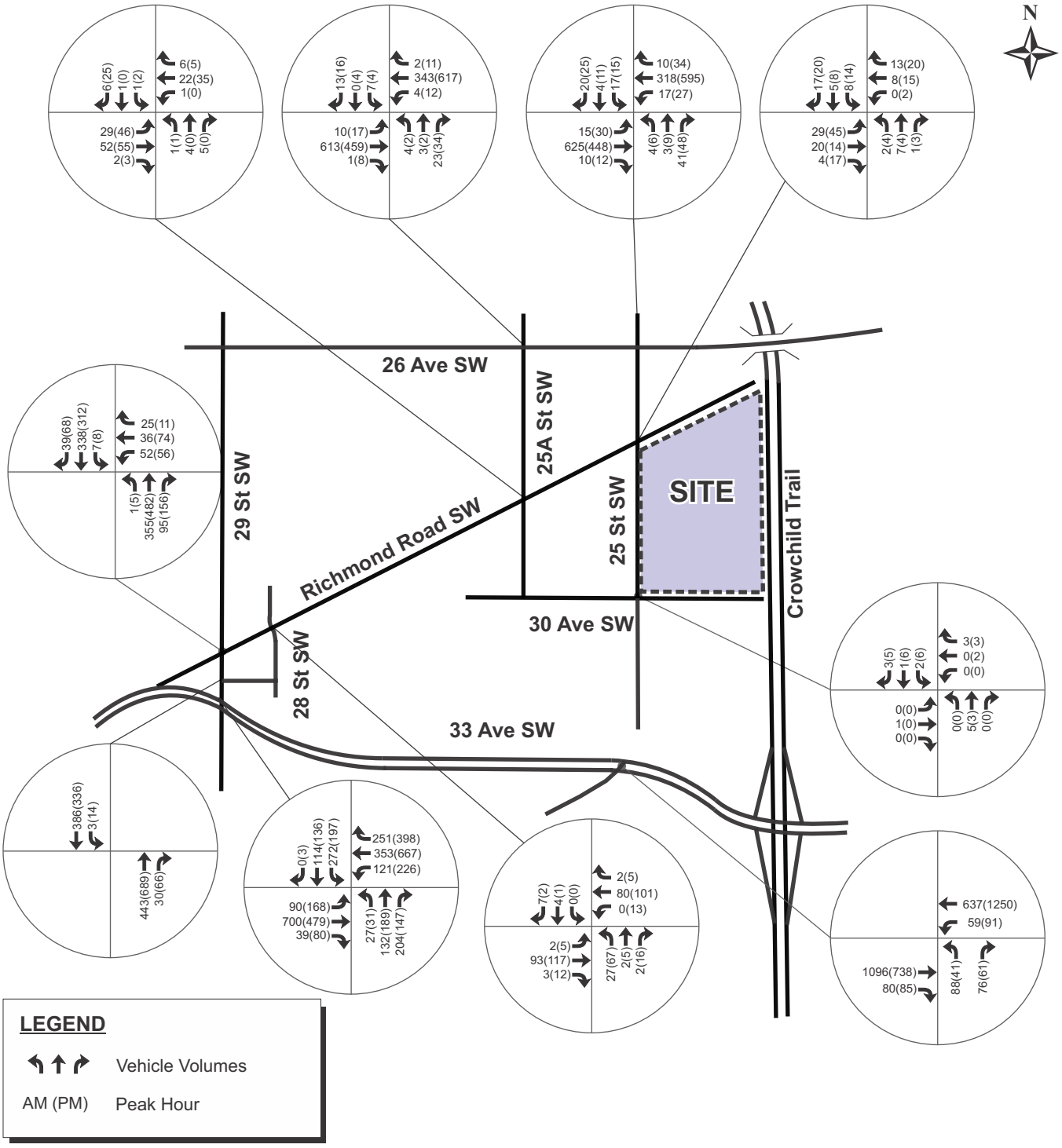


Exhibit 4.3

2028 Background Traffic Volumes

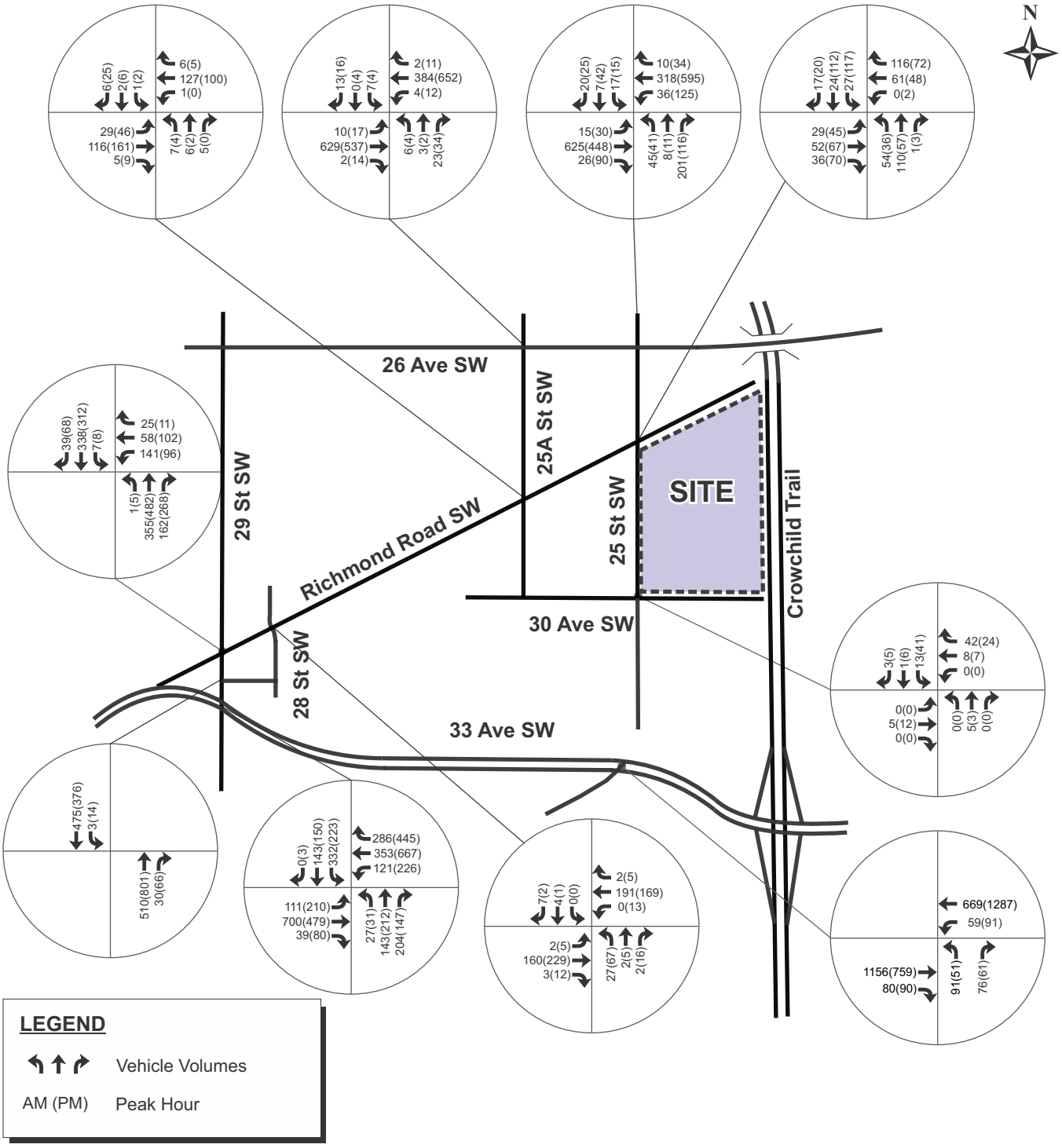


Exhibit 4.4

2028 After Development Traffic Volumes (50% Build Out)

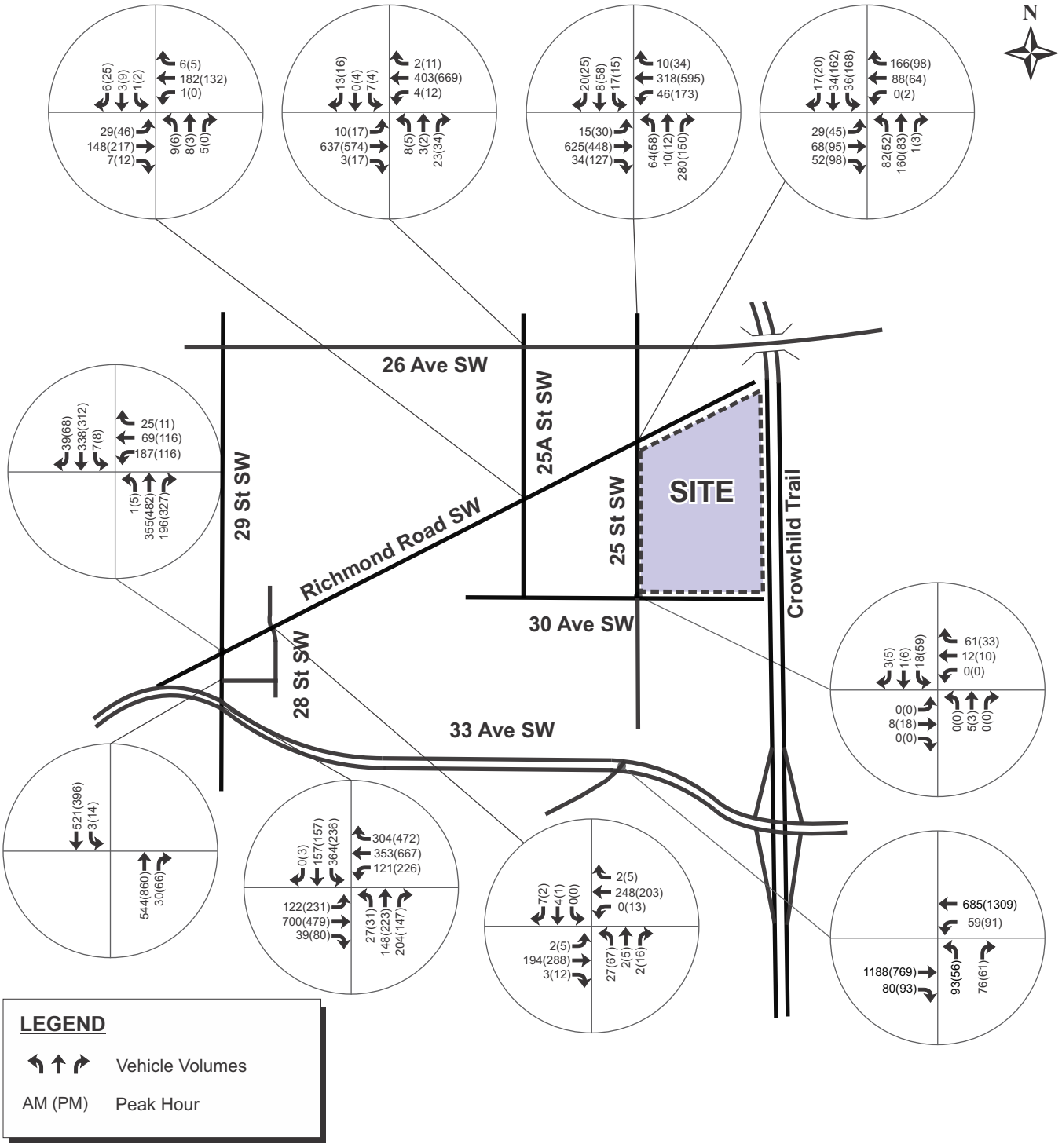


Exhibit 4.5

2028 After Development Traffic Volumes (75% Build Out)

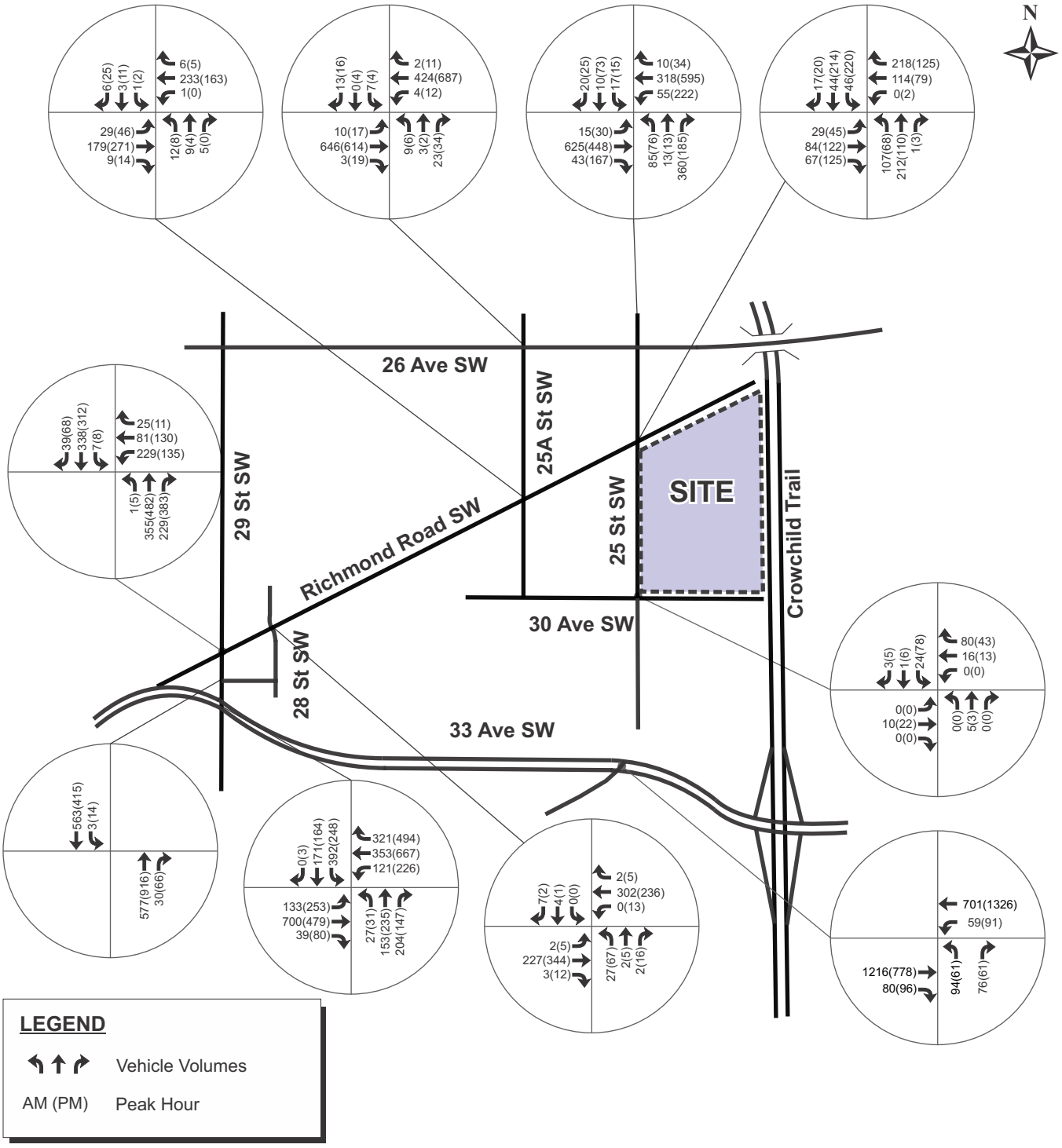


Exhibit 4.6

2028 After Development Traffic Volumes (100% Build Out)

4.4 2048 Forecast

2048 horizon forecast volumes were obtained from the City of Calgary for the following scenarios:

- **Baseline** – With zero development on the Viscount Bennett site
- **After Development** – With 2,500 units included on the Viscount Bennett site.

4.4.1 Network Assumptions

Base network assumptions are provided in **Appendix A**. A summary is provided below.

Number of Lanes

The number of lanes and network connections assumed in the forecast are generally unchanged between 2015 and 2048 except for the extension of the roadway through Richmond Green from 33 Avenue SW to Currie Barracks.

Traffic Control Devices

Assumed traffic control devices are also unchanged except for the addition of a roundabout at Richmond Green & 33 Avenue SW intersection. While this location aligns with 25 Street SW to the north, no vehicle connection to 25 Street SW is assumed in the forecast.

Population & Jobs

The forecast includes growth in both population and jobs. The difference is summarized in **Table 4.5** by Transportation Zone. When compared to the land use assumption table provided on the City's online forecasting toolbox, 2015 assumptions are unchanged while 2048 assumptions are higher. TZ544 has job reductions due to the zeroing out of the Viscount Bennett site.

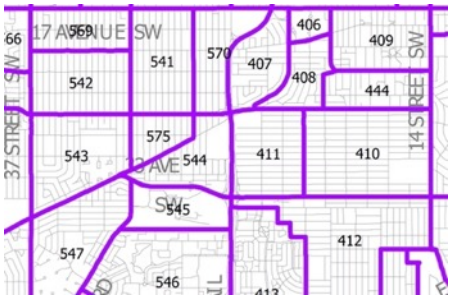


Table 4.5: Forecast Population & Jobs

TRANSPORTATION ZONE	2015		2048	
	Population	Jobs	Population	Jobs
541	2,051	333	2,775	623
542	1,768	178	2,432	368
543	1,554	365	2,077	1,006
544	501	305	865	421
545	64	112	131	123
570	1,314	173	2,012	603
575	583	138	781	434
407	657	153	1,312	356
408	680	24	1,202	170
410	3,286	894	4,789	1,592
411	1,359	380	2,105	442
412	3,757	1,278	5,936	2,032
TOTAL	**17,574**	**4,605**	**21,891**	**8,231**

*Black = Same as assumption table in the online forecast toolbox. Green = Higher than table in the online forecast toolbox. Red = Lower than table in the online forecast toolbox.

Transit

Forecast transit line assumptions (full build scenario) are identified in **Table 4.6**.

Table 4.6: Forecast Transit Line Assumptions

ROUTE	HEADWAY	
	AM Crown	PM Crown
6 – Killarney 26 Avenue	10 minutes	10 minutes
18 – Lakeview	13 minutes	13 minutes
20 – Heritage/Northmount	10 minutes	10 minutes
63 – Lakeview Express	15 minutes	25 minutes
111 – Richmond Road	15 minutes	15 minutes
112 Lakeview	15 minutes	15 minutes
181 – MRU North Express	30 minutes	30 minutes
BRT – SW	5 minutes	5 minutes

Mode Split

Forecast mode splits are identified in **Table 4.7**. The full build out scenario includes a 7% mode shift in peak directional auto usage when compared to the baseline scenario.

Table 4.7: Forecast Mode Splits

MODE	AM CROWN				PM CROWN			
	Baseline		Full Build		Baseline		Full Build	
	In	Out	In	Out	In	Out	In	Out
Auto (SOV)	32%	28%	39%	23%	37%	41%	32%	40%
Auto (HOV)	51%	40%	42%	38%	40%	44%	38%	39%
Transit	8%	17%	8%	26%	11%	6%	16%	7%
School Bus	0%	4%	0%	2%	1%	0%	1%	0%
Walk	7%	8%	10%	9%	9%	8%	12%	13%
Bike	2%	3%	1%	2%	2%	1%	1%	1%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

4.4.2 Unadjusted Volumes

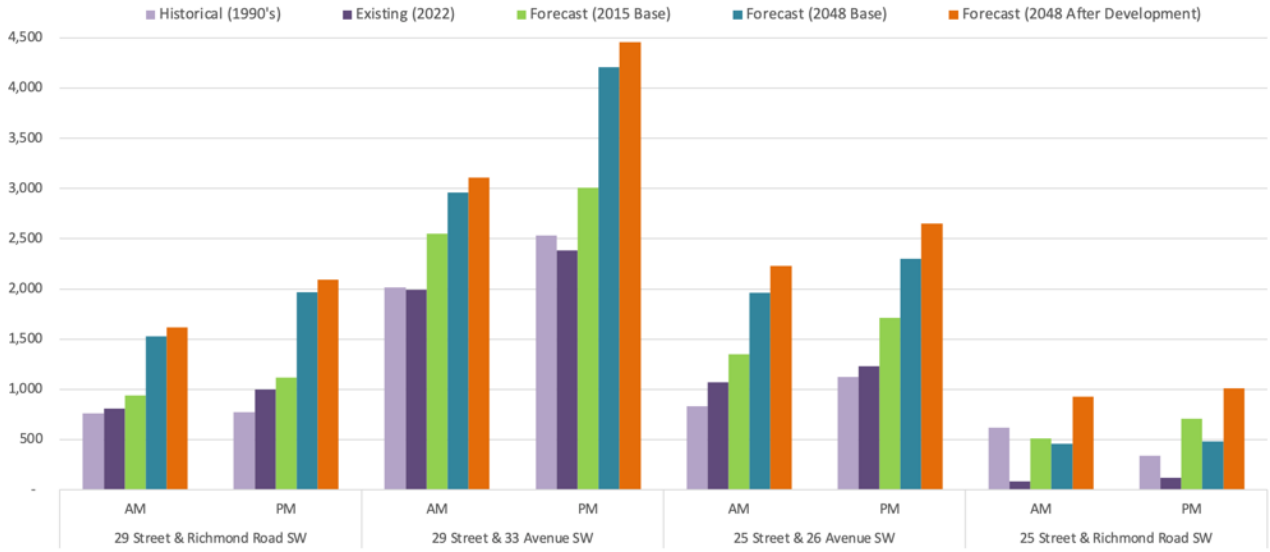
Forecast volumes were provided for the 2015 horizon (Baseline) and 2048 horizon (Baseline & After Development). All forecast volumes identify a significant increase in network volumes. Unadjusted volumes compared in **Table 4.8** and **Figure 4.6**.

Table 4.8: Existing vs. 2048 Forecast (Unadjusted) Intersection Volumes

INTERSECTION	PEAK HOUR	ENTERING INTERSECTION VOLUME					FACTOR (EXISTING /2015)
		Historical (1990's)	Existing	2015 Forecast Baseline	2048 Forecast Baseline	2048 Forecast After Dev.	
29 Street & Richmond Rd SW	AM	759	811	940	1,530	1,620	0.86
	PM	771	1,000	1,120	1,970	2,090	0.89
29 Street & 33 Avenue SW	AM	2,015	1,992	2,550	2,960	3,110	0.78
	PM	2,534	2,386	3,010	4,210	4,460	0.79
25 Street & 26 Avenue SW	AM	833	1,068	1,350	1,960	2,230	0.79
	PM	1,124	1,231	1,710	2,300	2,650	0.72
25 Street & Richmond Rd SW	AM	618	81	510	460	930	0.16
	PM	338	120	710	480	1,010	0.17
TOTAL*	**AM**	**4,225**	**3,952**	**5,350**	**6,910**	**7,890**	**0.74**
	PM	**4,767**	**4,737**	**6,550**	**8,960**	**10,210**	**0.72**

*Vehicles travel through multiple intersections

Figure 4.6: Existing vs. 2048 Forecast (Unadjusted) Intersection Volumes



4.4.3 Volume Calibration

A comparison of 2015 horizon forecast and Existing (observed) volumes identified a significant difference, which is typical of forecast model outputs. This comparison confirmed calibration of the forecast model outputs was required to reflect actual baseline conditions. Based on discussions with Mobility, the 2048 forecast outputs were calibrated based on current conditions (Existing/2015 Forecast). Resulting 2048 horizon traffic volumes analyzed in this report are illustrated in **Exhibit 4.7** and **Exhibit 4.8**.

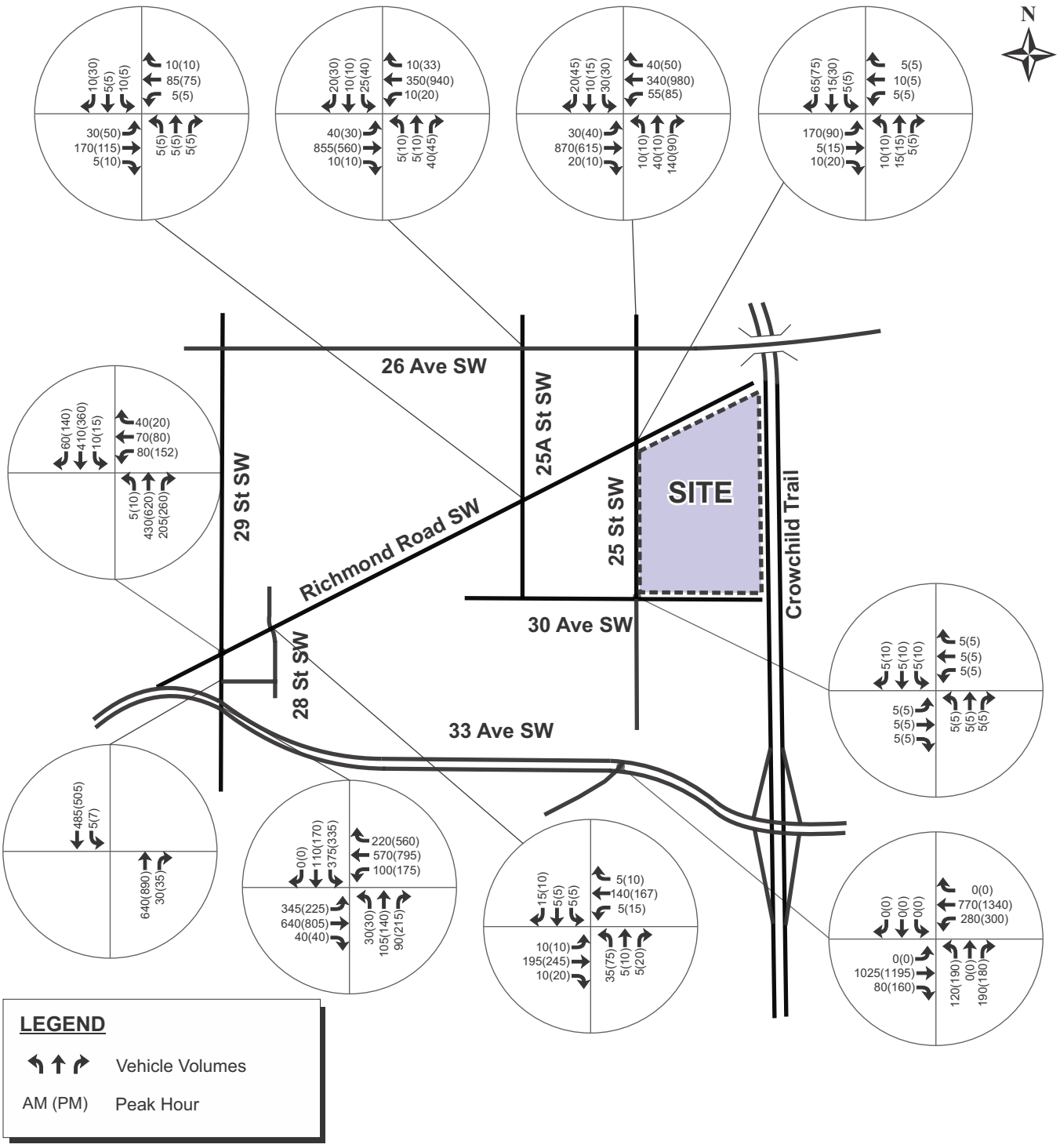


Exhibit 4.7

2048 Forecast Volumes (Baseline)

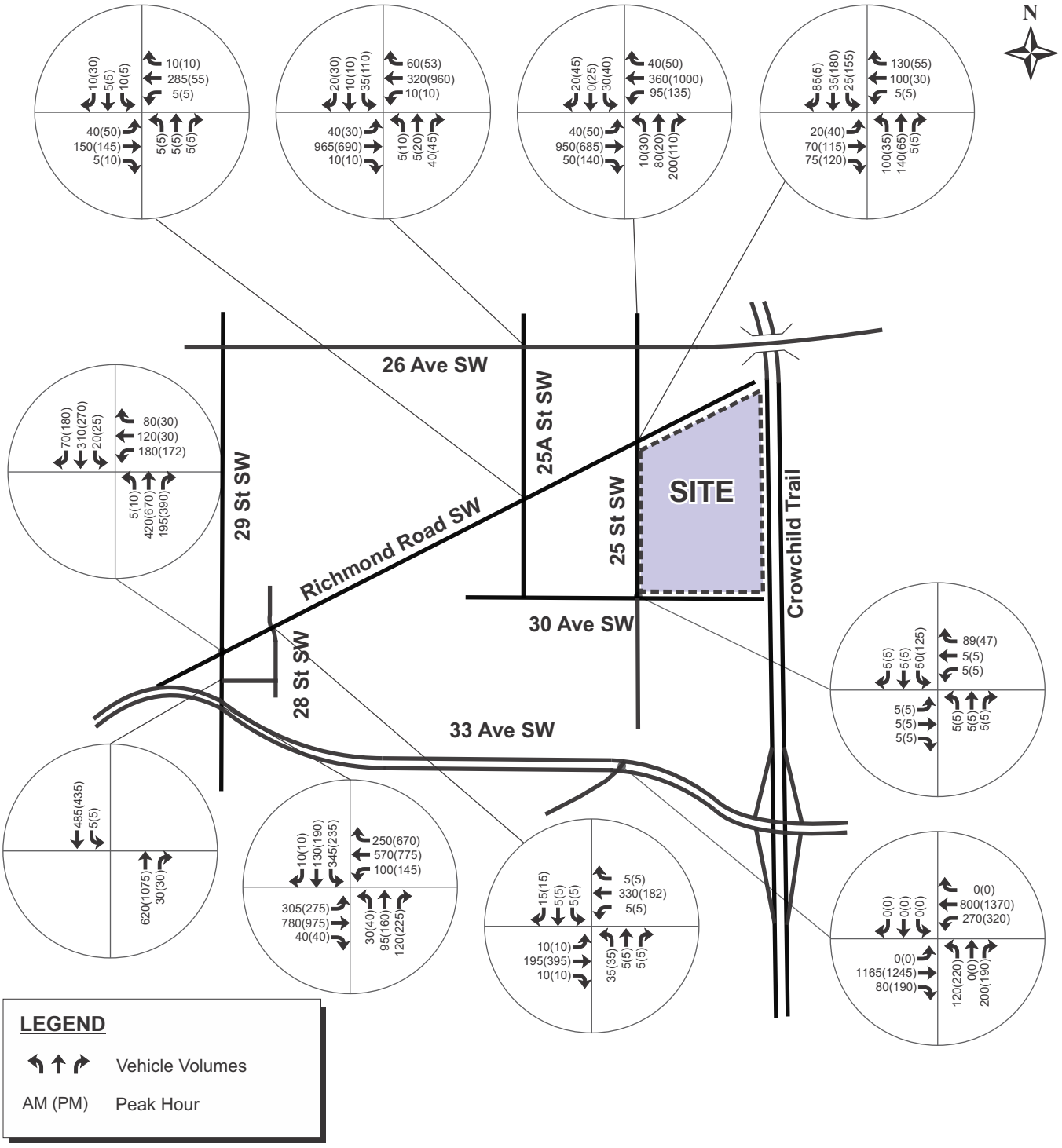


Exhibit 4.8

2048 Forecast Volumes (After Development)

4.5 With 25 Street Connection (Volumes)

Prior to Crowchild Trail expressway construction (1980's), 25 Street SW provided direct vehicle access between 32 Avenue and 33 Avenue SW (illustrated in **Figure 4.7**).

Figure 4.7: 25 Street SW Historic Connection



After review of the Version 1 TIA, the City of Calgary requested a scenario be completed to test the network impact of re-opening this connection.

Analysis is completed for the 2028 After Development (100% Build) and 2048 Forecast After Development horizons. Traffic volumes for both horizons were adjusted to account for shifts in network volumes based on select zone forecasts. The volumes account for a future access point to the Currie Barracks development on the south leg of the 25 Street & 33 Avenue SW intersection. Resulting traffic volumes are illustrated in **Exhibit 4.9** and **Exhibit 4.10**.

Analysis in this report is completed assuming a two-lane roundabout. An alternate signalized intersection analysis is also included. Modifications to the southbound right turn lane at the Crowchild Trail & 33 Avenue SW interchange would be required with the signal alternative.

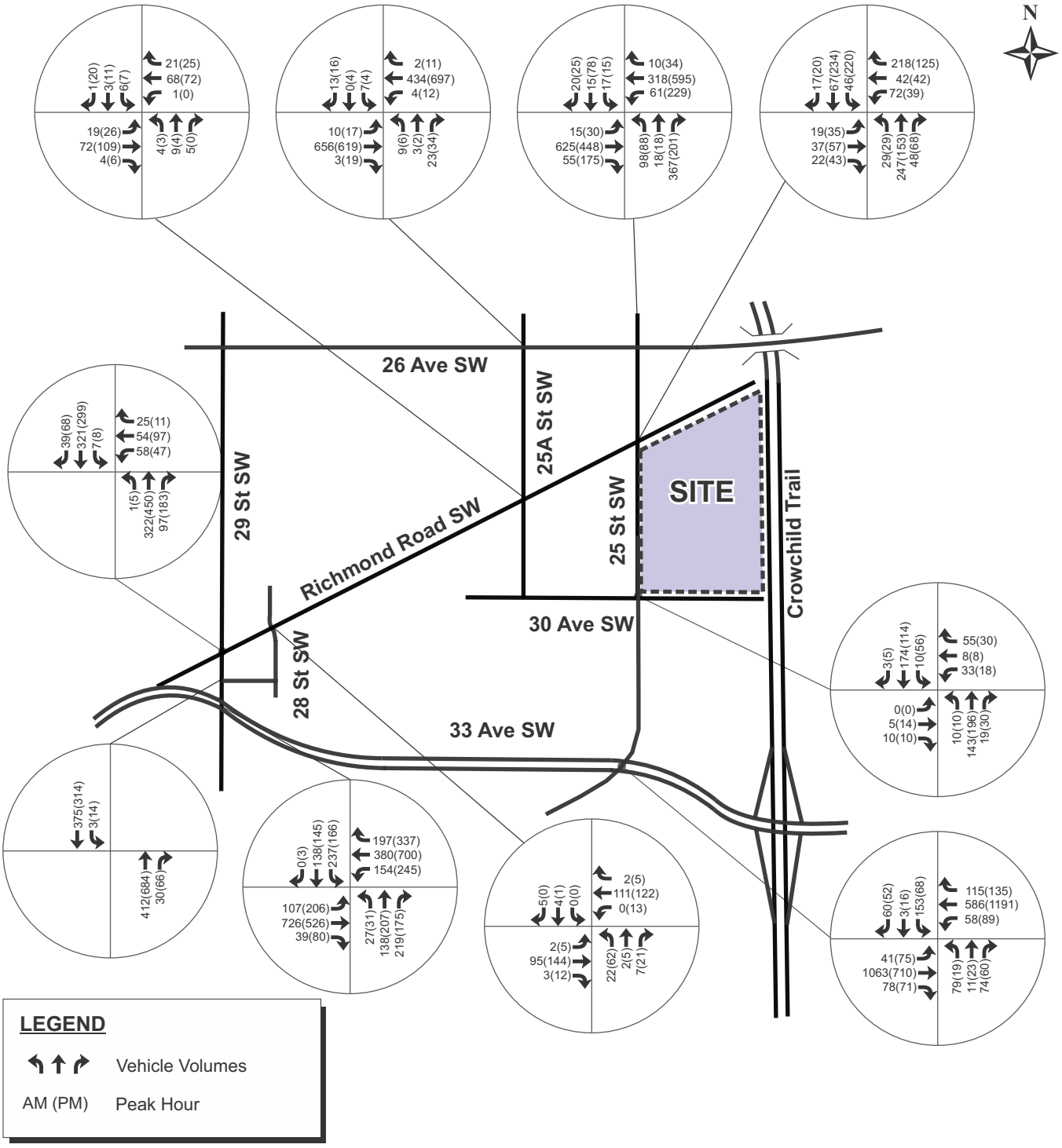


Exhibit 4.9

2028 After Development (100% Build Out) With 25 Street Connection Scenario

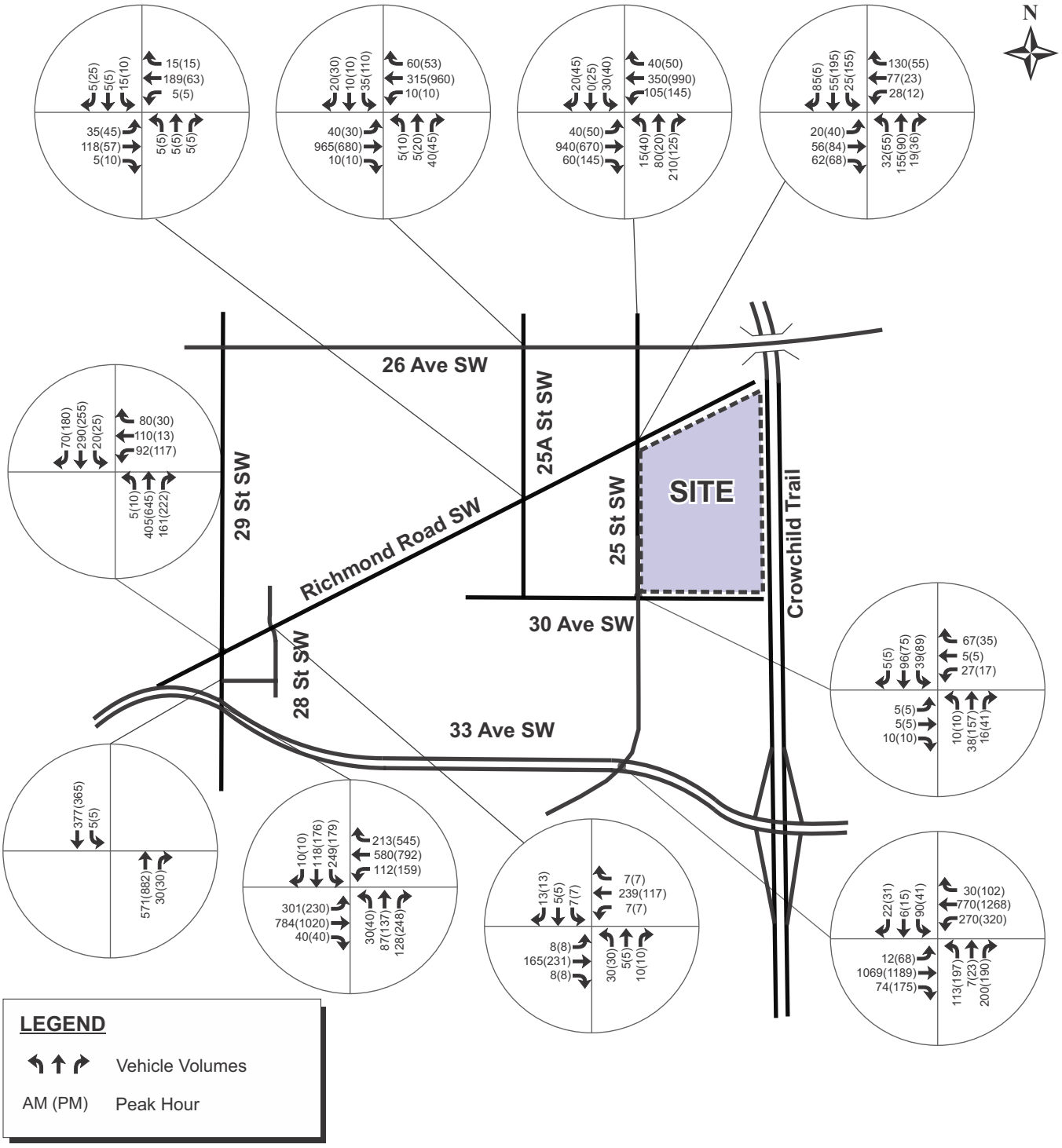


Exhibit 4.10

2048 Forecast (After Development) With 25 Street Connection Scenario

4.6 2028 Horizon Analysis

4.6.1 Intersection Analysis

Synchro 11 traffic analysis software was used to review intersection operating conditions based on the methods outlined in the Highway Capacity Manual. Traffic operations were assessed using the performance measures of 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 traffic demand volume and available capacity per lane. 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 ranging from LOS A (minimal delay) to LOS F (significant delay).

The analysis is completed as per City of Calgary TIA guidelines. Synchro output reports are provided in **Appendix B**. An overall summary is provided in **Table 4.9**. Individual intersection movement volume to capacity (v/c) ratio, level of service, average control delay (in seconds), and 95th percentile queue (in metres) results are detailed in **Table 4.10** to **Table 4.15**.

Analysis is completed for 50% (1,250 units), 75% (1,875 units), and 100% (2,500 units) build scenarios. An additional sensitivity analysis with suburban low-density trip generation rates is provided in **Appendix E.**

Table 4.9: 2028 Intersection Analysis Summary

INTERSECTION		ANALYSIS SUMMARY			
		Background	50% Build Out	75% Build Out	100% Build Out
29 Street &	Richmond Rd SW	Operates acceptably.	Signal beneficial for westbound left. Impacted by 33 Avenue queuing*.	Signal required with turn lane (northbound right). Impacted by 33 Avenue queuing*.	
	31 Avenue SW	Impacted by 33 Avenue queuing during peak periods.		Due to queue spillback from 33 Ave, southbound left turn restrictions should be provided (peak hours or all times).	
	33 Avenue SW	Operates acceptably.	Southbound left turn arrow required.	Southbound left turn arrow required. Some movements near capacity.	Southbound left turn arrow required. Southbound left will operate at capacity with drivers waiting at least one cycle.
28 Street &	Richmond Rd SW	Operates acceptably.			
25A Street &	26 Avenue SW	Operates acceptably.			
	Richmond Rd SW	Operates acceptably.			
25 Street &	26 Avenue SW	Operates acceptably.	Signal required.	Signal required with turn lane (westbound left).	Signal required with turn lanes (westbound left + northbound right).
	Richmond Rd SW	Operates acceptably.			All-way stop required.
	30 Avenue SW	Operates acceptably.			

*29 Street & Richmond Road SW also assessed using SimTraffic in further sections.

Table 4.10: 2028 Intersection Analysis (29 Street SW – Richmond Road and 31 Avenue)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
29 Street & Richmond Rd SW *(West Stop)**	Existing	WBL	1	0.17	C	19	<5	0.21	C	23	6
		WBT/R	1	0.16	C	16	<5	0.30	C	23	9
		NB	1	<0.02	A	0	<5	<0.02	A	0	<5
		SB	1	<0.02	A	0	<5	<0.02	A	0	<5
		Overall		-	*A*	*2.4*	-	-	*A*	*3.2*	-
	Background	WBL	1	0.22	C	24	6	0.31	D	32	9
		WBT/R	1	0.19	C	18	5	0.41	D	32	14
		NB	1	<0.02	A	0	<5	<0.02	A	0	<5
		SB	1	<0.02	A	0	<5	<0.02	A	0	<5
		Overall		-	*A*	*2.6*	-	-	*A*	*4.0*	-
	After Development (50% Build)	WBL	1	0.64	E	44	30	0.59	F	53	24
		WBT/R	1	0.30	C	22	9	0.61	E	49	27
		NB	1	<0.02	A	0	<5	<0.02	A	0	<5
		SB	1	<0.02	A	0	<5	<0.02	A	0	<5
		Overall		-	*A*	*7.3*	-	-	*A*	*8.1*	-
	After Development (75% Build) **With Signal & NBR Lane**	WBL	1	0.45	B	16	24	0.29	B	15	19
		WBT/R	1	0.21	B	10	11	0.30	B	15	19
		NBL/T	1	0.37	A	8	36	0.47	A	9	44
		NBR		0.23	A	2	8	0.34	A	2	8
		SB	1	0.40	A	8	38	0.39	A	7	32
		Overall		-	*A*	*8.7*	-	-	*A*	*7.8*	-
	After Development (100% Build) **With Signal & NBR Lane**	WBL	1	0.52	B	17	30	0.34	B	16	21
		WBT/R	1	0.23	B	11	13	0.33	B	15	21
		NBL/T	1	0.45	B	10	39	0.47	A	9	47
		NBR	1	0.30	A	3	9	0.39	A	2	9
		SB	1	0.48	B	10	41	0.39	A	7	33
		Overall		-	*B*	*10.1*	-	-	*A*	*8.0*	-
29 Street & 31 Avenue SW	Existing	NBT/R	1	0.24	A	0	<5	0.41	A	0	<5
		SBL/T	2	0.14	A	0	<5	0.11	A	0	<5
		Overall		-	*A*	*0.1*	-	-	*A*	*0.2*	-
	Background	NBT/R	1	0.30	A	0	<5	0.47	A	0	<5
		SBL/T	2	0.16	A	0	<5	0.14	A	0	<5
		Overall		-	*A*	*0.1*	-	-	*A*	*0.1*	-
	After Development (50% Build)	NBT/R	1	0.34	A	0	<5	0.54	A	0	<5
		SBL/T	2	0.20	A	0	<5	0.16	A	0	<5
		Overall		-	*A*	*0.0*	-	-	*A*	*0.1*	-
	After Development (75% Build)	NBT/R	1	0.36	A	0	<5	0.57	A	0	<5
		SBL/T	2	0.22	A	0	<5	0.16	A	0	<5
		Overall		-	*A*	*0.0*	-	-	*A*	*0.1*	-
	After Development (100% Build)	NBT/R	1	0.38	A	0	<5	0.61	A	0	<5
		SBL/T	2	0.23	A	0	<5	0.17	A	1	<5
		Overall		-	*A*	*0.0*	-	-	*A*	*0.1*	-

Table 4.11: 2028 Intersection Analysis (29 Street SW – 33 Avenue)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
29 Street & 33 Avenue SW *(Signal)*	Existing	EBL	1	0.22	B	13	15	0.59	C	21	37
		EBT/R	2	0.66	C	27	76	0.39	B	19	49
		WBL	1	0.30	B	14	17	0.37	B	11	28
		WBT/R	2	0.49	B	18	44	0.85	C	28	116
		NBL/T/R	2	0.29	B	11	18	0.39	B	16	23
		SBL	1	0.77	D	43	75	0.67	D	45	45
		SBT/R	1	0.22	C	21	28	0.33	C	29	34
		Overall		-	*C*	*22.8*	-	-	*C*	*24.3*	-
	Background	EBL	1	0.28	B	14	16	0.68	C	30	43
		EBT/R	2	0.79	C	34	83	0.47	C	22	57
		WBL	1	0.45	B	17	20	0.55	B	16	35
		WBT/R	2	0.55	B	18	48	0.89	C	34	122
		NBL/T/R	2	0.34	B	10	23	0.43	B	18	31
		SBL	1	0.89	E	59	103	0.83	E	60	74
		SBT/R	1	0.20	C	22	30	0.30	C	28	38
		Overall		-	*C*	*26.6*	-	-	*C*	*29.2*	-
	After Development (50% Build)	EBL	1	0.37	B	16	19	0.87	D	55	69
		EBT/R	2	0.79	C	34	83	0.46	C	23	57
		WBL	1	0.45	B	18	20	0.56	B	17	35
		WBT/R	2	0.63	B	19	50	0.92	D	37	137
		NBL/T/R	2	0.35	B	11	24	0.43	C	21	37
		SBL	1	**1.10**	**F**	**110**	**132**	0.93	E	76	91
		SBT/R	1	0.25	C	22	37	0.31	C	29	42
		Overall		-	*C*	*34.4*	-	-	*C*	*34.2*	-
	After Development (50% Build) **With SBL Turn Arrow**	EBL	1	0.37	B	16	19	0.85	D	51	68
		EBT/R	2	0.79	C	34	83	0.46	C	22	57
		WBL	1	0.45	B	18	20	0.55	B	16	35
		WBT/R	2	0.63	B	19	50	0.91	D	35	137
		NBL/T/R	2	0.79	C	30	41	0.76	D	38	46
		SBL	1	0.83	D	40	94	0.83	D	54	73
		SBT/R	1	0.25	C	22	37	0.32	C	29	42
		Overall		-	*C*	*28.0*	-	-	*C*	*33.9*	-
	After Development (75% Build) **With SBL Turn Arrow**	EBL	1	0.52	C	27	33	0.87	E	57	96
		EBT/R	2	0.93	D	51	129	0.45	C	27	76
		WBL	1	0.55	C	28	33	0.52	B	17	45
		WBT/R	2	0.78	C	29	83	0.94	D	43	185
		NBL/T/R	2	0.62	B	18	27	0.74	D	41	51
		SBL	1	0.82	D	38	68	0.96	**F**	122	82
		SBT/R	1	0.24	B	17	29	0.33	C	32	45
		Overall		-	*C*	*34.1*	-	-	*D*	*44.3*	-
	After Development (100% Build) **With SBL Turn Arrow**	EBL	1	0.48	C	20	29	0.89	E	63	109
		EBT/R	2	0.75	C	31	113	0.43	C	27	79
		WBL	1	0.44	B	19	26	0.52	B	18	47
		WBT/R	2	0.72	C	22	71	0.97	D	52	204
		NBL/T/R	2	0.58	B	15	23	0.78	D	49	61
		SBL	1	**1.22**	**F**	**146**	111	0.97	**F**	**123**	96
		SBT/R	1	0.31	B	19	32	0.33	C	35	51
		Overall		-	D	41.6	-	-	D	50.5	-

**Southbound analyzed with de-facto left turn. Northbound analyzed with one of two lanes as de-facto left turn.*

Table 4.12: 2028 Intersection Analysis (28 Street SW – Richmond Road)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
28 Street & Richmond Rd SW *(North-South Stop)*	Existing	EB	1	<0.02	A	0	<5	<0.02	A	0	<5
		WB	1	<0.02	A	0	<5	<0.02	A	1	<5
		NB	1	0.06	B	11	<5	0.15	B	12	<5
		SB	1	0.02	B	10	<5	0.02	B	11	<5
		Overall		-	*A*	*2.8*	-	-	*A*	*4.0*	-
	Background	EB	1	<0.02	A	0	<5	<0.02	A	0	<5
		WB	1	<0.02	A	0	<5	<0.02	A	1	<5
		NB	1	0.06	B	11	<5	0.16	B	12	<5
		SB	1	0.02	B	10	<5	0.02	B	11	<5
		Overall		-	*A*	*2.6*	-	-	*A*	*3.9*	-
	After Development (50% Build)	EB	1	<0.02	A	0	<5	<0.02	A	0	<5
		WB	1	<0.02	A	0	<5	<0.02	A	1	<5
		NB	1	0.08	B	13	<5	0.21	B	15	6
		SB	1	0.03	B	12	<5	0.03	B	13	<5
		Overall		-	*A*	*1.8*	-	-	*A*	*3.1*	-
	After Development (75% Build)	EB	1	<0.02	A	0	<5	<0.02	A	0	<5
		WB	1	<0.02	A	0	<5	<0.02	A	1	<5
		NB	1	0.09	B	14	<5	0.24	C	17	7
		SB	1	0.03	B	13	<5	0.03	B	14	<5
		Overall		-	*A*	*1.6*	-	-	*A*	*3.0*	-
	After Development (100% Build)	EB	1	<0.02	A	0	<5	<0.02	A	0	<5
		WB	1	<0.02	A	0	<5	<0.02	A	1	<5
		NB	1	0.10	C	16	<5	0.27	C	19	8
		SB	1	0.04	B	14	<5	0.04	B	15	<5
		Overall		-	*A*	*1.5*	-	-	*A*	*2.9*	-

Table 4.13: 2028 Intersection Analysis (25A Street SW – 26 Avenue and Richmond Road)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
25A Street & 26 Avenue SW *(North-South Stop)*	Existing	EB	1	<0.02	A	0	<5	0.02	A	0	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.11	C	19	<5	0.14	C	18	<5
		SB	1	0.09	C	19	<5	0.11	C	22	<5
		Overall		-	*A*	*1.3*	-	-	*A*	*1.6*	-
	Background	EB	1	<0.02	A	0	<5	0.02	A	1	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.11	C	19	<5	0.14	C	18	<5
		SB	1	0.09	C	19	<5	0.12	C	23	<5
		Overall		-	*A*	*1.3*	-	-	*A*	*1.6*	-
	After Development (50% Build)	EB	1	<0.02	A	0	<5	0.02	A	1	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.13	C	20	<5	0.17	C	21	5
		SB	1	0.10	C	21	<5	0.13	D	26	<5
		Overall		-	*A*	*1.3*	-	-	*A*	*1.6*	-
	After Development (75% Build)	EB	1	<0.02	A	0	<5	0.02	A	1	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.16	C	23	<5	0.21	D	26	6
		SB	1	0.11	C	22	<5	0.18	D	33	<5
		Overall		-	*A*	*1.4*	-	-	*A*	*1.9*	-
	After Development (100% Build)	EB	1	<0.02	A	0	<5	0.02	A	1	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.17	C	23	<5	0.20	C	25	6
		SB	1	0.11	C	23	<5	0.16	D	30	<5
		Overall		-	*A*	*1.4*	-	-	*A*	*1.8*	-
25A Street & Richmond Rd SW *(North-South Stop)*	Existing	EB	1	0.02	A	3	<5	0.03	A	4	<5
		WB	1	<0.02	A	1	<5	<0.02	A	1	<5
		NB	1	0.02	A	10	<5	0.02	B	10	<5
		SB	1	0.02	A	10	<5	0.04	A	10	<5
		Overall		-	*A*	*4.2*	-	-	*A*	*4.8*	-
	Background	EB	1	0.02	A	3	<5	0.03	A	3	<5
		WB	1	<0.02	A	1	<5	<0.02	A	1	<5
		NB	1	0.02	B	10	<5	0.02	B	11	<5
		SB	1	0.02	A	10	<5	0.04	A	10	<5
		Overall		-	*A*	*3.8*	-	-	*A*	*4.4*	-
	After Development (50% Build)	EB	1	0.02	A	2	<5	0.03	A	2	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.03	B	12	<5	0.03	B	12	<5
		SB	1	0.03	B	11	<5	0.05	B	11	<5
		Overall		-	*A*	*2.0*	-	-	*A*	*2.6*	-
	After Development (75% Build)	EB	1	0.02	A	1	<5	0.03	A	2	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.05	B	13	<5	0.04	B	13	<5
		SB	1	0.03	B	12	<5	0.07	B	11	<5
		Overall		-	*A*	*1.9*	-	-	*A*	*2.3*	-
	After Development (100% Build)	EB	1	0.02	A	1	<5	0.04	A	1	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.07	B	14	<5	0.05	B	15	<5
		SB	1	0.03	B	13	<5	0.08	B	12	<5
		Overall		-	*A*	*1.8*	-	-	*A*	*2.2*	-

Table 4.14: 2028 Intersection Analysis (25 Street SW – 26 Avenue)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
25 Street & 26 Avenue SW *(North-South Stop)*	Existing	EB	1	<0.02	A	0	<5	0.04	A	1	<5
		WB	1	0.02	A	0	<5	0.02	A	1	<5
		NB	1	0.15	C	19	<5	0.18	C	20	5
		SB	1	0.19	C	24	5	0.27	D	32	8
		Overall		-	*A*	*2.1*	-	-	*A*	*2.7*	-
	Background	EB	1	<0.02	A	0	<5	0.04	A	1	<5
		WB	1	0.02	A	1	<5	0.03	A	1	<5
		NB	1	0.17	C	19	<5	0.22	C	20	6
		SB	1	0.20	D	25	5	0.31	D	35	9
		Overall		-	*A*	*2.2*	-	-	*A*	*3.2*	-
	After Development (50% Build)	EB	1	<0.02	A	0	<5	0.04	A	1	<5
		WB	1	0.04	A	1	<5	0.14	A	3	<5
		NB	1	0.94	F	79	70	1.46	F	312	94
		SB	1	0.46	F	68	15	0.96	F	167	41
		Overall		-	*C*	*17.9*	-	-	*E*	*43.9*	-
	After Development (50% Build) **With Signal**	EB	1	0.77	B	16	95	0.54	A	8	58
		WB	1	0.46	A	9	40	0.81	B	19	133
		NB	1	0.56	B	12	25	0.47	B	11	17
		SB	1	0.12	B	11	8	0.25	B	15	13
		Overall		-	*B*	*13.3*	-	-	*B*	*14.1*	-
	After Development (75% Build) **With Signal**	EB	1	0.78	B	18	127	0.57	A	9	79
		WB	1	0.49	B	11	58	0.91	C	27	213
		NB	1	0.71	B	18	54	0.71	C	30	42
		SB	1	0.12	B	13	11	0.36	C	30	26
		Overall		-	*B*	*16.0*	-	-	*C*	*20.9*	-
	After Development (100% Build) **With Signal**	EB	1	0.86	C	26	128	0.72	B	15	110
		WB	1	0.55	B	14	52	1.28	F	155	196
		NB	1	0.87	C	30	82	0.63	B	14	26
		SB	1	0.11	A	10	8	0.31	B	16	17
		Overall		-	*C*	*23.6*	-	-	*E*	*77.7*	-
	After Development (100% Build) **With Signal & Turn Lanes**	EB	1	0.82	C	22	124	0.64	B	11	73
		WBL	1	0.19	A	10	9	0.50	B	12	31
		WBT/R	1	0.39	A	10	38	0.58	A	10	66
		NBT/L	1	0.29	B	17	18	0.29	B	19	17
		NBR	1	0.73	B	18	45	0.40	A	6	12
		SB	1	0.12	B	11	8	0.30	B	15	18
		Overall		-	*B*	*17.4*	-	-	*B*	*10.7*	-

Table 4.15: 2028 Intersection Analysis (25 Street SW – Richmond Road and 30 Avenue)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
25 Street & Richmond Rd SW *(North-South Stop)*	Existing	EB	1	0.02	A	5	<5	0.03	A	5	<5
		WB	1	<0.02	A	3	<5	<0.02	A	2	<5
		NB	1	0.02	A	10	<5	0.02	A	10	<5
		SB	1	0.03	A	9	<5	0.04	A	10	<5
		Overall		-	*A*	*6.6*	-	-	*A*	*6.4*	-
	Background	EB	1	0.02	A	4	<5	0.03	A	5	<5
		WB	1	<0.02	A	1	<5	<0.02	A	1	<5
		NB	1	0.02	A	10	<5	0.02	B	10	<5
		SB	1	0.04	A	10	<5	0.06	A	10	<5
		Overall		-	*A*	*5.6*	-	-	*A*	*5.5*	-
	After Development (50% Build)	EB	1	0.02	A	2	<5	0.03	A	2	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.35	C	16	12	0.22	C	15	7
		SB	1	0.14	B	13	<5	0.52	C	20	23
		Overall		-	*A*	*7.1*	-	-	*A*	*10.4*	-
	After Development (75% Build)	EB	1	0.03	A	2	<5	0.03	A	2	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.59	C	24	28	0.39	C	21	14
		SB	1	0.22	C	16	6	0.87	E	49	67
		Overall		-	*B*	*10.2*	-	-	*C*	*22.9*	-
	After Development (100% Build)	EB	1	0.03	A	2	<5	0.04	A	2	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.90	**F**	**57**	70	0.67	E	40	34
		SB	1	0.38	C	24	13	**1.36**	**F**	**209**	179
		Overall		-	*C*	*22.7*	-	-	***F***	***90.3***	-
	After Development (100% Build) **All Way Stop**	EB	1	0.31	B	11	55	0.55	C	17	102
		WB	1	0.52	B	14	104	0.40	B	14	89
		NB	1	0.55	C	16	143	0.37	B	14	142
		SB	1	0.19	B	11	14	0.83	D	33	55
		Overall		-	*B*	*13.6*	-	-	*C*	*22.1*	-
25 Street & 30 Ave SW *(East-West Stop)*	Existing	EB	1	0.02	A	9	<5	0.02	A	9	<5
		WB	1	0.02	A	9	<5	0.02	A	9	<5
		NB	1	<0.02	A	3	<5	<0.02	A	3	<5
		SB	1	<0.02	A	3	<5	<0.02	A	2	<5
		Overall		-	*A*	*5.9*	-	-	*A*	*5.7*	-
	Background	EB	1	0.02	A	9	<5	0.02	A	9	<5
		WB	1	0.02	A	9	<5	0.02	A	9	<5
		NB	1	<0.02	A	3	<5	<0.02	A	3	<5
		SB	1	<0.02	A	3	<5	<0.02	A	3	<5
		Overall		-	*A*	*5.9*	-	-	*A*	*5.9*	-
	After Development (50% Build)	EB	1	0.02	A	10	<5	0.03	B	10	<5
		WB	1	0.07	A	9	<5	0.04	A	9	<5
		NB	1	<0.02	A	3	<5	<0.02	A	3	<5
		SB	1	<0.02	A	4	<5	0.03	A	6	<5
		Overall		-	*A*	*7.4*	-	-	*A*	*7.3*	-
	After Development (75% Build)	EB	1	0.03	A	10	<5	0.04	B	11	<5
		WB	1	0.09	A	9	<5	0.06	A	10	<5
		NB	1	<0.02	A	3	<5	<0.02	A	3	<5
		SB	1	<0.02	A	5	<5	0.04	A	6	<5
		Overall		-	*A*	*7.8*	-	-	*A*	*7.7*	-
	After Development (100% Build)	EB	1	0.03	B	10	<5	0.05	B	11	<5
		WB	1	0.12	A	10	<5	0.08	A	10	<5
		NB	1	<0.02	A	3	<5	<0.02	A	3	<5
		SB	1	0.02	A	5	<5	0.05	A	7	<5
		Overall		-	*A*	*8.2*	-	-	*A*	*8.0*	-

4.6.2 Signal Warrant Analysis

Signal warrant analysis was completed based on the methods outlined in 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 signal warrant analysis is summarized in **Table 4.16** and included in **Appendix C**.

Table 4.16: Signal Warrant Analysis

INTERSECTION	HORIZON	SIGNAL WARRANT SCORE	COMMENT
25 Street & 26 Avenue SW	Historical (1993) Historical (2014)	50/100 45/100	Not warranted
	Existing	31/100	
	Background	36/100	
	After Development (50% Build Out)	94/100	Near warranted
	After Development (75% Build Out)	123/100	Warranted
	After Development (100% Build Out)	163/100	
29 Street & Richmond Road SW	Historical (1990) Historical (2010)	37/100 50/100	Not Warranted
	Existing	38/100	
	Background	48/100	
	After Development (50% Build Out)	75/100	
	After Development (75% Build Out)	88/100	Near warranted
	After Development (100% Build Out)	101/100	Warranted

Signal warrant analysis confirms that two new traffic signals are warranted with the addition of development traffic.

4.6.3 Daily Volumes

To review roadway classifications and capacities, daily vehicle traffic volumes were calculated and compared to City guidelines. This analysis is summarized in **Table 4.17**.

Table 4.17: Daily Link Volume Analysis

ROADWAY	SECTION	CLASSIFI-CATION	GUIDELINE	DAILY VOLUMES			
				Existing	Background	Site	After Development (100%)
25 Street SW	N of Richmond Rd	Collector	2,000-8,000	830	+290	+6,230	7,350
	S of Richmond Rd	Residential	<2,000	330	+0	+4,840	5,170
Richmond Road SW	West of 28 Street	Collector	2,000-8,000	3,120	+170	+3,620	6,910
	East of 28 Street	Collector	2,000-8,000	2,330	+170	+3,620	6,120
	West of 25 Street	Collector	2,000-8,000	870	+170	+3,440	4,480
	East of 25 Street	Collector	2,000-8,000	240	+460	+4,830	5,530

**Existing daily volumes = standard factor of 2.4 applied to 6-hour volumes.*

**Development daily volumes = factor of 10 applied to PM peak hour volumes.*

Daily volume analysis confirms:

- **Richmond Road SW** – Will continue to carry traffic volumes within guidelines after site build out.
- **25 Street SW** – Will require a wider pavement width (10.2m) to allow two-way driving lanes (2.1m parking + 6m driving + 2.1m parking) from 26 Avenue to 30 Avenue. Alternatively, would require the removal of on-street parking on one side.

4.7 2048 Horizon Analysis

Intersection analysis was completed for 2048 forecast volumes. An overall summary is provided in **Table 4.18**. Individual intersection movement results are detailed in **Table 4.19** to **Table 4.24**. The analysis identifies several intersection improvements are required to accommodate forecasted 2048 baseline volumes. The net increase in traffic forecasted with the development does not result in additional intersection improvements being required.

Table 4.18: 2048 Intersection Analysis Summary

INTERSECTION		ANALYSIS SUMMARY	
		Baseline	After Development
29 Street &	Richmond Rd SW	Signal required.	
	31 Avenue SW	Southbound left turn restrictions should be provided either through signage (peak hours) or at all times (median).	
	33 Avenue SW	Southbound left turn arrow required. Westbound through will operate at capacity during the PM.	
28 Street &	Richmond Rd SW	Operates acceptably.	
25A Street &	26 Avenue SW	Signal required.	
	Richmond Rd SW	Operates acceptably.	
25 Street &	26 Avenue SW	Signal required with turn lanes (westbound left + northbound right).	
	Richmond Rd SW	Operates acceptably.	
	30 Avenue SW	Operates acceptably.	

Table 4.19: 2048 Intersection Analysis (29 Street SW – Richmond Road and 31 Avenue)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
29 Street & Richmond Rd SW *(West Stop)*	2048 Baseline	WBL	1	0.53	F	51	20	1.57	F	372	93
		WBT/R	1	0.52	E	38	20	0.83	F	106	37
		NB	1	<0.02	A	0	<5	<0.02	A	0	<5
		SB	1	<0.02	A	0	<5	0.02	A	1	<5
		Overall		-	*A*	*6.4*	-	-	*E*	*40.9*	-
	2048 Baseline With Signal & NBR Lane	WBL	1	0.20	B	14	13	0.38	B	18	26
		WBT/R	1	0.26	B	11	13	0.24	B	14	16
		NBL/T	1	0.43	A	8	36	0.60	B	11	71
		NBR	1	0.23	A	2	6	0.28	A	2	8
		SB	1	0.49	A	8	41	0.52	A	7	51
		Overall		-	A	7.8	-	-	A	9.6	-
	2048 After Development With Signal & NBR Lane	WBL	1	0.43	B	16	25	0.44	B	20	29
		WBT/R	1	0.44	B	13	22	0.15	B	11	9
		NBL/T	1	0.51	B	10	44	0.64	B	12	86
		NBR	1	0.26	A	2	7	0.39	A	2	10
		SB	1	0.51	A	10	40	0.49	A	8	46
		Overall		-	*B*	*10.1*	-	-	*A*	*9.5*	-
29 Street & 31 Avenue SW	2048 Baseline	NBT/R	1	0.42	A	0	<5	0.57	A	0	<5
		SBL/T	2	0.20	A	0	<5	0.21	A	0	<5
		Overall		-	*A*	*0.0*	-	-	*A*	*0.1*	-
	2048 After Development	NBT/R	1	0.41	A	0	<5	0.68	A	0	<5
		SBL/T	2	0.20	A	0	<5	0.18	A	0	<5
		Overall		-	*A*	*0.0*	-	-	*A*	*0.1*	-

Table 4.20: 2048 Intersection Analysis (29 Street SW – 33 Avenue)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
29 Street & 33 Avenue SW *(Signal)*	2048 Baseline	EBL	1	0.80	D	40	126	0.85	E	62	106
		EBT/R	2	0.50	C	27	101	0.58	C	31	141
		WBL	1	0.30	B	17	24	0.52	B	19	40
		WBT/R	2	0.91	D	54	162	**1.07**	E	79	290
		NBL/T/R	2	0.55	C	32	28	0.78	D	39	46
		SBL	1	0.86	D	49	107	0.99	**F**	83	134
		SBT/R	1	0.21	C	27	33	0.32	D	36	56
		Overall		-	*D*	*39.9*	-	-	*E*	*57.1*	-
	2048 After Development	EBL	1	0.74	C	29	93	0.99	**F**	90	134
		EBT/R	2	0.59	C	24	110	0.63	C	29	160
		WBL	1	0.30	B	14	21	0.51	B	19	31
		WBT/R	2	0.88	D	41	140	**1.08**	**F**	81	299
		NBL/T/R	2	0.51	C	21	22	0.82	D	46	57
		SBL	1	0.95	E	63	94	0.87	E	65	87
		SBT/R	1	0.28	C	25	34	0.39	D	38	65
		Overall		-	*C*	*33.8*	-	-	*E*	*57.7*	-

**Southbound analyzed with de-facto left turn. Northbound analyzed with one of two lanes as de-facto left turn.*

Table 4.21: 2048 Intersection Analysis (28 Street SW – Richmond Road)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
28 Street & Richmond Rd SW *(North-South Stop)*	2048 Baseline	EB	1	<0.02	A	0	<5	<0.02	A	0	<5
		WB	1	<0.02	A	0	<5	<0.02	A	1	<5
		NB	1	0.10	B	13	<5	0.26	C	17	8
		SB	1	0.04	B	11	<5	0.04	B	12	<5
		Overall		-	*A*	*2.3*	-	-	*A*	*3.7*	-
	2048 After Development	EB	1	<0.02	A	1	<5	<0.02	A	0	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.13	C	17	<5	0.14	C	18	<5
		SB	1	0.05	B	13	<5	0.05	B	13	<5
		Overall		-	*A*	*1.9*	-	-	*A*	*1.9*	-

Table 4.22: 2048 Intersection Analysis (25A Street SW – 26 Avenue and Richmond Road)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
25A Street & 26 Avenue SW *(North-South Stop)*	2048 Baseline	EB	1	0.04	A	1	<5	0.05	A	1	<5
		WB	1	0.02	A	1	<5	0.02	A	1	<5
		NB	1	0.25	D	27	7	0.51	F	57	19
		SB	1	0.49	F	61	17	1.26	F	301	52
		Overall		-	*A*	*4.3*	-	-	*C*	*17.0*	-
	2048 Baseline **Signal**	EB	1	0.68	A	9	115	0.50	A	6	58
		WB	1	0.28	A	4	25	0.78	B	14	160
		NB	1	0.17	B	14	11	0.24	B	17	14
		SB	1	0.21	C	22	16	0.33	C	24	21
		Overall		-	A	8.1	-	-	B	11.8	-
	2048 After Development **Signal**	EB	1	0.79	B	13	186	0.68	B	12	112
		WB	1	0.31	A	4	28	0.90	C	31	251
		NB	1	0.20	B	15	11	0.25	B	17	16
		SB	1	0.31	C	28	18	0.63	D	40	42
		Overall		-	*B*	*11.3*	-	-	*C*	*23.7*	-
25A Street & Richmond Rd SW *(North-South Stop)*	2048 Baseline	EB	1	0.02	A	1	<5	0.04	A	2	<5
		WB	1	<0.02	A	1	<5	<0.02	A	0	<5
		NB	1	0.03	B	12	<5	0.03	B	12	<5
		SB	1	0.05	B	11	<5	0.06	B	10	<5
		Overall		-	*A*	*2.2*	-	-	*A*	*3.2*	-
	2048 After Development	EB	1	0.04	A	2	<5	0.04	A	2	<5
		WB	1	<0.02	A	0	<5	<0.02	A	1	<5
		NB	1	0.03	B	14	<5	0.03	B	12	<5
		SB	1	0.06	B	14	<5	0.06	B	10	<5
		Overall		-	*A*	*1.8*	-	-	*A*	*3.1*	-

Table 4.23: 2048 Intersection Analysis (25 Street SW – 26 Avenue)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
25 Street & 26 Avenue SW *(North-South Stop)*	2048 Baseline **With Signal & Turn Lanes**	EB	1	0.84	B	16	123	0.56	A	9	71
		WBL	1	0.17	A	5	6	0.15	A	4	8
		WBT/R	1	0.35	A	5	26	0.77	B	12	175
		NBT/L	1	0.19	C	28	18	0.10	C	32	9
		NBR	1	0.42	A	10	15	0.34	B	11	12
		SB	1	0.26	C	23	17	0.40	C	24	20
		Overall		-	*B*	*13.1*	-	-	*B*	*11.0*	-
	2048 After Development **With Signal & Turn Lanes**	EB	1	0.91	D	36	261	0.84	C	31	216
		WBL	1	0.31	A	8	15	0.31	A	6	17
		WBT/R	1	0.34	A	5	41	0.79	B	13	237
		NBT/L	1	0.35	C	34	27	0.30	D	36	18
		NBR	1	0.64	C	23	33	0.40	B	11	13
		SB	1	0.28	C	25	17	0.52	C	31	27
		Overall		-	*C*	*26.4*	-	-	*C*	*20.6*	-

Table 4.24: 2048 Intersection Analysis (25 Street SW – Richmond Road and 30 Avenue)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
25 Street & Richmond Rd SW *(North-South Stop)*	2048 Baseline	EB	1	0.12	A	7	<5	0.06	A	6	<5
		WB	1	<0.02	A	2	<5	<0.02	A	3	<5
		NB	1	0.07	B	14	<5	0.06	B	12	<5
		SB	1	0.12	B	11	<5	0.15	B	10	<5
		Overall		-	*A*	*8.3*	-	-	*A*	*8.0*	-
	2048 After Development	EB	1	0.02	A	1	<5	0.03	A	1	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.62	D	26	31	0.27	C	17	8
		SB	1	0.27	B	14	8	0.79	E	37	54
		Overall		-	*B*	*10.9*	-	-	*C*	*18.2*	-
25 Street & 30 Ave SW *(East-West Stop)*	2048 Baseline	EB	1	0.02	A	9	<5	0.02	A	10	<5
		WB	1	0.02	A	9	<5	0.02	A	10	<5
		NB	1	<0.02	A	3	<5	<0.02	A	3	<5
		SB	1	<0.02	A	3	<5	<0.02	A	3	<5
		Overall		-	*A*	*5.9*	-	-	*A*	*5.2*	-
	2048 After Development	EB	1	0.02	B	10	<5	0.03	B	11	<5
		WB	1	0.11	A	9	<5	0.07	A	10	<5
		NB	1	<0.02	A	3	<5	<0.02	A	3	<5
		SB	1	0.03	A	6	<5	0.09	A	7	<5
		Overall		-	*A*	*8.0*	-	-	*A*	*7.7*	-

4.8 With 25 Street Connection (Analysis)

After Development (2028 and 2048) intersection analysis was completed with a 25 Street SW connection to 33 Avenue SW in place. Individual intersection movement (100% build out) results with the connection in place are detailed in **Table 4.26** to **Table 4.31**. Roundabout analysis is completed with SIDRA 9 software.

As the primary impact of the connection would be to address potential delays on 29 Street SW and associated upstream impacts on Richmond Road SW, SimTraffic analysis was also completed to review impacts. SimTraffic software is used for analyzing complex situations including closely spaced intersections with blocking problems and the effects of signals on nearby roadways. SimTraffic analysis queuing and delay summary for the westbound left turn movement at 29 Street & Richmond Road SW is summarized in **Table 4.25.** Detailed outputs are included in **Appendix B**.

Table 4.25: SimTraffic Queueing Analysis Summary (29 Street & Richmond Road – Westbound Left)

HORIZON	CONTROL	25 STREET CONNECTION	QUEUE IN METRES AVERAGE (95 PERCENTILE)		DELAY IN LOS (SECONDS)	
			AM	PM	AM	PM
Existing	Stop Sign	No	6 (13)	6 (12)	B (11)	B (10)
2028 Background			7 (16)	9 (23)	B (18)	C (25)
2028 After Development (50%)	Signal		16 (28)	11 (22)	B (11)	B (12)
2028 After Development (75%)			22 (39)	18 (36)	B (17)	C (34)
2028 After Development (100%)			49 (64)	45 (64)	**F (187)**	**F (218)**
		Yes	8 (17)	8 (18)	B (12)	C (21)
2048 Background	Signal	No	12 (26)	27 (50)	C (24)	D (45)
2048 After Development (100%)			25 (45)	22 (40)	C (25)	C (22)
		Yes	13 (24)	16 (27)	B (15)	B (19)

* *Average Queue* is the average of all 2 minute maximum queues and *95th percentile queue* is a statistical calculation based on the average queue plus 1.65 standard deviations.

Intersection analysis (2028 and 2048) based on the current road network (without 25 Street SW connecting to 33 Avenue SW) identified the southbound left turn movement at 29 Street & 33 Avenue SW would operate at capacity during the 100% build out scenario resulting in vehicles needing to wait one or more signal cycles. This congestion would have upstream intersection impacts (29 Street & Richmond Road SW). SimTraffic analysis identifies westbound left turning vehicles being delayed on Richmond Road SW during peak hours by 2-3 minutes during the 100% build out scenario.

Scenario analysis with 25 Street SW connecting to 33 Avenue SW identified a significant improvement in operations at 29 Street & 33 Avenue SW at the 100% build out scenario. This improvement would reduce delays on Richmond Road SW to under 30 seconds. The scenario would however result in an increase in traffic volumes along the 25 Street SW corridor, which is currently a Residential Street.

Based on the analysis results, a roadway connection of 25 Street SW to 33 Avenue SW is not required at 50% or 75% build out scenarios. However, at the 100% build out scenario, operations on 29 Street SW should be monitored to determine if anticipated delays materialize.

Table 4.26: Intersection Analysis (29 Street SW – Richmond Road and 31 Avenue) – With 25 Street Connection

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
29 Street & Richmond Rd SW *(West Stop)*	2028 After Development	WBL	1	0.23	C	22	7	0.24	D	28	7
		WBT/R	1	0.24	C	19	7	0.51	E	36	20
		NB	1	<0.02	A	0	<5	<0.02	A	0	<5
		SB	1	<0.02	A	0	<5	<0.02	A	0	<5
		Overall		-	*A*	*3.2*	-	-	*A*	*4.7*	-
	2048 After Development **With Signal & NBR Lane**	WBL	1	0.23	B	14	14	0.31	B	18	21
		WBT/R	1	0.43	B	12	20	0.12	A	9	7
		NBT/L	1	0.41	A	8	39	0.61	B	11	69
		NBR	**1**	0.19	A	2	7	0.24	A	2	6
		SB	1	0.40	A	8	35	0.47	A	7	37
		Overall		-	*A*	*8.3*	-	-	*A*	*8.7*	-
29 Street & 31 Avenue SW	2028 After Development	NBT/R	1	0.28	A	0	<5	0.46	A	0	<5
		SBL/T	2	0.16	A	0	<5	0.13	A	0	<5
		Overall		-	*A*	*0.1*	-	-	*A*	*0.1*	-
	2048 After Development	NBT/R	1	0.38	A	0	<5	0.56	A	0	<5
		SBL/T	2	0.16	A	0	<5	0.15	A	0	<5
		Overall		-	*A*	*0.1*	-	-	*A*	*0.1*	-

Table 4.27: Intersection Analysis (29 Street SW – 33 Avenue) – With 25 Street Connection

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
29 Street & 33 Avenue SW *(Signal)*	2028 After Development	EBL	1	0.31	B	14	18	0.78	D	40	64
		EBT/R	2	0.80	C	34	86	0.50	C	23	63
		WBL	1	0.57	C	21	25	0.61	B	18	39
		WBT/R	2	0.54	C	21	54	0.88	C	34	121
		NBL/T/R	2	0.36	B	11	24	0.49	B	18	34
		SBL	1	0.81	D	50	89	0.81	E	61	63
		SBT/R	1	0.25	C	23	36	0.34	C	29	40
		Overall		-	*C*	*26.3*	-	-	*C*	*29.3*	-
	2048 After Development	EBL	1	0.77	C	29	91	0.82	E	56	102
		EBT/R	2	0.67	C	26	116	0.65	C	28	170
		WBL	1	0.35	B	14	23	0.56	B	19	34
		WBT/R	2	0.84	D	36	124	0.97	D	50	267
		NBL/T/R	2	0.47	B	18	19	0.80	D	39	50
		SBL	1	0.70	C	32	51	0.71	D	50	57
		SBT/R	1	0.26	C	22	28	0.39	C	39	61
		Overall		-	*C*	*28.5*	-	-	*D*	*40.3*	-

**Southbound analyzed with de-facto left turn. Northbound analyzed with one of two lanes as de-facto left turn.*

Table 4.28: Intersection Analysis (28 Street SW – Richmond Road) – With 25 Street Connection

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
28 Street & Richmond Rd SW *(North-South Stop)*	2028 After Development	EB	1	<0.02	A	0	<5	<0.02	A	0	<5
		WB	1	<0.02	A	0	<5	<0.02	A	1	<5
		NB	1	0.06	B	11	<5	0.16	B	13	<5
		SB	1	0.02	B	11	<5	0.03	B	11	<5
		Overall		-	*A*	*2.2*	-	-	*A*	*3.5*	-
	2048 After Development	EB	1	<0.02	A	0	<5	<0.02	A	0	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.10	B	14	<5	0.10	B	13	<5
		SB	1	0.05	B	12	<5	0.04	B	11	<5
		Overall		-	*A*	*2.1*	-	-	*A*	*2.2*	-

Table 4.29: Intersection Analysis (25A Street SW – 26 Avenue and Richmond Road) – With 25 Street Connection

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
25A Street & 26 Avenue SW *(North-South Stop)*	2028 After Development	EB	1	<0.02	A	0	<5	0.02	A	1	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.17	C	24	5	0.21	D	25	6
		SB	1	0.11	C	23	<5	0.16	D	30	<5
		Overall		-	*A*	*1.4*	-	-	*A*	*1.8*	-
	2048 After Development **Signal**	EB	1	0.79	B	13	186	0.67	B	11	109
		WB	1	0.31	A	4	128	0.90	C	31	251
		NB	1	0.20	A	15	11	0.25	B	17	16
		SB	1	0.31	A	28	18	0.63	D	40	42
		Overall		-	*B*	*11.3*	-	-	*C*	*23.7*	-
25A Street & Richmond Rd SW *(North-South Stop)*	2028 After Development	EB	1	<0.02	A	2	<5	0.02	A	2	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.03	B	11	<5	0.02	B	11	<5
		SB	1	0.02	B	11	<5	0.06	B	11	<5
		Overall		-	*A*	*2.5*	-	-	*A*	*2.7*	-
	2048 After Development	EB	1	0.03	A	2	<5	0.03	A	3	<5
		WB	1	<0.02	A	0	<5	<0.02	A	1	<5
		NB	1	0.03	B	12	<5	0.02	B	11	<5
		SB	1	0.05	B	13	<5	0.06	B	10	<5
		Overall		-	*A*	*2.0*	-	-	*A*	*3.8*	-

Table 4.30: Intersection Analysis (25 Street SW – 26 Avenue) – With 25 Street Connection

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
25 Street & 26 Avenue SW *(North-South Stop)*	2028 After Development **With Signal & Turn Lanes**	EB	1	0.83	C	23	128	0.74	B	16	87
		WBL	1	0.22	B	10	10	0.62	B	17	45
		WBT/R	1	0.39	A	10	38	0.66	B	12	70
		NBT/L	1	0.34	B	18	21	0.35	B	20	19
		NBR	1	0.74	B	19	46	0.43	A	6	12
		SB	1	0.13	B	11	9	0.32	B	16	18
		Overall		-	*B*	*18.2*	-	-	*B*	*13.7*	-
	2048 After Development **With Signal & Turn Lanes**	EB	1	0.91	D	39	266	0.93	E	66	223
		WBL	1	0.34	A	9	18	0.36	A	7	19
		WBT/R	1	0.34	A	5	40	0.83	B	15	233
		NBT/L	1	0.36	C	35	28	0.37	D	38	20
		NBR	1	0.65	C	23	34	0.44	B	11	14
		SB	1	0.24	C	22	13	0.53	C	32	27
		Overall		-	*C*	*28.2*	-	-	*C*	*34.7*	-

Table 4.31: Intersection Analysis (25 Street SW – Richmond Road and 30 Avenue) – With 25 Street Connection

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
25 Street & Richmond Rd SW *(North-South Stop)*	2028 After Development **All Way Stop**	EB	1	0.13	A	10	14	0.26	B	12	20
		WB	1	0.50	B	13	29	0.37	B	13	23
		NB	1	0.51	B	14	32	0.43	B	13	26
		SB	1	0.22	B	10	18	0.79	D	26	42
		Overall		-	*B*	*12.5*	-	-	*C*	*18.7*	-
	2048 After Development **All Way Stop**	EB	1	0.21	A	10	18	0.30	B	11	21
		WB	1	0.34	B	10	26	0.14	A	10	16
		NB	1	0.32	B	11	20	0.28	B	10	18
		SB	1	0.25	A	10	25	0.53	B	14	36
		Overall		-	*B*	*10.1*	-	-	*B*	*11.9*	-
25 Street & 30 Ave SW *(East-West Stop)*	2028 After Development	EB	1	0.04	B	12	<5	0.06	B	13	<5
		WB	1	0.17	B	12	5	0.11	B	13	<5
		NB	1	<0.02	A	1	5	<0.02	A	0	<5
		SB	1	<0.02	A	1	<5	0.05	A	3	<5
		Overall		-	*A*	*3.3*	-	-	*A*	*3.4*	-
	2048 After Development	EB	1	0.03	B	11	<5	0.04	B	12	<5
		WB	1	0.14	B	11	<5	0.11	B	12	<5
		NB	1	<0.02	A	1	<5	<0.02	A	1	<5
		SB	1	0.03	A	2	<5	0.07	A	5	<5
		Overall		-	*A*	*5.1*	-	-	*A*	*3.9*	-
25 Street & 33 Avenue SW ***(Roundabout)***	2028 After Development	EB	2	0.47	A	4	25	0.33	A	4	15
		WB	2	0.28	A	3	13	0.51	A	4	29
		NB	1	0.31	A	8	10	0.15	A	5	5
		SB	1	0.30	A	7	10	0.25	A	8	8
		Overall		-	*A*	*4.1*	-	-	*A*	*3.6*	-
	2048 After Development	EB	2	0.52	A	5	28	0.67	A	7	54
		WB	2	0.40	A	5	22	0.73	A	7	64
		NB	1	0.61	B	11	27	0.92	C	25	67
		SB	1	0.20	A	9	6	0.26	B	10	9
		Overall		-	*A*	*5.2*	-	-	*A*	*8.9*	-
25 Street & 33 Avenue SW ***(Signal)***	2028 After Development	EBL	1	0.14	B	13	10	0.38	B	14	12
		EBT/R	2	0.88	D	37	150	0.51	B	19	74
		WBL	1	0.34	B	17	12	0.27	B	11	14
		WBT/R	2	0.51	C	23	77	0.89	C	33	165
		NBL/T	1	0.21	C	27	30	0.09	C	30	17
		NBR	1	0.12	A	6	10	0.12	A	9	10
		SB	1	0.45	C	28	65	0.30	C	27	41
		Overall		-	*C*	*29.3*	-	-	*C*	*26.3*	-
	2048 After Development	EBL	1	0.04	A	9	3	0.35	B	15	11
		EBT/R	2	0.89	D	40	161	0.98	D	52	222
		WBL	1	0.82	D	47	78	0.95	E	73	120
		WBT/R	2	0.44	B	15	74	0.76	C	24	165
		NBL/T	1	0.36	D	37	43	0.69	D	51	78
		NBR	1	0.35	A	7	18	0.36	A	7	17
		SB	1	0.34	C	34	41	0.26	C	28	27
		Overall		-	*C*	*29.8*	-	-	*D*	*39.2*	-

4.9 Collision History

All Collisions

Collision history for area intersections were obtained from the City of Calgary for the latest 10-year period (January 2012 to December 2021). Collision history is summarized in **Table 4.32** and identified:

- *32 Ave & Richmond Rd SW* – Most collisions were single vehicles striking objects (6 out of 9).
- *29 St & Richmond Rd SW* – Many right-angle collisions (33 out of 73).
- *29 St & 31 Ave SW* – Minimal collision history.
- *29 St & 33 Ave SW* – Many rear-end collisions (33 out of 83).
- *28 St & Richmond Rd SW* – Most collisions were single vehicles striking objects (7 out of 10).
- *25A St & 26 Ave SW* – Minimal collision history.
- *25A St & Richmond Rd SW* – One injury related to a side street parking maneuver.
- *25 St & 26 Ave SW* – Half of the collisions were right-angle (19 out of 37).
- *25 St & Richmond Rd SW* – Most collisions were single vehicles striking objects (5 out 6).

Table 4.32: Collision History

INTERSECTION	TOTAL (10-YEARS)			ANNUAL RATE			COLLISIONS PER ANNUAL MILLION ENTERING VEHICLES
	All	Injury	PDO	Total	Injury	PDO	
32 Ave & Richmond Rd SW	9	2	7	0.9	0.2	0.7	0.3
29 St & Richmond Rd SW	73	7	66	7.3	0.7	6.6	2.0
29 St & 31 Ave SW	2	0	2	0.2	-	0.2	0.1
29 St & 33 Ave SW	83	12	71	8.3	1.2	7.1	1.0
28 St & Richmond Rd SW	10	0	10	1.0	-	1.0	0.8
25A St & 26 Ave SW	2	1	1	0.2	0.1	0.1	<0.1
25A St & Richmond Rd SW	4	1	3	0.4	0.1	0.3	0.7
25 St & 26 Ave SW	37	4	33	3.7	0.4	3.3	0.8
25 St & Richmond Rd SW	6	0	6	0.6	-	0.6	1.4

PDO = Property Damage Only; Annual Million Entering Vehicles (MEV) estimated (PM x 10 x 365).

Vulnerable User Collisions

No fatalities were reported. The following 4 vulnerable user (pedestrian, cyclist) collisions were identified:

- *25 St & 26 Ave SW* – 1 pedestrian (2017)
- *29 St & 33 Ave SW* – 2 pedestrians (2013 & 2014) + 1 cyclist (2020)

Summary

A review of higher collision intersections identifies:

- *29 St & Richmond Road SW* – The addition of a traffic signal would address right-angle collisions.
- *29 St & 33 Ave SW* – The collision rate is consistent with high-volume intersections.
- *25 St & 26 Ave SW* – The addition of a traffic signal would address right-angle collisions.
- *25 St & Richmond Rd SW* – The intersection angle may result in a higher collision rate. Curb extensions are recommended to reduce the collision rate.

5. ACTIVE TRANSPORTATION

5.1 Walking

Pedestrian infrastructure within the study area is illustrated in **Figure 5.1**.

Figure 5.1: Pedestrian Network



5.1.1 Sidewalks

A review of sidewalk facilities near the site is summarized in **Table 5.1**. Improved facilities will be provided along site frontages.

Table 5.1: Sidewalk Review

SIDE	ROADWAY	EXISTING FACILITY	PROPOSED FACILITY
North	Richmond Road SW	Sidewalk	New sidewalk
West	25 Street SW	No facility	Sidewalk
South	30 Avenue SW	No facility	Sidewalk
East	Crowchild Trail SW	Sidewalk	New pathway integrated through site (5A standard).

5.1.2 Crosswalk Warrants

Pedestrian crossing warrants were completed to confirm if changes are required at the following crossings:

- *28 Street & Richmond Road SW* (West Leg) – Existing marked crosswalk (ground mounted).
- *25 Street & Richmond Road SW* (East Leg) – Existing marked crosswalk (ground mounted).

Crossing Control Needs

The Transportation Association of Canada (TAC) *Pedestrian Crossing Control Guide* identifies that a pedestrian crossing is candidate for control when hourly pedestrian volumes exceed 15 per hour and vehicle volumes exceed 1,500 vehicles per day (Decision Support Tool – Preliminary Assessment). Alternatively, a crossing can still be considered if there's a requirement for system connectivity and the crossing exceeds 100 metres from an existing crosswalk. As identified in **Table 5.2**, neither crossing currently meets the pedestrian volume threshold. For the purposes of this analysis, system connectivity is assumed. The daily volume threshold will be met at 25 Street SW after site development.

Table 5.2: TAC Pedestrian Crossing Control – Preliminary Assessment (Existing Volumes)

ROADWAY	CROSSING		EXISTING VOLUMES		VOLUME THRESHOLDS	
			Pedestrians	Vehicles	Pedestrians	Vehicles
Richmond Road SW	28 Street	West	3/hour	3,100/day	Not met	Met
	25 Street	East	2/hour	240/day	Not met	Not Met

Crossing Control Type

Per the treatment selection matrix illustrated in **Figure 5.2**, a standard crosswalk (ground mounted signage with markings) is the recommended treatment if a crossing is warranted. This is consistent with the current facility at both existing crosswalks.

Figure 5.2: TAC Pedestrian Crossing Control – Treatment Selection Matrix

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	TS	TS	TS
> 15,000	≤ 50	RRFB	OF	OF	RRFB or OF [3]	TS
	60	RRFB	TS	TS	TS	TS
	70	OF	TS	TS	TS	TS

The Richmond Road & 25 Street SW crosswalk (illustrated in **Figure 5.3**) has a large crossing distance due to the angled intersection. Curb extensions are recommended to reduce this crossing distance.

Figure 5.3: Crossing – 25 Street & Richmond Road SW



5.1.3 Crowchild Trail Crossings

Crowchild Trail NW represents a barrier to pedestrians. The current spacing between the 26 Avenue SW and 33 Avenue SW overpasses is 675 metres. Accessibility can be improved either through a new overpass and/or upgrading current facilities. An additional accessible active transportation overpass (e.g. 29 Avenue SW) would improve pedestrian access and reduce crossing distances to typical Arterial Street standards (~300 metres).

Due to the primarily residential nature east of Crowchild Trail between 26 Avenue and 33 Avenue, there is limited pedestrian draw from the subject site to destinations between the overpasses. Pedestrian draw is anticipated to be primarily destined to the 33 Avenue and 34 Avenue SW Main Street. As illustrated in **Figure 5.4**, the existing 33 Avenue SW pedestrian connectivity requires pedestrians to cross a free-flow off-ramp and includes non-accessible crosswalk. While the ability to expand sidewalk widths is limited, facilities could be improved by modifications to the ramp or adding a controlled crossing (RRFB) as well as modifying median locations.

Figure 5.4: Pedestrian Accommodation – Crowchild Trail & 33 Avenue SW Bridge (West Intersection)



5.1.4 Summary

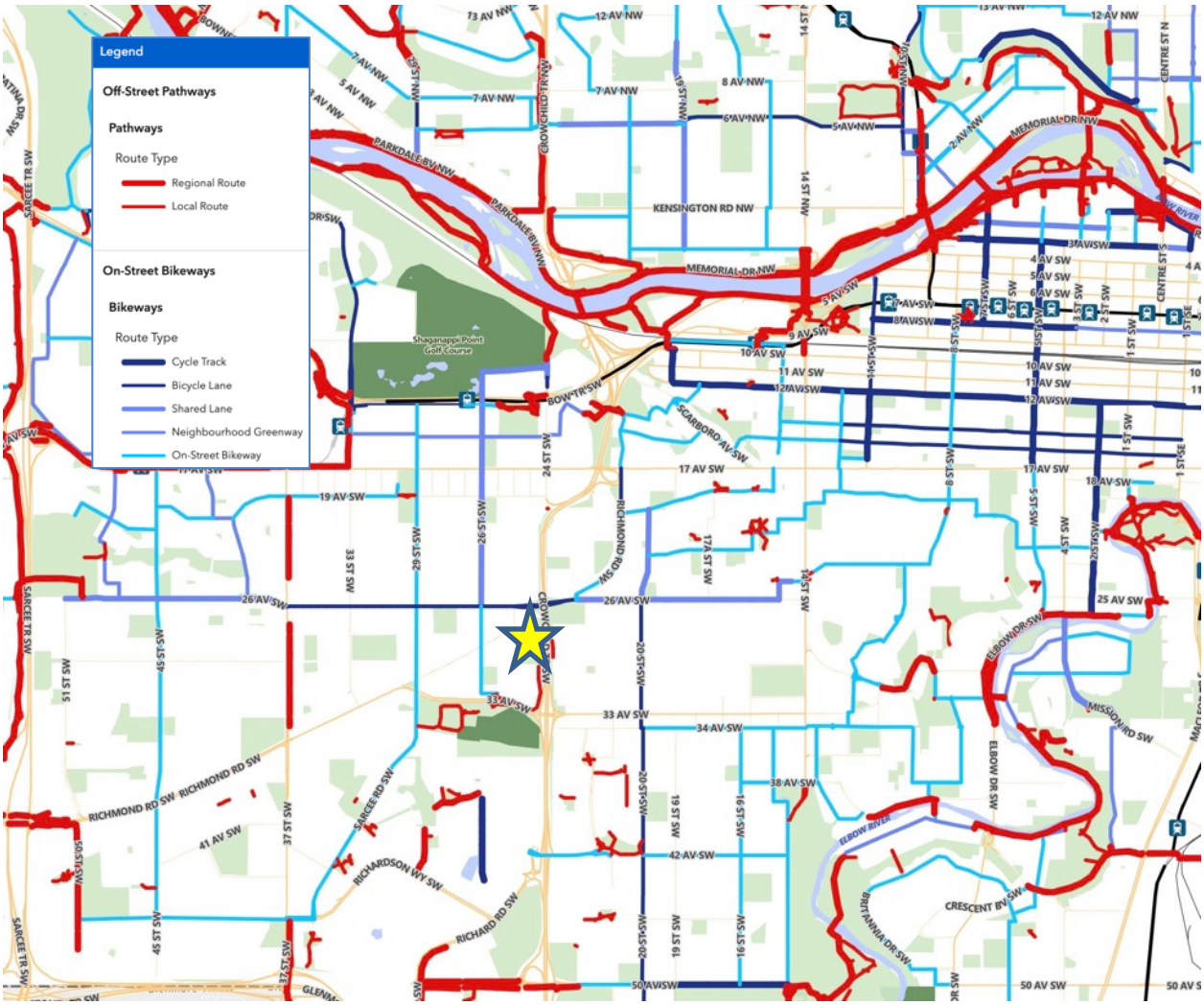
The review of pedestrian infrastructure finds:

- **Sidewalks** – Site frontage improvements will be provided as part of the development. No other changes are required to accommodate the development.
- **Crosswalks** – While no changes are required, curb extension improvements are recommended at 25 Street & Richmond Road SW.
- **Crowchild Trail Overpass** – Improvements to the 33 Avenue SW interchange and/or a new pedestrian overpass should be considered to provide enhanced pedestrian connectivity.

5.2 Cycling

Cycling facilities near the site are illustrated in **Figure 5.5**. Routes are provided to the north (26 Avenue SW – Bike Lanes) and west (26 Street SW – On-Street Bikeway).

Figure 5.5: Existing Cycling Network



City Planned Improvements

The City of Calgary is in the planning process for 5A Network cycling improvements on 26 Avenue SW (37 Street to 14 Street) with construction scheduled to start in 2024. The Calgary Transportation Plan (CTP) also recommends a future pathway on 33 Avenue SW and pathway or bikeway on Richmond Road SW.

Development Planned Improvements

As part of the development, a 5A path will be integrated through the site and tie-in to planned 5A network improvements on 26 Avenue SW.

5.3 Transit

Transit services are provided on Crowchild Trail SW, 26 Avenue SW, and 33 Avenue SW. Crowchild Trail and 33 Avenue SW are part of the City's identified Primary Transit Network.

Existing

Stops near the site are summarized in **Table 5.3.** BRT stops are illustrated in **Figure 5.6.** The existing area transit network is illustrated in **Figure 5.7** and summarized in **Table 5.4**.

Table 5.3: Existing Transit Stops

STOP LOCATION			ROUTES SERVICED	*DISTANCE
Roadway	Cross-Street	Direction		
Crowchild Trail SW	26 Avenue	North-South	Max Yellow, #20, #66	250m
	34 Avenue			450m
26 Avenue SW	26 Street	East-West	#6	250m
	Crowchild Trail	East-West	#6	250m
33 Avenue SW	25A Street	East-West	#22	400m

**Distance measured as straight-line from the centre of the site.*

Figure 5.6: BRT Stops

Southbound Stop



Northbound Stop



Source: Apple Maps & Google Maps

Figure 5.7: Existing Transit Service

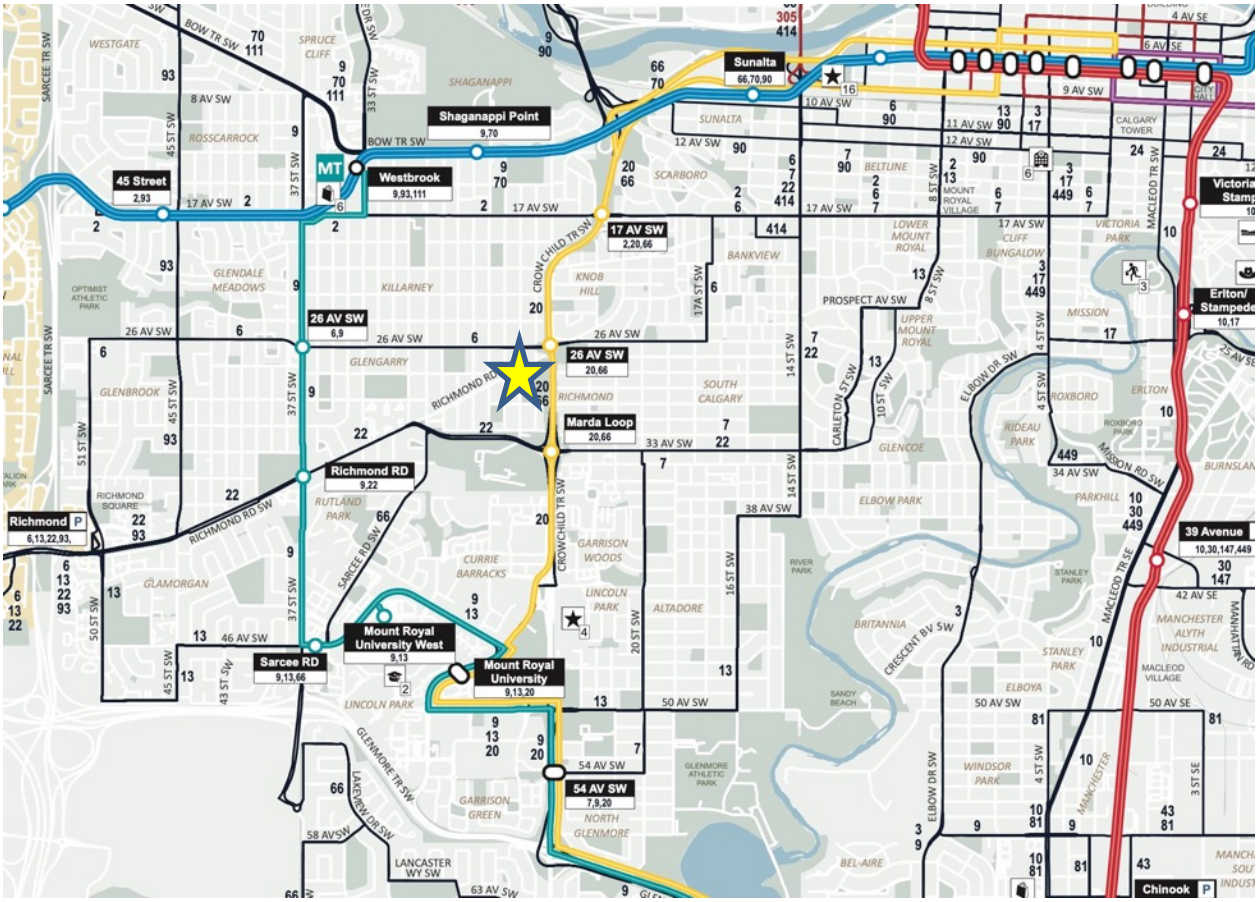


Table 5.4: Existing Transit Frequency

ROUTE		TYPE	FREQUENCY (2023)	
#	Name		Peak	Off-Peak
MAX Yellow	Woodpark/City Centre	BRT	10 min	19 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 and 33 Avenue SW. Service improvements on these corridors to primary transit frequencies will support reduced auto reliance for development trips.

Improvements

Shifting the southbound Crowchild Trail SW stop closer to the site and adding BRT shelters would improve transit access.

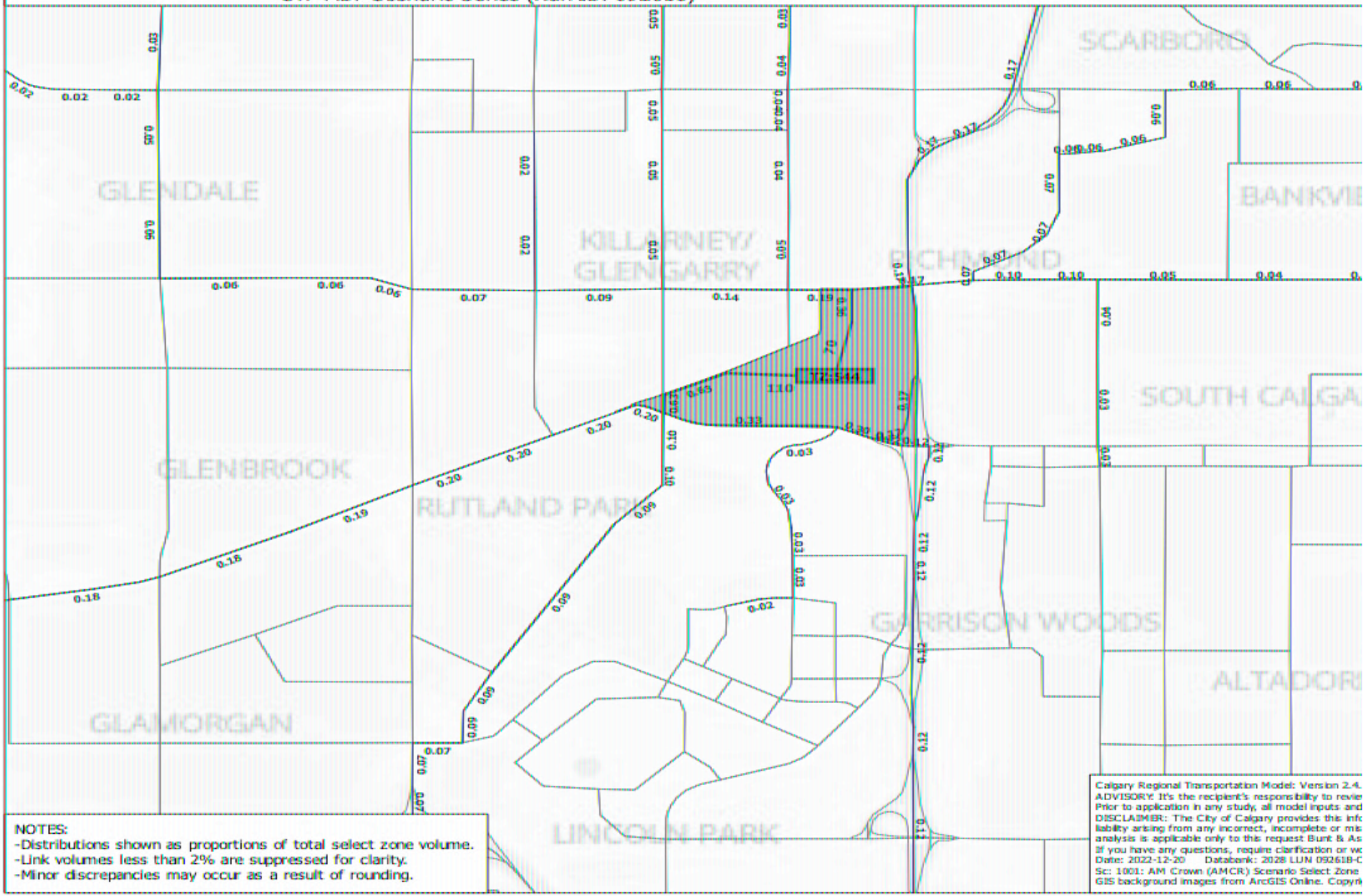
APPENDIX A

Traffic Data

Inbound Distribution for Zone(s): 544
2028 LUN - AM Crown

Bunt & Associates Engineering Ltd- Select Zone Analysis for Viscount Bennett TIA (R2553)
Total Inbound Select Zone Volume = 170 veh/hr

CTP MDP Scenario Series (Run ID: 092618)



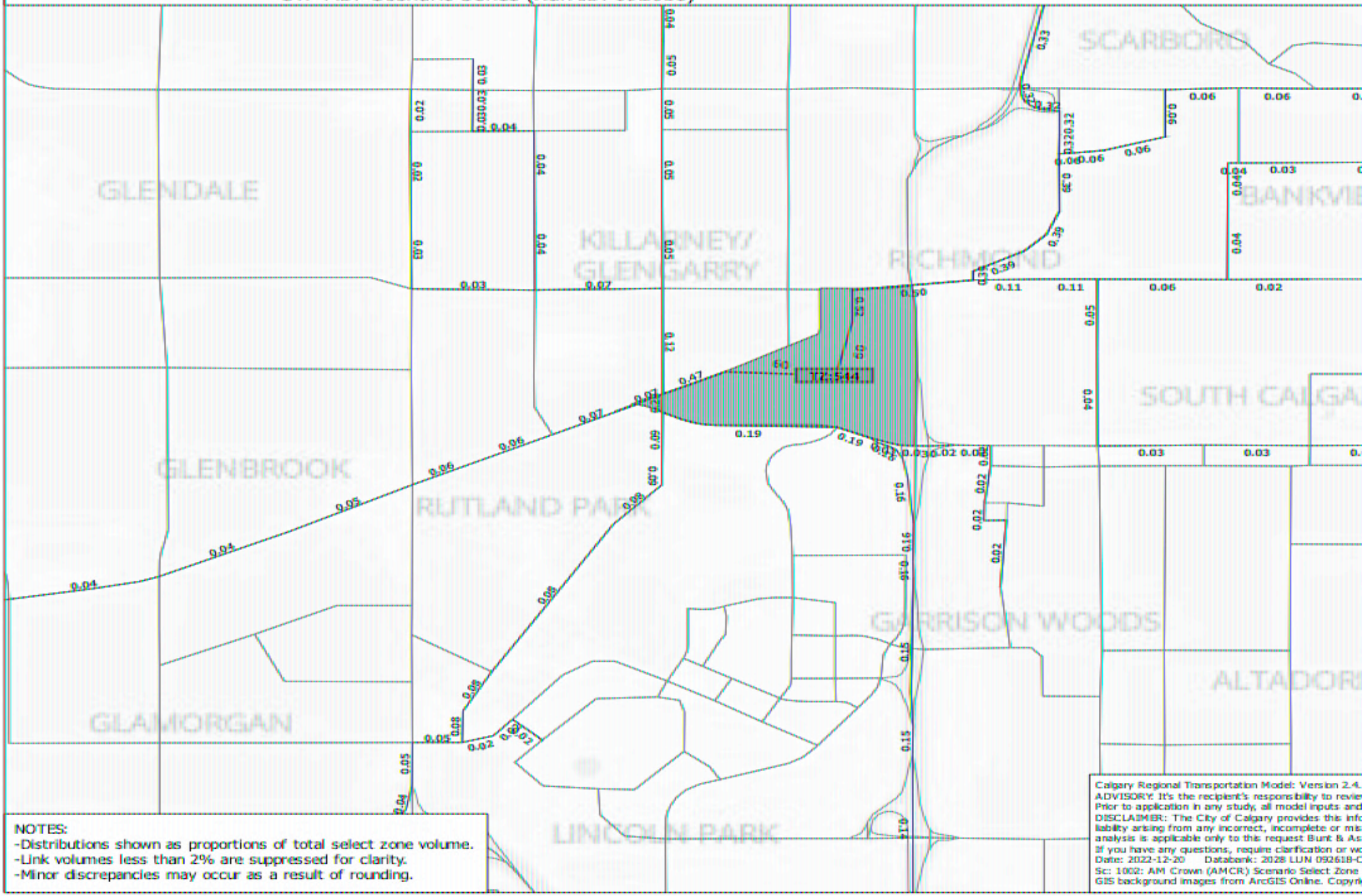
NOTES:
-Distributions shown as proportions of total select zone volume.
-Link volumes less than 2% are suppressed for clarity.
-Minor discrepancies may occur as a result of rounding.

Calgary Regional Transportation Model: Version 2.4.
ADVISORY: It's the recipient's responsibility to revie
Prior to application in any study, all model inputs and
DISCLAIMER: The City of Calgary provides this info
liability arising from any incorrect, incomplete or mis
analysis is applicable only to this request Bunt & As
If you have any questions, require clarification or wo
Date: 2022-12-20 Databank: 2028 LUN 092618-C
Sc: 1001: AM Crown (AMCR) Scenario Select Zone
GIS background images from ArcGIS Online. Copyri

Outbound Distribution for Zone(s): 544
2028 LUN - AM Crown

Bunt & Associates Engineering Ltd- Select Zone Analysis for Viscount Bennett TIA (R2553)
Total Outbound Select Zone Volume = 110 veh/hr

CTP MDP Scenario Series (Run ID: 092618)



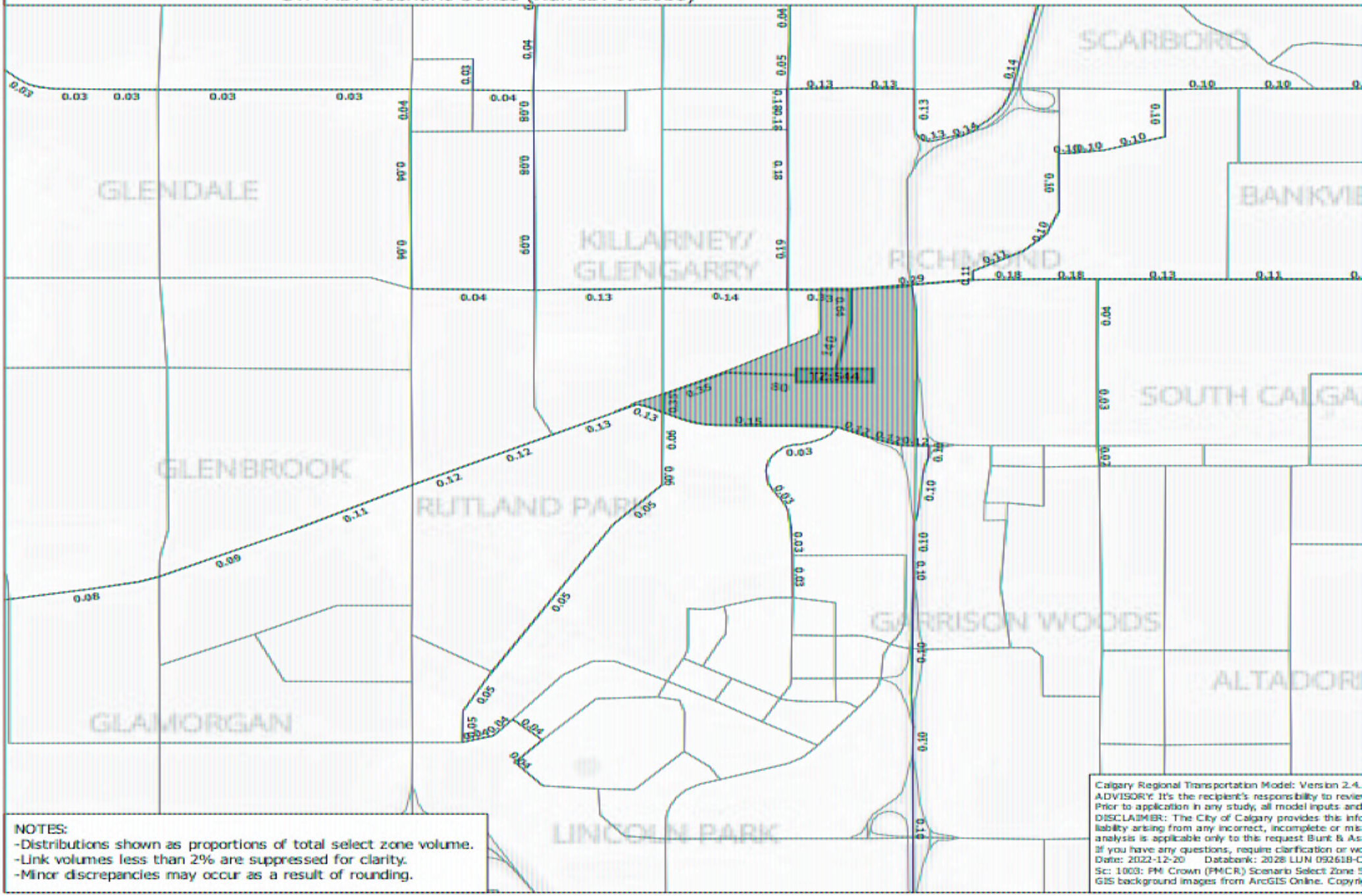
NOTES:
-Distributions shown as proportions of total select zone volume.
-Link volumes less than 2% are suppressed for clarity.
-Minor discrepancies may occur as a result of rounding.

Calgary Regional Transportation Model: Version 2.4
ADVISORY: It's the recipient's responsibility to revie
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analysis is applicable only to this request Bunt & As
If you have any questions, require clarification or wo
Date: 2022-12-20 Databank: 2028 LUN 092618-C
Sc: 1002: AM Crown (AMCR) Scenario Select Zone
GIS background images from ArcGIS Online. Copyri

Inbound Distribution for Zone(s): 544
2028 LUN - PM Crown

Bunt & Associates Engineering Ltd- Select Zone Analysis for Viscount Bennett TIA (R2553)
Total Inbound Select Zone Volume = 220 veh/hr

CTP MDP Scenario Series (Run ID: 092618)



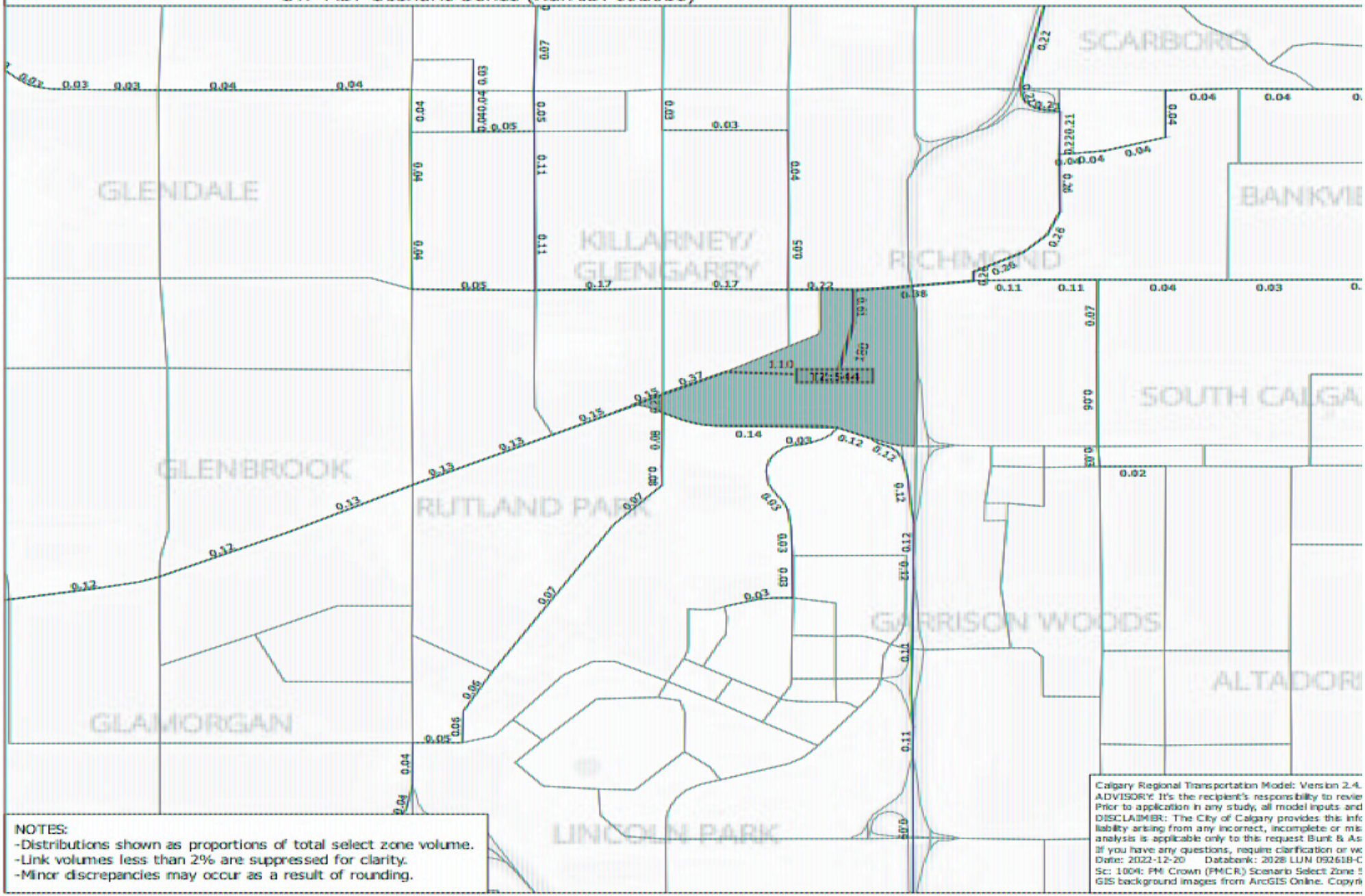
NOTES:
-Distributions shown as proportions of total select zone volume.
-Link volumes less than 2% are suppressed for clarity.
-Minor discrepancies may occur as a result of rounding.

Calgary Regional Transportation Model: Version 2.4
ADVISORY: It's the recipient's responsibility to revie
Prior to application in any study, all model inputs and
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If you have any questions, require clarification or wo
Date: 2022-12-20 Databank: 2028 LUN 092618-C
Sc: 1003: PM Crown (PMCR) Scenario Select Zone S
GIS background images from ArcGIS Online. Copyri

Outbound Distribution for Zone(s): 544
2028 LUN - PM Crown

Bunt & Associates Engineering Ltd- Select Zone Analysis for Viscount Bennett TIA (R2553)
Total Outbound Select Zone Volume = 280 veh/hr

CTP MDP Scenario Series (Run ID: 092618)



NOTES:
-Distributions shown as proportions of total select zone volume.
-Link volumes less than 2% are suppressed for clarity.
-Minor discrepancies may occur as a result of rounding.

Calgary Regional Transportation Model: Version 2.4.
ADVISORY: It's the recipient's responsibility to revie
Prior to application in any study, all model inputs and
DISCLAIMER: The City of Calgary provides this info
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analysis is applicable only to this request Bunt & As
If you have any questions, require clarification or wo
Date: 2022-12-20 Databank: 2028 LUN 092618-C
Sc: 1004: PM Crown (PMCR) Scenario Select Zone S
GIS background images from ArcGIS Online. Copyri

Turn Movmement Updated Forecast - 2048 Horizon

Viscount Bennett TIA (R2591c2)

Client: Amrit Uppal
Bunt & Associates Engineering Ltd.
Prepared by: Ashar Nazir P.Eng.
Mar08 ,2024

Notes:

Base run = Educational jobs for TZ-544 set to zero and full run done .
Full build scenario = additional population added to TZ-544.
Assumption plots provided to the client.

ADVISORY: It is the recipient's responsibility to review network and land use assumptions used to produce this analysis. Prior to application in any study, all model inputs and outputs require interpretation and adjustment.

DISCLAIMER: The City of Calgary provides this information in good faith but provides no warranty, nor accepts any liability arising from any incorrect, incomplete or misleading information or its improper use. Application of the provided analysis is applicable only to this request. If you have questions, require clarification or would like more details on this data please contact tranplanforecast@calgary.ca

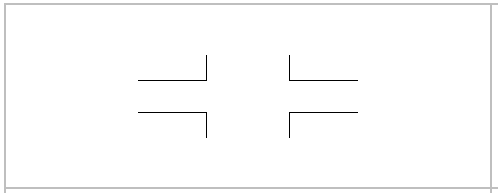
ISC: Unrestricted

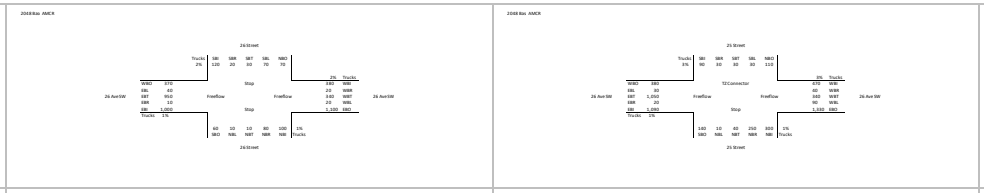
Viscount Bennett TIA[R2S91] - Project Base
Transportation Forecast
ISC: Unrestricted
March8, 2024
RTM Database Used:
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2048 LUN 030324-Viscount Bennett TIA - Full build

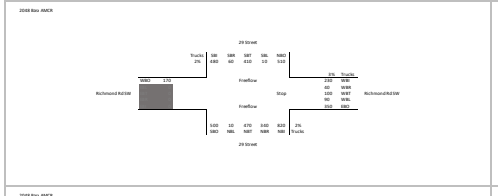
Understanding turning movement diagrams:

NB	Northbound	I	In (entering intersection)
SB	Southbound	O	Out (leaving intersection)
EB	Eastbound	R	Right turn
WB	Westbound	T	Through
Trucks	Inbound Truck %	L	Left Turn

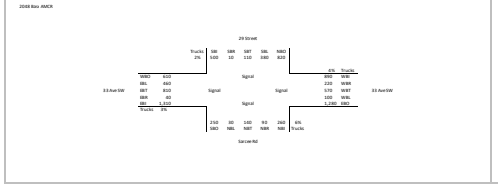
AM Peak Hour Forecast

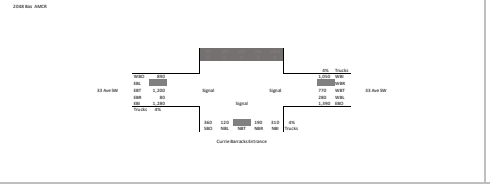


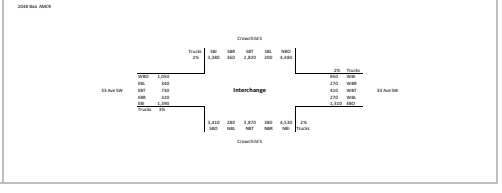












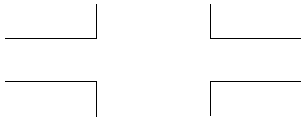
ADVISORY: It is the recipient's responsibility to review network and land use assumptions used to produce this analysis. Prior to application in any study, all model inputs and outputs require interpretation and adjustment.

Viscount Bennett TIA(R2591) - Project Base
Transportation Forecast
ISC: Unrestricted
Mar08 ,2024
RTM Database Used:
2048 LUN 090123-Viscount Bennett TIA - Project Base
2048 LUN 010324-Viscount Bennett TIA - Full build

Understanding turning movement diagrams:

NB	Northbound	I	In (entering intersection)
SB	Southbound	O	Out (leaving intersection)
EB	Eastbound	R	Right turn
WB	Westbound	T	Through
Trucks	Inbound Truck %	L	Left Turn

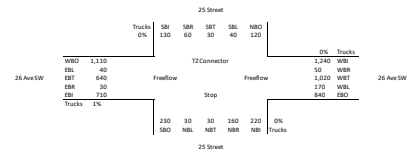
PM Peak Hour Forecast



2048 Bas PMCR



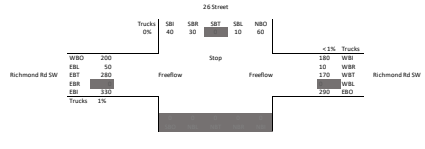
2048 Bas PMCR



2048 Bas PMCR



2048 Bas PMCR



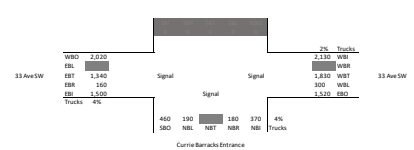
2048 Bas PMCR



2048 Bas PMCR



2048 Bas PMCR

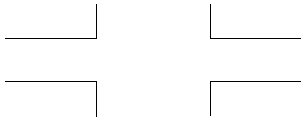


Viscount Bennett TIA (R2591c2)
Transportation Forecast
ISC: Unrestricted
Mar08 ,2024
RTM Database Used:
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2048 LUN 010324-Viscount Bennett TIA - Full build

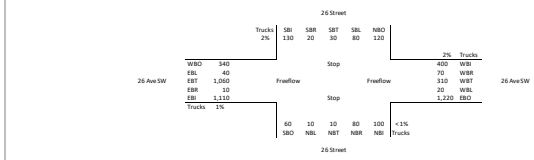
Understanding turning movement diagrams:

NB	Northbound	I	In (entering intersection)
SB	Southbound	O	Out (leaving intersection)
EB	Eastbound	R	Right turn
WB	Westbound	T	Through
Trucks	Inbound Truck %	L	Left Turn

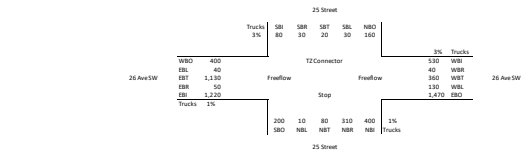
AM Peak Hour Forecast



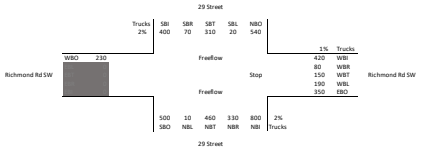
2048 FullBs AMCR



2048 FullBs AMCR



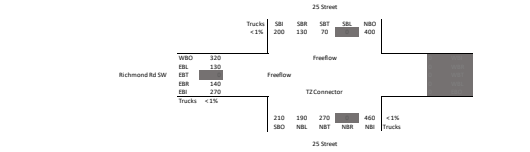
2048 FullBs AMCR



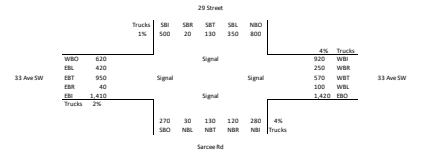
2048 FullBs AMCR



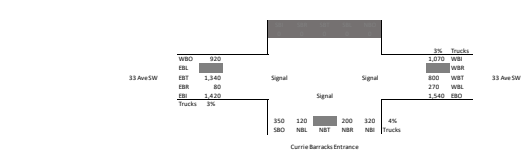
2048 FullBs AMCR



2048 FullBs AMCR



2048 FullBs AMCR



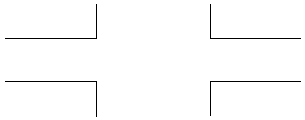
Viscount Bennett TIA (R2591c2)
Transportation Forecast
ISC: Unrestricted
Mar08 ,2024
RTM Database Used:
2048 LUN 090123-Viscount Bennett TIA - Project Base
2048 LUN 010324-Viscount Bennett TIA - Full build

Understanding turning movement diagrams:

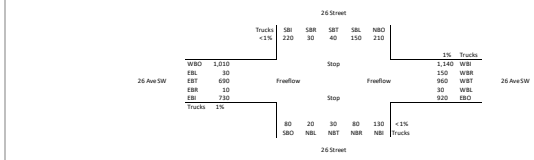
NB	Northbound	I	In (entering intersection)
SB	Southbound	O	Out (leaving intersection)
EB	Eastbound	R	Right turn
WB	Westbound	T	Through
Trucks	Inbound Truck %	L	Left Turn

PM Peak Hour Forecast

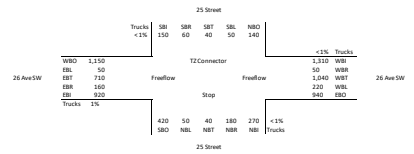
2048 FullBs PMCR



2048 FullBs PMCR



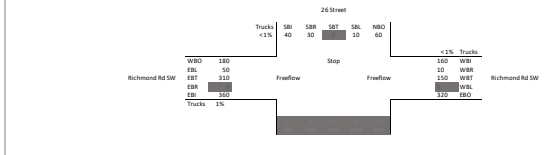
2048 FullBs PMCR



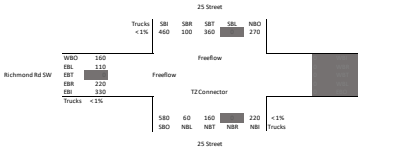
2048 FullBs PMCR



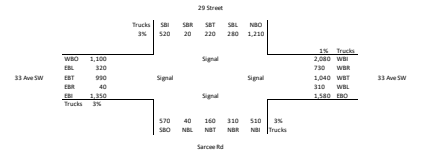
2048 FullBs PMCR



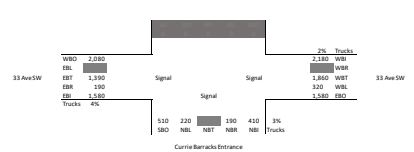
2048 FullBs PMCR



2048 FullBs PMCR



2048 FullBs PMCR



Project: Viscount Bennet TIA - Full build out (R2591c1)
Mode Split Report
ISC: Unrestricted
Date: January 16, 2024

Calgary RTMv2.4
Horizon: 2048 LUN (runID: 010324)
Scenario: Viscount Bennett TIA - Full build

Outbound: from zone(s) 544 to ga01
Inbound: from zone(s) ga01 to 544

Mode Split (Person trips) for 544 to/from ga01 - Modes Grouped Based on CTP Classifications

Mode (Person Trips)	AM Crown (1 Hour) Person Trips by Mode		PM Crown (1 Hour) Person Trips by Mode		AM Period (3 Hour) Person Trips by Mode		PM Period (3 Hour) Person Trips by Mode		Daily (24 Hour) Person Trips by Mode	
	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
Walk / Bike	125 11%	41 11%	115 13%	180 13%	413 14%	150 14%	396 14%	586 14%	1,967 14%	1,980 14%
Auto (SOV+HOV)	712 62%	294 81%	688 79%	966 70%	1,785 62%	831 79%	2,162 78%	2,834 69%	10,049 74%	10,083 74%
Transit (Walk Access + Park 'n Ride + School Bus)	316 27%	29 8%	66 8%	236 17%	691 24%	75 7%	208 8%	700 17%	1,622 12%	1,595 12%
Total:	**1,153**	**365**	**869**	**1,381**	**2,889**	**1,056**	**2,766**	**4,120**	**13,639**	**13,658**

Mode Split (Person trips) for 544 to/from ga01 - Modes Broken Down Into Further Classifications

Mode (Person Trips)	AM Crown (1 Hour) Person Trips by Mode		PM Crown (1 Hour) Person Trips by Mode		AM Period (3 Hour) Person Trips by Mode		PM Period (3 Hour) Person Trips by Mode		Daily (24 Hour) Person Trips by Mode	
	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
Walk	101 9%	36 10%	110 13%	164 12%	359 12%	138 13%	364 13%	525 13%	1,772 13%	1,786 13%
Bike	24 2%	5 1%	5 1%	16 1%	54 2%	12 1%	32 1%	61 1%	196 1%	194 1%
HOV	270 23%	143 39%	349 40%	439 32%	758 26%	414 39%	1,220 44%	1,436 35%	4,964 36%	5,015 37%
SOV	441 38%	152 42%	339 39%	527 38%	1,027 36%	417 39%	942 34%	1,398 34%	5,085 37%	5,068 37%
Transit: Walk Access	286 25%	29 8%	65 7%	221 16%	611 21%	74 7%	207 7%	640 16%	1,532 11%	1,503 11%
Transit: Park 'n Ride Access	6 1%	0 0%	1 0.1%	4 0.3%	16 1%	1 0.1%	1 0.04%	10 0.2%	18 0%	18 0%
School Bus	24 2%	0 0%	0 0%	11 1%	65 2%	0 0%	0 0%	50 1%	72 1%	74 1%
Total:	**1,153**	**365**	**869**	**1,381**	**2,889**	**1,056**	**2,766**	**4,120**	**13,639**	**13,658**

HOV Vehicle Trip Information:

Mode (Vehicle Trips)	AM Crown (1 Hour) Vehicle Trips by Mode		PM Crown (1 Hour) Vehicle Trips by Mode		AM Period (3 Hour) Vehicle Trips by Mode		PM Period (3 Hour) Vehicle Trips by Mode		Daily (24 Hour) Vehicle Trips by Mode	
	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
HOV Vehicle Trips	121	62	155	198	335	181	536	637	2,201	2,225

Land Use Assumptions

	Zone(s): 544	Zone(s): ga01
Population	5,115	1,988,711
Jobs	421	1,119,479

Notes:
-Mode split is calculated for all person trips for 544 to/from ga01. Intrazonal trips are included within the totals.
-Mode Split results are raw model values. Results should be verified and adjusted as necessary prior to use in any study.

Calgary Regional Transportation Model Version 2.4 (Calgary RTMv2.4)
Databank: 2048 LUN 010324-Viscount Bennett TIA - Full build

ADVISORY: It is the recipient's responsibility to review network and land use assumptions used to produce this analysis.
Prior to application in any study, all model inputs and outputs require interpretation and adjustment.
DISCLAIMER: The City of Calgary provides this information in good faith but provides no warranty, nor accepts any liability arising from any incorrect, incomplete or misleading information or its improper use.
Application of the provided analysis is applicable only to the study it was requested for. If you have any questions, require clarification or would like more details on this data please contact TranPlanForecast@calgary.ca.

Select Zone Plots - Full Build Scenario

Viscount Bennett TIA (R2591c1)

Client: Amrit Uppal
Bunt & Associates Engineering

Prepared By: Ashar Nazir P.Eng.
Jan 17, 2024

Notes:
Custom run - TZ 544 full build scenario
RTM Databanks used:
2048 LUN 010324-Viscount Bennett TIA - Full build

If you have questions or would like additional details please contact TranPlanForecast@calgary.ca.

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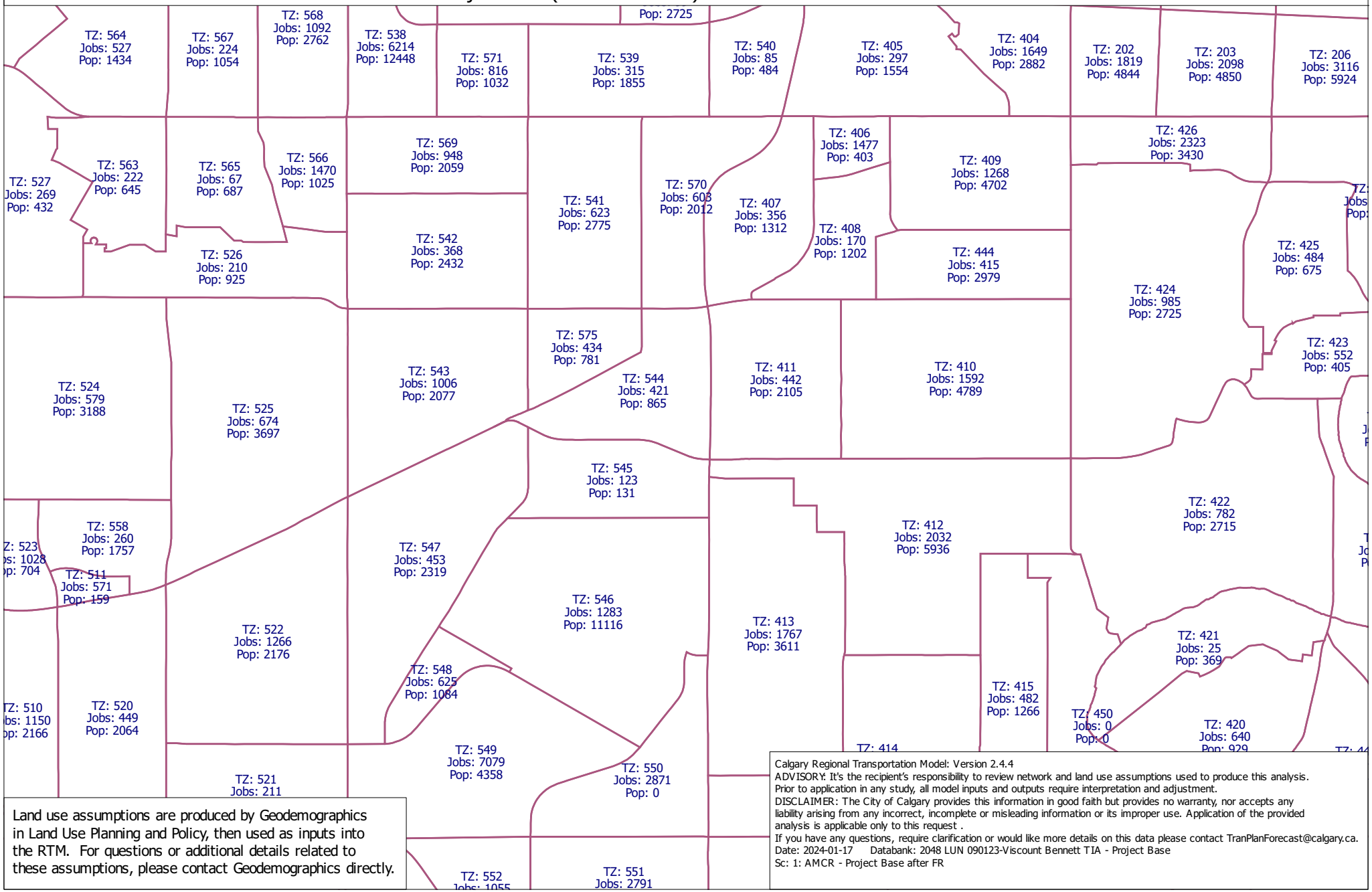
ISC: Unrestricted

2048 LUN 090123- Viscount Bennett TIA - Project Base

Land use assumption from Project base - for reference

Scenario Assumptions: Total Jobs & Population
2048 LUN

Viscount Bennett TIA - Project Base (Run ID: 090123)



Land use assumptions are produced by Geodemographics in Land Use Planning and Policy, then used as inputs into the RTM. For questions or additional details related to these assumptions, please contact Geodemographics directly.

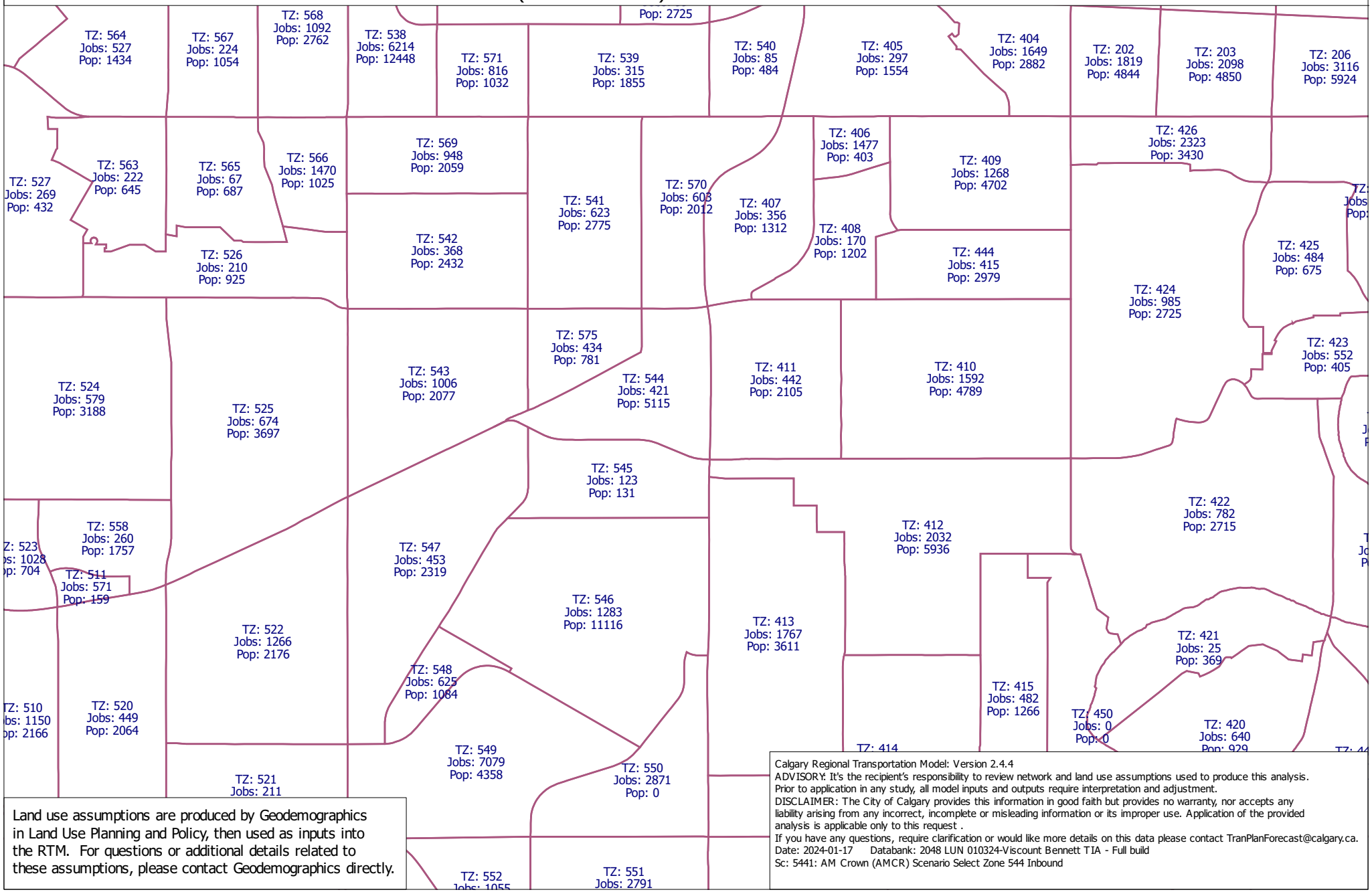
Calgary Regional Transportation Model: Version 2.4.4
ADVISORY: It's the recipient's responsibility to review network and land use assumptions used to produce this analysis. Prior to application in any study, all model inputs and outputs require interpretation and adjustment.
DISCLAIMER: The City of Calgary provides this information in good faith but provides no warranty, nor accepts any liability arising from any incorrect, incomplete or misleading information or its improper use. Application of the provided analysis is applicable only to this request .
If you have any questions, require clarification or would like more details on this data please contact TranPlanForecast@calgary.ca.
Date: 2024-01-17 Databank: 2048 LUN 090123-Viscount Bennett TIA - Project Base
Sc: 1: AMCR - Project Base after FR

2048 LUN 010324- Viscount Bennett TIA - Full build

Land Use assumption Full build out

Scenario Assumptions: Total Jobs & Population
2048 LUN

Viscount Bennett TIA - Full build (Run ID: 010324)



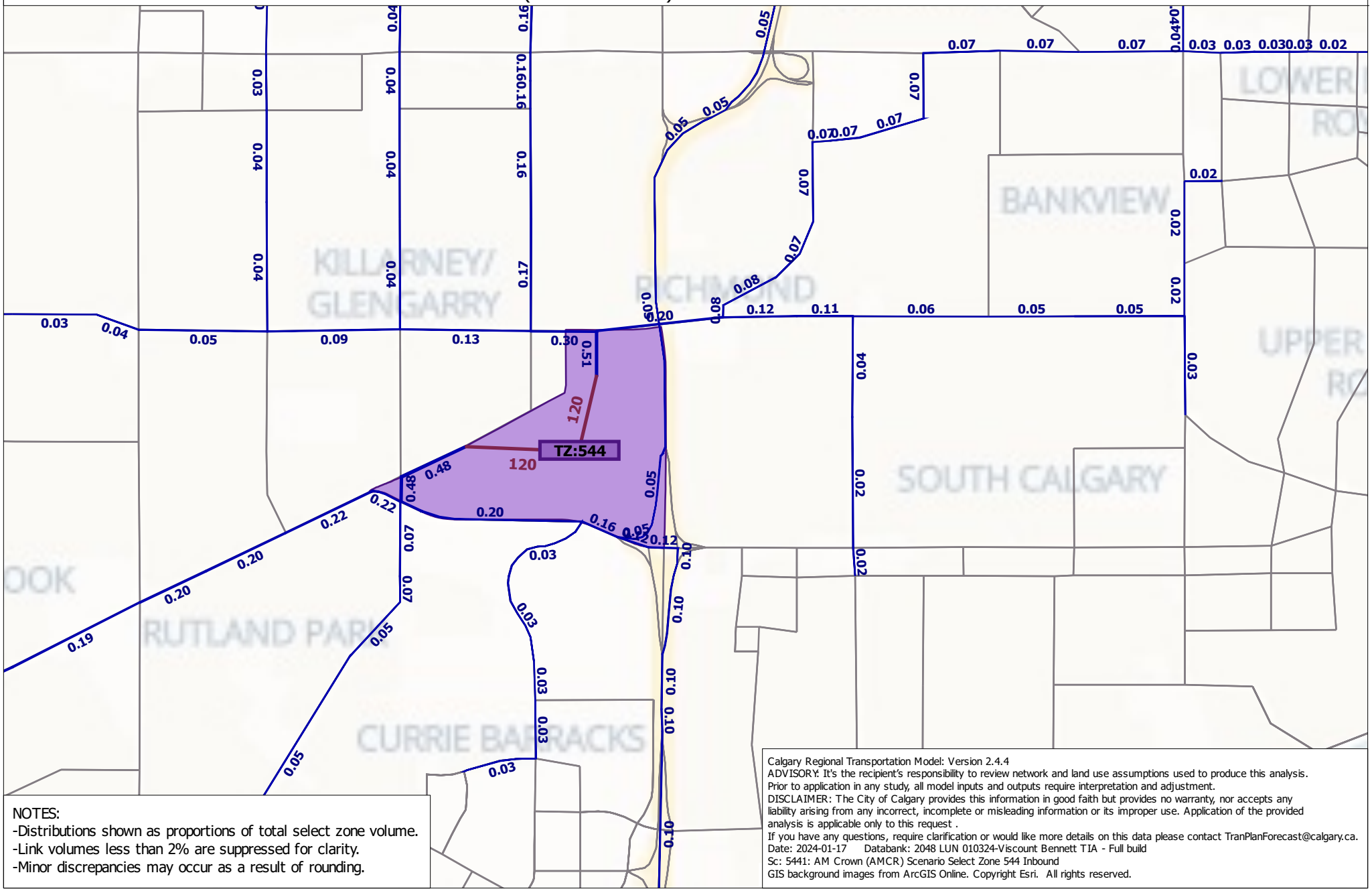
Land use assumptions are produced by Geodemographics in Land Use Planning and Policy, then used as inputs into the RTM. For questions or additional details related to these assumptions, please contact Geodemographics directly.

Calgary Regional Transportation Model: Version 2.4.4
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If you have any questions, require clarification or would like more details on this data please contact TranPlanForecast@calgary.ca.
Date: 2024-01-17 Databank: 2048 LUN 010324-Viscount Bennett TIA - Full build
Sc: 5441: AM Crown (AMCR) Scenario Select Zone 544 Inbound

Inbound Distribution for Zone(s): 544
2048 LUN - AM Crown

Total Inbound Select Zone Volume = 230 veh/hr

Viscount Bennett TIA - Full build (Run ID: 010324)



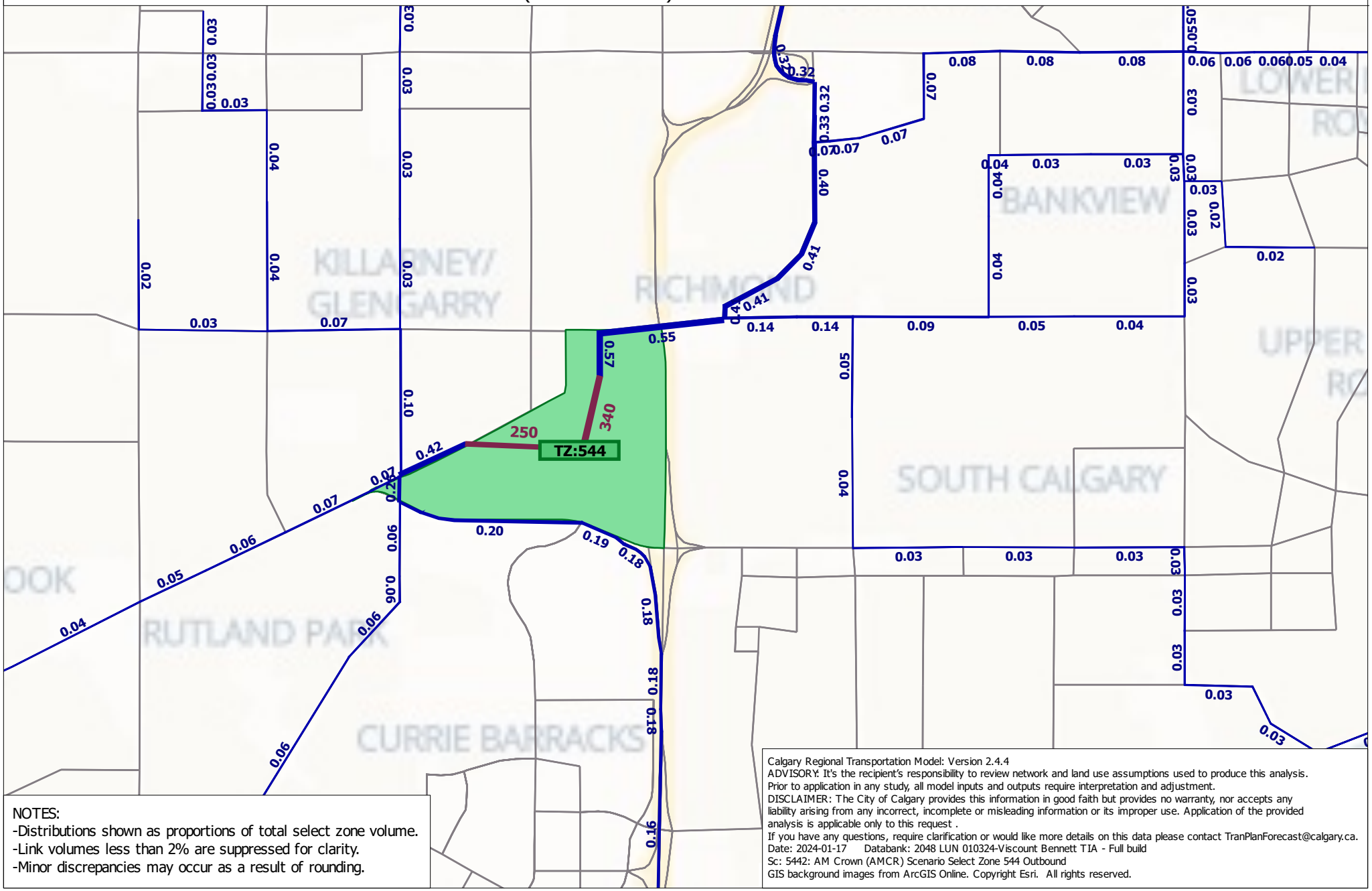
NOTES:
-Distributions shown as proportions of total select zone volume.
-Link volumes less than 2% are suppressed for clarity.
-Minor discrepancies may occur as a result of rounding.

Calgary Regional Transportation Model: Version 2.4.4
ADVISORY: It's the recipient's responsibility to review network and land use assumptions used to produce this analysis. Prior to application in any study, all model inputs and outputs require interpretation and adjustment.
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Date: 2024-01-17 Databank: 2048 LUN 010324-Viscount Bennett TIA - Full build
Sc: 5441: AM Crown (AMCR) Scenario Select Zone 544 Inbound
GIS background images from ArcGIS Online. Copyright Esri. All rights reserved.

Outbound Distribution for Zone(s): 544
2048 LUN - AM Crown

Total Outbound Select Zone Volume = 590 veh/hr

Viscount Bennett TIA - Full build (Run ID: 010324)



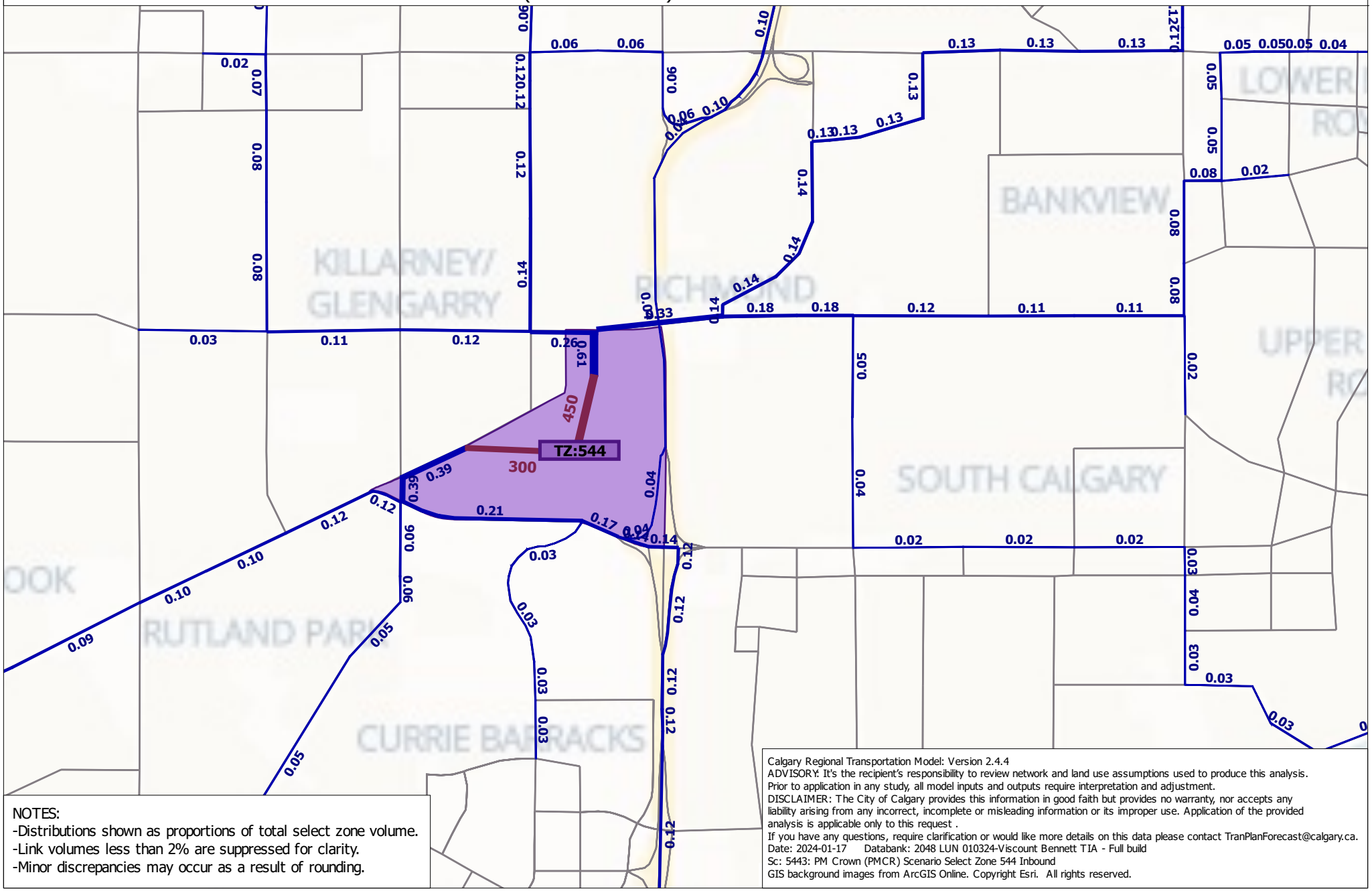
NOTES:
-Distributions shown as proportions of total select zone volume.
-Link volumes less than 2% are suppressed for clarity.
-Minor discrepancies may occur as a result of rounding.

Calgary Regional Transportation Model: Version 2.4.4
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Date: 2024-01-17 Databank: 2048 LUN 010324-Viscount Bennett TIA - Full build
Sc: 5442: AM Crown (AMCR) Scenario Select Zone 544 Outbound
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Inbound Distribution for Zone(s): 544
2048 LUN - PM Crown

Total Inbound Select Zone Volume = 750 veh/hr

Viscount Bennett TIA - Full build (Run ID: 010324)



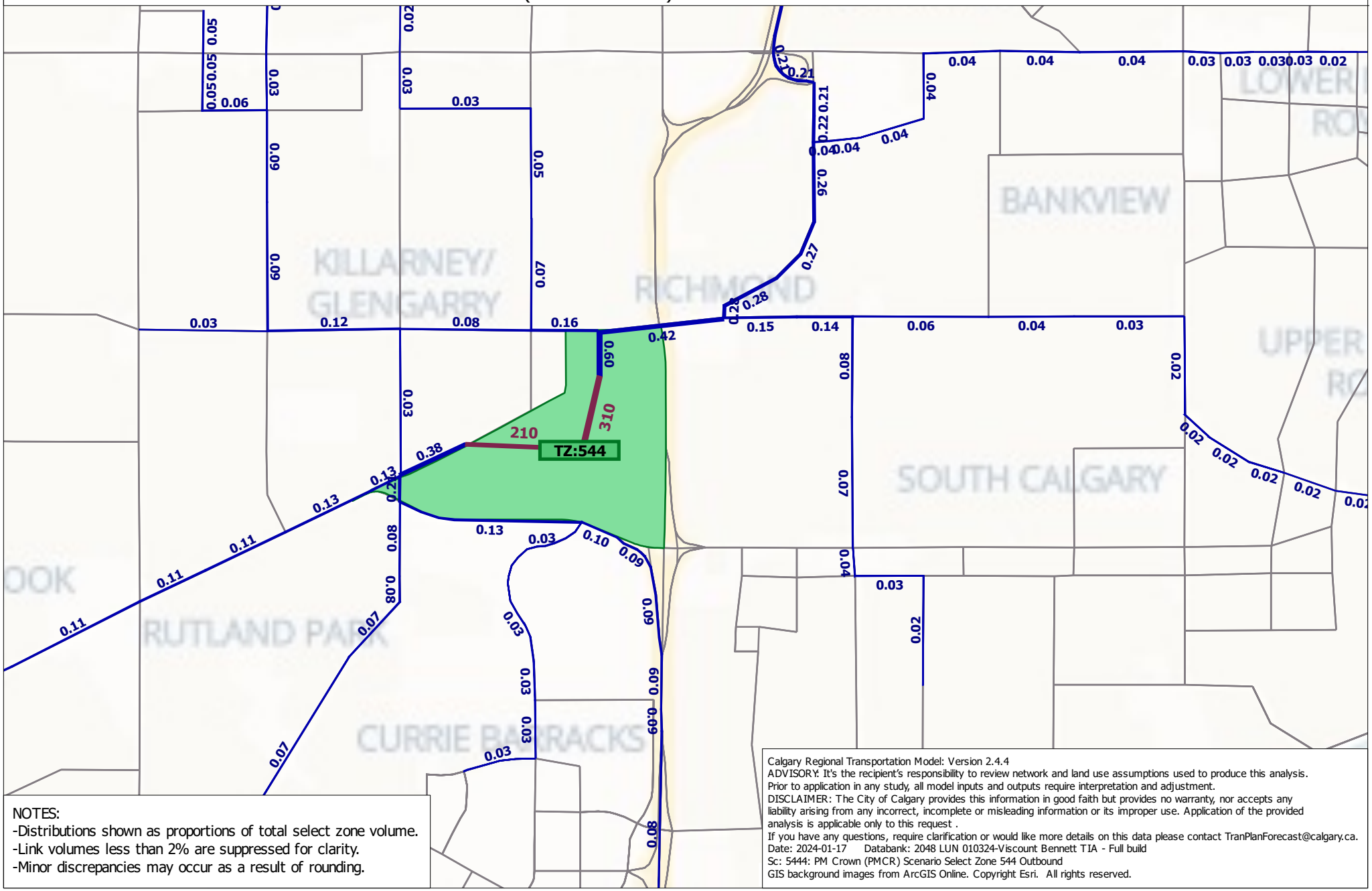
NOTES:
-Distributions shown as proportions of total select zone volume.
-Link volumes less than 2% are suppressed for clarity.
-Minor discrepancies may occur as a result of rounding.

Calgary Regional Transportation Model: Version 2.4.4
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Date: 2024-01-17 Databank: 2048 LUN 010324-Viscount Bennett TIA - Full build
Sc: 5443: PM Crown (PMCR) Scenario Select Zone 544 Inbound
GIS background images from ArcGIS Online. Copyright Esri. All rights reserved.

Outbound Distribution for Zone(s): 544
2048 LUN - PM Crown

Total Outbound Select Zone Volume = 510 veh/hr

Viscount Bennett TIA - Full build (Run ID: 010324)



NOTES:
-Distributions shown as proportions of total select zone volume.
-Link volumes less than 2% are suppressed for clarity.
-Minor discrepancies may occur as a result of rounding.

Calgary Regional Transportation Model: Version 2.4.4
ADVISORY: It's the recipient's responsibility to review network and land use assumptions used to produce this analysis. Prior to application in any study, all model inputs and outputs require interpretation and adjustment.
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Date: 2024-01-17 Databank: 2048 LUN 010324-Viscount Bennett TIA - Full build
Sc: 5444: PM Crown (PMCR) Scenario Select Zone 544 Outbound
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SIGNAL TIMING SUMMARY

LOCATION: 33 Av - Sarcee Rd / 29 St SW **Int #:** 544

Date Coded: May 14, 2020 **Date Installed:** 2020 October 7

								Pro Only	Pro/ Per	Per Only
TIMING PLAN NO:	**Max I**									
CYCLE LENGTH:	**Max 101.4**									
OFFSET:	**-**									
START TIME:	**18:00**									
END TIME:	**15:30**									
	Weekends: All Day							NBLT		**x**
								SBLT		**x**
								EBLT	**x**	
								WBLT		**x**
		^	^	^	^	^	^	^		
		4.2+3.2	3.8+4.0	3.0+3.2						
	MAX	40	30	10						
	MIN if Actuated	20	10+20*	7						
	Pedestrian	8+11	8+22							

X-Walk Clearance:
W X-walk: 17s, E X-walk: 22s
S X-walk: 9s, N X-walk: 11s

*ped actuation

								Pro Only	Pro/ Per	Per Only
TIMING PLAN NO:	**Pattern 3**									
CYCLE LENGTH:	**Max 111.4**									
OFFSET:	**-**									
START TIME:	**15:30**									
END TIME:	**18:00**									
								NBLT		**x**
								SBLT		**x**
								EBLT	**x**	
								WBLT		**x**
		^	^	^	^	^	^	^		
		4.2+3.2	3.8+4.0	3.0+3.2						
	MAX	50	25+5*	10						
	MIN if Actuated	20	10+20*	7						
	Pedestrian	8+11	8+22							

X-Walk Clearance:
W X-walk: 17s, E X-walk: 22s
S X-walk: 9s, N X-walk: 11s

*ped actuation

								Pro Only	Pro/ Per	Per Only
TIMING PLAN NO:										
CYCLE LENGTH:										
OFFSET:										
START TIME:										
END TIME:										
								NBLT		
								SBLT		
								EBLT		
								WBLT		
		^	^	^	^	^	^	^		
	MAX									
	MIN if Actuated									
	Pedestrian									

								Pro Only	Pro/ Per	Per Only
TIMING PLAN NO:										
CYCLE LENGTH:										
OFFSET:										
START TIME:										
END TIME:										
								NBLT		
								SBLT		
								EBLT		
								WBLT		
		^	^	^	^	^	^	^		
	MAX									
	MIN if Actuated									
	Pedestrian									

								Pro Only	Pro/ Per	Per Only
TIMING PLAN NO:										
CYCLE LENGTH:										
OFFSET:										
START TIME:										
END TIME:										
								NBLT		
								SBLT		
								EBLT		
								WBLT		
		^	^	^	^	^	^	^		
	MAX									
	MIN if Actuated									
	Pedestrian									

Notes: The offset point is referenced to the beginning of the first column of traffic movements.

If the max time is less than the pedestrian time, the extra unused pedestrian time is passed to the main street unless otherwise noted.

If any of the summary is unclear, please contact the Signals Division with the City of Calgary, by phoning 311.

Intersection Turning Movement Count Summary: 29 Street SW & Richmond Road SW

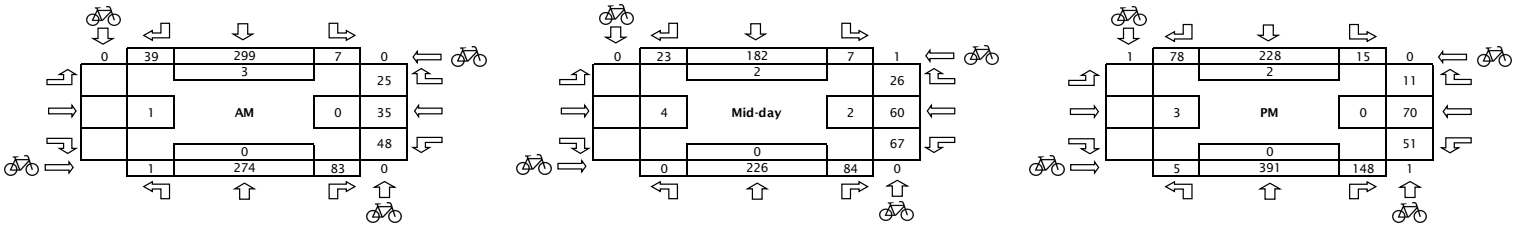
N/S Road: 29 Street SW
E/W Road: Richmond Road SW
Count Date: December 14, 2022 Wednesday
Weather: Cloudy
Road Condition: Dry
Project #: 02-22-0203

AM Peak Hour: 8:00 AM to 9:00 AM
Mid-day Peak Hour: 12:00 PM to 1:00 PM
PM Peak Hour: 4:30 PM to 5:30 PM

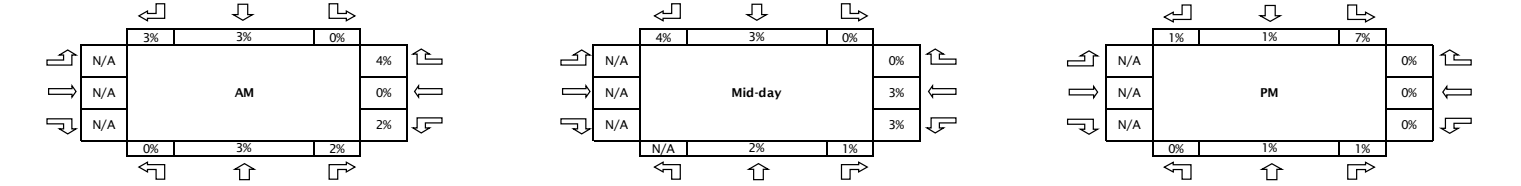
PHF (AM Peak Hour): 0.97
PHF (Mid-day Peak Hour): 0.92
PHF (PM Peak Hour): 0.90

	29 Street SW												Richmond Road 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		15 Min	Hourly	West Side	East Side	North Side	South Side	NB	SB	WB	EB
	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck										
7:00	0	0	16	0	6	2	1	0	26	0	5	0	1	0	1	0	0	0							58		0	0	0	0	0	0	0	
7:15	0	0	29	1	5	0	0	0	40	0	8	0	9	0	7	0	0	0							99		0	0	0	0	1	0	0	
7:30	0	0	42	4	10	0	3	0	42	2	7	0	12	0	12	0	0	0							134		0	0	0	0	0	0	0	
7:45	0	0	69	0	23	0	2	0	48	1	8	1	5	0	7	0	0	0							164	455	0	0	0	0	0	0	0	
8:00	0	0	65	2	19	0	1	0	77	1	6	0	13	0	9	0	4	0							197	594	0	0	0	0	0	0	0	
8:15	0	0	70	3	22	1	2	0	73	5	10	0	13	0	7	0	3	0							209	704	0	0	0	0	0	0	0	
8:30	0	0	64	1	25	1	1	0	73	0	11	1	13	0	6	0	5	1							202	772	1	0	1	0	0	0	0	
8:45	1	0	68	1	15	0	3	0	68	2	11	0	8	1	13	0	12	0							203	811	0	0	2	0	0	0	0	
2 Hour Total	1	0	423	12	125	4	13	0	447	11	66	2	74	1	62	0	24	1									1	0	3	0	1	0	0	
		1		435		129		13		458		68		75		62		25							1266									
Peak Hour Total	**1**	**0**	**267**	**7**	**81**	**2**	**7**	**0**	**291**	**8**	**38**	**1**	**47**	**1**	**35**	**0**	**24**	**1**									**1**	**0**	**3**	**0**	**0**	**0**	**0**	
		1		**274**		**83**		**7**		**299**		**39**		**48**		**35**		**25**								**811**								
11:00	0	0	42	1	18	1	0	0	30	1	3	0	13	0	18	0	1	0							128		0	0	0	0	0	0	0	
11:15	0	0	41	0	23	0	2	0	26	1	7	0	26	0	16	0	3	0							145		0	0	0	0	0	0	0	
11:30	0	0	47	3	13	1	6	0	28	1	15	0	23	1	14	0	3	1							156		0	0	0	0	0	0	0	
11:45	0	0	42	2	26	1	3	0	31	1	2	0	25	0	13	0	0	0							146	575	0	0	0	0	0	0	0	
12:00	0	0	40	4	18	1	2	0	39	0	7	0	19	0	11	0	8	0							149	596	2	1	0	0	0	0	0	
12:15	0	0	61	1	21	0	1	0	46	0	6	1	14	2	17	2	8	0							180	631	0	0	1	0	0	0	0	
12:30	0	0	57	0	22	0	2	0	45	2	4	0	13	0	13	0	5	0							163	638	0	0	0	0	0	0	0	
12:45	0	0	63	0	22	0	2	0	46	4	5	0	19	0	17	0	5	0							183	675	2	1	1	0	0	0	1	
2 Hour Total	0	0	393	11	163	4	18	0	291	10	49	1	152	3	119	2	33	1									4	2	2	0	0	0	1	
		0		404		167		18		301		50		155		121		34							1250									
Peak Hour Total	**0**	**0**	**221**	**5**	**83**	**1**	**7**	**0**	**176**	**6**	**22**	**1**	**65**	**2**	**58**	**2**	**26**	**0**									**4**	**2**	**2**	**0**	**0**	**0**	**1**	
		0		**226**		**84**		**7**		**182**		**23**		**67**		**60**		**26**								**675**								
16:00	0	0	90	4	34	0	3	0	53	1	12	0	15	0	11	1	0	0							224		0	0	0	0	0	0	0	
16:15	0	0	81	2	35	0	5	0	55	3	14	0	14	0	13	2	1	0							225		0	0	0	0	0	0	0	
16:30	3	0	98	2	38	0	4	0	53	0	17	1	9	0	11	0	0	0							236		0	0	0	0	1	0	0	
16:45	2	0	95	2	41	1	7	1	46	2	20	0	11	0	17	0	0	0							245	930	0	0	0	0	0	0	0	
17:00	0	0	92	0	32	1	0	0	51	0	21	0	15	0	23	0	5	0							240	946	2	0	2	0	0	1	0	
17:15	0	0	102	0	35	0	3	0	75	1	19	0	16	0	19	0	6	0							276	997	1	0	0	0	0	0	0	
17:30	0	0	88	0	29	0	3	0	70	0	14	0	15	0	12	0	5	0							236	997	0	0	1	0	0	0	2	
17:45	0	0	79	0	25	0	2	0	50	1	14	0	16	0	17	0	7	1							212	964	0	0	0	0	0	0	2	
2 Hour Total	5	0	725	10	269	2	27	1	453	8	131	1	111	0	123	3	24	1									3	0	3	0	1	1	4	
		5		735		271		28		461		132		111		126		25							1894									
Peak Hour Total	**5**	**0**	**387**	**4**	**146**	**2**	**14**	**1**	**225**	**3**	**77**	**1**	**51**	**0**	**70**	**0**	**11**	**0**									**3**	**0**	**2**	**0**	**1**	**1**	**0**	
		5		**391**		**148**		**15**		**228**		**78**		**51**		**70**		**11**								**997**								
6 Hour Total	**6**	**0**	**1541**	**33**	**557**	**10**	**58**	**1**	**1191**	**29**	**246**	**4**	**337**	**4**	**304**	**5**	**81**	**3**									**8**	**2**	**8**	**0**	**2**	**1**	**5**	
		6		**1574**		**567**		**59**		**1220**		**250**		**341**		**309**		**84**								**4410**								

Peak Hour Volumes



Heavy Vehicle Percentage



Intersection Turning Movement Count Summary: 29 Street SW & 31 Avenue SW

N/S Road: 29 Street SW
E/W Road: 31 Avenue SW
Count Date: December 14, 2022 Wednesday
Weather: Cloudy
Road Condition: Partial Snow covered
Project #: 02-22-0203

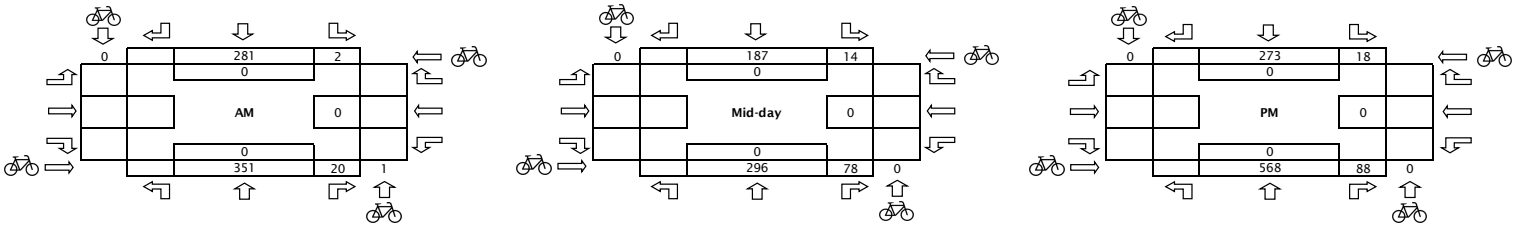
AM Peak Hour: 7:45 AM to 8:45 AM
Mid-day Peak Hour: 11:45 AM to 12:45 PM
PM Peak Hour: 4:00 PM to 5:00 PM

PHF (AM Peak Hour): 0.93
PHF (Mid-day Peak Hour): 0.95
PHF (PM Peak Hour): 0.96

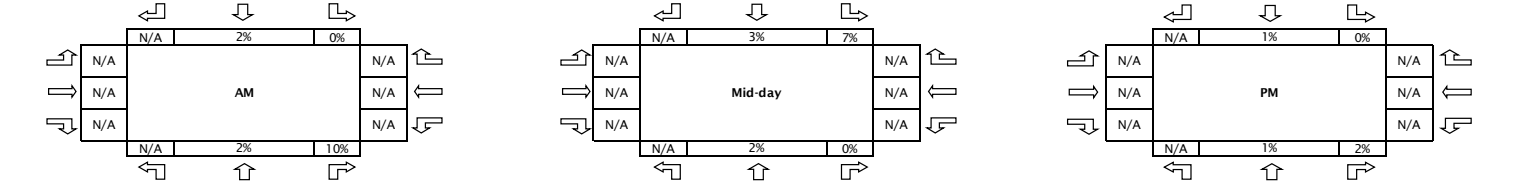
bunt & associates

	29 Street SW										31 Avenue SW																Pedestrians				Cyclists			
	Northbound (South Leg)						Southbound (North Leg)				Westbound (East Leg)						Eastbound (West Leg)																			
	Left		Through		Right		Left		Through		Right		Left		Through		Right		Left		Through		Right												
Time Starting	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Total Vehicles 15 Min	Total Vehicles Hourly	West Side	East Side	North Side	South Side	NB	SB	WB	EB
7:00			22	2	2	0	0	0	37	1															64			0	0	0	0	0		
7:15			33	0	1	0	0	0	57	0															91			0	0	0	0	0		
7:30			51	3	1	0	0	0	61	2															118			0	0	0	0	0		
7:45			87	0	4	0	0	0	69	1															161	434		0	0	0	0	0		
8:00			83	2	1	1	0	0	59	0															146	516		0	0	0	1	0		
8:15			88	3	4	1	1	0	74	4															175	600		0	0	0	0	0		
8:30			86	2	9	0	1	0	72	2															172	654		0	0	0	0	0		
8:45			85	1	14	0	1	0	55	2															158	651		0	0	0	0	0		
2 Hour Total			535	13	36	2	3	0	484	12																		0	0	0	1	0		
				548		38		3		496															1085									
Peak Hour Total			**344**	**7**	**18**	**2**	**2**	**0**	**274**	**7**																		**0**	**0**	**0**	**1**	**0**		
				351		**20**		**2**		**281**																**654**									
11:00			60	2	20	0	1	0	41	0															124			0	0	0	0	0		
11:15			73	0	11	0	1	0	53	1															139			0	0	0	0	0		
11:30			52	4	25	0	0	0	40	1															122			0	0	0	0	0		
11:45			69	2	27	0	0	1	52	0															151	536		0	0	0	0	0		
12:00			61	3	19	0	4	0	42	3															132	544		0	0	0	0	0		
12:15			79	0	17	0	2	0	41	2															141	546		0	0	0	0	0		
12:30			82	0	15	0	7	0	47	0															151	575		0	0	0	0	0		
12:45			83	0	19	0	3	0	32	2															139	563		1	0	0	0	0		
2 Hour Total			559	11	153	0	18	1	348	9																		1	0	0	0	0		
				570		153		19		357															1099									
Peak Hour Total			**291**	**5**	**78**	**0**	**13**	**1**	**182**	**5**																		**0**	**0**	**0**	**0**	**0**		
				296		**78**		**14**		**187**																**575**									
16:00			138	2	19	1	3	0	76	1															240			0	0	0	0	0		
16:15			122	1	23	0	7	0	75	1															229			0	0	0	0	0		
16:30			149	1	23	0	4	0	55	0															232			0	0	0	0	0		
16:45			154	1	21	1	4	0	63	2															246	947		0	0	0	0	0		
17:00			121	0	13	0	5	0	46	1															186	893		0	0	0	0	0		
17:15			132	0	6	0	3	0	51	1															193	857		0	0	0	0	0		
17:30			116	0	9	0	4	0	53	1															183	808		0	0	0	0	0		
17:45			108	0	10	0	5	0	57	0															180	742		0	0	0	0	0		
2 Hour Total			1040	5	124	2	35	0	476	7																		0	0	0	0	0		
				1045		126		35		483															1689									
Peak Hour Total			**563**	**5**	**86**	**2**	**18**	**0**	**269**	**4**																		**0**	**0**	**0**	**0**	**0**		
				568		**88**		**18**		**273**																**947**									
6 Hour Total			**2134**	**29**	**313**	**4**	**56**	**1**	**1308**	**28**																		**1**	**0**	**0**	**1**	**0**		
				2163		**317**		**57**		**1336**																**3873**									

Peak Hour Volumes



Heavy Vehicle Percentage



Intersection Turning Movement Count Summary: 29 Street SW & 33 Avenue SW

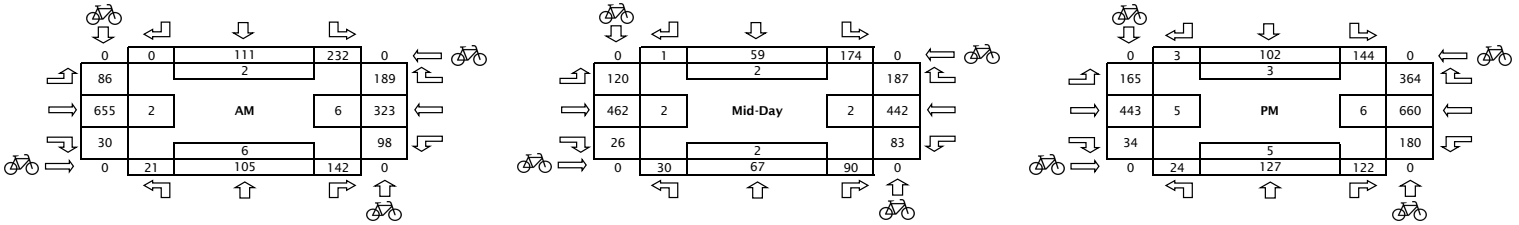
Road (North/South): 29 Street SW
Road (East/West): 33 Avenue SW
Count Date: December 14, 2022 Wednesday
Weather: Cloudy
Project #: Dry

AM Peak Hour: 8:00 AM to 9:00 AM
Mid-Day Peak Hour 11:45 AM to 12:45 PM
PM Peak Hour: 4:00 PM to 5:00 PM

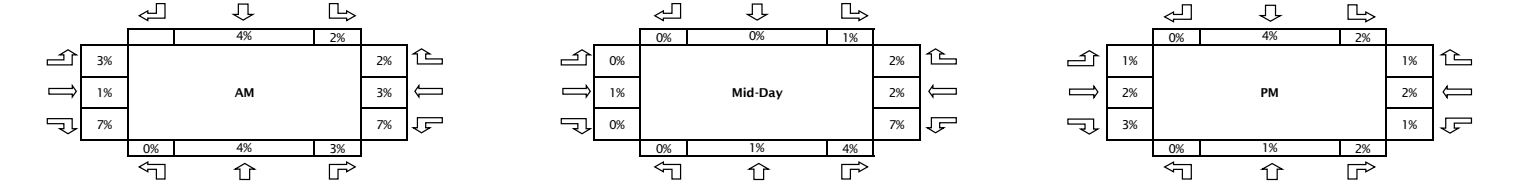
PHF (AM Peak Hour): 0.97
PHF (Mid-Day Peak Hour): 0.94
PHF (PM Peak Hour): 0.96

	29 Street SW												33 Avenue SW																			
	Northbound (South Leg)						Southbound (North Leg)						Westbound (East Leg)						Eastbound (West Leg)								Pedestrians				Cyclists			
	Left		Through		Right		Left		Through		Right		Left		Through		Right		Left		Through		Right											
Time Starting	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	15 Min	Hourly	West Side	East Side	North Side	South Side	NB	SB	WB	EB
7:00	3	0	5	0	29	1	24	0	3	0	0	0	9	2	31	1	14	2	5	0	103	0	4	0	236		1	0	0	0	0	0	0	0
7:15	2	0	4	0	51	0	38	0	9	0	0	0	12	0	35	0	21	0	9	0	130	1	2	0	314		0	0	0	1	0	0	0	0
7:30	2	0	13	1	46	1	41	0	17	0	1	0	13	1	48	3	24	2	15	0	144	4	8	0	384		2	3	0	1	0	0	0	0
7:45	5	0	25	0	39	1	56	2	8	0	1	0	12	0	53	2	41	0	25	0	159	4	5	0	438	1372	0	2	0	1	0	0	0	0
8:00	4	0	19	0	36	0	57	0	28	1	0	0	29	1	50	3	39	2	26	1	163	1	5	0	465	1601	0	4	0	2	0	0	0	0
8:15	2	0	33	2	39	2	48	2	36	2	0	0	21	1	86	0	43	1	16	1	165	2	13	1	516	1803	0	1	0	1	0	0	0	0
8:30	11	0	20	1	41	1	65	1	24	0	0	0	26	3	80	2	54	0	21	1	157	3	3	1	515	1934	2	0	1	3	0	0	0	0
8:45	4	0	29	1	22	1	58	1	19	1	0	0	15	2	96	6	50	0	20	0	161	3	7	0	496	1992	0	1	1	0	0	0	0	0
2 Hour Total	33	0	148	5	303	7	387	6	144	4	2	0	137	10	479	17	286	7	137	3	1182	18	47	2			5	11	2	9	0	0	0	0
	33		153		310		393		148		2		147		496		293		140		1200		49		3364									
Peak Hour Total	**21**	**0**	**101**	**4**	**138**	**4**	**228**	**4**	**107**	**4**	**0**	**0**	**91**	**7**	**312**	**11**	**186**	**3**	**83**	**3**	**646**	**9**	**28**	**2**			**2**	**6**	**2**	**6**	**0**	**0**	**0**	**0**
	21		**105**		**142**		**232**		**111**		**0**		**98**		**323**		**189**		**86**		**655**		**30**		**1992**									
11:00	2	0	12	0	27	0	45	1	13	0	1	0	13	1	72	2	46	2	22	0	119	2	6	0	386		0	3	0	0	0	0	0	0
11:15	7	0	20	0	26	1	51	0	11	0	0	0	25	0	95	1	42	0	22	0	112	3	7	1	424		1	1	1	0	0	0	0	0
11:30	2	0	14	0	24	1	43	1	13	0	2	0	25	2	100	2	51	3	12	1	102	1	15	0	414		1	1	1	0	0	0	0	0
11:45	13	0	20	0	19	0	56	0	13	0	0	0	18	4	104	2	48	2	28	0	125	2	7	0	461	1685	0	1	0	0	0	0	0	0
12:00	5	0	12	1	25	2	38	0	15	0	1	0	16	0	116	1	39	2	29	0	110	0	7	0	419	1718	2	0	1	2	0	0	0	0
12:15	6	0	16	0	19	2	36	1	17	0	0	0	25	1	104	3	50	0	30	0	120	3	7	0	440	1734	0	0	0	0	0	0	0	0
12:30	6	0	18	0	23	0	42	1	14	0	0	0	18	1	110	2	46	0	33	0	101	1	5	0	421	1741	0	1	1	0	0	0	0	0
12:45	10	0	8	0	14	2	45	3	19	0	2	0	12	1	112	1	59	0	35	0	104	0	6	0	433	1713	1	3	0	1	0	0	0	0
2 Hour Total	51	0	120	1	177	8	356	7	115	0	6	0	152	10	813	14	381	9	211	1	893	12	60	1			5	10	4	3	0	0	0	0
	51		121		185		363		115		6		162		827		390		212		905		61		3398									
Peak Hour Total	**30**	**0**	**66**	**1**	**86**	**4**	**172**	**2**	**59**	**0**	**1**	**0**	**77**	**6**	**434**	**8**	**183**	**4**	**120**	**0**	**456**	**6**	**26**	**0**			**2**	**2**	**2**	**2**	**0**	**0**	**0**	**0**
	30		**67**		**90**		**174**		**59**		**1**		**83**		**442**		**187**		**120**		**462**		**26**		**1741**									
16:00	9	0	35	0	32	1	38	0	24	1	0	0	41	0	171	4	78	2	44	1	120	6	6	1	614		1	3	0	1	0	0	0	0
16:15	8	0	32	0	35	1	35	1	30	2	1	0	58	1	154	6	69	1	44	0	113	1	5	0	597		1	1	1	2	0	0	0	0
16:30	4	0	23	0	28	0	38	0	22	0	2	0	45	1	181	1	110	0	39	1	106	2	12	0	615		0	1	0	0	0	0	0	0
16:45	3	0	36	1	24	1	30	2	22	1	0	0	34	0	143	0	103	1	36	0	94	1	10	0	542	2368	3	1	2	2	0	0	0	0
17:00	6	0	27	0	13	1	30	0	34	0	0	0	22	1	121	1	77	0	30	0	117	1	6	0	487	2241	3	1	0	2	0	0	0	0
17:15	6	0	29	0	16	1	46	0	27	1	5	0	24	0	101	0	78	0	31	0	102	2	4	0	473	2117	2	0	0	1	0	0	0	0
17:30	13	0	20	0	20	1	43	0	36	0	4	0	31	2	95	0	72	0	33	0	107	0	4	0	481	1983	2	0	1	1	0	0	0	0
17:45	13	0	21	0	23	0	37	0	28	0	2	0	36	0	128	2	63	0	34	0	113	0	8	0	508	1949	0	1	0	1	0	0	0	0
2 Hour Total	62	0	223	1	191	6	297	3	223	5	14	0	291	5	1094	14	650	4	291	2	872	13	55	1			12	8	4	10	0	0	0	0
	62		224		197		300		228		14		296		1108		654		293		885		56		4317									
Peak Hour Total	**24**	**0**	**126**	**1**	**119**	**3**	**141**	**3**	**98**	**4**	**3**	**0**	**178**	**2**	**649**	**11**	**360**	**4**	**163**	**2**	**433**	**10**	**33**	**1**			**5**	**6**	**3**	**5**	**0**	**0**	**0**	**0**
	24		**127**		**122**		**144**		**102**		**3**		**180**		**660**		**364**		**165**		**443**		**34**		**2368**									
6 Hour Total	**146**	**0**	**491**	**7**	**671**	**21**	**1040**	**16**	**482**	**9**	**22**	**0**	**580**	**25**	**2386**	**45**	**1317**	**20**	**639**	**6**	**2947**	**43**	**162**	**4**			**22**	**29**	**10**	**22**	**0**	**0**	**0**	**0**
	146		**498**		**692**		**1056**		**491**		**22**		**605**		**2431**		**1337**		**645**		**2990**		**166**		**11079**									

Peak Hour Volumes



Heavy Vehicle Percentage



Intersection Turning Movement Count Summary: 28 Street SW & Richmond Road SW

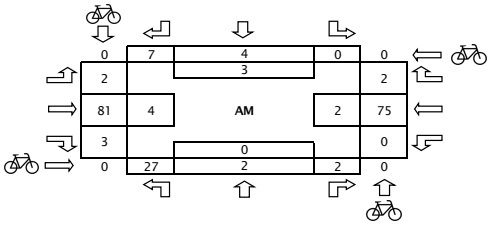
N/S Road: 28 Street SW
E/W Road: Richmond Road SW
Count Date: December 14, 2022 Wednesday
Weather: Cloudy
Road Condition: Partial Snow Covered
Project #: 02-22-0203

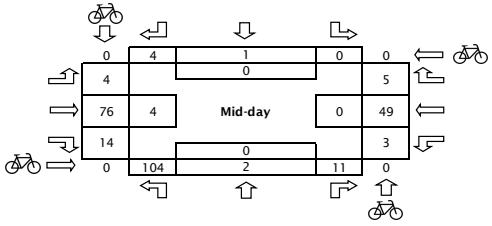
AM Peak Hour: 8:00 AM to 9:00 AM
Mid-day Peak Hour: 11:30 AM to 12:30 PM
PM Peak Hour: 5:00 PM to 6:00 PM

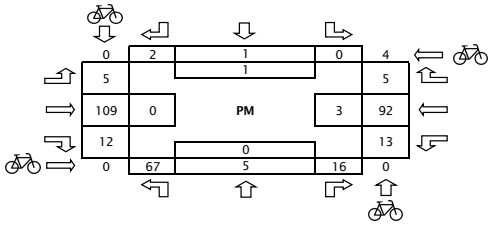
PHF (AM Peak Hour): 0.92
PHF (Mid-day Peak Hour): 0.91
PHF (PM Peak Hour): 0.91

	28 Street SW												Richmond Road 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		15 Min	Hourly	West Side	East Side	North Side	South Side	NB	SB	WB	EB
	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck										
7:00	1	0	0	0	1	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	7	1	0	1	14		0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	18	0	1	0	0	0	5	0	0	0	26		0	0	0	0	0	0	0	0
7:30	1	0	0	0	0	0	0	0	0	0	1	0	0	0	24	0	0	0	0	0	12	0	0	0	38		0	0	0	0	0	0	0	0
7:45	3	0	0	0	0	0	0	0	1	0	2	0	0	0	15	0	0	0	1	0	23	0	0	0	45	123	0	0	0	0	0	0	0	0
8:00	6	0	1	0	1	0	0	0	3	0	1	0	0	0	19	0	1	0	1	0	18	0	0	0	51	160	1	0	0	0	0	0	0	0
8:15	1	0	0	0	0	0	0	0	0	0	2	0	0	0	19	0	0	0	0	0	23	1	0	0	46	180	1	0	1	0	0	0	0	0
8:30	4	0	1	0	0	0	0	0	1	0	3	0	0	0	19	1	1	0	1	0	22	1	2	0	56	198	2	1	1	0	0	0	0	0
8:45	15	1	0	0	1	0	0	0	0	0	1	0	0	0	17	0	0	0	0	0	16	0	1	0	52	205	0	1	1	0	0	0	0	0
2 Hour Total	31	1	2	0	3	0	0	0	5	0	13	0	0	0	133	1	3	0	3	0	126	3	3	1			4	2	3	0	0	0	0	0
	32		2		3		0		5		13		0		134		3		3		129		4		328									
Peak Hour Total	**26**	**1**	**2**	**0**	**2**	**0**	**0**	**0**	**4**	**0**	**7**	**0**	**0**	**0**	**74**	**1**	**2**	**0**	**2**	**0**	**79**	**2**	**3**	**0**			**4**	**2**	**3**	**0**	**0**	**0**	**0**	**0**
	27		**2**		**2**		**0**		**4**		**7**		**0**		**75**		**2**		**2**		**81**		**3**			**205**								
11:00	25	0	0	0	2	0	0	0	0	0	2	0	1	0	5	0	0	0	0	0	18	1	2	0	56		0	1	1	0	0	0	0	0
11:15	30	0	0	0	3	0	0	0	1	0	3	0	0	0	10	0	0	0	0	0	21	0	1	0	69		1	0	0	0	0	0	0	0
11:30	28	0	1	0	2	1	0	0	0	0	2	0	0	0	8	0	0	0	1	0	20	0	3	1	68		0	0	0	0	0	0	0	0
11:45	27	0	0	0	1	0	0	0	0	0	0	0	1	0	11	0	1	0	1	0	19	1	4	0	66	259	0	0	0	0	0	0	0	0
12:00	22	0	0	0	3	0	0	0	1	0	1	0	1	0	14	0	0	2	0	0	18	0	1	1	64	267	3	0	0	0	0	0	0	0
12:15	24	3	1	0	4	0	0	0	0	0	1	0	1	0	15	1	1	0	2	0	17	1	4	0	75	273	1	0	0	0	0	0	0	0
12:30	20	0	1	0	3	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	20	0	4	0	58	263	0	1	2	0	0	0	0	0
12:45	23	0	0	0	1	1	0	0	1	0	0	0	2	0	17	1	0	0	0	0	18	0	6	0	70	267	0	0	2	0	0	0	1	0
2 Hour Total	199	3	3	0	19	2	0	0	3	0	9	0	6	0	90	2	2	3	4	0	151	3	25	2			5	2	5	0	0	0	1	0
	202		3		21		0		3		9		5		92		5		4		154		27		526									
Peak Hour Total	**101**	**3**	**2**	**0**	**10**	**1**	**0**	**0**	**1**	**0**	**4**	**0**	**3**	**0**	**48**	**1**	**2**	**3**	**4**	**0**	**74**	**2**	**12**	**2**			**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	104		**2**		**11**		**0**		**1**		**4**		**3**		**49**		**5**		**4**		**76**		**14**			**273**								
16:00	11	0	0	0	1	0	0	0	0	0	0	0	2	0	15	1	1	0	1	0	26	0	2	0	60		1	0	0	0	0	0	0	0
16:15	9	0	0	0	3	0	0	0	0	0	0	0	1	0	18	1	1	0	0	0	25	0	4	0	62		0	0	0	0	0	0	0	0
16:30	2	0	0	0	3	0	0	0	0	0	0	0	1	0	13	0	0	0	0	0	28	0	1	0	48		2	0	0	0	0	0	0	0
16:45	8	0	0	0	5	0	0	0	0	0	0	0	2	0	12	0	0	0	1	0	29	0	2	0	59	229	0	1	0	0	0	0	0	0
17:00	14	0	3	0	4	0	0	0	0	0	0	0	3	0	31	0	1	0	1	0	29	1	1	0	88	257	0	2	1	0	0	0	0	0
17:15	13	0	0	0	9	1	0	0	1	0	0	0	3	0	28	0	0	0	1	0	28	0	6	0	90	285	0	1	0	0	0	0	0	0
17:30	17	0	2	0	0	0	0	0	0	0	1	0	4	0	17	0	1	0	3	0	28	0	1	0	74	311	0	0	0	0	0	0	2	0
17:45	22	1	0	0	2	0	0	0	0	0	1	0	3	0	16	0	3	0	0	0	23	0	4	0	75	327	0	0	0	0	0	0	2	0
2 Hour Total	96	1	5	0	27	1	0	0	1	0	2	0	19	0	150	2	7	0	7	0	216	1	21	0			3	4	1	0	0	0	4	0
	97		5		28		0		1		2		19		152		7		7		217		21		556									
Peak Hour Total	**66**	**1**	**5**	**0**	**15**	**1**	**0**	**0**	**1**	**0**	**2**	**0**	**13**	**0**	**92**	**0**	**5**	**0**	**5**	**0**	**108**	**1**	**12**	**0**			**0**	**3**	**1**	**0**	**0**	**0**	**4**	**0**
	67		**5**		**16**		**0**		**1**		**2**		**13**		**92**		**5**		**5**		**109**		**12**			**327**								
6 Hour Total	**326**	**5**	**10**	**0**	**49**	**3**	**0**	**0**	**9**	**0**	**24**	**0**	**25**	**0**	**373**	**5**	**12**	**3**	**14**	**0**	**493**	**7**	**49**	**3**			**12**	**8**	**9**	**0**	**0**	**0**	**5**	**0**
	331		**10**		**52**		**0**		**9**		**24**		**25**		**378**		**15**		**14**		**500**		**52**			**1410**								

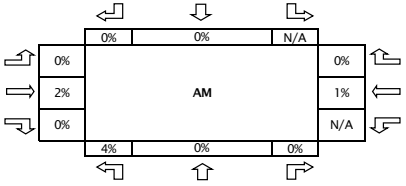
Peak Hour Volumes

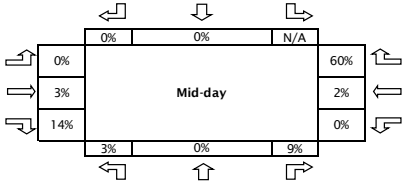


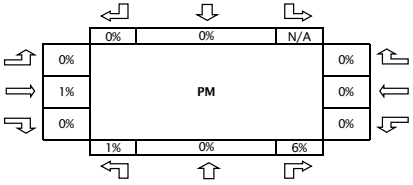




Heavy Vehicle Percentage







Intersection Turning Movement Count Summary:

25a Street SW & 26 Avenue SW

Road (North/South): 25a Street SW
Road (East/West): 26 Avenue SW
Count Date: December 14, 2022 Wednesday
Weather: Cloudy
Project #: 02-22-0203

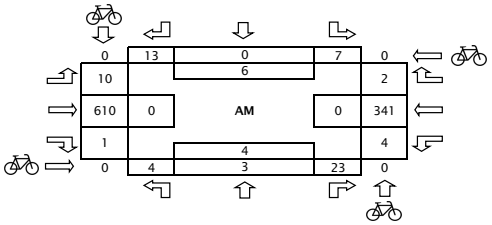
AM Peak Hour: 8:00 AM to 9:00 AM
Mid-Day Peak Hour 12:00 PM to 1:00 PM
PM Peak Hour: 4:45 PM to 5:45 PM

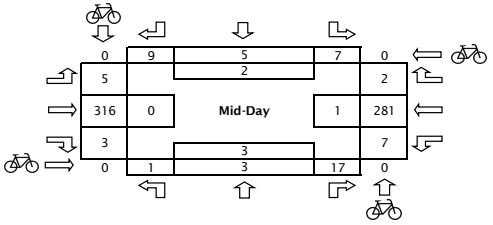
PHF (AM Peak Hour): 0.92
PHF (Mid-Day Peak Hour): 0.88
PHF (PM Peak Hour): 0.90

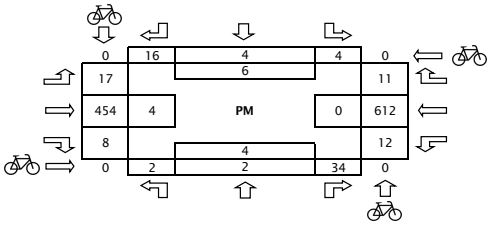
bunt & associates

	25a Street SW												26 Avenue SW																			
	Northbound (South Leg)						Southbound (North Leg)						Westbound (East Leg)						Eastbound (West Leg)								Pedestrians				Cyclists			
	Left		Through		Right		Left		Through		Right		Left		Through		Right		Left		Through		Right		Total Vehicles		West	East	North	South				
Time Starting	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	15 Min	Hourly	Side	Side	Side	Side	NB	SB	WB	EB
7:00	1	0	0	0	2	0	0	0	0	0	0	0	0	0	34	1	0	0	1	0	72	1	1	0	113		0	0	0	0	0	0	0	0
7:15	0	0	0	0	3	0	1	0	0	0	2	0	2	0	31	0	0	0	1	0	103	0	1	0	144		0	0	0	0	0	0	0	0
7:30	0	0	0	0	4	0	0	0	0	0	3	0	2	0	50	1	1	0	1	0	135	3	1	0	201		1	0	2	0	0	0	0	0
7:45	0	0	0	0	5	0	2	0	0	0	5	0	1	0	55	4	0	0	1	0	127	3	1	0	204	662	0	0	2	2	0	0	0	0
8:00	2	0	0	0	7	0	3	0	0	0	4	0	1	0	79	2	0	0	2	0	140	1	0	0	241	790	0	0	3	1	0	0	0	0
8:15	0	0	0	1	7	0	1	0	0	0	3	0	3	0	86	5	1	0	4	0	161	5	1	0	278	924	0	0	3	2	0	0	0	0
8:30	1	0	0	1	8	0	2	0	0	0	2	0	0	0	74	2	0	0	0	0	163	3	0	0	256	979	0	0	0	0	0	0	0	0
8:45	1	0	1	0	1	0	1	0	0	0	4	0	0	0	92	1	1	0	4	0	136	1	0	0	243	1018	0	0	0	1	0	0	0	0
2 Hour Total	5	0	1	2	37	0	10	0	0	0	23	0	9	0	501	16	3	0	14	0	1037	17	5	0			1	0	10	6	0	0	0	0
	5		3		37		10		0		23		9		517		3		14		1054		5		1680									
Peak Hour Total	**4**	**0**	**1**	**2**	**23**	**0**	**7**	**0**	**0**	**0**	**13**	**0**	**4**	**0**	**331**	**10**	**2**	**0**	**10**	**0**	**600**	**10**	**1**	**0**			**0**	**0**	**6**	**4**	**0**	**0**	**0**	**0**
	4		**3**		**23**		**7**		**0**		**13**		**4**		**341**		**2**		**10**		**610**		**1**			**1018**								
11:00	0	0	0	0	4	0	0	0	0	0	1	0	0	0	66	1	0	0	0	0	78	0	1	0	151		0	0	0	2	0	0	0	0
11:15	0	0	0	0	2	0	4	0	0	0	1	0	0	0	53	2	0	0	2	0	78	2	1	0	145		0	0	1	0	0	0	0	0
11:30	2	0	0	0	3	0	2	0	0	1	1	0	0	0	57	0	0	0	1	0	64	2	0	0	133		0	0	1	0	0	0	0	0
11:45	0	0	1	0	5	0	3	0	0	0	3	0	3	0	62	1	0	0	2	0	72	1	0	0	153	582	0	0	1	1	0	0	0	0
12:00	0	0	0	0	2	0	2	0	2	0	3	0	2	0	60	0	0	0	0	0	65	3	2	0	141	572	0	1	1	2	0	0	0	0
12:15	0	0	2	0	10	0	2	0	2	0	1	0	1	0	77	3	1	0	1	0	84	1	1	0	186	613	0	0	1	1	0	0	0	0
12:30	0	0	1	0	4	0	2	0	0	0	3	0	2	0	64	2	1	0	2	0	81	1	0	0	163	643	0	0	0	0	0	0	0	0
12:45	1	0	0	0	1	0	1	0	1	0	2	0	2	0	71	4	0	0	2	0	80	1	0	0	166	656	0	0	0	0	0	0	0	0
2 Hour Total	3	0	4	0	31	0	16	0	5	1	15	0	10	0	510	13	2	0	10	0	602	11	5	0			0	1	5	6	0	0	0	0
	3		4		31		16		6		15		10		523		2		10		613		5		1238									
Peak Hour Total	**1**	**0**	**3**	**0**	**17**	**0**	**7**	**0**	**5**	**0**	**9**	**0**	**7**	**0**	**272**	**9**	**2**	**0**	**5**	**0**	**310**	**6**	**3**	**0**			**0**	**1**	**2**	**3**	**0**	**0**	**0**	**0**
	1		**3**		**17**		**7**		**5**		**9**		**7**		**281**		**2**		**5**		**316**		**3**			**656**								
16:00	2	0	1	0	8	0	2	0	0	0	3	0	1	0	116	2	4	0	1	0	119	4	0	0	263		0	0	2	2	0	0	0	0
16:15	1	0	1	0	5	0	3	0	1	0	3	0	4	0	120	2	2	0	3	0	105	2	1	0	253		0	1	2	2	0	0	0	0
16:30	0	0	0	0	7	0	6	0	0	0	4	0	1	0	123	0	3	0	2	0	104	1	2	0	253		0	0	1	0	0	0	0	0
16:45	0	0	1	0	6	0	1	0	0	0	4	0	2	0	140	2	2	0	5	0	111	0	1	0	275	1044	0	0	1	0	0	0	0	0
17:00	1	0	1	0	9	0	1	0	2	0	8	0	5	0	177	0	1	0	7	0	112	1	3	0	328	1109	0	0	1	2	0	0	0	0
17:15	0	0	0	0	9	0	1	0	1	0	3	0	3	0	150	1	5	0	3	0	123	1	3	0	303	1159	4	0	4	1	0	0	0	0
17:30	1	0	0	0	10	0	1	0	1	0	1	0	2	0	141	1	3	0	2	0	106	0	1	0	270	1176	0	0	0	1	0	0	0	0
17:45	2	0	2	0	4	0	4	0	1	0	1	0	4	0	98	0	4	0	3	0	111	0	3	0	237	1138	0	0	0	1	0	0	0	0
2 Hour Total	7	0	6	0	58	0	19	0	6	0	27	0	22	0	1065	8	24	0	26	0	891	9	14	0			4	1	11	9	0	0	0	0
	7		6		58		19		6		27		22		1073		24		26		900		14		2182									
Peak Hour Total	**2**	**0**	**2**	**0**	**34**	**0**	**4**	**0**	**4**	**0**	**16**	**0**	**12**	**0**	**608**	**4**	**11**	**0**	**17**	**0**	**452**	**2**	**8**	**0**			**4**	**0**	**6**	**4**	**0**	**0**	**0**	**0**
	2		**2**		**34**		**4**		**4**		**16**		**12**		**612**		**11**		**17**		**454**		**8**			**1176**								
6 Hour Total	**15**	**0**	**11**	**2**	**126**	**0**	**45**	**0**	**11**	**1**	**65**	**0**	**41**	**0**	**2076**	**37**	**29**	**0**	**50**	**0**	**2530**	**37**	**24**	**0**			**5**	**2**	**26**	**21**	**0**	**0**	**0**	**0**
	15		**13**		**126**		**45**		**12**		**65**		**41**		**2113**		**29**		**50**		**2567**		**24**			**5100**								

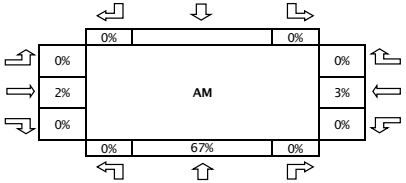
Peak Hour Volumes

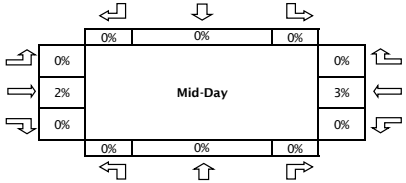


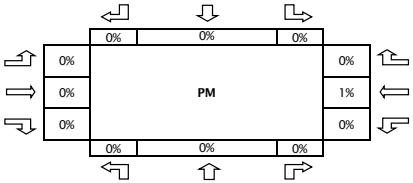




Heavy Vehicle Percentage





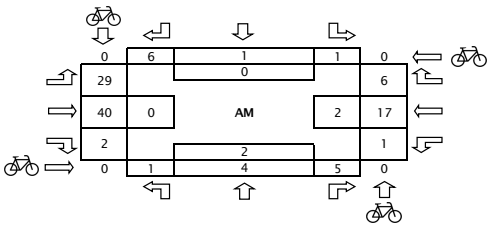


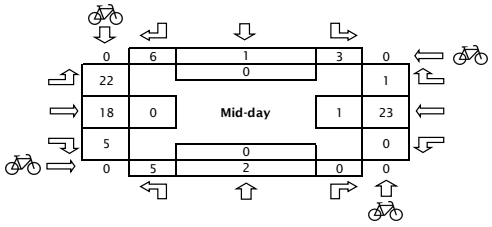
Intersection Turning Movement Count Summary: 25a Street SW & Richmond Road SW

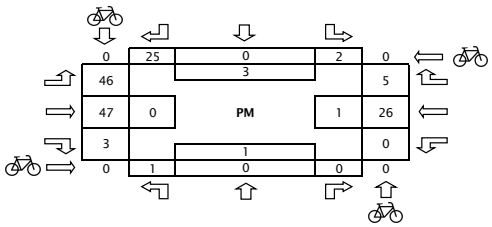
N/S Road:	25a Street SW		**AM Peak Hour:**	7:45 AM	to	8:45 AM	**PHF (AM Peak Hour):**	0.86
E/W Road:	Richmond Road SW		**Mid-day Peak Hour:**	11:30 AM	to	12:30 PM	**PHF (Mid-day Peak Hour):**	0.74
Count Date:	December 14, 2022	Wednesday	**PM Peak Hour:**	4:15 PM	to	5:15 PM	**PHF (PM Peak Hour):**	0.92
Weather:	Cloudy							
Road Condition:	partial snow covered							
Project #:	02-22-0203							

	25a Street SW												Richmond Road 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				
	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	15 Min	Hourly					NB	SB	WB	EB
7:00	0	0	1	0	1	0	0	0	0	0	1	0	0	0	3	0	0	0	4	0	3	0	0	0	13		0	0	0	0	0	0	0	0
7:15	0	0	1	0	0	0	0	0	0	0	2	0	0	0	6	0	1	0	2	0	4	0	0	0	16		0	0	0	0	0	0	0	0
7:30	0	0	0	0	2	0	2	0	0	0	1	0	0	0	2	0	0	0	6	0	4	0	0	0	17		0	0	0	0	0	0	0	0
7:45	0	0	0	0	2	0	0	0	0	0	2	0	0	0	2	0	0	0	11	0	10	0	0	0	27	73	0	0	0	0	0	0	0	0
8:00	0	0	2	0	1	0	0	0	0	0	0	0	0	0	8	0	0	0	5	0	9	0	1	0	26	86	0	2	0	1	0	0	0	0
8:15	0	0	1	0	1	0	0	0	0	0	2	0	0	0	3	0	1	0	7	1	11	0	0	0	27	97	0	0	0	1	0	0	0	0
8:30	1	0	1	0	1	0	1	0	1	0	2	0	1	0	4	0	5	0	4	1	9	1	1	0	33	113	0	0	0	0	0	0	0	0
8:45	1	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	7	1	1	0	17	103	1	0	0	0	0	0	0	0
2 Hour Total	2	0	7	0	8	0	3	0	1	0	10	0	1	0	33	0	7	0	40	2	57	2	3	0			1	2	0	2	0	0	0	0
	2		7		8		3		1		10		1		33		7		42		59		3		176									
Peak Hour Total	**1**	**0**	**4**	**0**	**5**	**0**	**1**	**0**	**1**	**0**	**6**	**0**	**1**	**0**	**17**	**0**	**6**	**0**	**27**	**2**	**39**	**1**	**2**	**0**			**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**
	1		**4**		**5**		**1**		**1**		**6**		**1**		**17**		**6**		**29**		**40**		**2**			**113**								
11:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	5	0	5	0	0	0	14		0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	1	0	0	0	1	0	0	0	6	0	1	0	4	0	6	0	1	0	20		0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	8	0	0	0	6	0	8	0	2	0	25		0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	1	0	0	0	2	0	0	0	5	0	0	0	4	0	2	0	0	0	14	73	0	0	0	0	0	0	0	0
12:00	3	0	0	0	0	0	0	1	0	0	2	0	0	0	4	0	0	0	3	0	3	0	2	0	18	77	0	1	0	0	0	0	0	0
12:15	1	1	2	0	0	0	1	0	1	0	1	0	0	0	6	0	1	0	9	0	5	0	1	0	29	86	0	0	0	0	0	0	0	0
12:30	1	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	1	0	4	0	7	0	0	0	17	78	0	0	0	0	0	0	0	0
12:45	1	0	1	0	0	0	1	0	0	0	1	0	0	0	5	0	1	0	0	0	10	0	1	0	21	85	0	0	1	0	0	0	0	0
2 Hour Total	6	1	3	0	0	0	4	1	2	0	9	0	0	0	40	0	4	0	35	0	46	0	7	0			0	1	1	0	0	0	0	0
	7		3		0		5		2		9		0		40		4		35		46		7		158									
Peak Hour Total	**4**	**1**	**2**	**0**	**0**	**0**	**2**	**1**	**1**	**0**	**6**	**0**	**0**	**0**	**23**	**0**	**1**	**0**	**22**	**0**	**18**	**0**	**5**	**0**			**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
	5		**2**		**0**		**3**		**1**		**6**		**0**		**23**		**1**		**22**		**18**		**5**			**86**								
16:00	1	0	0	0	0	0	0	0	0	0	2	0	0	0	9	0	3	0	6	0	18	0	0	0	39		0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	1	0	0	0	8	0	0	0	7	0	2	0	13	0	9	1	0	0	41		0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	3	0	0	0	7	0	1	0	9	0	10	0	1	0	31		0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	14	0	14	0	0	0	42	153	0	0	1	0	0	0	0	0
17:00	1	0	0	0	0	0	1	0	0	0	7	0	0	0	5	0	2	0	10	0	13	0	2	0	41	155	0	1	2	1	0	0	0	0
17:15	0	0	0	0	0	0	0	0	1	0	6	0	0	0	9	0	0	0	8	1	15	0	0	0	40	154	0	0	0	0	0	0	0	0
17:30	0	0	2	0	0	0	1	0	0	0	2	0	0	0	7	0	2	0	7	0	9	0	2	0	32	155	0	0	0	0	0	0	0	0
17:45	1	0	3	0	0	0	0	0	2	0	4	0	0	0	4	0	2	0	3	0	6	0	0	0	25	138	0	0	0	0	0	0	1	0
2 Hour Total	3	0	5	0	0	0	3	0	3	0	39	0	0	0	55	0	12	0	70	1	94	1	5	0			0	1	3	1	0	0	1	0
	3		5		0		3		3		39		0		55		12		71		95		5		291									
Peak Hour Total	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**25**	**0**	**0**	**0**	**26**	**0**	**5**	**0**	**46**	**0**	**46**	**1**	**3**	**0**			**0**	**1**	**3**	**1**	**0**	**0**	**0**	**0**
	1		**0**		**0**		**2**		**0**		**25**		**0**		**26**		**5**		**46**		**47**		**3**			**155**								
6 Hour Total	**11**	**1**	**15**	**0**	**8**	**0**	**10**	**1**	**6**	**0**	**58**	**0**	**1**	**0**	**128**	**0**	**23**	**0**	**145**	**3**	**197**	**3**	**15**	**0**			**1**	**4**	**4**	**3**	**0**	**0**	**1**	**0**
	12		**15**		**8**		**11**		**6**		**58**		**1**		**128**		**23**		**148**		**200**		**15**			**625**								

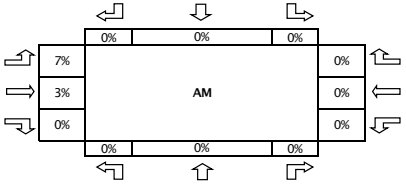
Peak Hour Volumes

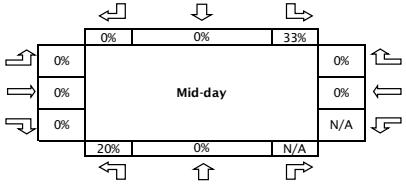


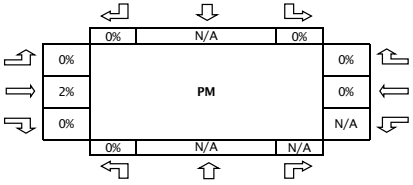




Heavy Vehicle Percentage







Intersection Turning Movement Count Summary:

25 Street SW & 26 Avenue SW

Road (North/South): 25 Street SW
Road (East/West): 26 Avenue SW
Count Date: December 14, 2022 Wednesday
Weather: Cloudy
Project #: 02-22-0203

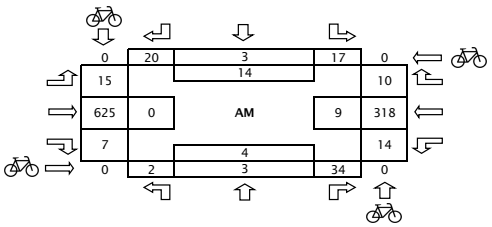
AM Peak Hour: 8:00 AM to 9:00 AM
Mid-Day Peak Hour 12:00 PM to 1:00 PM
PM Peak Hour: 4:45 PM to 5:45 PM

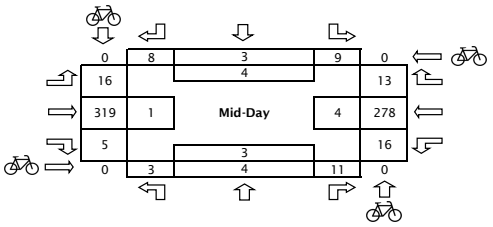
PHF (AM Peak Hour): 0.91
PHF (Mid-Day Peak Hour): 0.89
PHF (PM Peak Hour): 0.92

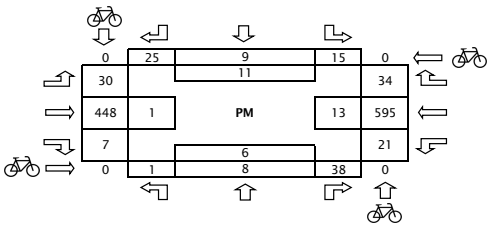
bunt & associates

	25 Street SW												26 Avenue SW																			
	Northbound (South Leg)						Southbound (North Leg)						Westbound (East Leg)						Eastbound (West Leg)								Pedestrians				Cyclists			
	Left		Through		Right		Left		Through		Right		Left		Through		Right		Left		Through		Right		Total Vehicles		West	East	North	South				
Time Starting	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	15 Min	Hourly	Side	Side	Side	Side	NB	SB	WB	EB
7:00	0	0	0	0	6	0	1	0	0	0	2	0	2	0	32	1	0	0	2	0	74	1	0	0	121		0	1	0	1	0	0	0	0
7:15	0	0	0	1	8	0	6	0	2	0	1	0	1	0	33	0	0	0	3	0	98	0	2	0	155		1	2	3	2	0	0	0	0
7:30	0	0	1	0	5	0	3	0	0	0	3	0	2	0	50	2	2	0	4	0	140	2	1	0	215		0	1	3	0	0	0	0	0
7:45	1	0	1	0	9	0	3	0	0	0	4	0	1	0	50	3	3	0	3	0	135	3	0	0	216	707	1	3	1	3	0	0	0	0
8:00	0	0	2	0	7	0	7	0	1	0	3	0	5	0	76	2	2	0	2	0	150	1	1	0	259	845	0	3	7	0	0	0	0	0
8:15	1	0	1	0	14	0	4	0	1	0	6	0	1	0	81	5	4	0	3	0	165	5	2	0	293	983	0	5	6	3	0	0	0	0
8:30	0	0	0	0	8	0	1	0	1	0	1	0	5	0	70	2	2	0	7	0	165	3	2	0	267	1035	0	1	0	0	0	0	0	0
8:45	1	0	0	0	5	0	5	0	0	0	10	0	3	0	81	1	2	0	3	0	135	1	2	0	249	1068	0	0	1	1	0	0	0	0
2 Hour Total	3	0	5	1	62	0	30	0	5	0	30	0	20	0	473	16	15	0	27	0	1062	16	10	0			2	16	21	10	0	0	0	0
	3		6		62		30		5		30		20		489		15		27		1078		10		1775									
Peak Hour Total	**2**	**0**	**3**	**0**	**34**	**0**	**17**	**0**	**3**	**0**	**20**	**0**	**14**	**0**	**308**	**10**	**10**	**0**	**15**	**0**	**615**	**10**	**7**	**0**			**0**	**9**	**14**	**4**	**0**	**0**	**0**	**0**
	2		**3**		**34**		**17**		**3**		**20**		**14**		**318**		**10**		**15**		**625**		**7**			**1068**								
11:00	1	0	0	0	5	0	4	0	0	0	2	0	3	0	60	1	0	0	3	0	79	0	0	0	158		0	1	0	1	0	0	0	0
11:15	0	0	0	0	4	0	1	0	2	0	2	0	4	0	51	1	3	0	7	0	77	2	0	0	154		1	1	1	0	0	0	0	0
11:30	0	1	0	0	6	0	4	0	0	0	8	0	3	0	48	0	5	0	2	0	66	2	1	0	146		0	3	1	0	0	0	0	0
11:45	0	0	1	0	6	0	5	0	3	0	5	0	3	0	60	1	3	0	3	0	77	1	1	0	169	627	0	1	2	0	0	0	0	0
12:00	1	0	1	0	0	0	2	0	1	0	2	0	4	0	59	0	1	0	3	0	63	3	0	0	140	609	1	3	0	2	0	0	0	0
12:15	1	0	2	0	1	0	0	0	1	0	3	0	3	0	76	3	3	0	4	0	94	1	0	0	192	647	0	0	1	1	0	0	0	0
12:30	1	0	1	0	8	0	2	0	0	0	2	0	2	0	65	3	5	0	3	0	79	1	4	0	176	677	0	1	2	0	0	0	0	0
12:45	0	0	0	0	2	0	5	0	1	0	1	0	7	0	69	3	4	0	6	0	77	1	1	0	177	685	0	0	1	0	0	0	0	0
2 Hour Total	4	1	5	0	32	0	23	0	8	0	25	0	29	0	488	12	24	0	31	0	612	11	7	0			2	10	8	4	0	0	0	0
	5		5		32		23		8		25		29		500		24		31		623		7		1312									
Peak Hour Total	**3**	**0**	**4**	**0**	**11**	**0**	**9**	**0**	**3**	**0**	**8**	**0**	**16**	**0**	**269**	**9**	**13**	**0**	**16**	**0**	**313**	**6**	**5**	**0**			**1**	**4**	**4**	**3**	**0**	**0**	**0**	**0**
	3		**4**		**11**		**9**		**3**		**8**		**16**		**278**		**13**		**16**		**319**		**5**			**685**								
16:00	0	0	3	0	15	0	2	0	0	0	4	0	6	0	116	2	3	0	6	0	122	4	2	0	285		0	0	5	0	0	0	0	0
16:15	0	0	1	0	10	0	8	0	0	0	6	0	4	0	121	2	4	0	5	0	104	2	0	0	267		1	2	4	0	0	0	0	0
16:30	0	0	2	0	5	0	4	0	1	0	2	0	6	0	124	0	6	0	8	0	106	1	3	0	268		0	0	1	0	1	0	0	1
16:45	0	0	2	0	13	0	4	0	1	0	6	0	5	0	133	2	8	0	8	0	110	0	0	0	292	1112	0	3	4	2	0	0	0	0
17:00	1	0	2	0	8	0	1	0	0	0	5	0	4	0	185	0	9	0	7	0	109	1	3	0	335	1162	1	1	0	1	0	0	0	0
17:15	0	0	2	0	9	0	2	0	6	0	7	0	5	0	138	0	11	0	7	0	125	1	1	0	314	1209	0	6	4	2	0	0	0	0
17:30	0	0	2	0	8	0	8	0	2	0	7	0	7	0	136	1	6	0	8	0	102	0	3	0	290	1231	0	3	3	1	0	0	0	0
17:45	1	0	3	0	2	0	6	0	1	0	4	0	6	0	94	0	10	0	2	0	117	0	0	0	246	1185	0	0	1	2	0	0	0	0
2 Hour Total	2	0	17	0	70	0	35	0	11	0	41	0	43	0	1047	7	57	0	51	0	895	9	12	0			2	15	22	8	1	0	0	1
	2		17		70		35		11		41		43		1054		57		51		904		12		2297									
Peak Hour Total	**1**	**0**	**8**	**0**	**38**	**0**	**15**	**0**	**9**	**0**	**25**	**0**	**21**	**0**	**592**	**3**	**34**	**0**	**30**	**0**	**446**	**2**	**7**	**0**			**1**	**13**	**11**	**6**	**0**	**0**	**0**	**0**
	1		**8**		**38**		**15**		**9**		**25**		**21**		**595**		**34**		**30**		**448**		**7**			**1231**								
6 Hour Total	**9**	**1**	**27**	**1**	**164**	**0**	**88**	**0**	**24**	**0**	**96**	**0**	**92**	**0**	**2008**	**35**	**96**	**0**	**109**	**0**	**2569**	**36**	**29**	**0**			**6**	**41**	**51**	**22**	**1**	**0**	**0**	**1**
	10		**28**		**164**		**88**		**24**		**96**		**92**		**2043**		**96**		**109**		**2605**		**29**			**5384**								

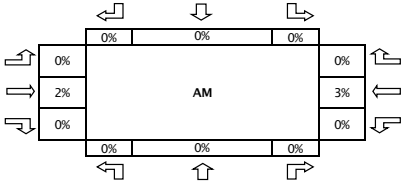
Peak Hour Volumes

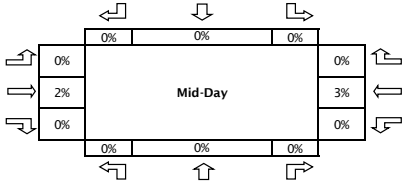


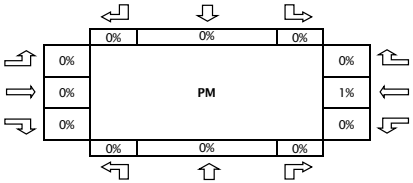




Heavy Vehicle Percentage







Intersection Turning Movement Count Summary: 25 Street SW & Richmond Road SW

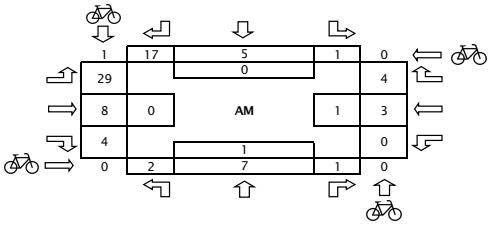
N/S Road: 25 Street SW
E/W Road: Richmond Road SW
Count Date: December 14, 2022 Wednesday
Weather: Coudy
Road Condition: partial snow covered
Project #: 02-22-0203

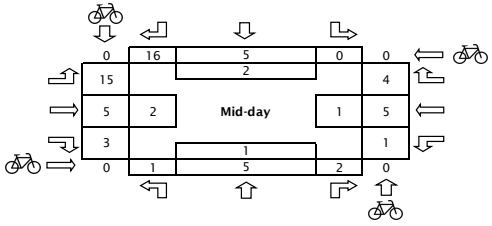
AM Peak Hour: 8:00 AM to 9:00 AM
Mid-day Peak Hour: 11:00 AM to 12:00 PM
PM Peak Hour: 4:00 PM to 5:00 PM

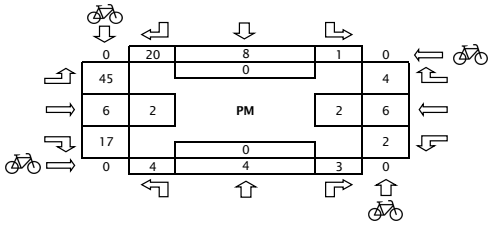
PHF (AM Peak Hour): 0.84
PHF (Mid-day Peak Hour): 0.86
PHF (PM Peak Hour): 0.81

	25 Street SW												Richmond Road 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		15 Min	Hourly	West Side	East Side	North Side	South Side	NB	SB	WB	EB
	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck										
7:00	0	0	3	0	0	1	0	0	0	0	2	0	0	0	1	0	1	0	1	0	3	0	0	0	12		0	0	0	0	0	0	0	1
7:15	3	0	3	0	0	0	1	0	1	0	3	0	0	0	0	0	1	1	4	0	1	0	0	0	18		0	0	0	0	0	0	0	1
7:30	0	0	1	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	5	0	0	0	0	0	9		0	0	0	0	0	0	0	0
7:45	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	9	0	1	0	1	0	14	53	0	0	0	0	0	0	0	0
8:00	0	0	1	0	0	0	0	0	2	0	5	0	0	0	2	0	3	0	8	0	2	0	1	0	24	65	0	0	0	1	0	0	0	0
8:15	0	0	4	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	10	0	2	0	1	0	20	67	0	0	0	0	0	1	0	0
8:30	1	0	0	0	1	0	0	0	1	0	7	0	0	0	1	0	0	0	7	0	2	0	1	0	21	79	0	1	0	0	0	0	0	0
8:45	1	0	2	0	0	0	1	0	1	0	3	0	0	0	0	0	1	0	4	0	2	0	1	0	16	81	0	0	0	0	0	0	0	0
2 Hour Total	6	0	14	0	1	1	3	0	6	0	25	0	0	0	4	0	7	1	48	0	13	0	5	0			0	1	0	1	0	1	0	2
		6		14		2		3		6		25		0		4		8		48		13		5	134									
Peak Hour Total	**2**	**0**	**7**	**0**	**1**	**0**	**1**	**0**	**5**	**0**	**17**	**0**	**0**	**0**	**3**	**0**	**4**	**0**	**29**	**0**	**8**	**0**	**4**	**0**			**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**
		2		**7**		**1**		**1**		**5**		**17**		**0**		**3**		**4**		**29**		**8**		**4**		**81**								
11:00	0	0	1	0	0	0	0	0	1	0	2	0	0	0	0	0	2	0	2	0	2	0	1	0	11		1	0	1	1	0	0	0	0
11:15	0	0	1	0	1	0	0	0	1	0	5	0	1	0	1	0	0	0	4	0	0	0	2	0	16		1	0	0	0	0	0	0	0
11:30	0	0	2	0	1	0	0	0	0	0	5	0	0	0	3	1	2	0	2	1	1	0	0	0	18		0	1	0	0	0	0	0	0
11:45	1	0	1	0	0	0	0	0	3	0	4	0	0	0	0	0	0	0	6	0	2	0	0	0	17	62	0	0	1	0	0	0	0	0
12:00	0	0	1	0	0	0	0	0	1	0	3	0	0	0	2	0	0	0	1	0	2	0	0	1	11	62	2	0	0	0	0	0	0	0
12:15	1	0	0	0	0	0	0	0	1	0	3	0	0	0	2	0	0	0	5	0	1	0	1	0	14	60	0	0	1	0	0	0	0	0
12:30	0	0	3	0	0	0	1	0	2	0	2	0	0	0	1	0	0	0	6	0	0	0	0	0	15	57	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	1	0	3	0	4	1	0	0	1	0	0	0	3	0	3	0	3	1	20	60	0	0	0	0	0	0	0	0
2 Hour Total	2	0	9	0	2	0	2	0	12	0	28	1	1	0	10	1	4	0	29	1	11	0	7	2			4	1	3	1	0	0	0	0
		2		9		2		2		12		29		1		11		4		30		11		9	122									
Peak Hour Total	**1**	**0**	**5**	**0**	**2**	**0**	**0**	**0**	**5**	**0**	**16**	**0**	**1**	**0**	**4**	**1**	**4**	**0**	**14**	**1**	**5**	**0**	**3**	**0**			**2**	**1**	**2**	**1**	**0**	**0**	**0**	**0**
		1		**5**		**2**		**0**		**5**		**16**		**1**		**5**		**4**		**15**		**5**		**3**		**62**								
16:00	3	0	2	0	0	0	0	0	3	0	5	0	0	0	1	0	2	0	16	0	3	0	2	0	37		2	0	0	0	0	0	0	0
16:15	0	0	1	0	0	0	0	0	1	0	3	0	0	0	4	0	1	0	8	0	1	0	7	1	27		0	0	0	0	0	0	0	0
16:30	0	0	0	0	1	0	1	0	1	0	7	0	1	0	0	0	1	0	6	0	1	0	3	0	22		0	0	0	0	0	0	0	0
16:45	1	0	1	0	2	0	0	0	3	0	5	0	1	0	1	0	0	0	15	0	1	0	4	0	34	120	0	2	0	0	0	0	0	0
17:00	0	0	1	0	0	0	1	0	1	0	4	0	0	0	3	0	1	0	8	0	2	0	2	0	23	106	0	0	0	1	0	0	0	0
17:15	1	0	0	0	0	0	0	0	4	0	7	0	0	0	1	0	1	0	9	0	1	0	3	0	27	106	0	0	0	0	0	0	0	0
17:30	2	0	2	0	0	0	1	0	4	0	7	0	0	0	0	0	1	0	8	0	0	0	2	0	27	111	0	0	0	0	0	1	0	0
17:45	0	0	2	0	1	0	2	0	2	0	3	0	1	0	1	0	0	0	4	0	0	0	2	0	18	95	0	0	0	0	0	1	0	0
2 Hour Total	7	0	9	0	4	0	5	0	19	0	41	0	3	0	11	0	7	0	74	0	9	0	25	1			2	2	0	1	0	2	0	0
		7		9		4		5		19		41		3		11		7		74		9		26	215									
Peak Hour Total	**4**	**0**	**4**	**0**	**3**	**0**	**1**	**0**	**8**	**0**	**20**	**0**	**2**	**0**	**6**	**0**	**4**	**0**	**45**	**0**	**6**	**0**	**16**	**1**			**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**
		4		**4**		**3**		**1**		**8**		**20**		**2**		**6**		**4**		**45**		**6**		**17**		**120**								
6 Hour Total	**15**	**0**	**32**	**0**	**7**	**1**	**10**	**0**	**37**	**0**	**94**	**1**	**4**	**0**	**25**	**1**	**18**	**1**	**151**	**1**	**33**	**0**	**37**	**3**			**6**	**4**	**3**	**3**	**0**	**3**	**0**	**2**
		15		**32**		**8**		**10**		**37**		**95**		**4**		**26**		**19**		**152**		**33**		**40**		**471**								

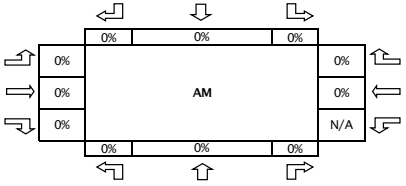
Peak Hour Volumes

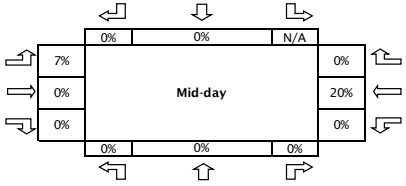


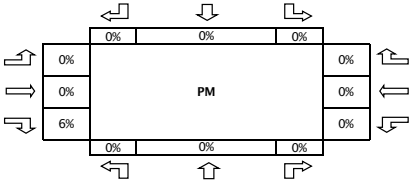




Heavy Vehicle Percentage







Intersection Turning Movement Count Summary: 25 Street SW & 30 Avenue SW

N/S Road: 25 Street SW
E/W Road: 30 Avenue SW
Count Date: December 14, 2022 Wednesday
Weather: Cloudy
Road Condition: Snow Covered
Project #: 02-22-0203

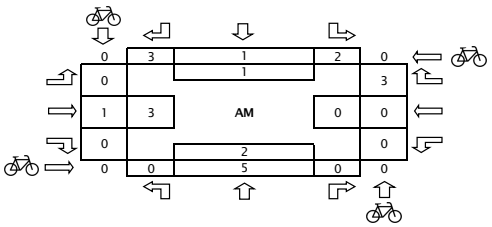
AM Peak Hour: 7:15 AM to 8:15 AM
Mid-day Peak Hour: 12:00 PM to 1:00 PM
PM Peak Hour: 4:00 PM to 5:00 PM

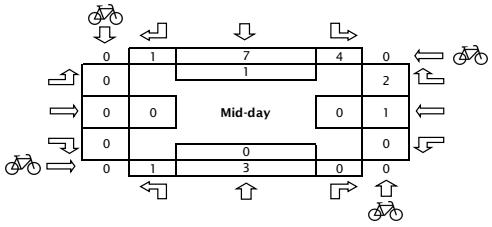
PHF (AM Peak Hour): 0.54
PHF (Mid-day Peak Hour): 0.68
PHF (PM Peak Hour): 0.69

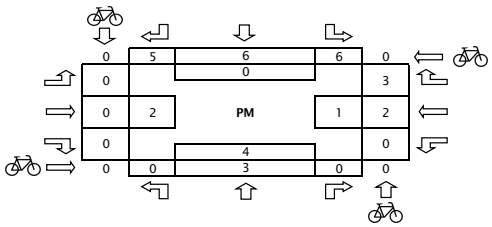
bunt & associates

	25 Street SW												30 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		15 Min	Hourly	West Side	East Side	North Side	South Side	NB	SB	WB	EB
	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck										
7:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3		0	0	0	0	0	0	0	0
7:15	0	0	4	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	7		2	0	0	0	0	0	0	0
7:30	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	3		0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	14	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	4	15	1	0	1	2	0	0	0	0
8:15	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	12	0	0	0	1	0	0	0	0
8:30	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	12	1	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	13	0	1	1	0	0	0	0	0
2 Hour Total	0	0	9	0	0	0	3	0	4	0	3	0	0	0	1	0	5	1	0	0	1	0	0	0			4	1	2	3	0	0	0	0
	0		9		0		3		4		3		0		1		6		0		1		0		27									
Peak Hour Total	**0**	**0**	**5**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**			**3**	**0**	**1**	**2**	**0**	**0**	**0**	**0**
	0		**5**		**0**		**2**		**1**		**3**		**0**		**0**		**3**		**0**		**1**		**0**		**15**									
11:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		0	1	1	0	0	0	0	0
11:15	0	0	1	0	0	0	2	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	6		0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	3		1	0	0	1	0	0	0	0
11:45	0	0	1	0	0	0	1	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	5	15	0	0	0	0	0	0	0	0
12:00	0	0	1	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	18	0	0	1	0	0	0	0	0
12:15	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	15	0	0	0	0	0	0	0	0
12:30	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	5	17	0	0	0	0	0	0	0	0
12:45	0	1	0	0	0	0	2	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	19	0	0	0	0	0	0	0	0
2 Hour Total	0	1	5	0	0	0	6	1	8	1	3	0	0	0	2	0	6	0	0	0	0	0	1	0			1	1	2	1	0	0	0	0
	1		5		0		7		9		3		0		2		6		0		0		1		34									
Peak Hour Total	**0**	**1**	**3**	**0**	**0**	**0**	**3**	**1**	**6**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
	1		**3**		**0**		**4**		**7**		**1**		**0**		**1**		**2**		**0**		**0**		**0**		**19**									
16:00	0	0	1	0	0	0	0	0	1	0	1	0	0	0	1	0	2	0	0	0	0	0	0	0	6		1	0	0	1	0	0	0	0
16:15	0	0	1	0	0	0	3	0	2	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	9		1	0	0	3	0	0	0	0
16:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2		0	0	0	0	0	0	0	0
16:45	0	0	1	0	0	0	2	0	3	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	8	25	0	1	0	0	0	0	0	0
17:00	0	0	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	23	1	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	18	0	0	1	0	0	0	0	0
17:30	0	0	2	0	0	0	1	0	2	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	9	25	0	0	1	1	0	0	0	0
17:45	0	0	0	0	0	0	1	0	3	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	7	24	0	0	0	0	0	0	0	0
2 Hour Total	0	0	6	0	0	0	10	0	16	0	8	1	0	0	2	0	6	0	0	0	0	0	0	0			3	1	2	5	0	0	0	0
	0		6		0		10		16		9		0		2		6		0		0		0		49									
Peak Hour Total	**0**	**0**	**3**	**0**	**0**	**0**	**6**	**0**	**6**	**0**	**4**	**1**	**0**	**0**	**2**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**2**	**1**	**0**	**4**	**0**	**0**	**0**	**0**
	0		**3**		**0**		**6**		**6**		**5**		**0**		**2**		**3**		**0**		**0**		**0**		**25**									
6 Hour Total	**0**	**1**	**20**	**0**	**0**	**0**	**19**	**1**	**28**	**1**	**14**	**1**	**0**	**0**	**5**	**0**	**17**	**1**	**0**	**0**	**1**	**0**	**1**	**0**			**8**	**3**	**6**	**9**	**0**	**0**	**0**	**0**
	1		**20**		**0**		**20**		**29**		**15**		**0**		**5**		**18**		**0**		**1**		**1**		**110**									

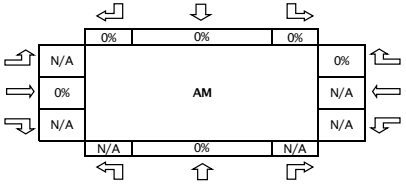
Peak Hour Volumes

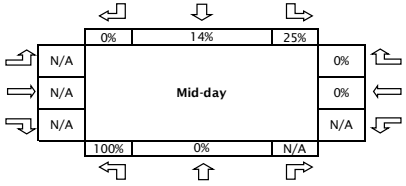


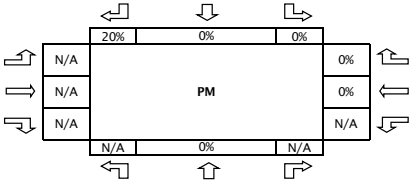




Heavy Vehicle Percentage

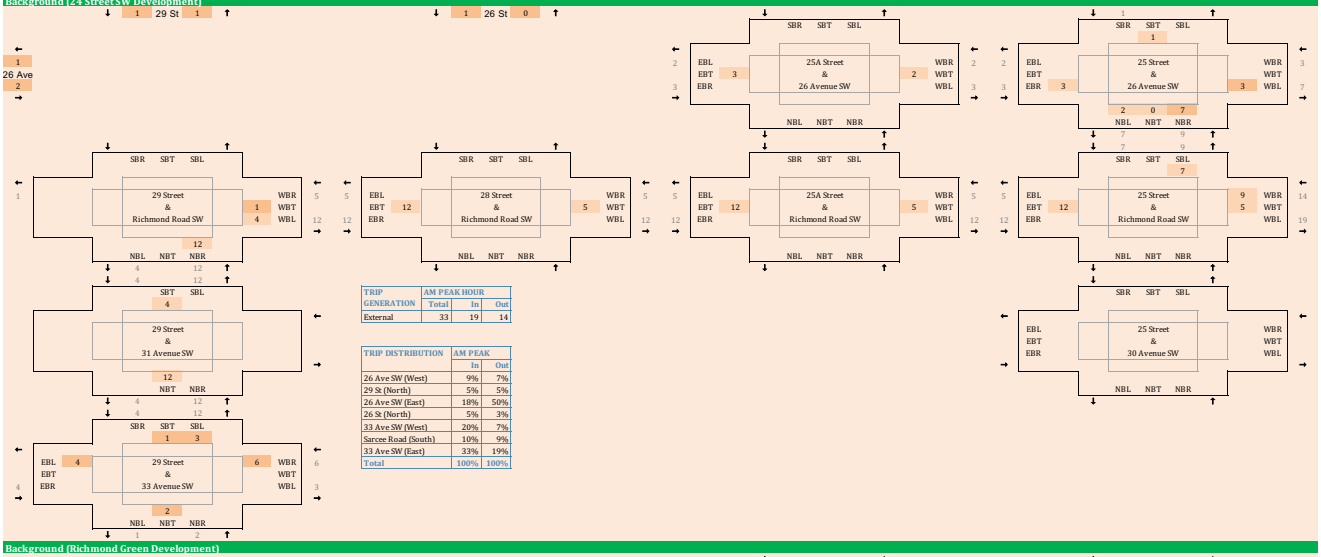






Viscount Bennett TIA
02-22-0203
AM Peak Hour

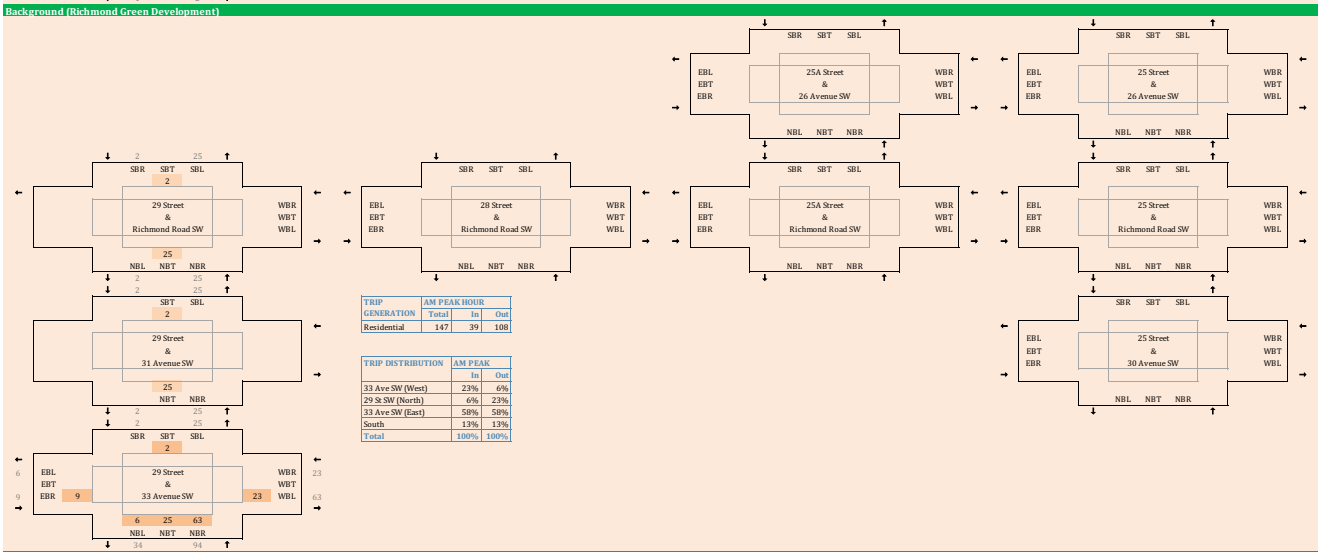
Background (24 Street SW Development)



TRIP GENERATION	AM PEAK HOUR Total	In	Out
External	33	19	14

TRIP DISTRIBUTION	AM PEAK In	Out
26 Ave SW (West)	9%	7%
29 St (North)	5%	5%
26 Ave SW (East)	18%	50%
26 St (North)	5%	3%
33 Ave SW (West)	20%	7%
Sarcee Road (South)	10%	9%
33 Ave SW (East)	33%	19%
Total	100%	100%

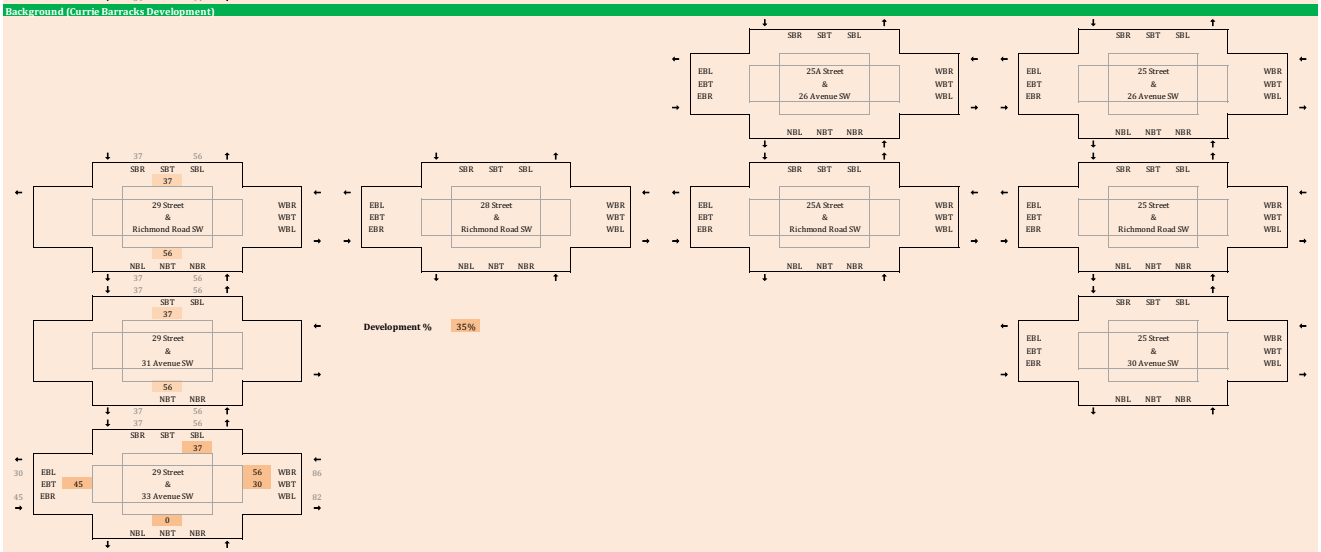
Background (Richmond Green Development)



TRIP GENERATION	AM PEAK HOUR Total	In	Out
Residential	147	39	108

TRIP DISTRIBUTION	AM PEAK In	Out
33 Ave SW (West)	23%	6%
29 St SW (North)	6%	23%
33 Ave SW (East)	58%	58%
South	13%	13%
Total	100%	100%

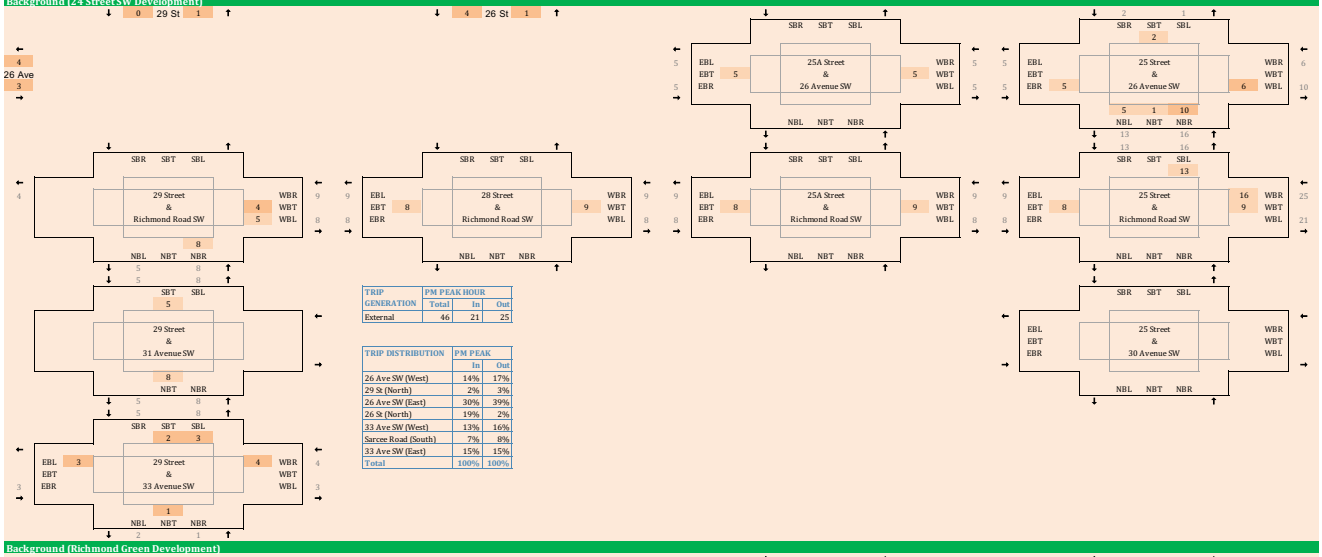
Background (Currie Barracks Development)



Development % 35%

Viscount Bennett TIA
02-22-0203
PM Peak Hour

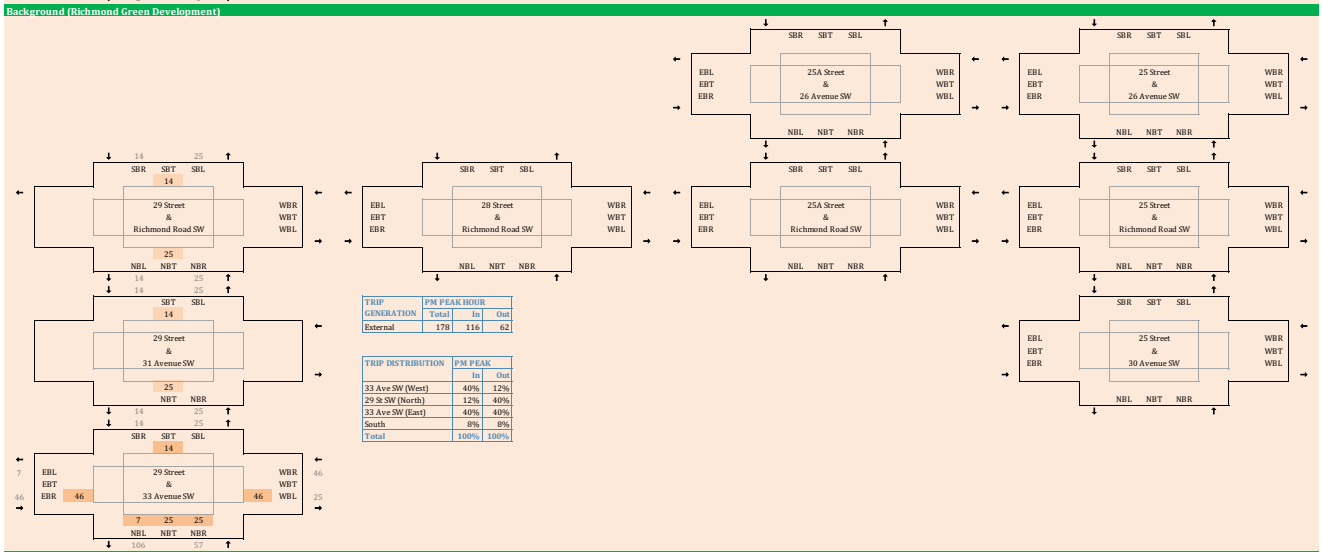
Background (24 Street SW Development)



TRIP GENERATION	PM PEAK HOUR Total	In	Out
External	46	21	25

TRIP DISTRIBUTION	PM PEAK In	Out
26 Ave SW (West)	14%	17%
29 St (North)	2%	3%
26 Ave SW (East)	30%	39%
26 St (North)	19%	2%
33 Ave SW (West)	13%	16%
Sarcee Road (South)	7%	8%
33 Ave SW (East)	15%	15%
Total	100%	100%

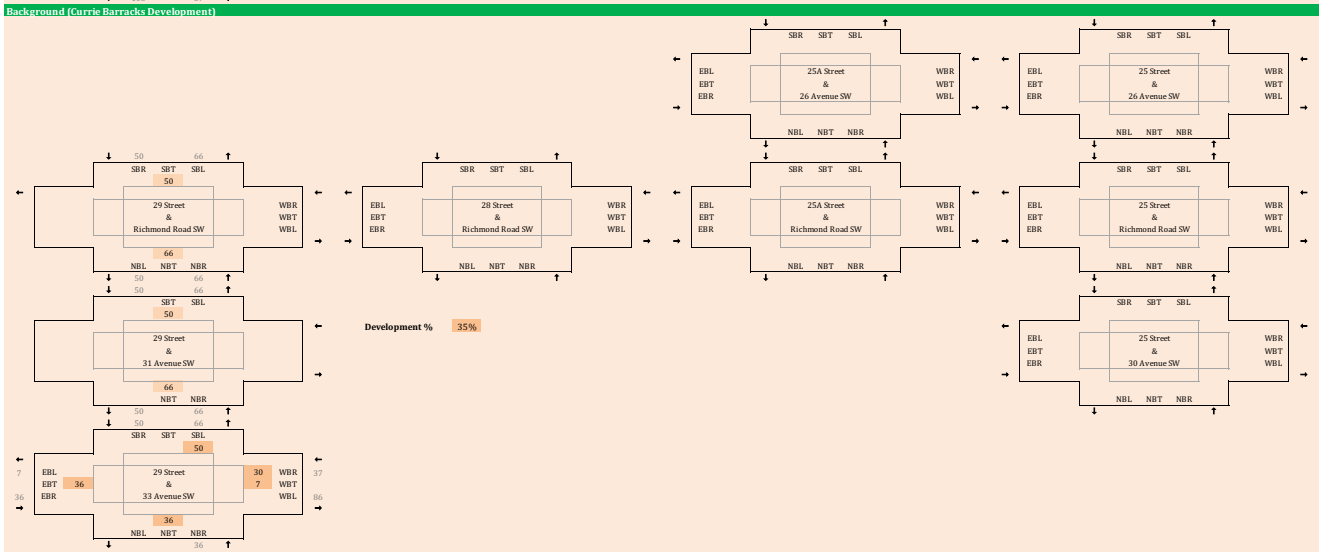
Background (Richmond Green Development)



TRIP GENERATION	PM PEAK HOUR Total	In	Out
External	178	116	62

TRIP DISTRIBUTION	PM PEAK In	Out
33 Ave SW (West)	40%	12%
29 St SW (North)	12%	40%
33 Ave SW (East)	40%	40%
South	8%	8%
Total	100%	100%

Background (Currie Barracks Development)



Development % 35%

APPENDIX B

Synchro & Sidra Reports

1: 29 St & Richmond Road SW AM Peak Hour
01/13/2023 Existing

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	48	35	25	5	274	83	7	299	39
Future Volume (Veh/h)	0	0	0	48	35	25	5	274	83	7	299	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	51	37	27	5	291	88	7	318	41
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.98	0.98		0.98	0.98	0.98				0.98		
vC, conflicting volume	793	792	388	748	768	385	384			404		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	777	775	388	730	751	359	384			379		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	83	88	96	100			99		
cM capacity (veh/h)	256	311	645	308	321	640	1174			1128		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	51	64	384	366
Volume Left	51	0	5	7
Volume Right	0	27	88	41
cSH	308	407	1174	1128
Volume to Capacity	0.17	0.16	0.00	0.01
Queue Length 95th (m)	4.4	4.2	0.1	0.1
Control Delay (s)	19.0	15.5	0.1	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	17.0		0.1	0.2
Approach LOS	C			

Intersection Summary					
Average Delay			2.4		
Intersection Capacity Utilization			39.3%	ICU Level of Service	A
Analysis Period (min)			15		

2: 29 St & 31 Ave SW AM Peak Hour
01/13/2023 Existing

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	350	30	5	343
Future Volume (Veh/h)	0	0	350	30	5	343
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)	0	0	372	32	5	365
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.93	0.93			0.93	
vC, conflicting volume	606	413			404	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	534	326			316	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	429	606			1149	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	404	127	243
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	1149	1700
Volume to Capacity	0.24	0.00	0.14
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.4	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.1	
Approach LOS			

Intersection Summary					
Average Delay			0.1		
Intersection Capacity Utilization			36.4%	ICU Level of Service	A
Analysis Period (min)			15		

4: 28 St /28 St & Richmond Road SW AM Peak Hour
01/13/2023 Existing



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	81	5	5	75	5	27	5	5	5	5	7
Future Volume (Veh/h)	5	81	5	5	75	5	27	5	5	5	5	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	86	5	5	80	5	29	5	5	5	5	7
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	110			116			250	244	138	248	244	132
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	110			116			250	244	138	248	244	132
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			95	99	99	99	99	99
cM capacity (veh/h)	1447			1440			637	625	870	641	625	877

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	96	90	39	17
Volume Left	5	5	29	5
Volume Right	5	5	5	7
cSH	1447	1440	658	715
Volume to Capacity	0.00	0.00	0.06	0.02
Queue Length 95th (m)	0.1	0.1	1.4	0.6
Control Delay (s)	0.4	0.4	10.8	10.2
Lane LOS	A	A	B	B
Approach Delay (s)	0.4	0.4	10.8	10.2
Approach LOS			B	B

Intersection Summary					
Average Delay	2.8				
Intersection Capacity Utilization	26.7%	ICU Level of Service		A	
Analysis Period (min)	15				

5: 25A St & Richmond Road SW AM Peak Hour
01/13/2023 Existing



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	40	5	5	17	6	5	5	5	5	5	6
Future Volume (Veh/h)	29	40	5	5	17	6	5	5	5	5	5	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	43	5	5	18	6	5	5	5	5	5	6
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	49			73			197	192	96	196	191	71
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	49			73			197	192	96	196	191	71
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	99	99	99	99
cM capacity (veh/h)	1523			1493			683	657	919	685	657	948

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	79	29	15	16
Volume Left	31	5	5	5
Volume Right	5	6	5	6
cSH	1523	1493	736	753
Volume to Capacity	0.02	0.00	0.02	0.02
Queue Length 95th (m)	0.5	0.1	0.5	0.5
Control Delay (s)	3.0	1.3	10.0	9.9
Lane LOS	A	A	A	A
Approach Delay (s)	3.0	1.3	10.0	9.9
Approach LOS			A	A

Intersection Summary					
Average Delay	4.2				
Intersection Capacity Utilization	26.7%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	610	5	5	341	5	5	5	23	7	5	13
Future Volume (Veh/h)	10	610	5	5	341	5	5	5	23	7	5	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	649	5	5	363	5	5	5	24	7	5	14
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	393			679			1116	1102	702	1126	1102	416
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	393			679			1116	1102	702	1126	1102	416
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			97	97	94	95	97	98
cM capacity (veh/h)	1140			893			162	199	419	154	199	609

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	665	373	34	26
Volume Left	11	5	5	7
Volume Right	5	5	24	14
cSH	1140	893	300	278
Volume to Capacity	0.01	0.01	0.11	0.09
Queue Length 95th (m)	0.2	0.1	2.9	2.3
Control Delay (s)	0.3	0.2	18.5	19.3
Lane LOS	A	A	C	C
Approach Delay (s)	0.3	0.2	18.5	19.3
Approach LOS			C	C

Intersection Summary					
Average Delay	1.3				
Intersection Capacity Utilization	55.0%	ICU Level of Service		B	
Analysis Period (min)	15				

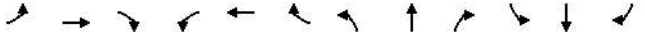
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	625	7	14	318	10	5	5	34	17	5	20
Future Volume (Veh/h)	15	625	7	14	318	10	5	5	34	17	5	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	16	665	7	15	338	11	5	5	36	18	5	21
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	374			697			1148	1130	718	1162	1128	394
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	374			697			1148	1130	718	1162	1128	394
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			97	97	91	87	97	97
cM capacity (veh/h)	1158			879			150	189	410	139	189	627

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	688	364	46	44
Volume Left	16	15	5	18
Volume Right	7	11	36	21
cSH	1158	879	312	232
Volume to Capacity	0.01	0.02	0.15	0.19
Queue Length 95th (m)	0.3	0.4	3.9	5.2
Control Delay (s)	0.4	0.6	18.5	24.1
Lane LOS	A	A	C	C
Approach Delay (s)	0.4	0.6	18.5	24.1
Approach LOS			C	C

Intersection Summary					
Average Delay	2.1				
Intersection Capacity Utilization	57.4%	ICU Level of Service		B	
Analysis Period (min)	15				

8: 25 St /25 St & Richmond Road SW — AM Peak Hour

01/13/2023 — Existing



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	8	5	5	5	5	5	7	5	5	5	17
Future Volume (Veh/h)	29	8	5	5	5	5	5	7	5	5	5	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	9	5	5	5	5	5	7	5	5	5	18
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	35			39			162	144	62	150	144	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	35			39			162	144	62	150	144	58
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	99	99	99	98
cM capacity (veh/h)	1541			1536			712	698	960	734	698	965

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	45	15	17	28
Volume Left	31	5	5	5
Volume Right	5	5	5	18
cSH	1541	1536	764	858
Volume to Capacity	0.02	0.00	0.02	0.03
Queue Length 95th (m)	0.5	0.1	0.5	0.8
Control Delay (s)	5.1	2.5	9.8	9.3
Lane LOS	A	A	A	A
Approach Delay (s)	5.1	2.5	9.8	9.3
Approach LOS			A	A

Intersection Summary					
Average Delay	6.6				
Intersection Capacity Utilization	24.7%	ICU Level of Service		A	
Analysis Period (min)	15				

9: 25 St & 30 Ave SW — AM Peak Hour

01/13/2023 — Existing



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	5	5	5	5	5	5	5	5	5	5
Future Volume (Veh/h)	5	5	5	5	5	5	5	5	5	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	5	5	5	5	5	5	5	5	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	35			35			92	88	58	92	88	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	35			35			92	88	58	92	88	58
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	99	99	99	99	99
cM capacity (veh/h)	1541			1541			812	763	965	812	763	965

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	15	15	15
Volume Left	5	5	5	5
Volume Right	5	5	5	5
cSH	1541	1541	838	838
Volume to Capacity	0.00	0.00	0.02	0.02
Queue Length 95th (m)	0.1	0.1	0.4	0.4
Control Delay (s)	2.5	2.5	9.4	9.4
Lane LOS	A	A	A	A
Approach Delay (s)	2.5	2.5	9.4	9.4
Approach LOS			A	A

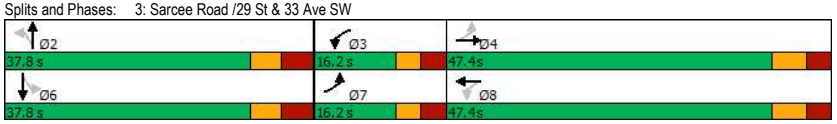
Intersection Summary					
Average Delay	5.9				
Intersection Capacity Utilization	24.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	655	30	98	323	189	21	105	142	232	111	5
Future Volume (vph)	86	655	30	98	323	189	21	105	142	232	111	5
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Storage Length (m)	45.0		0.0	85.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.97	1.00		0.98	0.97			0.98		0.98	1.00	
Frt		0.993			0.945			0.921			0.994	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3370	0	1704	3109	0	0	3053	0	1704	1780	0
Flt Permitted	0.409			0.275				0.924		0.577		
Satd. Flow (perm)	713	3370	0	484	3109	0	0	2828	0	1017	1780	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			137			151			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		72.7			16.7			68.8			45.9	
Travel Time (s)		5.2			1.2			5.0			3.3	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	91	697	32	104	344	201	22	112	151	247	118	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	729	0	104	545	0	0	285	0	247	123	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		37.8	37.8	
Total Split (s)	16.2	47.4		16.2	47.4		37.8	37.8		37.8	37.8	
Total Split (%)	16.0%	46.7%		16.0%	46.7%		37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	10.0	40.0		10.0	40.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.8	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		7.8	7.8	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		5	5		5	5	
Act Effct Green (s)	31.7	24.3		31.9	24.4			23.4		23.4	23.4	
Actuated g/C Ratio	0.43	0.33		0.43	0.33			0.31		0.31	0.31	
v/c Ratio	0.22	0.66		0.30	0.49			0.29		0.77	0.22	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	12.7	26.9		13.8	18.2			10.8		43.2	21.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	12.7	26.9		13.8	18.2			10.8		43.2	21.4	
LOS	B	C		B	B			B		D	C	
Approach Delay		25.3			17.5			10.8			35.9	
Approach LOS		C			B			B			D	
Queue Length 50th (m)	6.8	50.1		7.8	25.7			7.1		31.3	12.5	
Queue Length 95th (m)	15.2	75.8		17.0	44.2			18.0		#75.3	28.4	
Internal Link Dist (m)		48.7			0.1			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	455	1908		387	1817			1286		431	756	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.20	0.38		0.27	0.30			0.22		0.57	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 101.4			
Actuated Cycle Length: 74.5			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 22.8		Intersection LOS: C	
Intersection Capacity Utilization 88.0%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	51	70	11	5	391	148	8	248	68
Future Volume (Veh/h)	0	0	0	51	70	11	5	391	148	8	248	68
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	54	74	12	5	412	156	8	261	72
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.92	0.92		0.92	0.92	0.92				0.92		
vC, conflicting volume	912	941	347	863	899	540	358			593		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	860	891	347	806	846	455	358			512		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	79	72	98	100			99		
cM capacity (veh/h)	185	250	681	257	265	532	1201			946		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	54	86	573	341
Volume Left	54	0	5	8
Volume Right	0	12	156	72
cSH	257	285	1201	946
Volume to Capacity	0.21	0.30	0.00	0.01
Queue Length 95th (m)	5.9	9.4	0.1	0.2
Control Delay (s)	22.7	23.0	0.1	0.3
Lane LOS	C	C	A	A
Approach Delay (s)	22.9		0.1	0.3
Approach LOS	C			

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	49.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	590	66	14	267
Future Volume (Veh/h)	0	0	590	66	14	267
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)	0	0	621	69	15	281
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.87	0.87			0.87	
vC, conflicting volume	851	680			690	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	753	557			568	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			98	
cM capacity (veh/h)	289	403			869	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	690	109	187
Volume Left	0	15	0
Volume Right	69	0	0
cSH	1700	869	1700
Volume to Capacity	0.41	0.02	0.11
Queue Length 95th (m)	0.0	0.4	0.0
Control Delay (s)	0.0	1.4	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.5	
Approach LOS			

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	51.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	443	34	180	660	364	24	127	122	144	120	5
Future Volume (vph)	165	443	34	180	660	364	24	127	122	144	120	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99		0.97	0.97			0.98		0.98	1.00	
Frt		0.989			0.947			0.933			0.994	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3348	0	1704	3119	0	0	3105	0	1704	1780	0
Flt Permitted	0.133			0.460				0.913		0.576		
Satd. Flow (perm)	239	3348	0	800	3119	0	0	2841	0	1016	1780	0
Satd. Flow (RTOR)		9			122			128			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	174	466	36	189	695	383	25	134	128	152	126	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	502	0	189	1078	0	0	287	0	152	131	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		37.8	37.8	
Total Split (s)	16.2	47.4		16.2	47.4		37.8	37.8		37.8	37.8	
Total Split (%)	16.0%	46.7%		16.0%	46.7%		37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	10.0	40.0		10.0	40.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.8	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		7.8	7.8	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		5	5		5	5	
Act Effct Green (s)	41.5	30.9		40.7	30.5			18.0		18.0	18.0	
Actuated g/C Ratio	0.52	0.39		0.51	0.38			0.22		0.22	0.22	
v/c Ratio	0.59	0.39		0.37	0.85			0.39		0.67	0.33	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	21.4	19.0		11.0	28.3			16.4		44.8	29.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	21.4	19.0		11.0	28.3			16.4		44.8	29.0	
LOS	C	B		B	C			B		D	C	
Approach Delay		19.6			25.7			16.4			37.5	
Approach LOS		B			C			B			D	
Queue Length 50th (m)	10.5	27.1		11.5	68.6			10.5		21.3	16.5	
Queue Length 95th (m)	#37.1	48.8		28.3	116.2			22.7		44.8	34.2	
Internal Link Dist (m)		48.7			0.1			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	317	1743		538	1679			1185		395	694	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.55	0.29		0.35	0.64			0.24		0.38	0.19	

Intersection Summary		
Cycle Length: 101.4		
Actuated Cycle Length: 80.1		
Natural Cycle: 90		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.85		
Intersection Signal Delay: 24.3	Intersection LOS: C	
Intersection Capacity Utilization 101.2%	ICU Level of Service G	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	109	12	13	92	5	67	5	16	5	5	5
Future Volume (Veh/h)	5	109	12	13	92	5	67	5	16	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	115	13	14	97	5	71	5	17	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	127			153			316	312	172	328	316	150
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	127			153			316	312	172	328	316	150
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			88	99	98	99	99	99
cM capacity (veh/h)	1427			1396			575	569	834	556	566	858

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	133	116	93	15
Volume Left	5	14	71	5
Volume Right	13	5	17	5
cSH	1427	1396	609	634
Volume to Capacity	0.00	0.01	0.15	0.02
Queue Length 95th (m)	0.1	0.2	4.1	0.6
Control Delay (s)	0.3	1.0	12.0	10.8
Lane LOS	A	A	B	B
Approach Delay (s)	0.3	1.0	12.0	10.8
Approach LOS			B	B

Intersection Summary					
Average Delay	4.0				
Intersection Capacity Utilization	31.2%	ICU Level of Service		A	
Analysis Period (min)	15				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	47	5	5	26	5	5	5	5	5	5	25
Future Volume (Veh/h)	46	47	5	5	26	5	5	5	5	5	5	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	48	49	5	5	27	5	5	5	5	5	5	26
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	57			79			266	240	102	244	240	80
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	57			79			266	240	102	244	240	80
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			99	99	99	99	99	97
cM capacity (veh/h)	1513			1486			598	611	912	631	611	938

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	102	37	15	36
Volume Left	48	5	5	5
Volume Right	5	5	5	26
cSH	1513	1486	681	821
Volume to Capacity	0.03	0.00	0.02	0.04
Queue Length 95th (m)	0.7	0.1	0.5	1.0
Control Delay (s)	3.6	1.0	10.4	9.6
Lane LOS	A	A	B	A
Approach Delay (s)	3.6	1.0	10.4	9.6
Approach LOS			B	A

Intersection Summary					
Average Delay	4.8				
Intersection Capacity Utilization	28.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	454	8	12	612	11	5	5	34	5	5	16
Future Volume (Veh/h)	17	454	8	12	612	11	5	5	34	5	5	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	18	478	8	13	644	12	5	5	36	5	5	17
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	681			511			1264	1250	532	1282	1248	700
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	681			511			1264	1250	532	1282	1248	700
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			96	97	93	96	97	96
cM capacity (veh/h)	891			1031			124	160	524	116	160	420

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	504	669	46	27
Volume Left	18	13	5	5
Volume Right	8	12	36	17
cSH	891	1031	327	236
Volume to Capacity	0.02	0.01	0.14	0.11
Queue Length 95th (m)	0.5	0.3	3.7	2.9
Control Delay (s)	0.6	0.3	17.8	22.2
Lane LOS	A	A	C	C
Approach Delay (s)	0.6	0.3	17.8	22.2
Approach LOS			C	C

Intersection Summary					
Average Delay	1.6				
Intersection Capacity Utilization	55.0%	ICU Level of Service		B	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	448	7	21	595	34	5	8	38	15	9	25
Future Volume (Veh/h)	30	448	7	21	595	34	5	8	38	15	9	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	32	472	7	22	626	36	5	8	40	16	9	26
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	687			504			1308	1296	526	1322	1281	694
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	687			504			1308	1296	526	1322	1281	694
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			98			95	95	92	85	94	94
cM capacity (veh/h)	887			1037			108	146	528	105	149	423

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	511	684	53	51
Volume Left	32	22	5	16
Volume Right	7	36	40	26
cSH	887	1037	300	186
Volume to Capacity	0.04	0.02	0.18	0.27
Queue Length 95th (m)	0.9	0.5	4.8	8.1
Control Delay (s)	1.0	0.6	19.6	31.5
Lane LOS	A	A	C	D
Approach Delay (s)	1.0	0.6	19.6	31.5
Approach LOS			C	D

Intersection Summary					
Average Delay	2.7				
Intersection Capacity Utilization	58.3%	ICU Level of Service		B	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	6	17	5	6	5	5	5	5	5	8	20
Future Volume (Veh/h)	45	6	17	5	6	5	5	5	5	5	8	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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	6	18	5	6	5	5	5	5	5	8	21
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	36			49			202	180	65	185	186	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	36			49			202	180	65	185	186	58
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			99	99	99	99	99	98
cM capacity (veh/h)	1540			1523			660	660	955	691	654	963

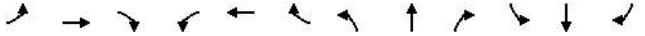
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	71	16	15	34
Volume Left	47	5	5	5
Volume Right	18	5	5	21
cSH	1540	1523	736	824
Volume to Capacity	0.03	0.00	0.02	0.04
Queue Length 95th (m)	0.7	0.1	0.5	1.0
Control Delay (s)	5.0	2.3	10.0	9.6
Lane LOS	A	A	A	A
Approach Delay (s)	5.0	2.3	10.0	9.6
Approach LOS			A	A

Intersection Summary					
Average Delay	6.4				
Intersection Capacity Utilization	24.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	5	5	5	5	5	5	5	5	6	6
Future Volume (Veh/h)	5	5	5	5	5	5	5	5	5	5	6	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	5	5	5	5	5	5	5	5	5	6	6
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	94	89	59	94	90	58	37			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	94	89	59	94	90	58	37			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	99	99	99	100			100		
cM capacity (veh/h)	810	761	963	810	761	965	1539			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	15	15	17
Volume Left	5	5	5	5
Volume Right	5	5	5	6
cSH	836	836	1539	1541
Volume to Capacity	0.02	0.02	0.00	0.00
Queue Length 95th (m)	0.4	0.4	0.1	0.1
Control Delay (s)	9.4	9.4	2.5	2.2
Lane LOS	A	A	A	A
Approach Delay (s)	9.4	9.4	2.5	2.2
Approach LOS	A	A		

Intersection Summary					
Average Delay	5.7				
Intersection Capacity Utilization	24.6%	ICU Level of Service		A	
Analysis Period (min)	15				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	52	36	25	5	355	95	7	338	39
Future Volume (Veh/h)	0	0	0	52	36	25	5	355	95	7	338	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	55	38	27	5	378	101	7	360	41
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.96	0.96		0.96	0.96	0.96				0.96		
vC, conflicting volume	929	934	430	883	904	478	426			504		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	907	912	430	860	881	440	426			466		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	78	86	95	100			99		
cM capacity (veh/h)	200	255	611	248	266	569	1133			1032		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	55	65	484	408
Volume Left	55	0	5	7
Volume Right	0	27	101	41
cSH	248	341	1133	1032
Volume to Capacity	0.22	0.19	0.00	0.01
Queue Length 95th (m)	6.3	5.3	0.1	0.2
Control Delay (s)	23.6	18.0	0.1	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	20.6		0.1	0.2
Approach LOS	C			

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	44.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	443	30	5	386
Future Volume (Veh/h)	0	0	443	30	5	386
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)	0	0	471	32	5	411
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.90	0.90			0.90	
vC, conflicting volume	728	512			503	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	645	406			396	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	356	525			1047	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	503	142	274
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	1047	1700
Volume to Capacity	0.30	0.00	0.16
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.1	
Approach LOS			

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	41.5%	ICU Level of Service	A	
Analysis Period (min)	15			

4: 28 St /28 St & Richmond Road SW AM Peak Hour
01/13/2023 Background

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	93	5	5	80	5	27	5	5	5	5	7
Future Volume (Veh/h)	5	93	5	5	80	5	27	5	5	5	5	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	99	5	5	85	5	29	5	5	5	5	7
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	115			129			268	262	152	266	262	138
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	115			129			268	262	152	266	262	138
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			95	99	99	99	99	99
cM capacity (veh/h)	1441			1425			620	611	856	623	611	871

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	109	95	39	17
Volume Left	5	5	29	5
Volume Right	5	5	5	7
cSH	1441	1425	642	701
Volume to Capacity	0.00	0.00	0.06	0.02
Queue Length 95th (m)	0.1	0.1	1.5	0.6
Control Delay (s)	0.4	0.4	11.0	10.3
Lane LOS	A	A	B	B
Approach Delay (s)	0.4	0.4	11.0	10.3
Approach LOS			B	B

Intersection Summary					
Average Delay	2.6				
Intersection Capacity Utilization	27.0%	ICU Level of Service		A	
Analysis Period (min)	15				

5: 25A St & Richmond Road SW AM Peak Hour
01/13/2023 Background

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	52	5	5	22	6	5	5	5	5	5	6
Future Volume (Veh/h)	29	52	5	5	22	6	5	5	5	5	5	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	55	5	5	23	6	5	5	5	5	5	6
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	54			85			214	208	108	213	208	76
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	54			85			214	208	108	213	208	76
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	99	99	99	99
cM capacity (veh/h)	1517			1478			666	643	905	668	643	942

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	91	34	15	16
Volume Left	31	5	5	5
Volume Right	5	6	5	6
cSH	1517	1478	721	740
Volume to Capacity	0.02	0.00	0.02	0.02
Queue Length 95th (m)	0.5	0.1	0.5	0.5
Control Delay (s)	2.6	1.1	10.1	10.0
Lane LOS	A	A	B	A
Approach Delay (s)	2.6	1.1	10.1	10.0
Approach LOS			B	A

Intersection Summary					
Average Delay	3.8				
Intersection Capacity Utilization	27.2%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	613	5	5	343	5	5	5	23	7	5	13
Future Volume (Veh/h)	10	613	5	5	343	5	5	5	23	7	5	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	652	5	5	365	5	5	5	24	7	5	14
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	395			682			1120	1106	704	1130	1106	418
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	395			682			1120	1106	704	1130	1106	418
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			97	97	94	95	97	98
cM capacity (veh/h)	1138			891			161	198	418	153	198	608

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	668	375	34	26
Volume Left	11	5	5	7
Volume Right	5	5	24	14
cSH	1138	891	299	276
Volume to Capacity	0.01	0.01	0.11	0.09
Queue Length 95th (m)	0.2	0.1	2.9	2.3
Control Delay (s)	0.3	0.2	18.6	19.4
Lane LOS	A	A	C	C
Approach Delay (s)	0.3	0.2	18.6	19.4
Approach LOS			C	C

Intersection Summary					
Average Delay	1.3				
Intersection Capacity Utilization	55.2%	ICU Level of Service		B	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	625	10	17	318	10	5	5	41	17	5	20
Future Volume (Veh/h)	15	625	10	17	318	10	5	5	41	17	5	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	16	665	11	18	338	11	5	5	44	18	5	21
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	374			701			1156	1138	720	1178	1138	394
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	374			701			1156	1138	720	1178	1138	394
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			97	97	89	86	97	97
cM capacity (veh/h)	1158			876			148	186	409	132	186	627

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	692	367	54	44
Volume Left	16	18	5	18
Volume Right	11	11	44	21
cSH	1158	876	321	224
Volume to Capacity	0.01	0.02	0.17	0.20
Queue Length 95th (m)	0.3	0.5	4.5	5.4
Control Delay (s)	0.4	0.7	18.5	25.0
Lane LOS	A	A	C	D
Approach Delay (s)	0.4	0.7	18.5	25.0
Approach LOS			C	D

Intersection Summary					
Average Delay	2.2				
Intersection Capacity Utilization	57.2%	ICU Level of Service		B	
Analysis Period (min)	15				

8: 25 St /25 St & Richmond Road SW AM Peak Hour
01/13/2023 Background

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	20	5	5	8	13	5	7	5	8	5	17
Future Volume (Veh/h)	29	20	5	5	8	13	5	7	5	8	5	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	21	5	5	9	14	5	7	5	9	5	18
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	48			51			182	168	74	170	164	66
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	48			51			182	168	74	170	164	66
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	99	99	99	98
cM capacity (veh/h)	1525			1521			690	676	945	711	680	954

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	57	28	17	32
Volume Left	31	5	5	9
Volume Right	5	14	5	18
cSH	1525	1521	743	823
Volume to Capacity	0.02	0.00	0.02	0.04
Queue Length 95th (m)	0.5	0.1	0.5	0.9
Control Delay (s)	4.1	1.3	10.0	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	4.1	1.3	10.0	9.5
Approach LOS			A	A

Intersection Summary					
Average Delay	5.6				
Intersection Capacity Utilization	24.8%	ICU Level of Service		A	
Analysis Period (min)	15				

9: 25 St & 30 Ave SW AM Peak Hour
01/13/2023 Background

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	5	5	5	5	5	5	5	5	5	5
Future Volume (Veh/h)	5	5	5	5	5	5	5	5	5	5	5	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	5	5	5	5	5	5	5	5	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	92	88	58	92	88	58	35			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92	88	58	92	88	58	35			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	99	99	99	100			100		
cM capacity (veh/h)	812	763	965	812	763	965	1541			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	15	15	15
Volume Left	5	5	5	5
Volume Right	5	5	5	5
cSH	838	838	1541	1541
Volume to Capacity	0.02	0.02	0.00	0.00
Queue Length 95th (m)	0.4	0.4	0.1	0.1
Control Delay (s)	9.4	9.4	2.5	2.5
Lane LOS	A	A	A	A
Approach Delay (s)	9.4	9.4	2.5	2.5
Approach LOS	A	A		

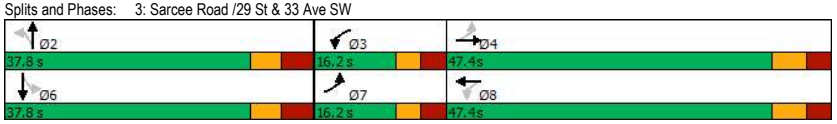
Intersection Summary					
Average Delay	5.9				
Intersection Capacity Utilization	24.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	700	39	121	353	251	27	132	204	272	114	5
Future Volume (vph)	90	700	39	121	353	251	27	132	204	272	114	5
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Storage Length (m)	45.0		0.0	85.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98	1.00		0.98	0.96			0.97		0.99	1.00	
Frt		0.992			0.938			0.916			0.994	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3364	0	1704	3072	0	0	3032	0	1704	1780	0
Flt Permitted	0.347			0.198				0.923		0.523		
Satd. Flow (perm)	608	3364	0	349	3072	0	0	2805	0	924	1780	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			209			217			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		72.7			16.7			68.8			45.9	
Travel Time (s)		5.2			1.2			5.0			3.3	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	96	745	41	129	376	267	29	140	217	289	121	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	786	0	129	643	0	0	386	0	289	126	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		37.8	37.8	
Total Split (s)	16.2	47.4		16.2	47.4		37.8	37.8		37.8	37.8	
Total Split (%)	16.0%	46.7%		16.0%	46.7%		37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	10.0	40.0		10.0	40.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.8	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		7.8	7.8	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		5	5		5	5	
Act Effct Green (s)	34.5	25.2		37.1	28.7			30.2		30.2	30.2	
Actuated g/C Ratio	0.40	0.29		0.43	0.34			0.35		0.35	0.35	
v/c Ratio	0.28	0.79		0.45	0.55			0.34		0.89	0.20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	14.1	33.9		17.4	17.8			10.3		58.8	21.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	14.1	33.9		17.4	17.8			10.3		58.8	21.7	
LOS	B	C		B	B			B		E	C	
Approach Delay		31.7			17.7			10.3			47.5	
Approach LOS		C			B			B			D	
Queue Length 50th (m)	8.2	61.3		11.2	30.6			9.7		43.2	13.7	
Queue Length 95th (m)	15.7	82.6		20.3	48.4			23.0		#103.0	30.1	
Internal Link Dist (m)		48.7			0.1			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	387	1583		312	1553			1128		325	628	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.25	0.50		0.41	0.41			0.34		0.89	0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 101.4			
Actuated Cycle Length: 85.6			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 26.6		Intersection LOS: C	
Intersection Capacity Utilization 93.0%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	56	74	11	5	482	156	8	312	68
Future Volume (Veh/h)	0	0	0	56	74	11	5	482	156	8	312	68
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	59	78	12	5	507	164	8	328	72
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.87	0.87		0.87	0.87	0.87				0.87		
vC, conflicting volume	1080	1111	414	1029	1065	639	425			696		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1015	1051	414	956	998	506	425			572		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	69	62	97	100			99		
cM capacity (veh/h)	122	190	624	191	204	469	1134			848		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	59	90	676	408
Volume Left	59	0	5	8
Volume Right	0	12	164	72
cSH	191	220	1134	848
Volume to Capacity	0.31	0.41	0.00	0.01
Queue Length 95th (m)	9.4	14.1	0.1	0.2
Control Delay (s)	32.0	32.2	0.1	0.3
Lane LOS	D	D	A	A
Approach Delay (s)	32.1		0.1	0.3
Approach LOS	D			

Intersection Summary				
Average Delay	4.0			
Intersection Capacity Utilization	55.4%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	689	66	14	336
Future Volume (Veh/h)	0	0	689	66	14	336
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)	0	0	725	69	15	354
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.84	0.84			0.84	
vC, conflicting volume	992	784			794	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	892	644			656	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			98	
cM capacity (veh/h)	226	340			776	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	794	133	236
Volume Left	0	15	0
Volume Right	69	0	0
cSH	1700	776	1700
Volume to Capacity	0.47	0.02	0.14
Queue Length 95th (m)	0.0	0.4	0.0
Control Delay (s)	0.0	1.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.5	
Approach LOS			

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	57.0%	ICU Level of Service	B	
Analysis Period (min)	15			

4: 28 St /28 St & Richmond Road SW PM Peak Hour
01/13/2023 Background

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	117	12	13	101	5	67	5	16	5	5	5
Future Volume (Veh/h)	5	117	12	13	101	5	67	5	16	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	123	13	14	106	5	71	5	17	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	136			161			334	328	180	346	332	158
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	136			161			334	328	180	346	332	158
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			87	99	98	99	99	99
cM capacity (veh/h)	1416			1387			560	557	826	542	554	848

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	141	125	93	15
Volume Left	5	14	71	5
Volume Right	13	5	17	5
cSH	1416	1387	595	621
Volume to Capacity	0.00	0.01	0.16	0.02
Queue Length 95th (m)	0.1	0.2	4.2	0.6
Control Delay (s)	0.3	0.9	12.2	10.9
Lane LOS	A	A	B	B
Approach Delay (s)	0.3	0.9	12.2	10.9
Approach LOS			B	B

Intersection Summary					
Average Delay	3.9				
Intersection Capacity Utilization	31.5%	ICU Level of Service		A	
Analysis Period (min)	15				

5: 25A St & Richmond Road SW PM Peak Hour
01/13/2023 Background

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	55	5	5	35	5	5	5	5	5	5	25
Future Volume (Veh/h)	46	55	5	5	35	5	5	5	5	5	5	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	48	58	5	5	37	5	5	5	5	5	5	26
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	67			88			284	258	110	264	258	90
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	67			88			284	258	110	264	258	90
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			99	99	99	99	99	97
cM capacity (veh/h)	1501			1474			580	596	902	613	596	926

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	111	47	15	36
Volume Left	48	5	5	5
Volume Right	5	5	5	26
cSH	1501	1474	665	807
Volume to Capacity	0.03	0.00	0.02	0.04
Queue Length 95th (m)	0.8	0.1	0.5	1.1
Control Delay (s)	3.4	0.8	10.5	9.7
Lane LOS	A	A	B	A
Approach Delay (s)	3.4	0.8	10.5	9.7
Approach LOS			B	A

Intersection Summary					
Average Delay	4.4				
Intersection Capacity Utilization	29.0%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	459	8	12	617	11	5	5	34	5	5	16
Future Volume (Veh/h)	17	459	8	12	617	11	5	5	34	5	5	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	18	483	8	13	649	12	5	5	36	5	5	17
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	686			516			1274	1260	537	1292	1258	705
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	686			516			1274	1260	537	1292	1258	705
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			96	97	93	96	97	96
cM capacity (veh/h)	888			1027			122	158	520	115	158	417

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	509	674	46	27
Volume Left	18	13	5	5
Volume Right	8	12	36	17
cSH	888	1027	324	233
Volume to Capacity	0.02	0.01	0.14	0.12
Queue Length 95th (m)	0.5	0.3	3.7	2.9
Control Delay (s)	0.6	0.3	17.9	22.5
Lane LOS	A	A	C	C
Approach Delay (s)	0.6	0.3	17.9	22.5
Approach LOS			C	C

Intersection Summary					
Average Delay	1.6				
Intersection Capacity Utilization	55.3%	ICU Level of Service		B	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	448	12	27	595	34	6	9	48	15	11	25
Future Volume (Veh/h)	30	448	12	27	595	34	6	9	48	15	11	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	32	472	13	28	626	36	6	9	51	16	12	26
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	687			510			1324	1310	528	1348	1299	694
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	687			510			1324	1310	528	1348	1299	694
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			97			94	94	90	84	92	94
cM capacity (veh/h)	887			1032			103	142	526	97	145	423

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	517	690	66	54
Volume Left	32	28	6	16
Volume Right	13	36	51	26
cSH	887	1032	302	175
Volume to Capacity	0.04	0.03	0.22	0.31
Queue Length 95th (m)	0.9	0.6	6.2	9.4
Control Delay (s)	1.0	0.7	20.2	34.6
Lane LOS	A	A	C	D
Approach Delay (s)	1.0	0.7	20.2	34.6
Approach LOS			C	D

Intersection Summary					
Average Delay	3.2				
Intersection Capacity Utilization	60.2%	ICU Level of Service		B	
Analysis Period (min)	15				

8: 25 St /25 St & Richmond Road SW PM Peak Hour
01/13/2023 Background

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	14	17	5	15	20	5	5	5	14	8	20
Future Volume (Veh/h)	45	14	17	5	15	20	5	5	5	14	8	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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	15	18	5	16	21	5	5	5	15	8	21
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	62			58			230	215	74	212	214	76
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	62			58			230	215	74	212	214	76
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			99	99	99	98	99	98
cM capacity (veh/h)	1507			1512			633	630	945	663	632	942

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	80	42	15	44
Volume Left	47	5	5	15
Volume Right	18	21	5	21
cSH	1507	1512	710	764
Volume to Capacity	0.03	0.00	0.02	0.06
Queue Length 95th (m)	0.7	0.1	0.5	1.4
Control Delay (s)	4.5	0.9	10.2	10.0
Lane LOS	A	A	B	A
Approach Delay (s)	4.5	0.9	10.2	10.0
Approach LOS			B	A

Intersection Summary					
Average Delay	5.5				
Intersection Capacity Utilization	27.2%	ICU Level of Service		A	
Analysis Period (min)	15				

9: 25 St & 30 Ave SW PM Peak Hour
01/13/2023 Background

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	5	5	5	5	5	5	5	6	6	5
Future Volume (Veh/h)	5	5	5	5	5	5	5	5	5	6	6	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	5	5	5	5	5	5	5	5	6	6	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	96	90	58	96	90	58	36			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	96	90	58	96	90	58	36			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	99	99	99	100			100		
cM capacity (veh/h)	808	759	963	808	759	965	1540			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	15	15	17
Volume Left	5	5	5	6
Volume Right	5	5	5	5
cSH	835	835	1540	1541
Volume to Capacity	0.02	0.02	0.00	0.00
Queue Length 95th (m)	0.4	0.4	0.1	0.1
Control Delay (s)	9.4	9.4	2.5	2.6
Lane LOS	A	A	A	A
Approach Delay (s)	9.4	9.4	2.5	2.6
Approach LOS	A	A		

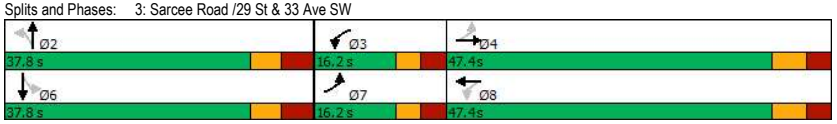
Intersection Summary					
Average Delay	5.9				
Intersection Capacity Utilization	24.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	479	80	226	667	398	31	189	147	197	136	5
Future Volume (vph)	168	479	80	226	667	398	31	189	147	197	136	5
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Storage Length (m)	45.0		0.0	85.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99		0.97	0.96			0.98		0.99	1.00	
Frt		0.979			0.944			0.940			0.995	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3291	0	1704	3104	0	0	3134	0	1704	1782	0
Flt Permitted	0.117			0.378				0.912		0.513		
Satd. Flow (perm)	210	3291	0	661	3104	0	0	2865	0	907	1782	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			144			155			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		72.7			16.7			68.8			45.9	
Travel Time (s)		5.2			1.2			5.0			3.3	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	177	504	84	238	702	419	33	199	155	207	143	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	177	588	0	238	1121	0	0	387	0	207	148	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		37.8	37.8	
Total Split (s)	16.2	47.4		16.2	47.4		37.8	37.8		37.8	37.8	
Total Split (%)	16.0%	46.7%		16.0%	46.7%		37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	10.0	40.0		10.0	40.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.8	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		7.8	7.8	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		5	5		5	5	
Act Effct Green (s)	45.0	34.1		44.8	34.1			24.9		24.9	24.9	
Actuated g/C Ratio	0.50	0.38		0.49	0.38			0.27		0.27	0.27	
v/c Ratio	0.68	0.47		0.55	0.89			0.43		0.83	0.30	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	30.3	22.3		16.3	33.7			17.7		59.9	28.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	30.3	22.3		16.3	33.7			17.7		59.9	28.4	
LOS	C	C		B	C			B		E	C	
Approach Delay		24.2			30.6			17.7			46.8	
Approach LOS		C			C			B			D	
Queue Length 50th (m)	15.8	42.1		22.1	92.4			17.9		36.3	21.5	
Queue Length 95th (m)	#43.4	57.1		35.4	121.5			31.3		#73.6	38.0	
Internal Link Dist (m)		48.7			0.1			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	275	1507		450	1488			1078		309	608	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.64	0.39		0.53	0.75			0.36		0.67	0.24	

Intersection Summary			
Area Type:	Other		
Cycle Length: 101.4			
Actuated Cycle Length: 90.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 29.2		Intersection LOS: C	
Intersection Capacity Utilization 105.2%		ICU Level of Service G	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	141	58	25	5	355	162	7	338	39
Future Volume (Veh/h)	0	0	0	141	58	25	5	355	162	7	338	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	150	62	27	5	378	172	7	360	41
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.92	0.92		0.92	0.92	0.92				0.92		
vC, conflicting volume	976	1004	430	918	939	514	426			575		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	931	962	430	868	891	429	426			495		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	36	75	95	100			99		
cM capacity (veh/h)	167	228	611	234	251	551	1133			962		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	150	89	555	408
Volume Left	150	0	5	7
Volume Right	0	27	172	41
cSH	234	300	1133	962
Volume to Capacity	0.64	0.30	0.00	0.01
Queue Length 95th (m)	29.7	9.2	0.1	0.2
Control Delay (s)	44.4	22.0	0.1	0.2
Lane LOS	E	C	A	A
Approach Delay (s)	36.0		0.1	0.2
Approach LOS	E			

Intersection Summary				
Average Delay	7.3			
Intersection Capacity Utilization	49.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	510	30	5	475
Future Volume (Veh/h)	0	0	510	30	5	475
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)	0	0	543	32	5	505
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.88	0.88			0.88	
vC, conflicting volume	846	584			575	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	759	462			452	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	294	472			975	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	575	173	337
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	975	1700
Volume to Capacity	0.34	0.01	0.20
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.1	
Approach LOS			

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	45.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	160	5	5	191	5	27	5	5	5	5	7
Future Volume (Veh/h)	5	160	5	5	191	5	27	5	5	5	5	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	170	5	5	203	5	29	5	5	5	5	7
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	233			200			458	450	222	456	450	256
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	233			200			458	450	222	456	450	256
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			94	99	99	99	99	99
cM capacity (veh/h)	1305			1342			464	478	781	467	478	749

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	180	213	39	17
Volume Left	5	5	29	5
Volume Right	5	5	5	7
cSH	1305	1342	491	557
Volume to Capacity	0.00	0.00	0.08	0.03
Queue Length 95th (m)	0.1	0.1	2.0	0.7
Control Delay (s)	0.2	0.2	13.0	11.7
Lane LOS	A	A	B	B
Approach Delay (s)	0.2	0.2	13.0	11.7
Approach LOS			B	B

Intersection Summary					
Average Delay	1.8				
Intersection Capacity Utilization	29.5%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	116	5	5	127	6	7	6	5	5	5	6
Future Volume (Veh/h)	29	116	5	5	127	6	7	6	5	5	5	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	123	5	5	135	6	7	6	5	5	5	6
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	166			153			394	388	176	394	388	188
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	166			153			394	388	176	394	388	188
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	99	99	99	99
cM capacity (veh/h)	1381			1396			505	509	830	505	509	817

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	159	146	18	16
Volume Left	31	5	7	5
Volume Right	5	6	5	6
cSH	1381	1396	568	591
Volume to Capacity	0.02	0.00	0.03	0.03
Queue Length 95th (m)	0.5	0.1	0.7	0.6
Control Delay (s)	1.6	0.3	11.5	11.3
Lane LOS	A	A	B	B
Approach Delay (s)	1.6	0.3	11.5	11.3
Approach LOS			B	B

Intersection Summary					
Average Delay	2.0				
Intersection Capacity Utilization	35.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	629	5	5	384	5	6	5	23	7	5	13
Future Volume (Veh/h)	10	629	5	5	384	5	6	5	23	7	5	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	669	5	5	409	5	6	5	24	7	5	14
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	439			699			1182	1168	722	1192	1168	462
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	439			699			1182	1168	722	1192	1168	462
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			96	97	94	95	97	98
cM capacity (veh/h)	1096			878			145	182	408	138	182	574

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	685	419	35	26
Volume Left	11	5	6	7
Volume Right	5	5	24	14
cSH	1096	878	275	254
Volume to Capacity	0.01	0.01	0.13	0.10
Queue Length 95th (m)	0.2	0.1	3.3	2.6
Control Delay (s)	0.3	0.2	20.0	20.8
Lane LOS	A	A	C	C
Approach Delay (s)	0.3	0.2	20.0	20.8
Approach LOS			C	C

Intersection Summary					
Average Delay			1.3		
Intersection Capacity Utilization			56.3%	ICU Level of Service	B
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	625	26	36	318	10	45	8	201	17	7	20
Future Volume (Veh/h)	15	625	26	36	318	10	45	8	201	17	7	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	16	665	28	38	338	11	48	9	214	18	7	21
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	374			718			1205	1186	729	1399	1194	394
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	374			718			1205	1186	729	1399	1194	394
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			64	95	47	62	96	97
cM capacity (veh/h)	1158			864			133	170	404	47	168	627

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	709	387	271	46
Volume Left	16	38	48	18
Volume Right	28	11	214	21
cSH	1158	864	287	101
Volume to Capacity	0.01	0.04	0.94	0.46
Queue Length 95th (m)	0.3	1.0	69.2	14.9
Control Delay (s)	0.4	1.4	78.7	67.8
Lane LOS	A	A	F	F
Approach Delay (s)	0.4	1.4	78.7	67.8
Approach LOS			F	F

Intersection Summary					
Average Delay			17.9		
Intersection Capacity Utilization			64.3%	ICU Level of Service	C
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	52	36	5	61	116	54	110	5	27	24	17
Future Volume (Veh/h)	29	52	36	5	61	116	54	110	5	27	24	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	55	38	5	65	123	57	117	5	29	26	18
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	213			118			354	384	124	386	342	176
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	213			118			354	384	124	386	342	176
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			89	77	99	93	95	98
cM capacity (veh/h)	1327			1438			514	511	886	426	540	829

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	124	193	179	73
Volume Left	31	5	57	29
Volume Right	38	123	5	18
cSH	1327	1438	518	529
Volume to Capacity	0.02	0.00	0.35	0.14
Queue Length 95th (m)	0.5	0.1	11.6	3.6
Control Delay (s)	2.1	0.2	15.6	12.9
Lane LOS	A	A	C	B
Approach Delay (s)	2.1	0.2	15.6	12.9
Approach LOS			C	B

Intersection Summary					
Average Delay	7.1				
Intersection Capacity Utilization	40.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	5	5	8	42	5	5	5	13	5	5
Future Volume (Veh/h)	5	5	5	5	8	42	5	5	5	13	5	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	5	5	5	9	45	5	5	5	14	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	152	106	58	110	106	58	35			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	152	106	58	110	106	58	35			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	99	99	95	100			99		
cM capacity (veh/h)	705	741	965	786	741	965	1541			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	59	15	24
Volume Left	5	5	5	14
Volume Right	5	45	5	5
cSH	788	906	1541	1541
Volume to Capacity	0.02	0.07	0.00	0.01
Queue Length 95th (m)	0.4	1.6	0.1	0.2
Control Delay (s)	9.7	9.3	2.5	4.3
Lane LOS	A	A	A	A
Approach Delay (s)	9.7	9.3	2.5	4.3
Approach LOS	A	A		

Intersection Summary					
Average Delay	7.4				
Intersection Capacity Utilization	25.5%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	700	39	121	353	286	27	143	204	332	143	5
Future Volume (vph)	111	700	39	121	353	286	27	143	204	332	143	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98	1.00		0.98	0.96			0.97		0.99	1.00	
Frt		0.992			0.933			0.918			0.995	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3364	0	1704	3046	0	0	3041	0	1704	1782	0
Flt Permitted	0.279			0.204				0.921		0.517		
Satd. Flow (perm)	490	3364	0	360	3046	0	0	2808	0	914	1782	0
Satd. Flow (RTOR)		6			238			217			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	118	745	41	129	376	304	29	152	217	353	152	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	786	0	129	680	0	0	398	0	353	157	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		37.8	37.8	
Total Split (s)	16.2	47.4		16.2	47.4		37.8	37.8		37.8	37.8	
Total Split (%)	16.0%	46.7%		16.0%	46.7%		37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	10.0	40.0		10.0	40.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.8	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		7.8	7.8	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		5	5		5	5	
Act Effct Green (s)	34.9	25.2		35.3	25.4			30.2		30.2	30.2	
Actuated g/C Ratio	0.41	0.29		0.41	0.30			0.35		0.35	0.35	
v/c Ratio	0.37	0.79		0.45	0.63			0.35		1.10	0.25	
Control Delay	15.6	33.9		17.6	19.2			10.7		109.5	22.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	15.6	33.9		17.6	19.2			10.7		109.5	22.3	
LOS	B	C		B	B			B		F	C	
Approach Delay		31.5			18.9			10.7			82.7	
Approach LOS		C			B			B			F	
Queue Length 50th (m)	10.2	61.3		11.2	32.0			10.4		~65.0	17.4	
Queue Length 95th (m)	18.7	82.6		20.3	50.2			24.3		#131.9	36.6	

3: Sarcee Road /29 St & 33 Ave SW
04/16/2024

AM Peak Hour
After Development (50% Build Out)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			105.7			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	351	1583		312	1556			1129		322	629	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.34	0.50		0.41	0.44			0.35		1.10	0.25	

Intersection Summary	
Cycle Length: 101.4	
Actuated Cycle Length: 85.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 34.4	Intersection LOS: C
Intersection Capacity Utilization 94.6%	ICU Level of Service F
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	96	102	11	5	482	268	8	312	68
Future Volume (Veh/h)	0	0	0	96	102	11	5	482	268	8	312	68
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	101	107	12	5	507	282	8	328	72
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.83	0.83		0.83	0.83	0.83				0.83		
vC, conflicting volume	1154	1229	414	1088	1124	698	425			814		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1083	1174	414	1004	1047	534	425			674		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	41	41	97	100			99		
cM capacity (veh/h)	80	153	624	170	182	433	1134			745		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	101	119	794	408
Volume Left	101	0	5	8
Volume Right	0	12	282	72
cSH	170	194	1134	745
Volume to Capacity	0.59	0.61	0.00	0.01
Queue Length 95th (m)	24.3	26.5	0.1	0.2
Control Delay (s)	53.1	49.4	0.1	0.3
Lane LOS	F	E	A	A
Approach Delay (s)	51.1		0.1	0.3
Approach LOS	F			

Intersection Summary				
Average Delay	8.1			
Intersection Capacity Utilization	63.3%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	801	66	14	376
Future Volume (Veh/h)	0	0	801	66	14	376
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)	0	0	843	69	15	396
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.81	0.81			0.81	
vC, conflicting volume	1130	902			912	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1043	761			773	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			98	
cM capacity (veh/h)	174	275			678	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	912	147	264
Volume Left	0	15	0
Volume Right	69	0	0
cSH	1700	678	1700
Volume to Capacity	0.54	0.02	0.16
Queue Length 95th (m)	0.0	0.5	0.0
Control Delay (s)	0.0	1.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.5	
Approach LOS			

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	63.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	229	12	13	169	5	67	5	16	5	5	5
Future Volume (Veh/h)	5	229	12	13	169	5	67	5	16	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	241	13	14	178	5	71	5	17	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	208			279			524	518	298	536	522	230
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	208			279			524	518	298	536	522	230
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			83	99	98	99	99	99
cM capacity (veh/h)	1333			1255			418	435	710	403	432	773

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	259	197	93	15
Volume Left	5	14	71	5
Volume Right	13	5	17	5
cSH	1333	1255	453	493
Volume to Capacity	0.00	0.01	0.21	0.03
Queue Length 95th (m)	0.1	0.3	5.8	0.7
Control Delay (s)	0.2	0.7	15.0	12.5
Lane LOS	A	A	B	B
Approach Delay (s)	0.2	0.7	15.0	12.5
Approach LOS			B	B

Intersection Summary					
Average Delay	3.1				
Intersection Capacity Utilization	35.5%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	161	9	5	100	5	5	5	5	5	6	25
Future Volume (Veh/h)	46	161	9	5	100	5	5	5	5	5	6	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	48	169	9	5	105	5	5	5	5	5	6	26
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	135			203			466	440	224	444	442	158
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	135			203			466	440	224	444	442	158
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			99	99	99	99	99	97
cM capacity (veh/h)	1417			1338			437	471	780	464	470	849

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	226	115	15	37
Volume Left	48	5	5	5
Volume Right	9	5	5	26
cSH	1417	1338	527	683
Volume to Capacity	0.03	0.00	0.03	0.05
Queue Length 95th (m)	0.8	0.1	0.7	1.3
Control Delay (s)	1.8	0.4	12.0	10.6
Lane LOS	A	A	B	B
Approach Delay (s)	1.8	0.4	12.0	10.6
Approach LOS			B	B

Intersection Summary					
Average Delay	2.6				
Intersection Capacity Utilization	34.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	537	14	12	652	11	5	5	34	5	5	16
Future Volume (Veh/h)	17	537	14	12	652	11	5	5	34	5	5	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	18	565	15	13	686	12	5	5	36	5	5	17
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	723			605			1396	1382	622	1415	1384	742
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	723			605			1396	1382	622	1415	1384	742
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			95	96	92	95	96	96
cM capacity (veh/h)	860			951			99	133	465	93	132	397

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	598	711	46	27
Volume Left	18	13	5	5
Volume Right	15	12	36	17
cSH	860	951	278	201
Volume to Capacity	0.02	0.01	0.17	0.13
Queue Length 95th (m)	0.5	0.3	4.4	3.5
Control Delay (s)	0.6	0.4	20.5	25.7
Lane LOS	A	A	C	D
Approach Delay (s)	0.6	0.4	20.5	25.7
Approach LOS			C	D

Intersection Summary					
Average Delay	1.6				
Intersection Capacity Utilization	57.6%	ICU Level of Service		B	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	448	90	125	595	34	41	11	116	15	42	25
Future Volume (Veh/h)	30	448	90	125	595	34	41	11	116	15	42	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	32	472	95	132	626	36	43	12	122	16	44	26
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	687			592			1590	1560	570	1670	1589	694
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	687			592			1590	1560	570	1670	1589	694
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			86			0	87	76	62	49	94
cM capacity (veh/h)	887			962			40	89	499	42	86	423

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	599	794	177	86
Volume Left	32	132	43	16
Volume Right	95	36	122	26
cSH	887	962	121	90
Volume to Capacity	0.04	0.14	1.46	0.96
Queue Length 95th (m)	0.9	3.6	93.8	41.4
Control Delay (s)	1.0	3.3	311.7	167.3
Lane LOS	A	A	F	F
Approach Delay (s)	1.0	3.3	311.7	167.3
Approach LOS			F	F

Intersection Summary					
Average Delay	43.9				
Intersection Capacity Utilization	100.3%	ICU Level of Service		G	
Analysis Period (min)	15				

8: 25 St /25 St & Richmond Road SW
04/16/2024

PM Peak Hour
After Development (50% Build Out)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	67	70	5	48	72	36	57	5	117	112	20
Future Volume (Veh/h)	45	67	70	5	48	72	36	57	5	117	112	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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	71	74	5	51	76	38	60	5	123	118	21
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	152			170			431	389	158	386	388	139
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	152			170			431	389	158	386	388	139
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			90	88	99	74	77	98
cM capacity (veh/h)	1397			1376			385	503	849	465	503	869

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	192	132	103	262
Volume Left	47	5	38	123
Volume Right	74	76	5	21
cSH	1397	1376	460	501
Volume to Capacity	0.03	0.00	0.22	0.52
Queue Length 95th (m)	0.8	0.1	6.5	22.7
Control Delay (s)	2.1	0.3	15.1	19.8
Lane LOS	A	A	C	C
Approach Delay (s)	2.1	0.3	15.1	19.8
Approach LOS			C	C

Intersection Summary					
Average Delay	10.4				
Intersection Capacity Utilization	44.2%	ICU Level of Service		A	
Analysis Period (min)	15				

9: 25 St & 30 Ave SW
04/16/2024

PM Peak Hour
After Development (50% Build Out)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	12	5	5	7	24	5	5	5	41	6	5
Future Volume (Veh/h)	5	12	5	5	7	24	5	5	5	41	6	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	13	5	5	7	25	5	5	5	43	6	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	190	164	58	174	164	58	36			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	190	164	58	174	164	58	36			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	98	99	99	99	97	100			97		
cM capacity (veh/h)	671	675	963	699	675	965	1540			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	23	37	15	54
Volume Left	5	5	5	43
Volume Right	5	25	5	5
cSH	721	851	1540	1541
Volume to Capacity	0.03	0.04	0.00	0.03
Queue Length 95th (m)	0.8	1.0	0.1	0.7
Control Delay (s)	10.2	9.4	2.5	5.9
Lane LOS	B	A	A	A
Approach Delay (s)	10.2	9.4	2.5	5.9
Approach LOS	B	A		

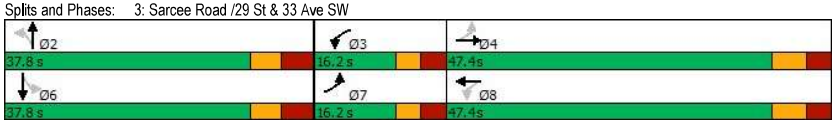
Intersection Summary					
Average Delay	7.3				
Intersection Capacity Utilization	26.3%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	479	80	226	667	445	31	212	147	223	150	5
Future Volume (vph)	210	479	80	226	667	445	31	212	147	223	150	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99		0.97	0.96			0.98		0.99	1.00	
Frt		0.979			0.940			0.943			0.995	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3291	0	1704	3083	0	0	3148	0	1704	1782	0
Flt Permitted	0.109			0.377				0.913		0.485		
Satd. Flow (perm)	195	3291	0	659	3083	0	0	2881	0	858	1782	0
Satd. Flow (RTOR)		22			185			128			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	221	504	84	238	702	468	33	223	155	235	158	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	221	588	0	238	1170	0	0	411	0	235	163	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		37.8	37.8	
Total Split (s)	16.2	47.4		16.2	47.4		37.8	37.8		37.8	37.8	
Total Split (%)	16.0%	46.7%		16.0%	46.7%		37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	10.0	40.0		10.0	40.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.8	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		7.8	7.8	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		5	5		5	5	
Act Effct Green (s)	48.1	36.8		47.2	36.3			28.7		28.7	28.7	
Actuated g/C Ratio	0.50	0.38		0.49	0.38			0.30		0.30	0.30	
v/c Ratio	0.87	0.46		0.56	0.92			0.43		0.93	0.31	
Control Delay	54.9	23.1		17.2	36.6			20.5		75.8	28.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	54.9	23.1		17.2	36.6			20.5		75.8	28.7	
LOS	D	C		B	D			C		E	C	
Approach Delay		31.8			33.3			20.5			56.5	
Approach LOS		C			C			C			E	
Queue Length 50th (m)	26.3	42.2		22.2	95.8			23.0		44.7	24.5	
Queue Length 95th (m)	#68.6	57.1		35.4	#137.1			36.7		#90.6	41.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			105.7			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	254	1383		433	1391			987		267	557	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.87	0.43		0.55	0.84			0.42		0.88	0.29	

Intersection Summary	
Cycle Length: 101.4	
Actuated Cycle Length: 96.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 34.2	Intersection LOS: C
Intersection Capacity Utilization 110.1%	ICU Level of Service H
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	229	81	25	5	355	229	7	338	39
Future Volume (Veh/h)	0	0	0	229	81	25	5	355	229	7	338	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	244	86	27	5	378	244	7	360	41
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	1024	1076	430	954	975	550	426			647		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	968	1026	430	889	912	436	426			545		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	0	64	95	100			99		
cM capacity (veh/h)	135	203	611	219	236	530	1133			894		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	244	113	627	408
Volume Left	244	0	5	7
Volume Right	0	27	244	41
cSH	219	272	1133	894
Volume to Capacity	1.11	0.42	0.00	0.01
Queue Length 95th (m)	85.3	14.7	0.1	0.2
Control Delay (s)	140.5	27.3	0.1	0.2
Lane LOS	F	D	A	A
Approach Delay (s)	104.7		0.1	0.2
Approach LOS	F			

Intersection Summary				
Average Delay	27.0			
Intersection Capacity Utilization	56.9%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	577	30	5	563
Future Volume (Veh/h)	0	0	577	30	5	563
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)	0	0	614	32	5	599
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.86	0.86			0.86	
vC, conflicting volume	964	655			646	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	880	521			511	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	241	422			907	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	646	205	399
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	907	1700
Volume to Capacity	0.38	0.01	0.23
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.1	
Approach LOS			

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	48.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	227	5	5	302	5	27	5	5	5	5	7
Future Volume (Veh/h)	5	227	5	5	302	5	27	5	5	5	5	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	241	5	5	321	5	29	5	5	5	5	7
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	351			271			646	640	294	644	640	374
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	351			271			646	640	294	644	640	374
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			92	99	99	99	99	99
cM capacity (veh/h)	1181			1264			346	373	713	348	373	643

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	251	331	39	17
Volume Left	5	5	29	5
Volume Right	5	5	5	7
cSH	1181	1264	374	440
Volume to Capacity	0.00	0.00	0.10	0.04
Queue Length 95th (m)	0.1	0.1	2.6	0.9
Control Delay (s)	0.2	0.2	15.7	13.5
Lane LOS	A	A	C	B
Approach Delay (s)	0.2	0.2	15.7	13.5
Approach LOS			C	B

Intersection Summary					
Average Delay	1.5				
Intersection Capacity Utilization	35.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	179	9	5	233	6	12	9	5	5	5	6
Future Volume (Veh/h)	29	179	9	5	233	6	12	9	5	5	5	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	190	10	5	248	6	13	10	5	5	5	6
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	279			225			576	571	245	578	573	301
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	279			225			576	571	245	578	573	301
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			97	98	99	99	99	99
cM capacity (veh/h)	1255			1314			380	400	759	376	399	706

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	231	259	28	16
Volume Left	31	5	13	5
Volume Right	10	6	5	6
cSH	1255	1314	426	466
Volume to Capacity	0.02	0.00	0.07	0.03
Queue Length 95th (m)	0.6	0.1	1.6	0.8
Control Delay (s)	1.3	0.2	14.0	13.0
Lane LOS	A	A	B	B
Approach Delay (s)	1.3	0.2	14.0	13.0
Approach LOS			B	B

Intersection Summary					
Average Delay	1.8				
Intersection Capacity Utilization	42.4%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	646	5	5	424	5	9	5	23	7	5	13
Future Volume (Veh/h)	10	646	5	5	424	5	9	5	23	7	5	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	687	5	5	451	5	10	5	24	7	5	14
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	481			717			1242	1228	740	1252	1228	504
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	481			717			1242	1228	740	1252	1228	504
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			92	97	94	94	97	97
cM capacity (veh/h)	1058			864			132	168	399	125	168	543

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	703	461	39	26
Volume Left	11	5	10	7
Volume Right	5	5	24	14
cSH	1058	864	235	233
Volume to Capacity	0.01	0.01	0.17	0.11
Queue Length 95th (m)	0.2	0.1	4.4	2.8
Control Delay (s)	0.3	0.2	23.3	22.4
Lane LOS	A	A	C	C
Approach Delay (s)	0.3	0.2	23.3	22.4
Approach LOS			C	C

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	57.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	84	67	5	114	218	107	212	5	46	44	17
Future Volume (Veh/h)	29	84	67	5	114	218	107	212	5	46	44	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	89	71	5	121	232	114	226	5	49	47	18
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	378			185			525	600	174	602	519	287
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	378			185			525	600	174	602	519	287
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			70	41	99	75	89	97
cM capacity (veh/h)	1154			1359			374	385	831	198	428	719

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	191	358	345	114
Volume Left	31	5	114	49
Volume Right	71	232	5	18
cSH	1154	1359	384	298
Volume to Capacity	0.03	0.00	0.90	0.38
Queue Length 95th (m)	0.6	0.1	69.9	13.1
Control Delay (s)	1.5	0.1	57.2	24.3
Lane LOS	A	A	F	C
Approach Delay (s)	1.5	0.1	57.2	24.3
Approach LOS			F	C

Intersection Summary				
Average Delay	22.7			
Intersection Capacity Utilization	55.9%	ICU Level of Service	B	
Analysis Period (min)	15			

9: 25 St & 30 Ave SW
04/16/2024

AM Peak Hour
After Development (100% Build Out)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	10	5	5	16	80	5	5	5	24	5	5
Future Volume (Veh/h)	5	10	5	5	16	80	5	5	5	24	5	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	11	5	5	17	85	5	5	5	26	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	220	130	58	138	130	58	35			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	220	130	58	138	130	58	35			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	98	99	99	98	91	100			98		
cM capacity (veh/h)	600	713	965	746	713	965	1541			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	21	107	15	36
Volume Left	5	5	5	26
Volume Right	5	85	5	5
cSH	725	902	1541	1541
Volume to Capacity	0.03	0.12	0.00	0.02
Queue Length 95th (m)	0.7	3.1	0.1	0.4
Control Delay (s)	10.1	9.5	2.5	5.4
Lane LOS	B	A	A	A
Approach Delay (s)	10.1	9.5	2.5	5.4
Approach LOS	B	A		

Intersection Summary					
Average Delay	8.2				
Intersection Capacity Utilization	27.2%	ICU Level of Service		A	
Analysis Period (min)	15				

1: 29 St & Richmond Road SW
04/16/2024

PM Peak Hour
After Development (100% Build Out)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	135	130	11	5	482	383	8	312	68
Future Volume (Veh/h)	0	0	0	135	130	11	5	482	383	8	312	68
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	142	137	12	5	507	403	8	328	72
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.80	0.80		0.80	0.80	0.80				0.80		
vC, conflicting volume	1229	1350	414	1148	1184	758	425			935		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1159	1312	414	1058	1104	568	425			790		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	5	15	97	100			99		
cM capacity (veh/h)	36	121	624	150	162	397	1134			646		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	142	149	915	408
Volume Left	142	0	5	8
Volume Right	0	12	403	72
cSH	150	170	1134	646
Volume to Capacity	0.95	0.88	0.00	0.01
Queue Length 95th (m)	52.0	47.8	0.1	0.3
Control Delay (s)	119.7	94.3	0.1	0.4
Lane LOS	F	F	A	A
Approach Delay (s)	106.7		0.1	0.4
Approach LOS	F			

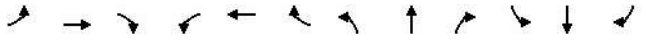
Intersection Summary					
Average Delay	19.4				
Intersection Capacity Utilization	71.4%	ICU Level of Service		C	
Analysis Period (min)	15				



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	916	66	14	415
Future Volume (Veh/h)	0	0	916	66	14	415
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)	0	0	964	69	15	437
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.78	0.78			0.78	
vC, conflicting volume	1272	1024			1033	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1207	888			900	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			97	
cM capacity (veh/h)	130	218			584	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	1033	161	291
Volume Left	0	15	0
Volume Right	69	0	0
cSH	1700	584	1700
Volume to Capacity	0.61	0.03	0.17
Queue Length 95th (m)	0.0	0.6	0.0
Control Delay (s)	0.0	1.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.5	
Approach LOS			

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		69.3%	ICU Level of Service	C
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	344	12	13	236	5	67	5	16	5	5	5
Future Volume (Veh/h)	5	344	12	13	236	5	67	5	16	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	362	13	14	248	5	71	5	17	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	278			400			714	710	418	726	714	300
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	278			400			714	710	418	726	714	300
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			77	99	97	98	99	99
cM capacity (veh/h)	1256			1133			310	338	607	298	336	707

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	380	267	93	15
Volume Left	5	14	71	5
Volume Right	13	5	17	5
cSH	1256	1133	342	387
Volume to Capacity	0.00	0.01	0.27	0.04
Queue Length 95th (m)	0.1	0.3	8.2	0.9
Control Delay (s)	0.1	0.5	19.4	14.7
Lane LOS	A	A	C	B
Approach Delay (s)	0.1	0.5	19.4	14.7
Approach LOS			C	B

Intersection Summary				
Average Delay		2.9		
Intersection Capacity Utilization		40.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	271	14	5	163	5	8	5	5	5	11	25
Future Volume (Veh/h)	46	271	14	5	163	5	8	5	5	5	11	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	48	285	15	5	172	5	8	5	5	5	12	26
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	202			325			655	626	342	630	630	224
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	202			325			655	626	342	630	630	224
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			98	99	99	99	97	97
cM capacity (veh/h)	1340			1207			321	368	670	347	366	779

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	348	182	18	43
Volume Left	48	5	8	5
Volume Right	15	5	5	26
cSH	1340	1207	391	534
Volume to Capacity	0.04	0.00	0.05	0.08
Queue Length 95th (m)	0.8	0.1	1.1	2.0
Control Delay (s)	1.4	0.3	14.6	12.3
Lane LOS	A	A	B	B
Approach Delay (s)	1.4	0.3	14.6	12.3
Approach LOS			B	B

Intersection Summary					
Average Delay	2.2				
Intersection Capacity Utilization	49.1%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	614	19	12	687	11	6	5	34	5	5	16
Future Volume (Veh/h)	17	614	19	12	687	11	6	5	34	5	5	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	18	646	20	13	723	12	6	5	36	5	5	17
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	760			691			1516	1503	706	1536	1507	779
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	760			691			1516	1503	706	1536	1507	779
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			93	96	91	93	96	96
cM capacity (veh/h)	833			884			81	112	417	75	111	379

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	684	748	47	27
Volume Left	18	13	6	5
Volume Right	20	12	36	17
cSH	833	884	229	173
Volume to Capacity	0.02	0.01	0.20	0.16
Queue Length 95th (m)	0.5	0.3	5.7	4.1
Control Delay (s)	0.6	0.4	24.7	29.6
Lane LOS	A	A	C	D
Approach Delay (s)	0.6	0.4	24.7	29.6
Approach LOS			C	D

Intersection Summary					
Average Delay	1.8				
Intersection Capacity Utilization	60.3%	ICU Level of Service		B	
Analysis Period (min)	15				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	122	125	5	79	125	68	110	5	222	214	20
Future Volume (Veh/h)	45	122	125	5	79	125	68	110	5	222	214	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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	128	132	5	83	132	72	116	5	234	225	21
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	240			285			630	563	244	560	563	199
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	240			285			630	563	244	560	563	199
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			62	71	99	23	44	97
cM capacity (veh/h)	1297			1249			192	400	760	304	400	805

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	307	220	193	480
Volume Left	47	5	72	234
Volume Right	132	132	5	21
cSH	1297	1249	287	353
Volume to Capacity	0.04	0.00	0.67	1.36
Queue Length 95th (m)	0.9	0.1	33.9	178.6
Control Delay (s)	1.5	0.2	39.9	208.7
Lane LOS	A	A	E	F
Approach Delay (s)	1.5	0.2	39.9	208.7
Approach LOS			E	F

Intersection Summary					
Average Delay	90.3				
Intersection Capacity Utilization	73.0%	ICU Level of Service		D	
Analysis Period (min)	15				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	22	5	5	13	43	5	5	5	78	6	5
Future Volume (Veh/h)	5	22	5	5	13	43	5	5	5	78	6	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	23	5	5	14	45	5	5	5	82	6	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	292	242	58	256	242	58	36			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	292	242	58	256	242	58	36			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	96	99	99	98	95	100			95		
cM capacity (veh/h)	547	595	963	595	595	965	1540			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	33	64	15	93
Volume Left	5	5	5	82
Volume Right	5	45	5	5
cSH	623	814	1540	1541
Volume to Capacity	0.05	0.08	0.00	0.05
Queue Length 95th (m)	1.3	1.9	0.1	1.3
Control Delay (s)	11.1	9.8	2.5	6.6
Lane LOS	B	A	A	A
Approach Delay (s)	11.1	9.8	2.5	6.6
Approach LOS	B	A		

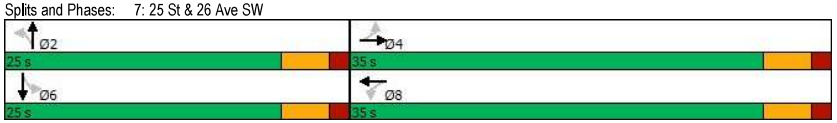
Intersection Summary					
Average Delay	8.0				
Intersection Capacity Utilization	29.4%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	625	26	36	318	10	45	8	201	17	7	20
Future Volume (vph)	15	625	26	36	318	10	45	8	201	17	7	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.94			0.96	
Frt		0.995			0.996			0.893			0.938	
Flt Protected		0.999			0.995			0.991			0.981	
Satd. Flow (prot)	0	1778	0	0	1774	0	0	1503	0	0	1600	0
Flt Permitted		0.989			0.905			0.934			0.865	
Satd. Flow (perm)	0	1760	0	0	1612	0	0	1407	0	0	1398	0
Satd. Flow (RTOR)		5			4			167			21	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	16	665	28	38	338	11	48	9	214	18	7	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	709	0	0	387	0	0	271	0	0	46	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	35.0	35.0		35.0	35.0		25.0	25.0		25.0	25.0	
Total Split (%)	58.3%	58.3%		58.3%	58.3%		41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	30.0	30.0		30.0	30.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		24.0			24.0			11.6			11.6	
Actuated g/C Ratio		0.52			0.52			0.25			0.25	
v/c Ratio		0.77			0.46			0.56			0.12	
Control Delay		16.2			9.1			12.0			11.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		16.2			9.1			12.0			11.0	
LOS		B			A			B			B	
Approach Delay		16.2			9.1			12.0			11.0	
Approach LOS		B			A			B			B	
Queue Length 50th (m)		34.7			14.9			6.1			1.4	
Queue Length 95th (m)		#95.1			39.5			25.2			7.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)												
Base Capacity (vph)		1177			1078			719			634	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.60			0.36			0.38			0.07	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 45.8	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 13.3	Intersection LOS: B
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: 25 St & 26 Ave SW

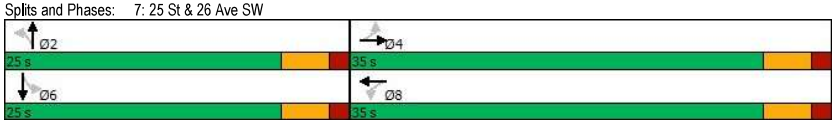


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	30	448	90	125	595	34	41	11	116	15	42	25
Future Volume (vph)	30	448	90	125	595	34	41	11	116	15	42	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.95			0.97	
Frt		0.979			0.994			0.907			0.959	
Flt Protected		0.997			0.992			0.988			0.991	
Satd. Flow (prot)	0	1733	0	0	1763	0	0	1533	0	0	1670	0
Flt Permitted		0.944			0.822			0.890			0.928	
Satd. Flow (perm)	0	1640	0	0	1458	0	0	1369	0	0	1556	0
Satd. Flow (RTOR)		23			6			122			26	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	32	472	95	132	626	36	43	12	122	16	44	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	599	0	0	794	0	0	177	0	0	86	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	35.0	35.0		35.0	35.0		25.0	25.0		25.0	25.0	
Total Split (%)	58.3%	58.3%		58.3%	58.3%		41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	30.0	30.0		30.0	30.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		34.1			34.1			10.5			10.5	
Actuated g/C Ratio		0.68			0.68			0.21			0.21	
v/c Ratio		0.54			0.81			0.47			0.25	
Control Delay		8.3			19.1			11.4			14.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		8.3			19.1			11.4			14.7	
LOS		A			B			B			B	
Approach Delay		8.3			19.1			11.4			14.7	
Approach LOS		A			B			B			B	
Queue Length 50th (m)		26.4			51.1			4.1			4.5	
Queue Length 95th (m)		57.8			#133.2			16.8			13.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)												
Base Capacity (vph)		1113			985			615			632	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.54			0.81			0.29			0.14	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50.5	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 102.8%	ICU Level of Service G
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: 25 St & 26 Ave SW

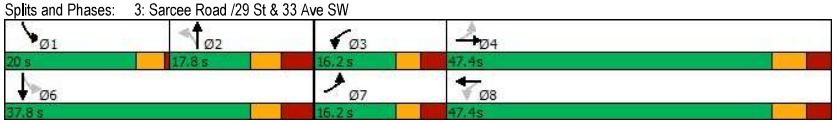


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	700	39	121	353	286	27	143	204	332	143	5
Future Volume (vph)	111	700	39	121	353	286	27	143	204	332	143	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98	1.00		0.98	0.96			0.94		0.99	1.00	
Frt		0.992			0.933			0.918			0.995	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3364	0	1704	3046	0	0	2935	0	1704	1782	0
Flt Permitted	0.279			0.204				0.914		0.291		
Satd. Flow (perm)	490	3364	0	360	3046	0	0	2690	0	515	1782	0
Satd. Flow (RTOR)		6			238			217			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	118	745	41	129	376	304	29	152	217	353	152	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	786	0	129	680	0	0	398	0	353	157	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		17.8	17.8		20.0	37.8	
Total Split (s)	16.2	47.4		16.2	47.4		17.8	17.8		20.0	37.8	
Total Split (%)	16.0%	46.7%		16.0%	46.7%		17.6%	17.6%		19.7%	37.3%	
Maximum Green (s)	10.0	40.0		10.0	40.0		10.0	10.0		16.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		0.5	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		4.0	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0						8.0	
Flash Dont Walk (s)		11.0			11.0						22.0	
Pedestrian Calls (#/hr)		0			0						5	
Act Effct Green (s)	34.9	25.2		35.3	25.4			10.1		34.0	30.2	
Actuated g/C Ratio	0.41	0.29		0.41	0.30			0.12		0.40	0.35	
v/c Ratio	0.37	0.79		0.45	0.63			0.79		0.83	0.25	
Control Delay	15.6	33.9		17.6	19.2			29.7		40.1	22.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	15.6	33.9		17.6	19.2			29.7		40.1	22.3	
LOS	B	C		B	B			C		D	C	
Approach Delay		31.5			18.9			29.7			34.6	
Approach LOS		C			B			C			C	
Queue Length 50th (m)	10.2	61.3		11.2	32.0			14.7		42.2	17.4	
Queue Length 95th (m)	18.7	82.6		20.3	50.2			#40.6		#94.1	36.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			0.1			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	351	1583		312	1556			507		427	629	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.34	0.50		0.41	0.44			0.79		0.83	0.25	

Intersection Summary	
Cycle Length: 101.4	
Actuated Cycle Length: 85.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 28.0	Intersection LOS: C
Intersection Capacity Utilization 87.7%	ICU Level of Service E
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW

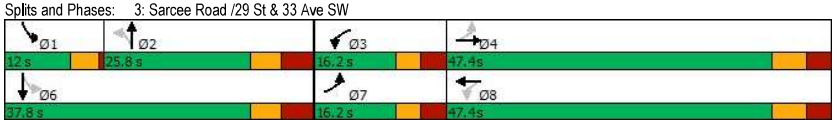


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	479	80	226	667	445	31	212	147	223	150	5
Future Volume (vph)	210	479	80	226	667	445	31	212	147	223	150	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99		0.97	0.96			0.97		0.99	1.00	
Frt		0.979			0.940			0.943			0.995	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3291	0	1704	3083	0	0	3122	0	1704	1782	0
Flt Permitted	0.110			0.380				0.906		0.320		
Satd. Flow (perm)	197	3291	0	664	3083	0	0	2835	0	567	1782	0
Satd. Flow (RTOR)		22			185			110			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	221	504	84	238	702	468	33	223	155	235	158	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	221	588	0	238	1170	0	0	411	0	235	163	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		17.8	17.8		11.5	37.8	
Total Split (s)	16.2	47.4		16.2	47.4		25.8	25.8		12.0	37.8	
Total Split (%)	16.0%	46.7%		16.0%	46.7%		25.4%	25.4%		11.8%	37.3%	
Maximum Green (s)	10.0	40.0		10.0	40.0		18.0	18.0		8.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		0.5	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		4.0	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0						8.0	
Flash Dont Walk (s)		11.0			11.0						22.0	
Pedestrian Calls (#/hr)		0			0						5	
Act Effct Green (s)	47.5	36.2		46.5	35.7			14.8		30.8	26.9	
Actuated g/C Ratio	0.50	0.38		0.49	0.38			0.16		0.33	0.29	
v/c Ratio	0.85	0.46		0.55	0.91			0.76		0.83	0.32	
Control Delay	50.7	22.4		16.4	35.3			38.2		53.5	29.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	50.7	22.4		16.4	35.3			38.2		53.5	29.0	
LOS	D	C		B	D			D		D	C	
Approach Delay		30.2			32.1			38.2			43.5	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	25.0	40.6		21.0	92.1			29.4		35.5	24.5	
Queue Length 95th (m)	#68.3	57.1		35.4	#137.1			45.9		#73.4	41.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			0.1			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	260	1421		442	1425			634		282	573	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.85	0.41		0.54	0.82			0.65		0.83	0.28	

Intersection Summary	
Cycle Length: 101.4	
Actuated Cycle Length: 94.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 103.1%	ICU Level of Service G
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



8: 25 St /25 St & Richmond Road SW
04/16/2024

AM Peak Hour
After Development (100% Build Out)



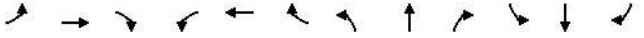
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	29	84	67	5	114	218	107	212	5	46	44	17
Future Volume (vph)	29	84	67	5	114	218	107	212	5	46	44	17
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	31	89	71	5	121	232	114	226	5	49	47	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	191	358	345	114
Volume Left (vph)	31	5	114	49
Volume Right (vph)	71	232	5	18
Hadj (s)	-0.16	-0.35	0.09	0.03
Departure Headway (s)	5.8	5.3	5.7	6.1
Degree Utilization, x	0.31	0.52	0.55	0.19
Capacity (veh/h)	559	638	586	495
Control Delay (s)	11.3	14.0	15.5	10.6
Approach Delay (s)	11.3	14.0	15.5	10.6
Approach LOS	B	B	C	B

Intersection Summary					
Delay	13.6				
Level of Service	B				
Intersection Capacity Utilization	55.9%	ICU Level of Service		B	
Analysis Period (min)	15				

8: 25 St /25 St & Richmond Road SW
04/16/2024

PM Peak Hour
After Development (100% Build Out)



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	122	125	5	79	125	68	110	5	222	214	20
Future Volume (vph)	45	122	125	5	79	125	68	110	5	222	214	20
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	128	132	5	83	132	72	116	5	234	225	21

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	307	220	193	480
Volume Left (vph)	47	5	72	234
Volume Right (vph)	132	132	5	21
Hadj (s)	-0.19	-0.32	0.09	0.11
Departure Headway (s)	6.5	6.6	6.9	6.2
Degree Utilization, x	0.55	0.40	0.37	0.83
Capacity (veh/h)	505	489	464	552
Control Delay (s)	17.1	13.9	13.8	32.5
Approach Delay (s)	17.1	13.9	13.8	32.5
Approach LOS	C	B	B	D

Intersection Summary					
Delay	22.1				
Level of Service	C				
Intersection Capacity Utilization	73.0%	ICU Level of Service		D	
Analysis Period (min)	15				

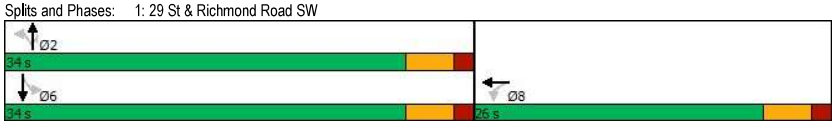
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	229	81	25	5	355	229	7	338	39
Future Volume (vph)	0	0	0	229	81	25	5	355	229	7	338	39
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.98			1.00	0.94		0.99	
Frt					0.964				0.850		0.986	
Flt Protected				0.950				0.999			0.999	
Satd. Flow (prot)	0	0	0	1704	1701	0	0	1792	1525	0	1755	0
Flt Permitted				0.950				0.995			0.993	
Satd. Flow (perm)	0	0	0	1666	1701	0	0	1784	1427	0	1744	0
Satd. Flow (RTOR)					27				244		13	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	0	0	0	244	86	27	5	378	244	7	360	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	244	113	0	0	383	244	0	408	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2		2	6		
Detector Phase				8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)				26.0	26.0		34.0	34.0	34.0	34.0	34.0	
Total Split (%)				43.3%	43.3%		56.7%	56.7%	56.7%	56.7%	56.7%	
Maximum Green (s)				21.0	21.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)				3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)				5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				None	None		Min	Min	Min	Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				11.9	11.9			20.4	20.4		20.4	
Actuated g/C Ratio				0.28	0.28			0.48	0.48		0.48	
v/c Ratio				0.52	0.23			0.45	0.30		0.48	
Control Delay				17.3	10.5			9.9	2.6		10.1	
Queue Delay				0.0	0.0			0.1	0.0		0.0	
Total Delay				17.3	10.5			10.0	2.6		10.1	
LOS				B	B			B	A		B	
Approach Delay					15.1			7.1			10.1	
Approach LOS					B			A			B	
Queue Length 50th (m)				14.5	4.6			15.2	0.0		16.0	
Queue Length 95th (m)				30.1	13.0			38.6	8.7		41.0	

1: 29 St & Richmond Road SW
04/16/2024
AM Peak Hour
After Development (100% Build Out)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)				50.0								
Base Capacity (vph)				831	862			1229	1058		1205	
Starvation Cap Reductn				0	0			195	70		0	
Spillback Cap Reductn				0	0			0	0		0	
Storage Cap Reductn				0	0			0	0		0	
Reduced v/c Ratio				0.29	0.13			0.37	0.25		0.34	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 42.3	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 48.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: 29 St & Richmond Road SW

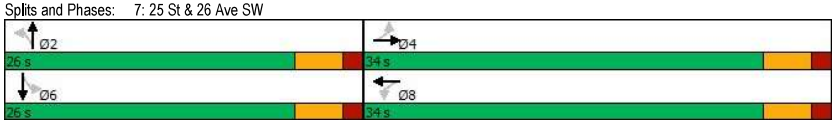


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	15	625	43	55	318	10	85	13	360	17	10	20
Future Volume (vph)	15	625	43	55	318	10	85	13	360	17	10	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.94			0.97	
Frt		0.991			0.996			0.894			0.943	
Flt Protected		0.999			0.993			0.991			0.982	
Satd. Flow (prot)	0	1768	0	0	1771	0	0	1505	0	0	1614	0
Flt Permitted		0.989			0.859			0.929			0.846	
Satd. Flow (perm)	0	1750	0	0	1530	0	0	1402	0	0	1384	0
Satd. Flow (RTOR)		8			3			156			21	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	16	665	46	59	338	11	90	14	383	18	11	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	727	0	0	408	0	0	487	0	0	50	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	34.0	34.0		34.0	34.0		26.0	26.0		26.0	26.0	
Total Split (%)	56.7%	56.7%		56.7%	56.7%		43.3%	43.3%		43.3%	43.3%	
Maximum Green (s)	29.0	29.0		29.0	29.0		21.0	21.0		21.0	21.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.1			26.1			17.6			17.6	
Actuated g/C Ratio		0.48			0.48			0.33			0.33	
v/c Ratio		0.86			0.55			0.87			0.11	
Control Delay		25.6			13.9			30.2			9.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		25.6			13.9			30.2			9.8	
LOS		C			B			C			A	
Approach Delay		25.6			13.9			30.2			9.8	
Approach LOS		C			B			C			A	
Queue Length 50th (m)		64.8			29.1			32.4			2.1	
Queue Length 95th (m)		#128.0			51.7			#81.5			7.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)												
Base Capacity (vph)		967			844			653			564	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.75			0.48			0.75			0.09	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 54	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 23.6	Intersection LOS: C
Intersection Capacity Utilization 90.0%	ICU Level of Service E
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: 25 St & 26 Ave SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	625	43	55	318	10	85	13	360	17	10	20
Future Volume (vph)	15	625	43	55	318	10	85	13	360	17	10	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	1.00			0.97	0.93		0.96	
Frt		0.991			0.995				0.850		0.943	
Flt Protected		0.999		0.950				0.959			0.982	
Satd. Flow (prot)	0	1768	0	1704	1781	0	0	1720	1525	0	1614	0
Flt Permitted		0.990		0.342				0.726			0.895	
Satd. Flow (perm)	0	1752	0	607	1781	0	0	1263	1422	0	1454	0
Satd. Flow (RTOR)		8			4				167		21	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	16	665	46	59	338	11	90	14	383	18	11	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	727	0	59	349	0	0	104	383	0	50	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	35.0	35.0		35.0	35.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	58.3%	58.3%		58.3%	58.3%		41.7%	41.7%	41.7%	41.7%	41.7%	
Maximum Green (s)	30.0	30.0		30.0	30.0		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		25.1		25.1	25.1			14.2	14.2		14.2	
Actuated g/C Ratio		0.51		0.51	0.51			0.29	0.29		0.29	
v/c Ratio		0.82		0.19	0.39			0.29	0.73		0.12	
Control Delay		20.8		9.6	9.6			16.9	18.4		10.5	
Queue Delay		0.9		0.0	0.0			0.0	0.0		0.0	
Total Delay		21.7		9.6	9.6			16.9	18.4		10.5	
LOS		C		A	A			B	B		B	
Approach Delay		21.7			9.6			18.1			10.5	
Approach LOS		C			A			B			B	
Queue Length 50th (m)		46.7		2.5	16.3			7.1	15.9		1.9	
Queue Length 95th (m)		#124.2		9.3	37.7			18.2	44.6		8.1	

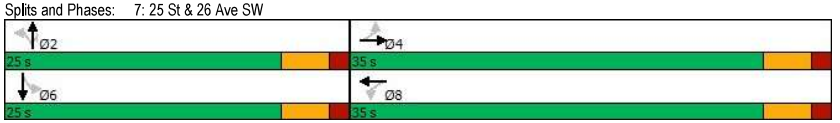
7: 25 St & 26 Ave SW
04/16/2024

AM Peak Hour
After Development (100% Build Out)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)				50.0					50.0			
Base Capacity (vph)		1095		378	1112			525	688		616	
Starvation Cap Reductn		146		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.77		0.16	0.31			0.20	0.56		0.08	

Intersection Summary			
Cycle Length: 60			
Actuated Cycle Length: 49.6			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 17.4		Intersection LOS: B	
Intersection Capacity Utilization 88.2%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 7: 25 St & 26 Ave SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	135	130	11	5	482	383	8	312	68
Future Volume (vph)	0	0	0	135	130	11	5	482	383	8	312	68
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.99			1.00	0.94		0.99	
Frt					0.988				0.850		0.976	
Flt Protected				0.950							0.999	
Satd. Flow (prot)	0	0	0	1704	1762	0	0	1794	1525	0	1729	0
Flt Permitted				0.950				0.996			0.990	
Satd. Flow (perm)	0	0	0	1666	1762	0	0	1786	1427	0	1713	0
Satd. Flow (RTOR)					8				403		26	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	0	0	0	142	137	12	5	507	403	8	328	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	142	149	0	0	512	403	0	408	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2		2	6		
Detector Phase				8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)				25.0	25.0		35.0	35.0	35.0	35.0	35.0	
Total Split (%)				41.7%	41.7%		58.3%	58.3%	58.3%	58.3%	58.3%	
Maximum Green (s)				20.0	20.0		30.0	30.0	30.0	30.0	30.0	
Yellow Time (s)				3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)				5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				None	None		Min	Min	Min	Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				10.6	10.6			25.4	25.4		25.4	
Actuated g/C Ratio				0.25	0.25			0.61	0.61		0.61	
v/c Ratio				0.34	0.33			0.47	0.39		0.39	
Control Delay				15.9	15.0			8.6	2.2		7.3	
Queue Delay				0.0	0.0			0.1	0.0		0.0	
Total Delay				15.9	15.0			8.8	2.2		7.3	
LOS				B	B			A	A		A	
Approach Delay					15.5			5.9			7.3	
Approach LOS					B			A			A	
Queue Length 50th (m)				7.9	7.8			21.3	0.0		14.6	
Queue Length 95th (m)				21.4	21.3			46.5	9.1		33.4	

1: 29 St & Richmond Road SW
04/16/2024

PM Peak Hour
After Development (100% Build Out)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)				50.0								
Base Capacity (vph)				801	852			1378	1193		1328	
Starvation Cap Reductn				0	0			209	85		0	
Spillback Cap Reductn				0	0			0	0		0	
Storage Cap Reductn				0	0			0	0		0	
Reduced v/c Ratio				0.18	0.17			0.44	0.36		0.31	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 41.9	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 8.0	Intersection LOS: A
Intersection Capacity Utilization 57.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: 29 St & Richmond Road SW

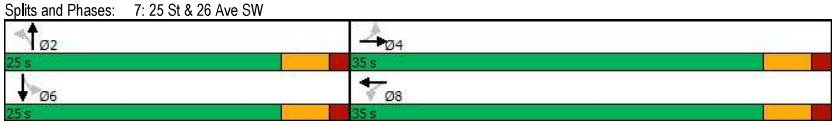


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	30	448	167	222	595	34	76	13	185	15	73	25
Future Volume (vph)	30	448	167	222	595	34	76	13	185	15	73	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.99			0.95			0.98	
Frt		0.965			0.995			0.909			0.971	
Flt Protected		0.998			0.987			0.986			0.993	
Satd. Flow (prot)	0	1699	0	0	1757	0	0	1534	0	0	1704	0
Flt Permitted		0.942			0.681			0.885			0.942	
Satd. Flow (perm)	0	1603	0	0	1209	0	0	1365	0	0	1612	0
Satd. Flow (RTOR)		42			5			187			25	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	32	472	176	234	626	36	80	14	195	16	77	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	680	0	0	896	0	0	289	0	0	119	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	35.0	35.0		35.0	35.0		25.0	25.0		25.0	25.0	
Total Split (%)	58.3%	58.3%		58.3%	58.3%		41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	30.0	30.0		30.0	30.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		30.1			30.1			12.0			12.0	
Actuated g/C Ratio		0.58			0.58			0.23			0.23	
v/c Ratio		0.72			1.28			0.63			0.31	
Control Delay		14.6			154.5			13.7			15.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.6			154.5			13.7			15.6	
LOS		B			F			B			B	
Approach Delay		14.6			154.5			13.7			15.6	
Approach LOS		B			F			B			B	
Queue Length 50th (m)		31.9			~104.7			7.9			7.2	
Queue Length 95th (m)		#110.2			#196.3			25.8			17.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)												
Base Capacity (vph)		943			700			640			636	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.72			1.28			0.45			0.19	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 52.1	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 77.7	Intersection LOS: E
Intersection Capacity Utilization 121.4%	ICU Level of Service H
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: 25 St & 26 Ave SW

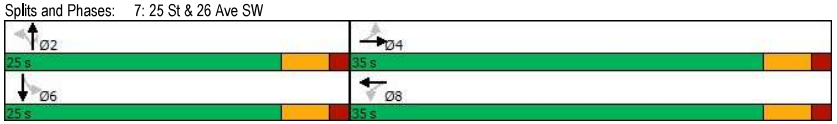


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	448	167	222	595	34	76	13	185	15	73	25
Future Volume (vph)	30	448	167	222	595	34	76	13	185	15	73	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99	1.00			0.97	0.93		0.98	
Frt		0.965			0.992				0.850		0.971	
Flt Protected		0.998		0.950				0.959			0.993	
Satd. Flow (prot)	0	1699	0	1704	1773	0	0	1720	1525	0	1704	0
Flt Permitted		0.958		0.412				0.798			0.943	
Satd. Flow (perm)	0	1630	0	731	1773	0	0	1393	1422	0	1611	0
Satd. Flow (RTOR)		42			7				195		25	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	32	472	176	234	626	36	80	14	195	16	77	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	680	0	234	662	0	0	94	195	0	119	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	35.0	35.0		35.0	35.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	58.3%	58.3%		58.3%	58.3%		41.7%	41.7%	41.7%	41.7%	41.7%	
Maximum Green (s)	30.0	30.0		30.0	30.0		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		29.2		29.2	29.2			10.7	10.7		10.7	
Actuated g/C Ratio		0.64		0.64	0.64			0.24	0.24		0.24	
v/c Ratio		0.64		0.50	0.58			0.29	0.40		0.30	
Control Delay		10.6		11.6	9.4			18.5	6.3		15.4	
Queue Delay		0.2		0.0	0.0			0.0	0.0		0.0	
Total Delay		10.9		11.6	9.4			18.5	6.3		15.4	
LOS		B		B	A			B	A		B	
Approach Delay		10.9			10.0			10.3			15.4	
Approach LOS		B			B			B			B	
Queue Length 50th (m)		31.5		10.2	30.8			6.0	0.0		6.0	
Queue Length 95th (m)		73.0		31.2	66.1			17.1	12.1		17.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)				50.0					50.0			
Base Capacity (vph)		1182		525	1274			620	741		731	
Starvation Cap Reductn		105		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.63		0.45	0.52			0.15	0.26		0.16	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 45.5	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 99.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: 25 St & 26 Ave SW



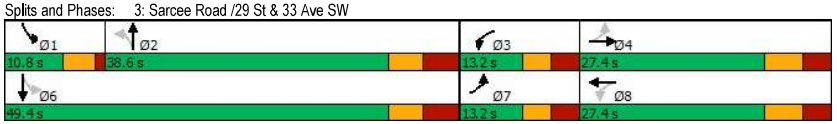
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	700	39	121	353	321	27	153	204	392	171	5
Future Volume (vph)	133	700	39	121	353	321	27	153	204	392	171	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98	1.00		0.99	0.96			0.98		0.99	1.00	
Frt		0.992			0.929			0.920			0.996	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3364	0	1704	3025	0	0	3056	0	1704	1785	0
Flt Permitted	0.243			0.246				0.909		0.374		
Satd. Flow (perm)	429	3364	0	436	3025	0	0	2785	0	663	1785	0
Satd. Flow (RTOR)		6			234			217			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	141	745	41	129	376	341	29	163	217	417	182	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	786	0	129	717	0	0	409	0	417	187	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		9.5	37.8	
Total Split (s)	13.2	27.4		13.2	27.4		38.6	38.6		10.8	49.4	
Total Split (%)	14.7%	30.4%		14.7%	30.4%		42.9%	42.9%		12.0%	54.9%	
Maximum Green (s)	7.0	20.0		7.0	20.0		30.8	30.8		6.3	41.6	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		1.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		4.5	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0			8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0			22.0	
Pedestrian Calls (#/hr)		0			0		5	5			5	
Act Effct Green (s)	29.8	23.0		28.5	20.2			13.9		28.1	24.8	
Actuated g/C Ratio	0.40	0.31		0.39	0.27			0.19		0.38	0.34	
v/c Ratio	0.48	0.75		0.44	0.72			0.58		1.22	0.31	
Control Delay	20.1	30.9		19.0	21.9			15.3		144.8	18.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0		1.0	0.1	
Total Delay	20.1	30.9		19.0	21.9			15.3		145.8	18.9	
LOS	C	C		B	C			B		F	B	
Approach Delay		29.3			21.5			15.3			106.5	
Approach LOS		C			C			B			F	
Queue Length 50th (m)	9.4	49.0		8.5	28.5			12.2		~60.9	18.5	
Queue Length 95th (m)	#29.3	#112.5		26.4	#70.6			23.4		#110.7	31.6	

3: Sarcee Road /29 St & 33 Ave SW
04/23/2024
AM Peak Hour
After Development (100% Build Out)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			158.5			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	295	1054		290	999			1301		342	1018	
Starvation Cap Reductn	0	0		0	0			0		30	254	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.48	0.75		0.44	0.72			0.31		1.34	0.24	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 73.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.22	
Intersection Signal Delay: 41.6	Intersection LOS: D
Intersection Capacity Utilization 97.3%	ICU Level of Service F
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	253	479	80	226	667	494	31	235	147	248	164	5
Future Volume (vph)	253	479	80	226	667	494	31	235	147	248	164	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.98		0.97	0.95			0.98		0.99	1.00	
Frt		0.979			0.936			0.947			0.996	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3282	0	1704	3036	0	0	3154	0	1704	1784	0
Flt Permitted	0.081			0.394				0.905		0.278		
Satd. Flow (perm)	145	3282	0	689	3036	0	0	2860	0	491	1784	0
Satd. Flow (RTOR)		16			158			76			1	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	266	504	84	238	702	520	33	247	155	261	173	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	266	588	0	238	1222	0	0	435	0	261	178	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		9.5	37.8	
Total Split (s)	23.0	51.3		24.7	53.0		38.8	38.8		15.2	54.0	
Total Split (%)	17.7%	39.5%		19.0%	40.8%		29.8%	29.8%		11.7%	41.5%	
Maximum Green (s)	16.8	43.9		18.5	45.6		31.0	31.0		10.7	46.2	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		1.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		4.5	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0			8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0			22.0	
Pedestrian Calls (#/hr)		0			0		5	5			5	
Act Effct Green (s)	66.8	49.1		60.3	45.7			20.7		39.2	35.9	
Actuated g/C Ratio	0.56	0.41		0.50	0.38			0.17		0.33	0.30	
v/c Ratio	0.89	0.43		0.52	0.97			0.78		0.97	0.33	
Control Delay	63.2	27.4		17.8	52.4			49.2		83.6	34.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0		39.8	1.0	
Total Delay	63.2	27.4		17.8	52.4			49.2		123.4	35.0	
LOS	E	C		B	D			D		F	C	
Approach Delay		38.6			46.8			49.2			87.6	
Approach LOS		D			D			D			F	
Queue Length 50th (m)	45.9	49.4		25.4	132.0			43.1		48.5	32.3	
Queue Length 95th (m)	#108.8	79.0		46.9	#204.4			60.6		#96.4	50.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			158.5			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	299	1354		532	1254			797		269	689	
Starvation Cap Reductn	0	0		0	0			0		41	313	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.89	0.43		0.45	0.97			0.55		1.14	0.47	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 119.9	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 50.5	Intersection LOS: D
Intersection Capacity Utilization 115.1%	ICU Level of Service H
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	80	70	40	5	430	205	10	410	60
Future Volume (Veh/h)	0	0	0	80	70	40	5	430	205	10	410	60
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	85	74	43	5	457	218	11	436	64
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.79	0.79		0.79	0.79	0.79				0.79		
vC, conflicting volume	1196	1225	518	1116	1148	616	525			700		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1116	1153	518	1015	1056	384	525			490		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	47	57	91	100			99		
cM capacity (veh/h)	84	150	545	159	171	503	1042			831		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	85	117	680	511
Volume Left	85	0	5	11
Volume Right	0	43	218	64
cSH	159	226	1042	831
Volume to Capacity	0.53	0.52	0.00	0.01
Queue Length 95th (m)	20.3	20.4	0.1	0.3
Control Delay (s)	51.0	36.8	0.1	0.4
Lane LOS	F	E	A	A
Approach Delay (s)	42.7		0.1	0.4
Approach LOS	E			

Intersection Summary				
Average Delay	6.4			
Intersection Capacity Utilization	56.8%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	640	30	5	485
Future Volume (Veh/h)	0	0	640	30	5	485
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)	0	0	681	32	5	516
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.78	0.78			0.78	
vC, conflicting volume	990	722			713	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	846	503			491	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	228	392			834	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	713	177	344
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	834	1700
Volume to Capacity	0.42	0.01	0.20
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.1	
Approach LOS			

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	52.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	195	10	5	140	5	35	5	5	5	5	15
Future Volume (Veh/h)	10	195	10	5	140	5	35	5	5	5	5	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	207	11	5	149	5	37	5	5	5	5	16
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	179			243			464	448	262	454	452	202
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	179			243			464	448	262	454	452	202
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			92	99	99	99	99	98
cM capacity (veh/h)	1366			1294			452	478	742	466	476	803

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	229	159	47	26
Volume Left	11	5	37	5
Volume Right	11	5	5	16
cSH	1366	1294	475	632
Volume to Capacity	0.01	0.00	0.10	0.04
Queue Length 95th (m)	0.2	0.1	2.5	1.0
Control Delay (s)	0.4	0.3	13.4	10.9
Lane LOS	A	A	B	B
Approach Delay (s)	0.4	0.3	13.4	10.9
Approach LOS			B	B

Intersection Summary					
Average Delay	2.3				
Intersection Capacity Utilization	33.3%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	170	5	5	85	10	5	5	5	10	5	10
Future Volume (Veh/h)	30	170	5	5	85	10	5	5	5	10	5	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	32	181	5	5	90	11	5	5	5	11	5	11
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	126			211			416	408	234	410	406	146
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	126			211			416	408	234	410	406	146
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	99	98	99	99
cM capacity (veh/h)	1428			1329			485	496	770	493	498	862

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	218	106	15	27
Volume Left	32	5	5	11
Volume Right	5	11	5	11
cSH	1428	1329	558	598
Volume to Capacity	0.02	0.00	0.03	0.05
Queue Length 95th (m)	0.5	0.1	0.6	1.1
Control Delay (s)	1.3	0.4	11.6	11.3
Lane LOS	A	A	B	B
Approach Delay (s)	1.3	0.4	11.6	11.3
Approach LOS			B	B

Intersection Summary					
Average Delay	2.2				
Intersection Capacity Utilization	33.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	855	10	10	350	10	5	5	40	25	10	20
Future Volume (Veh/h)	40	855	10	10	350	10	5	5	40	25	10	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	43	910	11	11	372	11	5	5	43	27	11	21
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	408			946			1478	1456	966	1496	1456	428
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	408			946			1478	1456	966	1496	1456	428
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			98			94	96	85	64	91	96
cM capacity (veh/h)	1125			709			83	117	295	74	117	600

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	964	394	53	59
Volume Left	43	11	5	27
Volume Right	11	11	43	21
cSH	1125	709	213	120
Volume to Capacity	0.04	0.02	0.25	0.49
Queue Length 95th (m)	0.9	0.4	7.2	17.1
Control Delay (s)	1.0	0.5	27.4	61.4
Lane LOS	A	A	D	F
Approach Delay (s)	1.0	0.5	27.4	61.4
Approach LOS			D	F

Intersection Summary					
Average Delay	4.3				
Intersection Capacity Utilization	84.5%	ICU Level of Service		E	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	5	10	5	10	5	10	15	5	5	15	65
Future Volume (Veh/h)	170	5	10	5	10	5	10	15	5	5	15	65
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	181	5	11	5	11	5	11	16	5	5	16	69
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	41			41			523	448	60	459	452	64
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	41			41			523	448	60	459	452	64
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			100			97	96	99	99	96	93
cM capacity (veh/h)	1534			1534			352	425	961	416	423	957

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	197	21	32	90
Volume Left	181	5	11	5
Volume Right	11	5	5	69
cSH	1534	1534	432	738
Volume to Capacity	0.12	0.00	0.07	0.12
Queue Length 95th (m)	3.0	0.1	1.8	3.1
Control Delay (s)	7.1	1.8	14.0	10.6
Lane LOS	A	A	B	B
Approach Delay (s)	7.1	1.8	14.0	10.6
Approach LOS			B	B

Intersection Summary					
Average Delay	8.3				
Intersection Capacity Utilization	34.5%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	5	5	5	5	5	5	5	5	5	5
Future Volume (Veh/h)	5	5	5	5	5	5	5	5	5	5	5	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	5	5	5	5	5	5	5	5	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	92	88	58	92	88	58	35			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92	88	58	92	88	58	35			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	99	99	99	100			100		
cM capacity (veh/h)	812	763	965	812	763	965	1541			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	15	15	15
Volume Left	5	5	5	5
Volume Right	5	5	5	5
cSH	838	838	1541	1541
Volume to Capacity	0.02	0.02	0.00	0.00
Queue Length 95th (m)	0.4	0.4	0.1	0.1
Control Delay (s)	9.4	9.4	2.5	2.5
Lane LOS	A	A	A	A
Approach Delay (s)	9.4	9.4	2.5	2.5
Approach LOS	A	A		

Intersection Summary					
Average Delay			5.9		
Intersection Capacity Utilization			24.6%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	152	80	20	10	620	260	15	360	140
Future Volume (Veh/h)	0	0	0	152	80	20	10	620	260	15	360	140
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	160	84	21	11	653	274	16	379	147
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.82	0.82		0.82	0.82	0.82				0.82		
vC, conflicting volume	1410	1484	502	1346	1420	840	551			952		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1390	1480	502	1314	1403	699	551			835		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	0	23	94	99			98		
cM capacity (veh/h)	32	98	556	102	109	347	1019			643		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	160	105	938	542
Volume Left	160	0	11	16
Volume Right	0	21	274	147
cSH	102	126	1019	643
Volume to Capacity	1.57	0.83	0.01	0.02
Queue Length 95th (m)	92.6	38.8	0.2	0.6
Control Delay (s)	372.0	106.3	0.3	0.7
Lane LOS	F	F	A	A
Approach Delay (s)	266.8		0.3	0.7
Approach LOS	F			

Intersection Summary					
Average Delay			40.9		
Intersection Capacity Utilization			71.9%	ICU Level of Service	C
Analysis Period (min)			15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	890	35	7	505
Future Volume (Veh/h)	0	0	890	35	7	505
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)	0	0	937	37	7	532
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.80	0.80			0.80	
vC, conflicting volume	1260	980			974	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1202	854			846	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	138	238			633	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	974	184	355
Volume Left	0	7	0
Volume Right	37	0	0
cSH	1700	633	1700
Volume to Capacity	0.57	0.01	0.21
Queue Length 95th (m)	0.0	0.3	0.0
Control Delay (s)	0.0	0.5	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.2	
Approach LOS			

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		65.9%	ICU Level of Service	C
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	245	20	15	167	10	75	10	20	5	5	10
Future Volume (Veh/h)	10	245	20	15	167	10	75	10	20	5	5	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	258	21	16	176	11	79	11	21	5	5	11
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	212			304			568	560	318	580	564	232
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	212			304			568	560	318	580	564	232
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			80	97	97	99	99	99
cM capacity (veh/h)	1328			1229			385	409	691	368	407	772

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	290	203	111	21
Volume Left	11	16	79	5
Volume Right	21	11	21	11
cSH	1328	1229	423	523
Volume to Capacity	0.01	0.01	0.26	0.04
Queue Length 95th (m)	0.2	0.3	7.9	1.0
Control Delay (s)	0.4	0.7	16.5	12.2
Lane LOS	A	A	C	B
Approach Delay (s)	0.4	0.7	16.5	12.2
Approach LOS			C	B

Intersection Summary				
Average Delay		3.7		
Intersection Capacity Utilization		37.2%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	115	10	5	75	10	5	5	5	5	5	30
Future Volume (Veh/h)	50	115	10	5	75	10	5	5	5	5	5	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	53	121	11	5	79	11	5	5	5	5	5	32
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	115			157			412	382	176	384	382	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	115			157			412	382	176	384	382	134
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			99	99	99	99	99	96
cM capacity (veh/h)	1441			1391			472	505	829	507	505	874

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	185	95	15	42
Volume Left	53	5	5	5
Volume Right	11	11	5	32
cSH	1441	1391	566	745
Volume to Capacity	0.04	0.00	0.03	0.06
Queue Length 95th (m)	0.9	0.1	0.6	1.4
Control Delay (s)	2.4	0.4	11.5	10.1
Lane LOS	A	A	B	B
Approach Delay (s)	2.4	0.4	11.5	10.1
Approach LOS			B	B

Intersection Summary					
Average Delay			3.2		
Intersection Capacity Utilization			32.6%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	560	10	20	940	33	10	10	45	40	10	30
Future Volume (Veh/h)	30	560	10	20	940	33	10	10	45	40	10	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	32	589	11	21	989	35	11	11	47	42	11	32
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1049			625			1794	1774	644	1810	1762	1056
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1049			625			1794	1774	644	1810	1762	1056
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			98			74	85	90	1	85	88
cM capacity (veh/h)	649			935			43	74	452	42	75	262

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	632	1045	69	85
Volume Left	32	21	11	42
Volume Right	11	35	47	32
cSH	649	935	135	67
Volume to Capacity	0.05	0.02	0.51	1.26
Queue Length 95th (m)	1.2	0.5	18.5	52.1
Control Delay (s)	1.3	0.7	56.8	300.9
Lane LOS	A	A	F	F
Approach Delay (s)	1.3	0.7	56.8	300.9
Approach LOS			F	F

Intersection Summary					
Average Delay			17.0		
Intersection Capacity Utilization			79.2%	ICU Level of Service	D
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	15	20	5	5	5	10	15	5	5	30	75
Future Volume (Veh/h)	90	15	20	5	5	5	10	15	5	5	30	75
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	95	16	21	5	5	5	11	16	5	5	32	79
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	35			62			379	286	76	297	294	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	35			62			379	286	76	297	294	58
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			98	97	99	99	94	92
cM capacity (veh/h)	1541			1507			447	557	942	561	552	965

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	132	15	32	116
Volume Left	95	5	11	5
Volume Right	21	5	5	79
cSH	1541	1507	546	779
Volume to Capacity	0.06	0.00	0.06	0.15
Queue Length 95th (m)	1.5	0.1	1.4	4.0
Control Delay (s)	5.5	2.5	12.0	10.4
Lane LOS	A	A	B	B
Approach Delay (s)	5.5	2.5	12.0	10.4
Approach LOS			B	B

Intersection Summary					
Average Delay	8.0				
Intersection Capacity Utilization	31.7%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	5	5	5	5	5	5	5	10	10	10
Future Volume (Veh/h)	5	5	5	5	5	5	5	5	5	10	10	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	5	5	5	5	5	5	5	5	11	11	11
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	114	108	66	114	112	58	47			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	114	108	66	114	112	58	47			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	99	99	99	100			99		
cM capacity (veh/h)	784	740	954	784	737	965	1526			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	15	15	33
Volume Left	5	5	5	11
Volume Right	5	5	5	11
cSH	816	818	1526	1541
Volume to Capacity	0.02	0.02	0.00	0.01
Queue Length 95th (m)	0.4	0.4	0.1	0.2
Control Delay (s)	9.5	9.5	2.5	2.5
Lane LOS	A	A	A	A
Approach Delay (s)	9.5	9.5	2.5	2.5
Approach LOS	A	A		

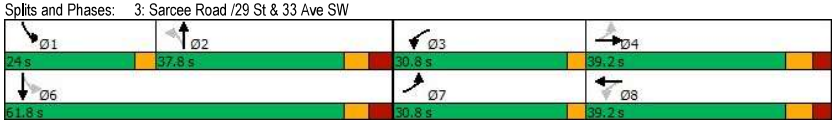
Intersection Summary					
Average Delay	5.2				
Intersection Capacity Utilization	24.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	345	640	40	100	570	220	30	105	90	375	110	5
Future Volume (vph)	345	640	40	100	570	220	30	105	90	375	110	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99			0.97			0.97		0.98	1.00	
Frt		0.991			0.958			0.940			0.994	
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1704	3353	0	1704	3156	0	0	3113	0	1704	1779	0
Flt Permitted	0.125			0.376				0.887		0.485		
Satd. Flow (perm)	224	3353	0	674	3156	0	0	2770	0	851	1779	0
Satd. Flow (RTOR)		5			40			96			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	367	681	43	106	606	234	32	112	96	399	117	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	367	724	0	106	840	0	0	240	0	399	122	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		11.5	37.8	
Total Split (s)	30.8	39.2		30.8	39.2		37.8	37.8		24.0	61.8	
Total Split (%)	23.4%	29.7%		23.4%	29.7%		28.7%	28.7%		18.2%	46.9%	
Maximum Green (s)	27.8	31.8		27.8	31.8		30.0	30.0		20.5	54.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	0.0	3.2		0.0	3.2		4.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	7.4		3.0	7.4			7.8		3.5	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0			8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0			22.0	
Pedestrian Calls (#/hr)		0			0		5	5			5	
Act Effct Green (s)	64.9	48.5		45.4	32.1			14.4		42.2	37.8	
Actuated g/C Ratio	0.57	0.43		0.40	0.28			0.13		0.37	0.33	
v/c Ratio	0.80	0.50		0.30	0.91			0.55		0.86	0.21	
Control Delay	40.0	26.5		17.1	53.9			32.4		49.1	27.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	40.0	26.5		17.1	53.9			32.4		49.1	27.6	
LOS	D	C		B	D			C		D	C	
Approach Delay		31.1			49.7			32.4			44.0	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	54.6	56.7		9.6	90.7			16.1		74.3	19.5	
Queue Length 95th (m)	#125.5	101.2		24.4	#162.3			28.3		#106.7	32.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			105.7			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	493	1434		628	919			808		471	854	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.74	0.50		0.17	0.91			0.30		0.85	0.14	

Intersection Summary	
Cycle Length: 131.8	
Actuated Cycle Length: 113.6	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 39.9	Intersection LOS: D
Intersection Capacity Utilization 107.3%	ICU Level of Service G
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



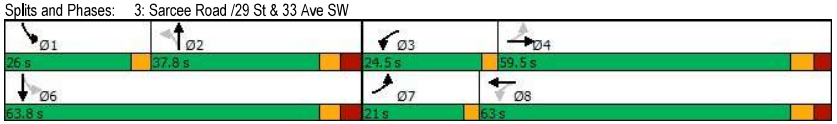
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	805	40	175	795	560	30	140	215	335	170	5
Future Volume (vph)	225	805	40	175	795	560	30	140	215	335	170	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99			0.95			0.97		0.98	1.00	
Frt		0.993			0.938			0.916			0.996	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3364	0	1704	3033	0	0	3008	0	1704	1784	0
Flt Permitted	0.068			0.246				0.903		0.232		
Satd. Flow (perm)	122	3364	0	441	3033	0	0	2721	0	409	1784	0
Satd. Flow (RTOR)		4			138			197			1	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	237	847	42	184	837	589	32	147	226	353	179	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	237	889	0	184	1426	0	0	405	0	353	184	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		12.5	37.8	
Total Split (s)	21.0	59.5		24.5	63.0		37.8	37.8		26.0	63.8	
Total Split (%)	14.2%	40.3%		16.6%	42.6%		25.6%	25.6%		17.6%	43.2%	
Maximum Green (s)	18.0	52.1		21.5	55.6		30.0	30.0		22.5	56.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	0.0	3.2		0.0	3.2		4.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	7.4		3.0	7.4			7.8		3.5	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0			8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0			22.0	
Pedestrian Calls (#/hr)		0			0		5	5			5	
Act Effct Green (s)	80.2	61.2		72.4	55.8			17.3		47.3	43.0	
Actuated g/C Ratio	0.60	0.45		0.54	0.41			0.13		0.35	0.32	
v/c Ratio	0.85	0.58		0.52	1.07			0.78		0.99	0.32	
Control Delay	61.7	30.8		19.2	79.2			39.2		82.7	35.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	61.7	30.8		19.2	79.2			39.2		82.7	35.9	
LOS	E	C		B	E			D		F	D	
Approach Delay		37.3			72.3			39.2			66.7	
Approach LOS		D			E			D			E	
Queue Length 50th (m)	45.0	87.9		20.4	~206.3			28.8		76.7	36.9	
Queue Length 95th (m)	#105.5	140.6		40.3	#289.8			46.4		#133.9	56.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			105.7			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	284	1531		466	1337			761		360	744	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.83	0.58		0.39	1.07			0.53		0.98	0.25	

Intersection Summary	
Cycle Length: 147.8	
Actuated Cycle Length: 134.7	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 57.1	Intersection LOS: E
Intersection Capacity Utilization 119.6%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	80	70	40	5	430	205	10	410	60
Future Volume (vph)	0	0	0	80	70	40	5	430	205	10	410	60
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.98			1.00	0.94		0.99	
Frt					0.945				0.850		0.983	
Flt Protected				0.950				0.999			0.999	
Satd. Flow (prot)	0	0	0	1704	1653	0	0	1792	1525	0	1747	0
Flt Permitted				0.950				0.995			0.989	
Satd. Flow (perm)	0	0	0	1666	1653	0	0	1784	1427	0	1729	0
Satd. Flow (RTOR)					43				218		17	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	0	0	0	85	74	43	5	457	218	11	436	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	85	117	0	0	462	218	0	511	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2		2	6		
Detector Phase				8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)				25.0	25.0		35.0	35.0	35.0	35.0	35.0	
Total Split (%)				41.7%	41.7%		58.3%	58.3%	58.3%	58.3%	58.3%	
Maximum Green (s)				20.0	20.0		30.0	30.0	30.0	30.0	30.0	
Yellow Time (s)				3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)				5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				None	None		Min	Min	Min	Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				10.1	10.1			24.4	24.4		24.4	
Actuated g/C Ratio				0.25	0.25			0.60	0.60		0.60	
v/c Ratio				0.20	0.26			0.43	0.23		0.49	
Control Delay				13.8	10.5			7.9	1.9		8.4	
Queue Delay				0.0	0.0			0.1	0.0		0.0	
Total Delay				13.8	10.5			8.0	1.9		8.4	
LOS				B	B			A	A		A	
Approach Delay					11.9			6.1			8.4	
Approach LOS					B			A			A	
Queue Length 50th (m)				4.6	3.9			18.4	0.0		20.5	
Queue Length 95th (m)				12.7	13.1			36.2	6.3		41.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)				50.0								
Base Capacity (vph)				823	839			1412	1174		1372	
Starvation Cap Reductn				0	0			195	80		0	
Spillback Cap Reductn				0	0			0	0		0	
Storage Cap Reductn				0	0			0	0		0	
Reduced v/c Ratio				0.10	0.14			0.38	0.20		0.37	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 40.5	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 56.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: 29 St & Richmond Road SW

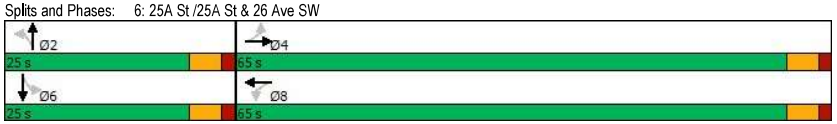


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	855	10	10	350	10	5	5	40	25	10	20
Future Volume (vph)	40	855	10	10	350	10	5	5	40	25	10	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.92			0.94	
Frt		0.998			0.996			0.890			0.952	
Flt Protected		0.998			0.999			0.995			0.978	
Satd. Flow (prot)	0	1785	0	0	1781	0	0	1471	0	0	1616	0
Flt Permitted		0.972			0.975			0.958			0.828	
Satd. Flow (perm)	0	1736	0	0	1737	0	0	1410	0	0	1335	0
Satd. Flow (RTOR)		1			3			43			21	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	43	910	11	11	372	11	5	5	43	27	11	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	964	0	0	394	0	0	53	0	0	59	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		45.9			45.9			10.9			10.9	
Actuated g/C Ratio		0.82			0.82			0.19			0.19	
v/c Ratio		0.68			0.28			0.17			0.21	
Control Delay		8.7			3.7			14.0			21.5	
Queue Delay		0.0			0.1			0.0			0.0	
Total Delay		8.7			3.8			14.0			21.5	
LOS		A			A			B			C	
Approach Delay		8.7			3.8			14.0			21.5	
Approach LOS		A			A			B			C	
Queue Length 50th (m)		64.2			15.0			0.9			3.3	
Queue Length 95th (m)		114.7			25.2			11.0			15.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		73.4			75.2			100.7			70.0	
Turn Bay Length (m)												
Base Capacity (vph)		1622			1623			565			523	
Starvation Cap Reductn		0			479			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.59			0.34			0.09			0.11	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 56.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: 25A St /25A St & 26 Ave SW

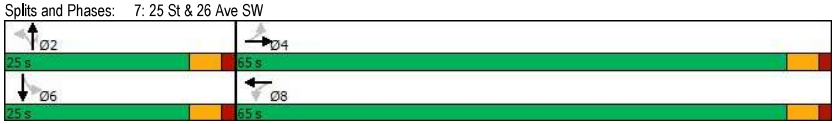


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	870	20	55	340	40	10	40	140	30	10	20
Future Volume (vph)	30	870	20	55	340	40	10	40	140	30	10	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99			0.99	0.91		0.94	
Frt		0.997			0.984				0.850		0.956	
Flt Protected		0.998		0.950				0.990			0.976	
Satd. Flow (prot)	0	1782	0	1704	1750	0	0	1776	1525	0	1624	0
Flt Permitted		0.980		0.298				0.935			0.828	
Satd. Flow (perm)	0	1748	0	529	1750	0	0	1660	1386	0	1341	0
Satd. Flow (RTOR)		3			14				149		21	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	32	926	21	59	362	43	11	43	149	32	11	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	979	0	59	405	0	0	54	149	0	64	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%	27.8%	27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		41.6		41.6	41.6			10.5	10.5		10.5	
Actuated g/C Ratio		0.67		0.67	0.67			0.17	0.17		0.17	
v/c Ratio		0.84		0.17	0.35			0.19	0.42		0.26	
Control Delay		15.4		4.8	5.0			27.9	9.9		22.8	
Queue Delay		0.5		0.0	0.0			0.0	0.0		0.0	
Total Delay		15.9		4.8	5.0			27.9	9.9		22.8	
LOS		B		A	A			C	A		C	
Approach Delay		15.9			5.0			14.7			22.8	
Approach LOS		B			A			B			C	
Queue Length 50th (m)		65.7		2.0	14.9			4.8	0.0		3.8	
Queue Length 95th (m)		122.5		5.6	26.4			17.6	15.4		17.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)				50.0					50.0			
Base Capacity (vph)		1628		492	1630			546	556		455	
Starvation Cap Reductn		251		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.71		0.12	0.25			0.10	0.27		0.14	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 62.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 13.1	Intersection LOS: B
Intersection Capacity Utilization 95.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: 25 St & 26 Ave SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	152	80	20	10	620	260	15	360	140
Future Volume (vph)	0	0	0	152	80	20	10	620	260	15	360	140
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.99			1.00	0.94		0.98	
Frt					0.970				0.850		0.963	
Flt Protected				0.950				0.999			0.999	
Satd. Flow (prot)	0	0	0	1704	1716	0	0	1792	1525	0	1696	0
Flt Permitted				0.950				0.991			0.978	
Satd. Flow (perm)	0	0	0	1666	1716	0	0	1777	1427	0	1659	0
Satd. Flow (RTOR)					21				274		45	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	0	0	0	160	84	21	11	653	274	16	379	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	160	105	0	0	664	274	0	542	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2		2	6		
Detector Phase				8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)				25.0	25.0		35.0	35.0	35.0	35.0	35.0	
Total Split (%)				41.7%	41.7%		58.3%	58.3%	58.3%	58.3%	58.3%	
Maximum Green (s)				20.0	20.0		30.0	30.0	30.0	30.0	30.0	
Yellow Time (s)				3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)				5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				None	None		Min	Min	Min	Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				11.1	11.1			27.5	27.5		27.5	
Actuated g/C Ratio				0.25	0.25			0.62	0.62		0.62	
v/c Ratio				0.38	0.24			0.60	0.28		0.52	
Control Delay				18.0	13.7			10.5	1.8		8.6	
Queue Delay				0.0	0.0			0.3	0.0		0.0	
Total Delay				18.0	13.7			10.8	1.9		8.6	
LOS				B	B			B	A		A	
Approach Delay					16.3			8.2			8.6	
Approach LOS					B			A			A	
Queue Length 50th (m)				9.0	4.5			31.5	0.0		21.0	
Queue Length 95th (m)				25.9	16.1			71.3	7.5		50.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)				50.0								
Base Capacity (vph)				763	797			1309	1123		1234	
Starvation Cap Reductn				0	0			191	120		0	
Spillback Cap Reductn				0	0			0	0		0	
Storage Cap Reductn				0	0			0	0		0	
Reduced v/c Ratio				0.21	0.13			0.59	0.27		0.44	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 44.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 63.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: 29 St & Richmond Road SW

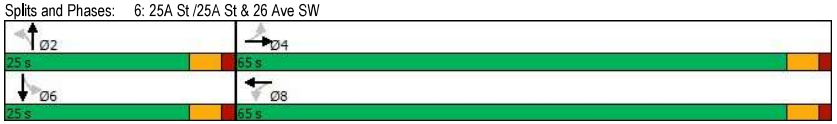


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	560	10	20	940	33	10	10	45	40	10	30
Future Volume (vph)	30	560	10	20	940	33	10	10	45	40	10	30
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.93			0.94	
Frt		0.998			0.995			0.908			0.949	
Flt Protected		0.997			0.999			0.992			0.976	
Satd. Flow (prot)	0	1782	0	0	1778	0	0	1516	0	0	1604	0
Flt Permitted		0.928			0.985			0.937			0.822	
Satd. Flow (perm)	0	1658	0	0	1752	0	0	1421	0	0	1318	0
Satd. Flow (RTOR)		2			4			47			31	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	32	589	11	21	989	35	11	11	47	42	11	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	632	0	0	1045	0	0	69	0	0	85	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		48.9			48.9			11.2			11.2	
Actuated g/C Ratio		0.76			0.76			0.17			0.17	
v/c Ratio		0.50			0.78			0.24			0.33	
Control Delay		6.3			12.8			16.6			24.4	
Queue Delay		0.0			1.0			0.0			0.0	
Total Delay		6.3			13.9			16.6			24.4	
LOS		A			B			B			C	
Approach Delay		6.3			13.9			16.6			24.4	
Approach LOS		A			B			B			C	
Queue Length 50th (m)		30.1			76.3			2.3			5.8	
Queue Length 95th (m)		57.7			159.8			13.9			20.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		73.4			75.2			100.7			70.0	
Turn Bay Length (m)												
Base Capacity (vph)		1470			1554			503			458	
Starvation Cap Reductn		0			263			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.43			0.81			0.14			0.19	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 64.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 82.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: 25A St /25A St & 26 Ave SW



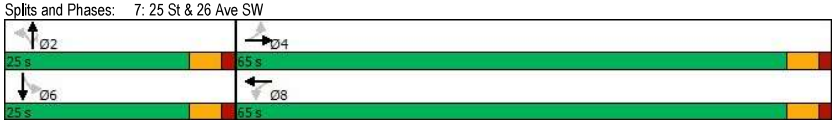
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	615	10	85	980	50	10	10	90	30	15	45
Future Volume (vph)	40	615	10	85	980	50	10	10	90	30	15	45
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.98	1.00			0.98	0.91		0.94	
Frt		0.998			0.993				0.850		0.933	
Flt Protected		0.997		0.950				0.976			0.983	
Satd. Flow (prot)	0	1782	0	1704	1774	0	0	1751	1525	0	1571	0
Flt Permitted		0.887		0.411				0.864			0.879	
Satd. Flow (perm)	0	1586	0	725	1774	0	0	1514	1386	0	1379	0
Satd. Flow (RTOR)		2			6				95		47	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	42	647	11	89	1032	53	11	11	95	32	16	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	700	0	89	1085	0	0	22	95	0	95	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%	27.8%	27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		59.5		59.5	59.5			10.7	10.7		10.7	
Actuated g/C Ratio		0.79		0.79	0.79			0.14	0.14		0.14	
v/c Ratio		0.56		0.15	0.77			0.10	0.34		0.40	
Control Delay		6.5		3.9	11.6			32.0	11.2		24.2	
Queue Delay		2.0		0.0	0.0			0.0	0.0		0.0	
Total Delay		8.5		3.9	11.6			32.0	11.2		24.2	
LOS		A		A	B			C	B		C	
Approach Delay		8.5			11.1			15.1			24.2	
Approach LOS		A			B			B			C	
Queue Length 50th (m)		36.9		3.0	82.1			3.0	0.0		6.7	
Queue Length 95th (m)		70.5		7.9	#175.0			9.3	12.4		20.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)				50.0					50.0			
Base Capacity (vph)		1266		578	1417			415	449		412	
Starvation Cap Reductn		397		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.81		0.15	0.77			0.05	0.21		0.23	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 74.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 11.0	Intersection LOS: B
Intersection Capacity Utilization 91.1%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: 25 St & 26 Ave SW



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	620	30	5	485
Future Volume (Veh/h)	0	0	620	30	5	485
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)	0	0	660	32	5	516
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.81	0.81			0.81	
vC, conflicting volume	969	701			692	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	847	518			507	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	238	400			858	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	692	177	344
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	858	1700
Volume to Capacity	0.41	0.01	0.20
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.1	
Approach LOS			

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		51.0%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	195	10	5	330	5	35	5	5	5	5	15
Future Volume (Veh/h)	10	195	10	5	330	5	35	5	5	5	5	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	207	11	5	351	5	37	5	5	5	5	16
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	381			243			666	650	262	656	654	404
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	381			243			666	650	262	656	654	404
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			89	99	99	99	99	97
cM capacity (veh/h)	1151			1294			329	366	742	341	365	619

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	229	361	47	26
Volume Left	11	5	37	5
Volume Right	11	5	5	16
cSH	1151	1294	354	479
Volume to Capacity	0.01	0.00	0.13	0.05
Queue Length 95th (m)	0.2	0.1	3.5	1.3
Control Delay (s)	0.5	0.1	16.7	12.9
Lane LOS	A	A	C	B
Approach Delay (s)	0.5	0.1	16.7	12.9
Approach LOS			C	B

Intersection Summary			
Average Delay		1.9	
Intersection Capacity Utilization		37.6%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	150	5	5	285	10	5	5	5	10	5	10
Future Volume (Veh/h)	40	150	5	5	285	10	5	5	5	10	5	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	43	160	5	5	303	11	5	5	5	11	5	11
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	339			190			630	622	212	624	620	358
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	339			190			630	622	212	624	620	358
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			99	99	99	97	99	98
cM capacity (veh/h)	1193			1353			344	370	791	351	371	656

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	208	319	15	27
Volume Left	43	5	5	11
Volume Right	5	11	5	11
cSH	1193	1353	436	438
Volume to Capacity	0.04	0.00	0.03	0.06
Queue Length 95th (m)	0.9	0.1	0.8	1.5
Control Delay (s)	1.9	0.2	13.5	13.8
Lane LOS	A	A	B	B
Approach Delay (s)	1.9	0.2	13.5	13.8
Approach LOS			B	B

Intersection Summary					
Average Delay	1.8				
Intersection Capacity Utilization	47.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	70	75	5	100	130	100	140	5	25	35	85
Future Volume (Veh/h)	20	70	75	5	100	130	100	140	5	25	35	85
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	21	74	80	5	106	138	106	149	5	27	37	90
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	269			179			500	460	164	470	431	225
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	269			179			500	460	164	470	431	225
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			71	68	99	92	92	88
cM capacity (veh/h)	1266			1366			365	467	842	344	485	779

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	175	249	260	154
Volume Left	21	5	106	27
Volume Right	80	138	5	90
cSH	1266	1366	422	569
Volume to Capacity	0.02	0.00	0.62	0.27
Queue Length 95th (m)	0.4	0.1	30.5	8.3
Control Delay (s)	1.1	0.2	26.2	13.7
Lane LOS	A	A	D	B
Approach Delay (s)	1.1	0.2	26.2	13.7
Approach LOS			D	B

Intersection Summary					
Average Delay	10.9				
Intersection Capacity Utilization	47.2%	ICU Level of Service		A	
Analysis Period (min)	15				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	5	5	5	89	5	5	5	50	5	5
Future Volume (Veh/h)	5	5	5	5	5	89	5	5	5	50	5	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	5	5	5	5	95	5	5	5	53	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	278	184	58	188	184	58	35			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	278	184	58	188	184	58	35			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	99	99	90	100			97		
cM capacity (veh/h)	542	654	965	686	654	965	1541			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	105	15	63
Volume Left	5	5	5	53
Volume Right	5	95	5	5
cSH	680	926	1541	1541
Volume to Capacity	0.02	0.11	0.00	0.03
Queue Length 95th (m)	0.5	2.9	0.1	0.8
Control Delay (s)	10.4	9.4	2.5	6.3
Lane LOS	B	A	A	A
Approach Delay (s)	10.4	9.4	2.5	6.3
Approach LOS	B	A		

Intersection Summary				
Average Delay	8.0			
Intersection Capacity Utilization	28.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	1075	30	5	435
Future Volume (Veh/h)	0	0	1075	30	5	435
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)	0	0	1132	32	5	458
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.77	0.77			0.77	
vC, conflicting volume	1412	1173			1164	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1386	1076			1064	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	100	162			502	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	1164	158	305
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	502	1700
Volume to Capacity	0.68	0.01	0.18
Queue Length 95th (m)	0.0	0.2	0.0
Control Delay (s)	0.0	0.5	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.2	
Approach LOS			

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	75.6%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	395	10	5	182	5	35	5	5	5	5	15
Future Volume (Veh/h)	10	395	10	5	182	5	35	5	5	5	5	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	416	11	5	192	5	37	5	5	5	5	16
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	222			452			716	700	472	706	704	244
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	222			452			716	700	472	706	704	244
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			88	99	99	98	99	98
cM capacity (veh/h)	1317			1084			306	343	566	315	341	760

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	438	202	47	26
Volume Left	11	5	37	5
Volume Right	11	5	5	16
cSH	1317	1084	325	504
Volume to Capacity	0.01	0.00	0.14	0.05
Queue Length 95th (m)	0.2	0.1	3.8	1.2
Control Delay (s)	0.3	0.2	17.9	12.5
Lane LOS	A	A	C	B
Approach Delay (s)	0.3	0.2	17.9	12.5
Approach LOS			C	B

Intersection Summary					
Average Delay	1.9				
Intersection Capacity Utilization	44.5%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	145	10	5	55	10	5	5	5	5	5	30
Future Volume (Veh/h)	50	145	10	5	55	10	5	5	5	5	5	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	53	153	11	5	58	11	5	5	5	5	5	32
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	94			189			422	394	208	396	394	114
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	94			189			422	394	208	396	394	114
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			99	99	99	99	99	96
cM capacity (veh/h)	1467			1354			465	499	795	499	499	898

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	217	74	15	42
Volume Left	53	5	5	5
Volume Right	11	11	5	32
cSH	1467	1354	554	754
Volume to Capacity	0.04	0.00	0.03	0.06
Queue Length 95th (m)	0.9	0.1	0.6	1.3
Control Delay (s)	2.1	0.5	11.7	10.1
Lane LOS	A	A	B	B
Approach Delay (s)	2.1	0.5	11.7	10.1
Approach LOS			B	B

Intersection Summary					
Average Delay	3.1				
Intersection Capacity Utilization	34.2%	ICU Level of Service		A	
Analysis Period (min)	15				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	115	120	5	30	55	35	65	5	155	180	5
Future Volume (Veh/h)	40	115	120	5	30	55	35	65	5	155	180	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	42	121	126	5	32	58	37	68	5	163	189	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	115			272			488	418	234	428	452	111
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	115			272			488	418	234	428	452	111
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			88	86	99	62	59	99
cM capacity (veh/h)	1441			1263			301	486	770	430	465	901

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	289	95	110	357
Volume Left	42	5	37	163
Volume Right	126	58	5	5
cSH	1441	1263	409	451
Volume to Capacity	0.03	0.00	0.27	0.79
Queue Length 95th (m)	0.7	0.1	8.2	53.9
Control Delay (s)	1.3	0.4	17.0	37.0
Lane LOS	A	A	C	E
Approach Delay (s)	1.3	0.4	17.0	37.0
Approach LOS			C	E

Intersection Summary					
Average Delay	18.2				
Intersection Capacity Utilization	54.9%	ICU Level of Service		A	
Analysis Period (min)	15				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	5	5	5	47	5	5	5	125	5	5
Future Volume (Veh/h)	5	5	5	5	5	47	5	5	5	125	5	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	5	5	5	5	49	5	5	5	132	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	390	342	58	346	342	58	35			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	390	342	58	346	342	58	35			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	99	99	95	100			91		
cM capacity (veh/h)	462	506	965	518	506	965	1541			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	59	15	142
Volume Left	5	5	5	132
Volume Right	5	49	5	5
cSH	579	839	1541	1541
Volume to Capacity	0.03	0.07	0.00	0.09
Queue Length 95th (m)	0.6	1.7	0.1	2.1
Control Delay (s)	11.4	9.6	2.5	7.1
Lane LOS	B	A	A	A
Approach Delay (s)	11.4	9.6	2.5	7.1
Approach LOS	B	A		

Intersection Summary					
Average Delay	7.7				
Intersection Capacity Utilization	31.1%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	780	40	100	570	250	30	95	120	345	130	10
Future Volume (vph)	305	780	40	100	570	250	30	95	120	345	130	10
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		1.00		0.98	0.97			0.97		0.98	1.00	
Frt		0.993			0.954			0.926			0.989	
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1704	3367	0	1704	3147	0	0	3065	0	1704	1768	0
Flt Permitted	0.144			0.325				0.888		0.470		
Satd. Flow (perm)	258	3367	0	573	3147	0	0	2731	0	828	1768	0
Satd. Flow (RTOR)		5			60			128			4	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	324	830	43	106	606	266	32	101	128	367	138	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	324	873	0	106	872	0	0	261	0	367	149	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		11.5	37.8	
Total Split (s)	22.6	44.2		13.4	35.0		38.5	38.5		13.9	52.4	
Total Split (%)	20.5%	40.2%		12.2%	31.8%		35.0%	35.0%		12.6%	47.6%	
Maximum Green (s)	19.6	36.8		10.4	27.6		30.7	30.7		10.4	44.6	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	0.0	3.2		0.0	3.2		4.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	7.4		3.0	7.4			7.8		3.5	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0			8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0			22.0	
Pedestrian Calls (#/hr)		0			0		5	5			5	
Act Effct Green (s)	53.5	40.2		40.3	27.8			13.7		32.1	27.7	
Actuated g/C Ratio	0.58	0.44		0.44	0.30			0.15		0.35	0.30	
v/c Ratio	0.74	0.59		0.30	0.88			0.51		0.95	0.28	
Control Delay	29.3	23.8		13.7	41.2			21.2		62.8	25.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	29.3	23.8		13.7	41.2			21.2		62.8	25.1	
LOS	C	C		B	D			C		E	C	
Approach Delay		25.3			38.2			21.2			51.9	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	30.3	56.7		6.9	69.0			11.3		~55.3	19.8	
Queue Length 95th (m)	#93.0	110.2		21.1	#139.6			22.1		#93.7	33.9	

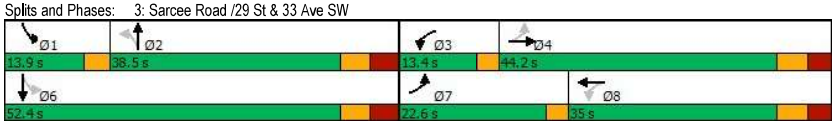
3: Sarcee Road /29 St & 33 Ave SW
04/16/2024

AM Peak Hour
2048 After Development

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			105.7			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	460	1471		394	992			1002		387	865	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.70	0.59		0.27	0.88			0.26		0.95	0.17	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 92.1	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 33.8	Intersection LOS: C
Intersection Capacity Utilization 105.5%	ICU Level of Service G
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



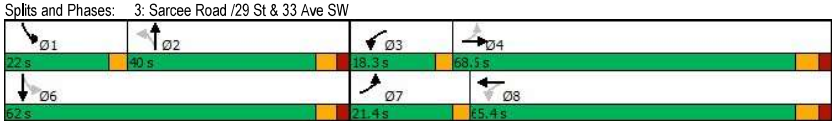
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	975	40	145	775	670	40	160	225	235	190	10
Future Volume (vph)	275	975	40	145	775	670	40	160	225	235	190	10
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		1.00			0.94			0.97		0.98	1.00	
Frt		0.994			0.930			0.920			0.992	
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1704	3371	0	1704	2986	0	0	3024	0	1704	1774	0
Flt Permitted	0.065			0.196				0.889		0.187		
Satd. Flow (perm)	117	3371	0	352	2986	0	0	2695	0	330	1774	0
Satd. Flow (RTOR)		3			173			176			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	289	1026	42	153	816	705	42	168	237	247	200	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	289	1068	0	153	1521	0	0	447	0	247	211	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		11.5	37.8	
Total Split (s)	21.4	68.5		18.3	65.4		40.0	40.0		22.0	62.0	
Total Split (%)	14.4%	46.0%		12.3%	44.0%		26.9%	26.9%		14.8%	41.7%	
Maximum Green (s)	18.4	61.8		15.3	58.7		33.7	33.7		18.5	55.7	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	0.0	2.5		0.0	2.5		2.5	2.5		0.0	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.7		3.0	6.7			6.3		3.5	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0			8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0			22.0	
Pedestrian Calls (#/hr)		0			0		5	5			5	
Act Effct Green (s)	84.1	66.8		73.1	58.9			19.7		43.4	40.6	
Actuated g/C Ratio	0.63	0.50		0.55	0.44			0.15		0.32	0.30	
v/c Ratio	0.99	0.63		0.51	1.08			0.82		0.87	0.39	
Control Delay	90.1	28.5		18.5	81.1			45.8		64.5	38.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	90.1	28.5		18.5	81.1			45.8		64.5	38.3	
LOS	F	C		B	F			D		E	D	
Approach Delay		41.6			75.4			45.8			52.4	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	61.5	107.0		15.9	~224.0			37.9		51.5	43.6	
Queue Length 95th (m)	#134.2	160.0		30.9	#299.0			56.8		#87.1	65.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			105.7			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	292	1682		359	1409			811		297	740	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.99	0.63		0.43	1.08			0.55		0.83	0.29	

Intersection Summary	
Cycle Length: 148.8	
Actuated Cycle Length: 134	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 57.7	Intersection LOS: E
Intersection Capacity Utilization 120.6%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW

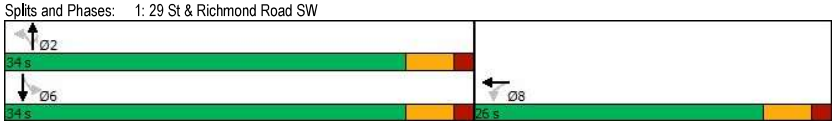


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	180	120	80	5	420	195	20	310	70
Future Volume (vph)	0	0	0	180	120	80	5	420	195	20	310	70
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.97			1.00	0.94		0.99	
Frt					0.940				0.850		0.976	
Flt Protected				0.950				0.999			0.998	
Satd. Flow (prot)	0	0	0	1704	1641	0	0	1792	1525	0	1728	0
Flt Permitted				0.950				0.995			0.970	
Satd. Flow (perm)	0	0	0	1666	1641	0	0	1784	1427	0	1678	0
Satd. Flow (RTOR)					61				207		24	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	0	0	0	191	128	85	5	447	207	21	330	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	191	213	0	0	452	207	0	425	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2		2	6		
Detector Phase				8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)				26.0	26.0		34.0	34.0	34.0	34.0	34.0	
Total Split (%)				43.3%	43.3%		56.7%	56.7%	56.7%	56.7%	56.7%	
Maximum Green (s)				21.0	21.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)				3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)				5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				None	None		Min	Min	Min	Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				11.1	11.1			20.6	20.6		20.6	
Actuated g/C Ratio				0.27	0.27			0.49	0.49		0.49	
v/c Ratio				0.43	0.44			0.51	0.26		0.51	
Control Delay				16.3	12.6			10.1	2.3		9.6	
Queue Delay				0.0	0.0			0.1	0.0		0.0	
Total Delay				16.3	12.6			10.2	2.3		9.6	
LOS				B	B			B	A		A	
Approach Delay					14.3			7.8			9.6	
Approach LOS					B			A			A	
Queue Length 50th (m)				11.0	8.5			17.9	0.0		15.6	
Queue Length 95th (m)				24.9	22.4			43.5	7.4		39.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)				50.0								
Base Capacity (vph)				843	860			1246	1059		1179	
Starvation Cap Reductn				0	0			197	0		0	
Spillback Cap Reductn				0	0			0	0		0	
Storage Cap Reductn				0	0			0	0		0	
Reduced v/c Ratio				0.23	0.25			0.43	0.20		0.36	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 41.7	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 61.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: 29 St & Richmond Road SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	40	965	10	10	320	60	5	5	40	35	10	20
Future Volume (vph)	40	965	10	10	320	60	5	5	40	35	10	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.92			0.95	
Frt		0.999			0.979			0.890			0.959	
Flt Protected		0.998			0.999			0.995			0.974	
Satd. Flow (prot)	0	1787	0	0	1732	0	0	1471	0	0	1629	0
Flt Permitted		0.973			0.972			0.964			0.804	
Satd. Flow (perm)	0	1740	0	0	1685	0	0	1419	0	0	1307	0
Satd. Flow (RTOR)		1			22			43			21	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	43	1027	11	11	340	64	5	5	43	37	11	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1081	0	0	415	0	0	53	0	0	69	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		55.2			55.2			11.0			11.0	
Actuated g/C Ratio		0.79			0.79			0.16			0.16	
v/c Ratio		0.79			0.31			0.20			0.31	
Control Delay		12.7			3.9			15.2			27.6	
Queue Delay		0.0			0.5			0.0			0.0	
Total Delay		12.7			4.4			15.2			27.6	
LOS		B			A			B			C	
Approach Delay		12.7			4.4			15.2			27.6	
Approach LOS		B			A			B			C	
Queue Length 50th (m)		84.3			15.2			1.2			6.1	
Queue Length 95th (m)		#186.2			27.8			10.8			18.4	

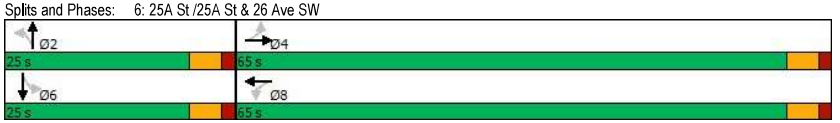
6: 25A St /25A St & 26 Ave SW
04/16/2024

AM Peak Hour
2048 After Development

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		73.4			75.2			100.7			70.0	
Turn Bay Length (m)												
Base Capacity (vph)		1430			1389			462			413	
Starvation Cap Reductn		0			578			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.76			0.51			0.11			0.17	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 70.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 94.6%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 6: 25A St /25A St & 26 Ave SW



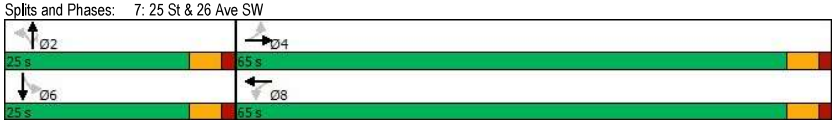
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	950	50	95	360	40	10	80	200	30	10	20
Future Volume (vph)	40	950	50	95	360	40	10	80	200	30	10	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99			0.99	0.91		0.95	
Frt		0.994			0.985				0.850		0.956	
Flt Protected		0.998		0.950				0.994			0.976	
Satd. Flow (prot)	0	1772	0	1704	1752	0	0	1783	1525	0	1624	0
Flt Permitted		0.973		0.262				0.964			0.814	
Satd. Flow (perm)	0	1726	0	466	1752	0	0	1719	1386	0	1321	0
Satd. Flow (RTOR)		6			13				133		21	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	43	1011	53	101	383	43	11	85	213	32	11	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1107	0	101	426	0	0	96	213	0	64	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%	27.8%	27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		54.4		54.4	54.4			12.4	12.4		12.4	
Actuated g/C Ratio		0.71		0.71	0.71			0.16	0.16		0.16	
v/c Ratio		0.91		0.31	0.34			0.35	0.64		0.28	
Control Delay		22.6		7.7	5.4			34.4	22.6		25.4	
Queue Delay		13.6		0.0	0.0			0.0	0.0		0.0	
Total Delay		36.2		7.7	5.4			34.4	22.6		25.4	
LOS		D		A	A			C	C		C	
Approach Delay		36.2			5.8			26.2			25.4	
Approach LOS		D			A			C			C	
Queue Length 50th (m)		91.9		3.9	16.2			13.8	11.5		6.0	
Queue Length 95th (m)		#261.4		14.9	40.6			27.0	32.6		16.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)				50.0					50.0			
Base Capacity (vph)		1370		369	1392			454	464		364	
Starvation Cap Reductn		265		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		1.00		0.27	0.31			0.21	0.46		0.18	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 77	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 26.4	Intersection LOS: C
Intersection Capacity Utilization 105.7%	ICU Level of Service G
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: 25 St & 26 Ave SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	172	30	30	10	670	390	25	270	180
Future Volume (vph)	0	0	0	172	30	30	10	670	390	25	270	180
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.97			1.00	0.94		0.98	
Frt					0.925				0.850		0.949	
Flt Protected				0.950				0.999			0.997	
Satd. Flow (prot)	0	0	0	1704	1603	0	0	1792	1525	0	1656	0
Flt Permitted				0.950				0.992			0.953	
Satd. Flow (perm)	0	0	0	1666	1603	0	0	1779	1427	0	1582	0
Satd. Flow (RTOR)					32				411		73	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	0	0	0	181	32	32	11	705	411	26	284	189
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	181	64	0	0	716	411	0	499	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2		2	6		
Detector Phase				8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)				25.0	25.0		35.0	35.0	35.0	35.0	35.0	
Total Split (%)				41.7%	41.7%		58.3%	58.3%	58.3%	58.3%	58.3%	
Maximum Green (s)				20.0	20.0		30.0	30.0	30.0	30.0	30.0	
Yellow Time (s)				3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)				5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				None	None		Min	Min	Min	Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				11.6	11.6			29.3	29.3		29.3	
Actuated g/C Ratio				0.25	0.25			0.63	0.63		0.63	
v/c Ratio				0.44	0.15			0.64	0.39		0.49	
Control Delay				19.7	10.6			11.6	2.1		7.9	
Queue Delay				0.0	0.0			0.6	0.1		0.0	
Total Delay				19.7	10.6			12.3	2.2		7.9	
LOS				B	B			B	A		A	
Approach Delay					17.3			8.6			7.9	
Approach LOS					B			A			A	
Queue Length 50th (m)				12.0	1.9			36.5	0.0		17.8	
Queue Length 95th (m)				28.9	9.4			85.6	9.5		46.1	

1: 29 St & Richmond Road SW
04/16/2024

PM Peak Hour
2048 After Development

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)				50.0								
Base Capacity (vph)				731	721			1260	1131		1142	
Starvation Cap Reductn				0	0			231	155		0	
Spillback Cap Reductn				0	0			0	0		0	
Storage Cap Reductn				0	0			0	0		0	
Reduced v/c Ratio				0.25	0.09			0.70	0.42		0.44	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 46.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 9.5	Intersection LOS: A
Intersection Capacity Utilization 70.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: 29 St & Richmond Road SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	690	10	10	960	53	10	20	45	110	10	30
Future Volume (vph)	30	690	10	10	960	53	10	20	45	110	10	30
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.94			0.95	
Frt		0.998			0.993			0.920			0.973	
Flt Protected		0.998			0.999			0.993			0.965	
Satd. Flow (prot)	0	1784	0	0	1772	0	0	1550	0	0	1653	0
Flt Permitted		0.934			0.992			0.949			0.790	
Satd. Flow (perm)	0	1669	0	0	1759	0	0	1473	0	0	1305	0
Satd. Flow (RTOR)		2			7			47			13	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	32	726	11	11	1011	56	11	21	47	116	11	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	769	0	0	1078	0	0	79	0	0	159	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		52.9			52.9			14.5			14.5	
Actuated g/C Ratio		0.68			0.68			0.19			0.19	
v/c Ratio		0.68			0.90			0.25			0.63	
Control Delay		11.5			23.0			17.0			39.5	
Queue Delay		0.0			7.7			0.0			0.0	
Total Delay		11.5			30.6			17.0			39.5	
LOS		B			C			B			D	
Approach Delay		11.5			30.6			17.0			39.5	
Approach LOS		B			C			B			D	
Queue Length 50th (m)		56.2			109.5			4.2			21.2	
Queue Length 95th (m)		112.3			#251.3			15.6			41.7	

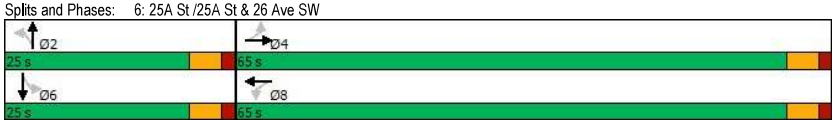
6: 25A St /25A St & 26 Ave SW
04/16/2024

PM Peak Hour
2048 After Development

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		73.4			75.2			100.7			70.0	
Turn Bay Length (m)												
Base Capacity (vph)		1319			1392			422			353	
Starvation Cap Reductn		0			278			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.58			0.97			0.19			0.45	

Intersection Summary			
Cycle Length: 90			
Actuated Cycle Length: 77.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 23.7		Intersection LOS: C	
Intersection Capacity Utilization 83.7%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 6: 25A St /25A St & 26 Ave SW

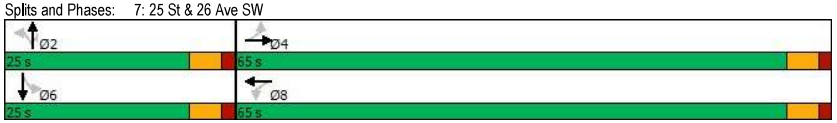


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	685	140	135	1000	50	30	20	110	40	25	45
Future Volume (vph)	50	685	140	135	1000	50	30	20	110	40	25	45
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99	1.00			0.97	0.91		0.94	
Frt		0.978			0.993				0.850		0.945	
Flt Protected		0.997		0.950				0.971			0.982	
Satd. Flow (prot)	0	1726	0	1704	1774	0	0	1742	1525	0	1603	0
Flt Permitted		0.801		0.328				0.734			0.857	
Satd. Flow (perm)	0	1387	0	582	1774	0	0	1282	1386	0	1372	0
Satd. Flow (RTOR)		23			6				116		36	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	53	721	147	142	1053	53	32	21	116	42	26	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	921	0	142	1106	0	0	53	116	0	115	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%	27.8%	27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		64.1		64.1	64.1			11.4	11.4		11.4	
Actuated g/C Ratio		0.79		0.79	0.79			0.14	0.14		0.14	
v/c Ratio		0.84		0.31	0.79			0.30	0.40		0.52	
Control Delay		17.8		6.1	13.3			35.9	10.8		31.4	
Queue Delay		12.7		0.0	0.0			0.0	0.0		0.0	
Total Delay		30.5		6.1	13.3			35.9	10.8		31.4	
LOS		C		A	B			D	B		C	
Approach Delay		30.5			12.5			18.7			31.4	
Approach LOS		C			B			B			C	
Queue Length 50th (m)		78.5		5.6	86.5			7.5	0.0		11.3	
Queue Length 95th (m)		#215.8		16.8	#237.1			17.6	13.3		26.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)				50.0					50.0			
Base Capacity (vph)		1097		458	1398			315	428		364	
Starvation Cap Reductn		172		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		1.00		0.31	0.79			0.17	0.27		0.32	

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 81.4		
Natural Cycle: 120		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.84		
Intersection Signal Delay: 20.6	Intersection LOS: C	
Intersection Capacity Utilization 113.0%	ICU Level of Service H	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		

Splits and Phases: 7: 25 St & 26 Ave SW





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	58	54	25	5	322	97	7	321	39
Future Volume (Veh/h)	0	0	0	58	54	25	5	322	97	7	321	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	62	57	27	5	343	103	7	341	41
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.97	0.97		0.97	0.97	0.97				0.97		
vC, conflicting volume	886	882	412	830	850	444	407			471		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	864	859	412	806	827	407	407			434		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	77	80	95	100			99		
cM capacity (veh/h)	205	274	626	270	286	595	1152			1063		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	62	84	451	389
Volume Left	62	0	5	7
Volume Right	0	27	103	41
cSH	270	344	1152	1063
Volume to Capacity	0.23	0.24	0.00	0.01
Queue Length 95th (m)	6.6	7.2	0.1	0.2
Control Delay (s)	22.2	18.8	0.1	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	20.3		0.1	0.2
Approach LOS	C			

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	43.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	412	30	5	375
Future Volume (Veh/h)	0	0	412	30	5	375
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)	0	0	438	32	5	399
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.89	0.89			0.89	
vC, conflicting volume	688	479			470	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	587	351			341	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	381	561			1080	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	470	138	266
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	1080	1700
Volume to Capacity	0.28	0.00	0.16
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.1	
Approach LOS			

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	39.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	95	5	5	111	5	22	5	7	5	5	5
Future Volume (Veh/h)	5	95	5	5	111	5	22	5	7	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	101	5	5	118	5	23	5	7	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	148			131			302	296	154	304	296	170
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	148			131			302	296	154	304	296	170
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			96	99	99	99	99	99
cM capacity (veh/h)	1402			1422			591	584	853	588	584	835

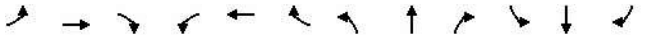
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	111	128	35	15
Volume Left	5	5	23	5
Volume Right	5	5	7	5
cSH	1402	1422	629	651
Volume to Capacity	0.00	0.00	0.06	0.02
Queue Length 95th (m)	0.1	0.1	1.3	0.5
Control Delay (s)	0.4	0.3	11.1	10.7
Lane LOS	A	A	B	B
Approach Delay (s)	0.4	0.3	11.1	10.7
Approach LOS			B	B

Intersection Summary					
Average Delay			2.2		
Intersection Capacity Utilization			27.1%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	72	5	5	68	21	5	9	5	6	5	5
Future Volume (Veh/h)	19	72	5	5	68	21	5	9	5	6	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	20	77	5	5	72	22	5	10	5	6	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	119			107			270	274	130	272	265	133
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	119			107			270	274	130	272	265	133
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	98	99	99	99	99
cM capacity (veh/h)	1437			1451			615	595	880	609	602	876

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	102	99	20	16
Volume Left	20	5	5	6
Volume Right	5	22	5	5
cSH	1437	1451	653	670
Volume to Capacity	0.01	0.00	0.03	0.02
Queue Length 95th (m)	0.3	0.1	0.7	0.6
Control Delay (s)	1.6	0.4	10.7	10.5
Lane LOS	A	A	B	B
Approach Delay (s)	1.6	0.4	10.7	10.5
Approach LOS			B	B

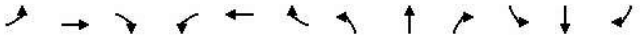
Intersection Summary					
Average Delay			2.5		
Intersection Capacity Utilization			28.2%	ICU Level of Service	A
Analysis Period (min)			15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	656	5	5	434	5	9	5	23	7	5	13
Future Volume (Veh/h)	10	656	5	5	434	5	9	5	23	7	5	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	698	5	5	462	5	10	5	24	7	5	14
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	492			728			1264	1250	750	1274	1250	514
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	492			728			1264	1250	750	1274	1250	514
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			92	97	94	94	97	97
cM capacity (veh/h)	1048			856			127	163	393	121	163	536

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	714	472	39	26
Volume Left	11	5	10	7
Volume Right	5	5	24	14
cSH	1048	856	229	226
Volume to Capacity	0.01	0.01	0.17	0.11
Queue Length 95th (m)	0.2	0.1	4.6	2.9
Control Delay (s)	0.3	0.2	23.9	23.0
Lane LOS	A	A	C	C
Approach Delay (s)	0.3	0.2	23.9	23.0
Approach LOS			C	C

Intersection Summary					
Average Delay	1.4				
Intersection Capacity Utilization	58.0%	ICU Level of Service		B	
Analysis Period (min)	15				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	10	33	8	55	10	143	19	10	174	5
Future Volume (Veh/h)	5	5	10	33	8	55	10	143	19	10	174	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	5	11	35	9	59	11	152	20	11	185	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	507	454	238	457	446	212	215			197		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	507	454	238	457	446	212	215			197		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	92	98	93	99			99		
cM capacity (veh/h)	396	472	766	459	477	792	1325			1345		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	21	103	183	201
Volume Left	5	35	11	11
Volume Right	11	59	20	5
cSH	559	607	1325	1345
Volume to Capacity	0.04	0.17	0.01	0.01
Queue Length 95th (m)	0.9	4.6	0.2	0.2
Control Delay (s)	11.7	12.1	0.5	0.5
Lane LOS	B	B	A	A
Approach Delay (s)	11.7	12.1	0.5	0.5
Approach LOS	B	B		

Intersection Summary					
Average Delay	3.3				
Intersection Capacity Utilization	31.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	47	97	11	5	450	183	8	299	68
Future Volume (Veh/h)	0	0	0	47	97	11	5	450	183	8	299	68
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	49	102	12	5	474	193	8	315	72
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.83	0.83		0.83	0.83	0.83				0.83		
vC, conflicting volume	1060	1094	401	998	1034	620	412			692		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	973	1013	401	897	940	445	412			530		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	76	52	98	100			99		
cM capacity (veh/h)	112	192	635	202	212	489	1147			845		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	49	114	672	395
Volume Left	49	0	5	8
Volume Right	0	12	193	72
cSH	202	225	1147	845
Volume to Capacity	0.24	0.51	0.00	0.01
Queue Length 95th (m)	7.0	19.7	0.1	0.2
Control Delay (s)	28.4	36.3	0.1	0.3
Lane LOS	D	E	A	A
Approach Delay (s)	33.9		0.1	0.3
Approach LOS	D			

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	55.9%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	684	66	14	314
Future Volume (Veh/h)	0	0	684	66	14	314
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)	0	0	720	69	15	331
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.80	0.80			0.80	
vC, conflicting volume	975	780			789	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	845	601			613	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			98	
cM capacity (veh/h)	232	347			771	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	789	125	221
Volume Left	0	15	0
Volume Right	69	0	0
cSH	1700	771	1700
Volume to Capacity	0.46	0.02	0.13
Queue Length 95th (m)	0.0	0.5	0.0
Control Delay (s)	0.0	1.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.5	
Approach LOS			

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	56.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	144	12	13	122	5	62	5	21	5	5	5
Future Volume (Veh/h)	5	144	12	13	122	5	62	5	21	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	152	13	14	128	5	65	5	22	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	158			190			384	380	208	402	384	180
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	158			190			384	380	208	402	384	180
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			87	99	97	99	99	99
cM capacity (veh/h)	1390			1353			518	521	795	494	519	825

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	170	147	92	15
Volume Left	5	14	65	5
Volume Right	13	5	22	5
cSH	1390	1353	565	581
Volume to Capacity	0.00	0.01	0.16	0.03
Queue Length 95th (m)	0.1	0.2	4.4	0.6
Control Delay (s)	0.3	0.8	12.6	11.4
Lane LOS	A	A	B	B
Approach Delay (s)	0.3	0.8	12.6	11.4
Approach LOS			B	B

Intersection Summary					
Average Delay			3.5		
Intersection Capacity Utilization			32.0%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	109	6	5	72	25	5	5	5	7	11	20
Future Volume (Veh/h)	26	109	6	5	72	25	5	5	5	7	11	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	27	115	6	5	76	26	5	5	5	7	12	21
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	127			146			348	334	168	328	324	139
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	127			146			348	334	168	328	324	139
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	99	99	98	98
cM capacity (veh/h)	1427			1404			529	548	838	560	555	869

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	148	107	15	40
Volume Left	27	5	5	7
Volume Right	6	26	5	21
cSH	1427	1404	611	687
Volume to Capacity	0.02	0.00	0.02	0.06
Queue Length 95th (m)	0.4	0.1	0.6	1.4
Control Delay (s)	1.5	0.4	11.0	10.6
Lane LOS	A	A	B	B
Approach Delay (s)	1.5	0.4	11.0	10.6
Approach LOS			B	B

Intersection Summary					
Average Delay			2.7		
Intersection Capacity Utilization			30.4%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	619	19	12	697	11	6	5	34	5	5	16
Future Volume (Veh/h)	17	619	19	12	697	11	6	5	34	5	5	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	18	652	20	13	734	12	6	5	36	5	5	17
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	771			697			1534	1520	712	1552	1524	790
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	771			697			1534	1520	712	1552	1524	790
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			92	95	91	93	95	95
cM capacity (veh/h)	825			879			79	109	414	73	109	373

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	690	759	47	27
Volume Left	18	13	6	5
Volume Right	20	12	36	17
cSH	825	879	225	169
Volume to Capacity	0.02	0.01	0.21	0.16
Queue Length 95th (m)	0.5	0.3	5.8	4.2
Control Delay (s)	0.6	0.4	25.2	30.3
Lane LOS	A	A	D	D
Approach Delay (s)	0.6	0.4	25.2	30.3
Approach LOS			D	D

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	60.6%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	14	10	18	8	30	10	196	30	56	114	5
Future Volume (Veh/h)	5	14	10	18	8	30	10	196	30	56	114	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	15	11	19	8	32	11	206	32	59	120	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	570	550	172	553	537	272	150			263		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	570	550	172	553	537	272	150			263		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	96	99	95	98	96	99			95		
cM capacity (veh/h)	361	400	833	377	407	733	1400			1272		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	31	59	249	184
Volume Left	5	19	11	59
Volume Right	11	32	32	5
cSH	480	519	1400	1272
Volume to Capacity	0.06	0.11	0.01	0.05
Queue Length 95th (m)	1.6	2.9	0.2	1.1
Control Delay (s)	13.0	12.8	0.4	2.8
Lane LOS	B	B	A	A
Approach Delay (s)	13.0	12.8	0.4	2.8
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	45.7%	ICU Level of Service	A	
Analysis Period (min)	15			

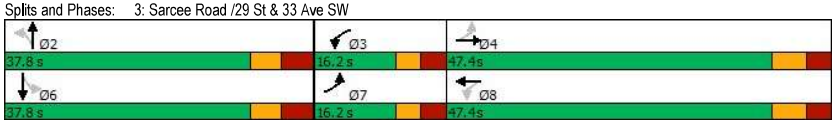
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	726	39	154	380	197	27	138	219	237	138	5
Future Volume (vph)	107	726	39	154	380	197	27	138	219	237	138	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98	1.00		0.99	0.97			0.97		0.99	1.00	
Frt		0.992			0.949			0.915			0.995	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3364	0	1704	3130	0	0	3028	0	1704	1782	0
Flt Permitted	0.371			0.187				0.922		0.510		
Satd. Flow (perm)	650	3364	0	330	3130	0	0	2799	0	902	1782	0
Satd. Flow (RTOR)		6			109			233			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	114	772	41	164	404	210	29	147	233	252	147	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	813	0	164	614	0	0	409	0	252	152	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		37.8	37.8	
Total Split (s)	16.2	47.4		16.2	47.4		37.8	37.8		37.8	37.8	
Total Split (%)	16.0%	46.7%		16.0%	46.7%		37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	10.0	40.0		10.0	40.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.8	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		7.8	7.8	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		5	5		5	5	
Act Effct Green (s)	35.9	26.3		38.6	29.9			30.1		30.1	30.1	
Actuated g/C Ratio	0.41	0.30		0.44	0.34			0.35		0.35	0.35	
v/c Ratio	0.31	0.80		0.57	0.54			0.36		0.81	0.25	
Control Delay	14.2	34.2		20.6	21.3			10.6		49.6	23.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	14.2	34.2		20.6	21.3			10.6		49.6	23.0	
LOS	B	C		C	C			B		D	C	
Approach Delay		31.7			21.2			10.6			39.6	
Approach LOS		C			C			B			D	
Queue Length 50th (m)	9.8	65.3		14.6	36.6			10.7		38.2	17.9	
Queue Length 95th (m)	18.2	85.8		25.1	53.7			24.4		#89.0	36.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			105.7			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	402	1557		306	1504			1121		312	618	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.28	0.52		0.54	0.41			0.36		0.81	0.25	

Intersection Summary	
Cycle Length: 101.4	
Actuated Cycle Length: 87	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 26.3	Intersection LOS: C
Intersection Capacity Utilization 95.0%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	1063	78	58	586	115	79	11	74	153	5	60
Future Volume (vph)	41	1063	78	58	586	115	79	11	74	153	5	60
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.975				0.850		0.963	
Flt Protected	0.950			0.950				0.958			0.966	
Satd. Flow (prot)	1704	3374	0	1704	3323	0	0	1718	1525	0	1668	0
Flt Permitted	0.284			0.087				0.654			0.731	
Satd. Flow (perm)	509	3374	0	156	3323	0	0	1173	1525	0	1263	0
Satd. Flow (RTOR)		8			25				79		17	
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
Adj. Flow (vph)	44	1131	83	62	623	122	84	12	79	163	5	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	1214	0	62	745	0	0	96	79	0	232	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.5	25.5		11.5	25.5		35.5	35.5	35.5	35.5	35.5	
Total Split (s)	12.0	61.0		12.0	61.0		47.0	47.0	47.0	47.0	47.0	
Total Split (%)	10.0%	50.8%		10.0%	50.8%		39.2%	39.2%	39.2%	39.2%	39.2%	
Maximum Green (s)	7.5	55.5		7.5	55.5		41.5	41.5	41.5	41.5	41.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	2.0		1.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	5.5		4.5	5.5			5.5	5.5		5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)		8.0			8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0	22.0	22.0	22.0	
Pedestrian Calls (#/hr)		0			0		5	5	5	5	5	
Act Effct Green (s)	49.9	43.4		51.0	45.8			42.3	42.3		42.3	
Actuated g/C Ratio	0.47	0.41		0.48	0.43			0.40	0.40		0.40	
v/c Ratio	0.14	0.88		0.34	0.51			0.21	0.12		0.45	
Control Delay	13.0	36.5		17.4	22.6			26.5	6.4		28.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	13.0	36.5		17.4	22.6			26.5	6.4		28.3	
LOS	B	D		B	C			C	A		C	
Approach Delay		35.7			22.2			17.4			28.3	
Approach LOS		D			C			B			C	
Queue Length 50th (m)	4.3	122.2		6.2	59.6			13.6	0.0		34.1	
Queue Length 95th (m)	9.6	150.0		12.4	76.8			29.6	10.2		65.1	
Internal Link Dist (m)		88.8			75.6			76.8			141.4	
Turn Bay Length (m)												
Base Capacity (vph)	327	1806		187	1787			468	656		514	

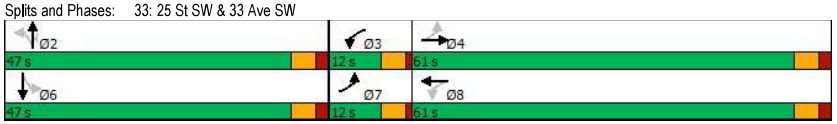
33: 25 St SW & 33 Ave SW
04/16/2024

AM Peak Hour
2028 After Development with 25 Street Connection

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.13	0.67		0.33	0.42			0.21	0.12		0.45	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 70.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 33: 25 St SW & 33 Ave SW

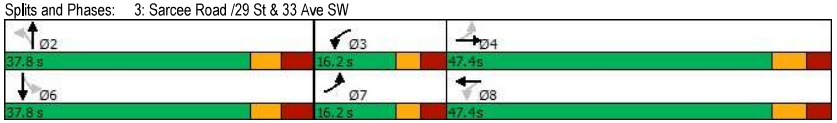


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	526	80	245	700	337	31	207	175	166	145	5
Future Volume (vph)	206	526	80	245	700	337	31	207	175	166	145	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99		0.98	0.97			0.98		0.99	1.00	
Frt		0.980			0.951			0.937			0.995	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3298	0	1704	3142	0	0	3121	0	1704	1782	0
Flt Permitted	0.118			0.354				0.914		0.464		
Satd. Flow (perm)	212	3298	0	621	3142	0	0	2860	0	821	1782	0
Satd. Flow (RTOR)		20			95			184			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	217	554	84	258	737	355	33	218	184	175	153	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	638	0	258	1092	0	0	435	0	175	158	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		37.8	37.8	
Total Split (s)	16.2	47.4		16.2	47.4		37.8	37.8		37.8	37.8	
Total Split (%)	16.0%	46.7%		16.0%	46.7%		37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	10.0	40.0		10.0	40.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.8	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		7.8	7.8	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		5	5		5	5	
Act Effct Green (s)	45.2	33.8		44.2	33.4			23.3		23.3	23.3	
Actuated g/C Ratio	0.51	0.38		0.50	0.38			0.26		0.26	0.26	
v/c Ratio	0.78	0.50		0.61	0.88			0.49		0.81	0.34	
Control Delay	40.2	22.5		17.8	33.5			17.7		60.8	29.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	40.2	22.5		17.8	33.5			17.7		60.8	29.0	
LOS	D	C		B	C			B		E	C	
Approach Delay		27.0			30.5			17.7			45.7	
Approach LOS		C			C			B			D	
Queue Length 50th (m)	21.9	44.2		22.3	87.5			18.9		29.1	22.4	
Queue Length 95th (m)	#63.6	62.8		38.5	121.0			34.0		#63.2	40.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			105.7			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	281	1539		439	1506			1113		285	620	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.77	0.41		0.59	0.73			0.39		0.61	0.25	

Intersection Summary	
Cycle Length: 101.4	
Actuated Cycle Length: 88.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 106.0%	ICU Level of Service G
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW

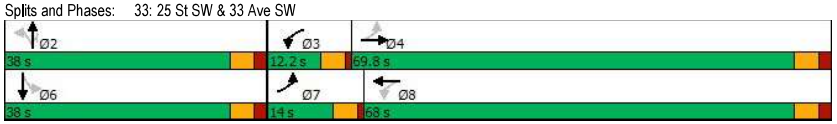


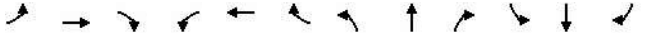
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	710	71	89	1191	135	19	23	60	68	16	52
Future Volume (vph)	75	710	71	89	1191	135	19	23	60	68	16	52
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.985				0.850		0.948	
Flt Protected	0.950			0.950				0.978			0.976	
Satd. Flow (prot)	1704	3360	0	1704	3357	0	0	1754	1525	0	1659	0
Flt Permitted	0.082			0.264				0.867			0.836	
Satd. Flow (perm)	147	3360	0	474	3357	0	0	1555	1525	0	1421	0
Satd. Flow (RTOR)		14			15				64		25	
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
Adj. Flow (vph)	79	747	75	94	1254	142	20	24	63	72	17	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	822	0	94	1396	0	0	44	63	0	144	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.5	25.5		11.5	25.5		35.5	35.5	35.5	35.5	35.5	
Total Split (s)	14.0	69.8		12.2	68.0		38.0	38.0	38.0	38.0	38.0	
Total Split (%)	11.7%	58.2%		10.2%	56.7%		31.7%	31.7%	31.7%	31.7%	31.7%	
Maximum Green (s)	9.5	64.3		7.7	62.5		32.5	32.5	32.5	32.5	32.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	2.0		1.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	5.5		4.5	5.5			5.5	5.5		5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)		8.0			8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0	22.0	22.0	22.0	
Pedestrian Calls (#/hr)		0			0		5	5	5	5	5	
Act Effct Green (s)	56.1	48.5		54.3	47.6			33.4	33.4		33.4	
Actuated g/C Ratio	0.55	0.47		0.53	0.47			0.33	0.33		0.33	
v/c Ratio	0.38	0.51		0.27	0.89			0.09	0.12		0.30	
Control Delay	14.0	19.3		10.9	32.7			30.4	8.6		27.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	14.0	19.3		10.9	32.7			30.4	8.6		27.4	
LOS	B	B		B	C			C	A		C	
Approach Delay		18.9			31.4			17.5			27.4	
Approach LOS		B			C			B			C	
Queue Length 50th (m)	6.4	59.0		7.7	133.4			6.5	0.0		18.6	
Queue Length 95th (m)	12.3	74.3		13.9	165.2			17.2	10.4		41.0	
Internal Link Dist (m)		88.8			75.6			76.8			141.4	
Turn Bay Length (m)												
Base Capacity (vph)	230	2176		347	2114			508	541		481	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.34	0.38		0.27	0.66			0.09	0.12		0.30	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 26.3	Intersection LOS: C
Intersection Capacity Utilization 71.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 33: 25 St SW & 33 Ave SW





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	19	37	22	72	42	218	29	247	48	46	67	17
Future Volume (vph)	19	37	22	72	42	218	29	247	48	46	67	17
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)	20	39	23	77	45	232	31	263	51	49	71	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	82	354	345	138
Volume Left (vph)	20	77	31	49
Volume Right (vph)	23	232	51	18
Hadj (s)	-0.09	-0.32	-0.04	0.03
Departure Headway (s)	5.8	5.1	5.3	5.7
Degree Utilization, x	0.13	0.50	0.51	0.22
Capacity (veh/h)	542	666	638	568
Control Delay (s)	9.6	13.0	13.6	10.3
Approach Delay (s)	9.6	13.0	13.6	10.3
Approach LOS	A	B	B	B

Intersection Summary					
Delay			12.5		
Level of Service			B		
Intersection Capacity Utilization			53.4%	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)	35	57	43	39	42	125	29	153	68	220	234	20
Future Volume (vph)	35	57	43	39	42	125	29	153	68	220	234	20
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)	37	60	45	41	44	132	31	161	72	232	246	21

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	142	217	264	499
Volume Left (vph)	37	41	31	232
Volume Right (vph)	45	132	72	21
Hadj (s)	-0.10	-0.29	-0.11	0.10
Departure Headway (s)	6.5	6.2	5.9	5.7
Degree Utilization, x	0.26	0.37	0.43	0.79
Capacity (veh/h)	484	523	559	619
Control Delay (s)	11.8	12.7	13.3	26.2
Approach Delay (s)	11.8	12.7	13.3	26.2
Approach LOS	B	B	B	D

Intersection Summary					
Delay			18.7		
Level of Service			C		
Intersection Capacity Utilization			67.8%	ICU Level of Service	C
Analysis Period (min)			15		

Queuing and Blocking Report
2028 After Development with 25 Street Connection 04/12/2024

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	12.7	26.4	29.0	17.0
Average Queue (m)	7.6	18.4	17.9	9.2
95th Queue (m)	14.1	28.8	32.4	17.5
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
2028 After Development with 25 Street Connection 04/12/2024

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	26.3	26.8	35.1	55.2
Average Queue (m)	11.7	13.5	14.1	24.2
95th Queue (m)	20.4	22.5	26.2	42.4
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

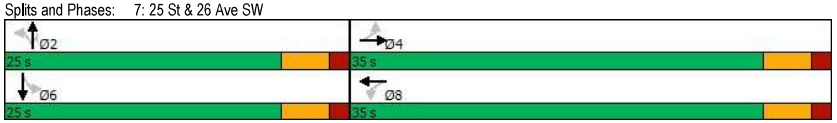
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	625	55	61	318	10	98	18	367	17	15	20
Future Volume (vph)	15	625	55	61	318	10	98	18	367	17	15	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99	1.00			0.97	0.93		0.96	
Frt		0.989			0.995				0.850		0.948	
Flt Protected		0.999		0.950				0.959			0.984	
Satd. Flow (prot)	0	1763	0	1704	1781	0	0	1720	1525	0	1630	0
Flt Permitted		0.990		0.335				0.721			0.898	
Satd. Flow (perm)	0	1746	0	595	1781	0	0	1255	1422	0	1472	0
Satd. Flow (RTOR)		10			4				167		21	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	16	665	59	65	338	11	104	19	390	18	16	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	740	0	65	349	0	0	123	390	0	55	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	35.0	35.0		35.0	35.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	58.3%	58.3%		58.3%	58.3%		41.7%	41.7%	41.7%	41.7%	41.7%	
Maximum Green (s)	30.0	30.0		30.0	30.0		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)	8.0	8.0		7.0	7.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		25.3		25.3	25.3			14.4	14.4		14.4	
Actuated g/C Ratio		0.51		0.51	0.51			0.29	0.29		0.29	
v/c Ratio		0.83		0.22	0.39			0.34	0.74		0.13	
Control Delay		21.9		10.1	9.6			17.9	19.1		10.8	
Queue Delay		1.2		0.0	0.0			0.0	0.0		0.0	
Total Delay		23.1		10.1	9.6			17.9	19.1		10.8	
LOS		C		B	A			B	B		B	
Approach Delay		23.1			9.7			18.8			10.8	
Approach LOS		C			A			B			B	
Queue Length 50th (m)		49.1		2.8	16.7			8.9	17.3		2.3	
Queue Length 95th (m)		#127.8		10.3	37.7			21.1	46.1		8.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)				50.0					50.0			
Base Capacity (vph)		1084		368	1103			517	684		619	
Starvation Cap Reductn		155		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.80		0.18	0.32			0.24	0.57		0.09	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 18.2	Intersection LOS: B
Intersection Capacity Utilization 89.5%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: 25 St & 26 Ave SW

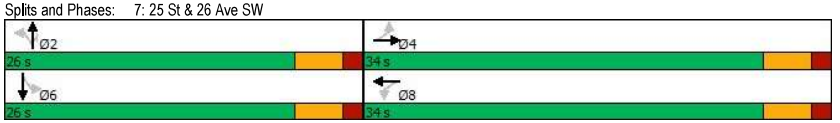


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	448	175	229	595	34	88	13	201	15	78	25
Future Volume (vph)	30	448	175	229	595	34	88	13	201	15	78	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99	1.00			0.97	0.93		0.98	
Frt		0.964			0.992				0.850		0.972	
Flt Protected		0.998		0.950				0.958			0.994	
Satd. Flow (prot)	0	1696	0	1704	1773	0	0	1718	1525	0	1709	0
Flt Permitted		0.958		0.389				0.764			0.952	
Satd. Flow (perm)	0	1627	0	690	1773	0	0	1333	1422	0	1630	0
Satd. Flow (RTOR)		42			7				212		24	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	32	472	184	241	626	36	93	14	212	16	82	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	688	0	241	662	0	0	107	212	0	124	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	34.0	34.0		34.0	34.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	56.7%	56.7%		56.7%	56.7%		43.3%	43.3%	43.3%	43.3%	43.3%	
Maximum Green (s)	29.0	29.0		29.0	29.0		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		26.8		26.8	26.8			11.0	11.0		11.0	
Actuated g/C Ratio		0.56		0.56	0.56			0.23	0.23		0.23	
v/c Ratio		0.74		0.62	0.66			0.35	0.43		0.32	
Control Delay		14.1		17.1	11.5			19.8	6.2		15.9	
Queue Delay		1.4		0.0	0.0			0.0	0.0		0.0	
Total Delay		15.5		17.1	11.5			19.8	6.2		15.9	
LOS		B		B	B			B	A		B	
Approach Delay		15.5			13.0			10.8			15.9	
Approach LOS		B			B			B			B	
Queue Length 50th (m)		32.1		11.0	30.8			8.1	0.0		7.4	
Queue Length 95th (m)		#87.2		#45.0	70.1			18.6	12.3		18.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)				50.0					50.0			
Base Capacity (vph)		1009		421	1085			589	746		733	
Starvation Cap Reductn		154		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.80		0.57	0.61			0.18	0.28		0.17	

Intersection Summary			
Cycle Length: 60			
Actuated Cycle Length: 47.8			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 13.7		Intersection LOS: B	
Intersection Capacity Utilization 99.8%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 7: 25 St & 26 Ave SW





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	571	30	5	377
Future Volume (Veh/h)	0	0	571	30	5	377
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)	0	0	607	32	5	401
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.82	0.82			0.82	
vC, conflicting volume	858	648			639	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	718	461			450	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	290	439			908	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	639	139	267
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	908	1700
Volume to Capacity	0.38	0.01	0.16
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.4	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.1	
Approach LOS			

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		48.4%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	165	8	7	239	7	30	5	10	7	5	13
Future Volume (Veh/h)	8	165	8	7	239	7	30	5	10	7	5	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	9	176	9	7	254	7	32	5	11	7	5	14
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	286			210			536	524	230	534	524	308
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	286			210			536	524	230	534	524	308
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			92	99	99	98	99	98
cM capacity (veh/h)	1248			1331			405	433	773	409	432	700

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	194	268	48	26
Volume Left	9	7	32	7
Volume Right	9	7	11	14
cSH	1248	1331	458	534
Volume to Capacity	0.01	0.01	0.10	0.05
Queue Length 95th (m)	0.2	0.1	2.7	1.2
Control Delay (s)	0.4	0.2	13.8	12.1
Lane LOS	A	A	B	B
Approach Delay (s)	0.4	0.2	13.8	12.1
Approach LOS			B	B

Intersection Summary				
Average Delay		2.1		
Intersection Capacity Utilization		32.8%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	118	5	5	189	15	5	5	5	15	5	5
Future Volume (Veh/h)	35	118	5	5	189	15	5	5	5	15	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	37	126	5	5	201	16	5	5	5	16	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	242			156			479	480	178	479	474	259
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	242			156			479	480	178	479	474	259
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			99	99	99	96	99	99
cM capacity (veh/h)	1295			1393			441	449	827	442	453	746

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	168	222	15	26
Volume Left	37	5	5	16
Volume Right	5	16	5	5
cSH	1295	1393	526	482
Volume to Capacity	0.03	0.00	0.03	0.05
Queue Length 95th (m)	0.7	0.1	0.7	1.3
Control Delay (s)	1.9	0.2	12.0	12.9
Lane LOS	A	A	B	B
Approach Delay (s)	1.9	0.2	12.0	12.9
Approach LOS			B	B

Intersection Summary					
Average Delay	2.0				
Intersection Capacity Utilization	42.2%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	10	27	5	67	10	38	16	39	96	5
Future Volume (Veh/h)	5	5	10	27	5	67	10	38	16	39	96	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	5	11	29	5	71	11	40	17	41	102	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	380	316	154	320	310	98	132			82		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	380	316	154	320	310	98	132			82		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	95	99	92	99			97		
cM capacity (veh/h)	476	554	852	558	558	916	1421			1482		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	21	105	68	148
Volume Left	5	29	11	41
Volume Right	11	71	17	5
cSH	647	758	1421	1482
Volume to Capacity	0.03	0.14	0.01	0.03
Queue Length 95th (m)	0.8	3.6	0.2	0.6
Control Delay (s)	10.7	10.5	1.3	2.2
Lane LOS	B	B	A	A
Approach Delay (s)	10.7	10.5	1.3	2.2
Approach LOS	B	B		

Intersection Summary					
Average Delay	5.1				
Intersection Capacity Utilization	31.8%	ICU Level of Service		A	
Analysis Period (min)	15				



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	882	30	5	365
Future Volume (Veh/h)	0	0	882	30	5	365
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)	0	0	928	32	5	384
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.81	0.81			0.81	
vC, conflicting volume	1171	969			960	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1096	847			836	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	164	243			646	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	960	133	256
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	646	1700
Volume to Capacity	0.56	0.01	0.15
Queue Length 95th (m)	0.0	0.2	0.0
Control Delay (s)	0.0	0.5	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.2	
Approach LOS			

Intersection Summary				
Average Delay			0.0	
Intersection Capacity Utilization			65.2%	ICU Level of Service C
Analysis Period (min)			15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	231	8	7	117	7	30	5	10	7	5	13
Future Volume (Veh/h)	8	231	8	7	117	7	30	5	10	7	5	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	8	243	8	7	123	7	32	5	11	7	5	14
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	155			276			470	457	297	467	458	176
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	155			276			470	457	297	467	458	176
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			93	99	98	98	99	98
cM capacity (veh/h)	1394			1259			450	473	710	453	472	829

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	259	137	48	26
Volume Left	8	7	32	7
Volume Right	8	7	11	14
cSH	1394	1259	494	606
Volume to Capacity	0.01	0.01	0.10	0.04
Queue Length 95th (m)	0.1	0.1	2.4	1.0
Control Delay (s)	0.3	0.4	13.1	11.2
Lane LOS	A	A	B	B
Approach Delay (s)	0.3	0.4	13.1	11.2
Approach LOS			B	B

Intersection Summary				
Average Delay			2.2	
Intersection Capacity Utilization			32.5%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	57	10	5	63	15	5	5	5	10	5	25
Future Volume (Veh/h)	45	57	10	5	63	15	5	5	5	10	5	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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	60	11	5	66	16	5	5	5	11	5	26
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	107			96			322	302	116	301	299	124
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	107			96			322	302	116	301	299	124
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			99	99	99	98	99	97
cM capacity (veh/h)	1451			1465			547	564	896	579	565	886

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	118	87	15	42
Volume Left	47	5	5	11
Volume Right	11	16	5	26
cSH	1451	1465	636	734
Volume to Capacity	0.03	0.00	0.02	0.06
Queue Length 95th (m)	0.8	0.1	0.6	1.4
Control Delay (s)	3.2	0.5	10.8	10.2
Lane LOS	A	A	B	B
Approach Delay (s)	3.2	0.5	10.8	10.2
Approach LOS			B	B

Intersection Summary					
Average Delay	3.8				
Intersection Capacity Utilization	29.4%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	10	17	5	35	10	157	41	89	75	5
Future Volume (Veh/h)	5	5	10	17	5	35	10	157	41	89	75	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	5	11	18	5	37	11	165	43	94	79	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	568	550	132	542	530	236	109			233		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	568	550	132	542	530	236	109			233		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	95	99	95	99			93		
cM capacity (veh/h)	356	390	878	384	400	767	1449			1305		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	21	60	219	178
Volume Left	5	18	11	94
Volume Right	11	37	43	5
cSH	533	558	1449	1305
Volume to Capacity	0.04	0.11	0.01	0.07
Queue Length 95th (m)	0.9	2.7	0.2	1.8
Control Delay (s)	12.0	12.2	0.4	4.5
Lane LOS	B	B	A	A
Approach Delay (s)	12.0	12.2	0.4	4.5
Approach LOS	B	B		

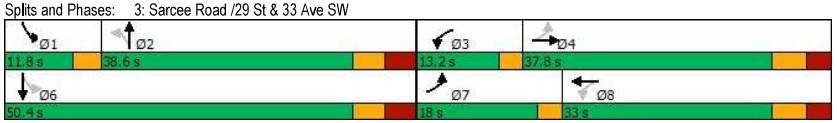
Intersection Summary					
Average Delay	3.9				
Intersection Capacity Utilization	44.7%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	784	40	112	580	213	30	87	128	249	118	10
Future Volume (vph)	301	784	40	112	580	213	30	87	128	249	118	10
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.97			0.97		0.98	1.00	
Frt		0.993			0.960			0.922			0.988	
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1704	3368	0	1704	3184	0	0	3052	0	1704	1766	0
Flt Permitted	0.162			0.280				0.890		0.470		
Satd. Flow (perm)	291	3368	0	495	3184	0	0	2725	0	829	1766	0
Satd. Flow (RTOR)		5			50			136			5	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	320	834	43	119	617	227	32	93	136	265	126	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	320	877	0	119	844	0	0	261	0	265	137	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		11.5	37.8	
Total Split (s)	18.0	37.8		13.2	33.0		38.6	38.6		11.8	50.4	
Total Split (%)	17.8%	37.3%		13.0%	32.5%		38.1%	38.1%		11.6%	49.7%	
Maximum Green (s)	15.0	30.4		10.2	25.6		30.8	30.8		8.3	42.6	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	0.0	3.2		0.0	3.2		4.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	7.4		3.0	7.4			7.8		3.5	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0			8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0			22.0	
Pedestrian Calls (#/hr)		0			0		5	5			5	
Act Effct Green (s)	48.4	32.9		38.3	25.8			13.6		29.8	25.4	
Actuated g/C Ratio	0.57	0.39		0.45	0.30			0.16		0.35	0.30	
v/c Ratio	0.77	0.67		0.35	0.84			0.47		0.70	0.26	
Control Delay	29.1	26.0		13.7	36.1			17.7		32.2	22.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	29.1	26.0		13.7	36.1			17.7		32.2	22.3	
LOS	C	C		B	D			B		C	C	
Approach Delay		26.9			33.3			17.7			28.8	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	24.6	54.5		7.2	58.4			9.4		32.2	15.9	
Queue Length 95th (m)	#91.2	#115.7		22.7	#124.0			19.1		50.7	28.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			105.7			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	418	1309		383	1004			1084		377	897	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.77	0.67		0.31	0.84			0.24		0.70	0.15	

Intersection Summary	
Cycle Length: 101.4	
Actuated Cycle Length: 84.7	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 28.5	Intersection LOS: C
Intersection Capacity Utilization 102.0%	ICU Level of Service G
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1069	74	270	770	30	113	7	200	90	6	22
Future Volume (vph)	12	1069	74	270	770	30	113	7	200	90	6	22
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.994				0.850		0.975	
Flt Protected	0.950			0.950				0.955			0.963	
Satd. Flow (prot)	1704	3374	0	1704	3387	0	0	1713	1525	0	1684	0
Flt Permitted	0.332			0.081				0.671			0.696	
Satd. Flow (perm)	595	3374	0	145	3387	0	0	1203	1525	0	1217	0
Satd. Flow (RTOR)		7			5				213		9	
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
Adj. Flow (vph)	13	1137	79	287	819	32	120	7	213	96	6	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	1216	0	287	851	0	0	127	213	0	125	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.5	25.5		11.5	25.5		35.5	35.5	35.5	35.5	35.5	
Total Split (s)	11.5	57.0		26.2	71.7		36.8	36.8	36.8	36.8	36.8	
Total Split (%)	9.6%	47.5%		21.8%	59.8%		30.7%	30.7%	30.7%	30.7%	30.7%	
Maximum Green (s)	8.0	51.5		22.7	66.2		31.3	31.3	31.3	31.3	31.3	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.0	2.0		0.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5			5.5	5.5		5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)		8.0			8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0	22.0	22.0	22.0	
Pedestrian Calls (#/hr)		0			0		5	5	5	5	5	
Act Effct Green (s)	52.4	43.3		66.8	61.0			31.8	31.8		31.8	
Actuated g/C Ratio	0.49	0.40		0.62	0.57			0.30	0.30		0.30	
v/c Ratio	0.04	0.89		0.82	0.44			0.36	0.35		0.34	
Control Delay	8.8	39.5		46.7	14.5			37.2	6.5		34.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	8.8	39.5		46.7	14.5			37.2	6.5		34.3	
LOS	A	D		D	B			D	A		C	
Approach Delay		39.2			22.6			17.9			34.3	
Approach LOS		D			C			B			C	
Queue Length 50th (m)	1.0	124.5		43.5	45.5			22.1	0.0		20.0	
Queue Length 95th (m)	3.1	160.6		#78.4	73.7			43.4	18.1		40.5	
Internal Link Dist (m)		88.8			75.6			76.8			141.4	
Turn Bay Length (m)												
Base Capacity (vph)	378	1641		423	2141			354	600		365	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.03	0.74		0.68	0.40			0.36	0.35		0.34	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 29.8	Intersection LOS: C
Intersection Capacity Utilization 74.1%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 33: 25 St SW & 33 Ave SW



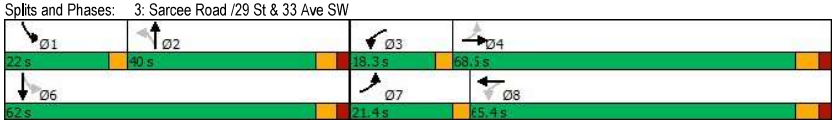
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	1020	40	159	792	545	40	137	248	179	176	10
Future Volume (vph)	230	1020	40	159	792	545	40	137	248	179	176	10
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		1.00			0.95			0.96		0.98	1.00	
Frt		0.994			0.939			0.912			0.992	
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1704	3372	0	1704	3038	0	0	2988	0	1704	1774	0
Flt Permitted	0.065			0.183				0.892		0.188		
Satd. Flow (perm)	117	3372	0	328	3038	0	0	2672	0	332	1774	0
Satd. Flow (RTOR)		3			137			221			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	242	1074	42	167	834	574	42	144	261	188	185	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	242	1116	0	167	1408	0	0	447	0	188	196	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		11.5	37.8	
Total Split (s)	21.4	68.5		18.3	65.4		40.0	40.0		22.0	62.0	
Total Split (%)	14.4%	46.0%		12.3%	44.0%		26.9%	26.9%		14.8%	41.7%	
Maximum Green (s)	18.4	61.8		15.3	58.7		33.7	33.7		18.5	55.7	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	0.0	2.5		0.0	2.5		2.5	2.5		0.0	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.7		3.0	6.7			6.3		3.5	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0			8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0			22.0	
Pedestrian Calls (#/hr)		0			0		5	5			5	
Act Effct Green (s)	83.9	66.4		73.5	59.0			17.8		39.7	36.9	
Actuated g/C Ratio	0.64	0.51		0.56	0.45			0.14		0.31	0.28	
v/c Ratio	0.82	0.65		0.56	0.97			0.80		0.71	0.39	
Control Delay	56.3	27.7		19.0	49.5			38.7		49.6	38.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	56.3	27.7		19.0	49.5			38.7		49.6	38.7	
LOS	E	C		B	D			D		D	D	
Approach Delay		32.8			46.3			38.7			44.0	
Approach LOS		C			D			D			D	
Queue Length 50th (m)	44.0	105.6		15.7	170.1			30.4		37.6	40.1	
Queue Length 95th (m)	#102.1	170.4		33.6	#266.6			49.7		57.1	60.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			105.7			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	301	1722		359	1453			859		297	764	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.80	0.65		0.47	0.97			0.52		0.63	0.26	

Intersection Summary	
Cycle Length: 148.8	
Actuated Cycle Length: 130.1	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 40.3	Intersection LOS: D
Intersection Capacity Utilization 113.0%	ICU Level of Service H
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW

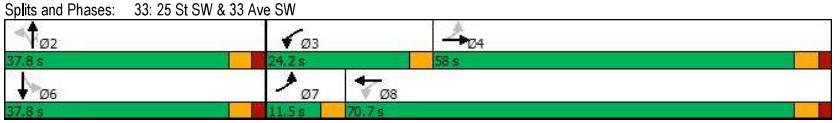


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	1189	175	320	1268	102	197	23	190	41	15	31
Future Volume (vph)	68	1189	175	320	1268	102	197	23	190	41	15	31
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.989				0.850		0.952	
Flt Protected	0.950			0.950				0.957			0.977	
Satd. Flow (prot)	1704	3343	0	1704	3370	0	0	1716	1525	0	1668	0
Flt Permitted	0.120			0.071				0.694			0.738	
Satd. Flow (perm)	215	3343	0	127	3370	0	0	1245	1525	0	1260	0
Satd. Flow (RTOR)		17			11				200		23	
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
Adj. Flow (vph)	72	1252	184	337	1335	107	207	24	200	43	16	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	1436	0	337	1442	0	0	231	200	0	92	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.5	25.5		11.5	25.5		35.5	35.5	35.5	35.5	35.5	
Total Split (s)	11.5	58.0		24.2	70.7		37.8	37.8	37.8	37.8	37.8	
Total Split (%)	9.6%	48.3%		20.2%	58.9%		31.5%	31.5%	31.5%	31.5%	31.5%	
Maximum Green (s)	8.0	52.5		20.7	65.2		32.3	32.3	32.3	32.3	32.3	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.0	2.0		0.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5			5.5	5.5		5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)		8.0			8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0	22.0	22.0	22.0	
Pedestrian Calls (#/hr)		0			0		5	5	5	5	5	
Act Effct Green (s)	61.7	52.3		78.3	67.5			32.3	32.3		32.3	
Actuated g/C Ratio	0.52	0.44		0.65	0.56			0.27	0.27		0.27	
v/c Ratio	0.35	0.98		0.95	0.76			0.69	0.36		0.26	
Control Delay	14.5	51.5		72.8	23.6			51.2	6.6		27.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	14.5	51.5		72.8	23.6			51.2	6.6		27.9	
LOS	B	D		E	C			D	A		C	
Approach Delay		49.7			32.9			30.5			27.9	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	5.6	169.8		63.3	133.6			48.9	0.0		12.6	
Queue Length 95th (m)	10.8	#221.8		#119.7	165.2			77.8	17.3		26.7	
Internal Link Dist (m)		88.8			75.6			76.8			141.4	
Turn Bay Length (m)												
Base Capacity (vph)	211	1477		356	1906			336	557		356	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.34	0.97		0.95	0.76			0.69	0.36		0.26	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 119.6		
Natural Cycle: 110		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.98		
Intersection Signal Delay: 39.2	Intersection LOS: D	
Intersection Capacity Utilization 89.3%	ICU Level of Service E	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		

Splits and Phases: 33: 25 St SW & 33 Ave SW

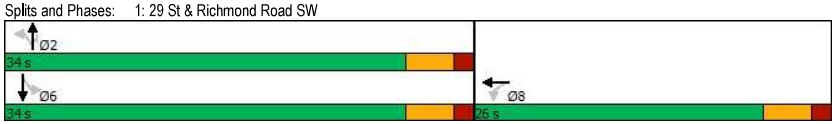


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	92	110	80	5	405	161	20	290	70
Future Volume (vph)	0	0	0	92	110	80	5	405	161	20	290	70
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.97			1.00	0.94		0.99	
Frt					0.937				0.850		0.975	
Flt Protected				0.950				0.999			0.997	
Satd. Flow (prot)	0	0	0	1704	1633	0	0	1792	1525	0	1723	0
Flt Permitted				0.950				0.996			0.971	
Satd. Flow (perm)	0	0	0	1666	1633	0	0	1786	1427	0	1677	0
Satd. Flow (RTOR)					67				171		26	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	0	0	0	98	117	85	5	431	171	21	309	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	98	202	0	0	436	171	0	404	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2		2	6		
Detector Phase				8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)				26.0	26.0		34.0	34.0	34.0	34.0	34.0	
Total Split (%)				43.3%	43.3%		56.7%	56.7%	56.7%	56.7%	56.7%	
Maximum Green (s)				21.0	21.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)				3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)				5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				None	None		Min	Min	Min	Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				10.6	10.6			24.3	24.3		24.3	
Actuated g/C Ratio				0.26	0.26			0.59	0.59		0.59	
v/c Ratio				0.23	0.43			0.41	0.19		0.40	
Control Delay				13.5	11.9			8.3	2.1		7.8	
Queue Delay				0.0	0.0			0.1	0.0		0.0	
Total Delay				13.5	11.9			8.4	2.1		7.8	
LOS				B	B			A	A		A	
Approach Delay					12.4			6.6			7.8	
Approach LOS					B			A			A	
Queue Length 50th (m)				5.3	7.5			17.1	0.0		14.5	
Queue Length 95th (m)				13.5	19.9			39.3	6.5		34.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)				50.0								
Base Capacity (vph)				856	872			1366	1132		1289	
Starvation Cap Reductn				0	0			191	0		0	
Spillback Cap Reductn				0	0			0	0		0	
Storage Cap Reductn				0	0			0	0		0	
Reduced v/c Ratio				0.11	0.23			0.37	0.15		0.31	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 40.9	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 8.3	Intersection LOS: A
Intersection Capacity Utilization 60.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: 29 St & Richmond Road SW

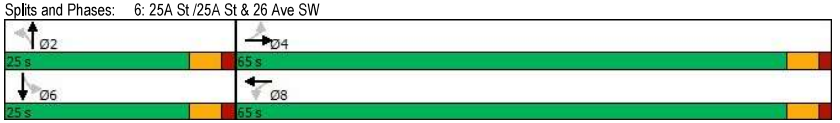


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	965	10	10	315	60	5	5	40	35	10	20
Future Volume (vph)	40	965	10	10	315	60	5	5	40	35	10	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.92			0.95	
Frt		0.999			0.979			0.890			0.959	
Flt Protected		0.998			0.999			0.995			0.974	
Satd. Flow (prot)	0	1787	0	0	1732	0	0	1471	0	0	1629	0
Flt Permitted		0.973			0.972			0.964			0.804	
Satd. Flow (perm)	0	1740	0	0	1685	0	0	1419	0	0	1307	0
Satd. Flow (RTOR)		1			22			43			21	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	43	1027	11	11	335	64	5	5	43	37	11	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1081	0	0	410	0	0	53	0	0	69	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		55.0			55.0			11.0			11.0	
Actuated g/C Ratio		0.79			0.79			0.16			0.16	
v/c Ratio		0.79			0.31			0.20			0.31	
Control Delay		12.7			3.9			15.2			27.5	
Queue Delay		0.0			0.5			0.0			0.0	
Total Delay		12.7			4.4			15.2			27.5	
LOS		B			A			B			C	
Approach Delay		12.7			4.4			15.2			27.5	
Approach LOS		B			A			B			C	
Queue Length 50th (m)		84.3			15.0			1.2			6.0	
Queue Length 95th (m)		#186.2			27.5			10.8			18.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		73.4			75.2			100.7			70.0	
Turn Bay Length (m)												
Base Capacity (vph)		1432			1391			463			413	
Starvation Cap Reductn		0			578			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.75			0.50			0.11			0.17	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 69.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 94.5%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 6: 25A St /25A St & 26 Ave SW

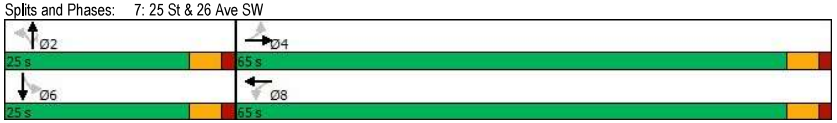


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	940	60	105	350	40	15	80	210	30	0	20
Future Volume (vph)	40	940	60	105	350	40	15	80	210	30	0	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99	0.99			0.99	0.91		0.94	
Frt		0.992			0.984				0.850		0.947	
Flt Protected		0.998		0.950				0.992			0.971	
Satd. Flow (prot)	0	1767	0	1704	1750	0	0	1779	1525	0	1590	0
Flt Permitted		0.973		0.262				0.950			0.785	
Satd. Flow (perm)	0	1721	0	466	1750	0	0	1690	1386	0	1247	0
Satd. Flow (RTOR)		7			14				137		24	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	43	1000	64	112	372	43	16	85	223	32	0	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1107	0	112	415	0	0	101	223	0	53	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%	27.8%	27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		54.7		54.7	54.7			12.7	12.7		12.7	
Actuated g/C Ratio		0.70		0.70	0.70			0.16	0.16		0.16	
v/c Ratio		0.91		0.34	0.34			0.36	0.65		0.24	
Control Delay		23.5		8.6	5.4			34.6	23.1		21.8	
Queue Delay		15.9		0.0	0.0			0.0	0.0		0.0	
Total Delay		39.4		8.6	5.4			34.6	23.1		21.8	
LOS		D		A	A			C	C		C	
Approach Delay		39.4			6.1			26.7			21.8	
Approach LOS		D			A			C			C	
Queue Length 50th (m)		95.2		4.6	16.0			14.5	12.4		4.0	
Queue Length 95th (m)		#266.0		17.5	40.4			28.1	34.3		13.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)				50.0					50.0			
Base Capacity (vph)		1357		367	1381			443	464		345	
Starvation Cap Reductn		262		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		1.01		0.31	0.30			0.23	0.48		0.15	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 77.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 28.2	Intersection LOS: C
Intersection Capacity Utilization 105.1%	ICU Level of Service G
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: 25 St & 26 Ave SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	117	13	30	10	645	222	25	255	180
Future Volume (vph)	0	0	0	117	13	30	10	645	222	25	255	180
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.95			1.00	0.94		0.97	
Frt					0.896				0.850		0.947	
Flt Protected				0.950				0.999			0.997	
Satd. Flow (prot)	0	0	0	1704	1532	0	0	1792	1525	0	1651	0
Flt Permitted				0.950				0.992			0.954	
Satd. Flow (perm)	0	0	0	1666	1532	0	0	1779	1427	0	1579	0
Satd. Flow (RTOR)					32				234		77	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	0	0	0	123	14	32	11	679	234	26	268	189
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	123	46	0	0	690	234	0	483	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2		2	6		
Detector Phase				8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)				25.0	25.0		35.0	35.0	35.0	35.0	35.0	
Total Split (%)				41.7%	41.7%		58.3%	58.3%	58.3%	58.3%	58.3%	
Maximum Green (s)				20.0	20.0		30.0	30.0	30.0	30.0	30.0	
Yellow Time (s)				3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)				5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				None	None		Min	Min	Min	Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				10.5	10.5			27.9	27.9		27.9	
Actuated g/C Ratio				0.24	0.24			0.63	0.63		0.63	
v/c Ratio				0.31	0.12			0.61	0.24		0.47	
Control Delay				17.7	9.4			10.1	1.6		7.1	
Queue Delay				0.0	0.0			0.4	0.0		0.0	
Total Delay				17.7	9.4			10.5	1.7		7.1	
LOS				B	A			B	A		A	
Approach Delay					15.4			8.2			7.1	
Approach LOS					B			A			A	
Queue Length 50th (m)				7.1	0.8			33.3	0.0		16.2	
Queue Length 95th (m)				20.9	7.1			69.1	6.4		37.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)				50.0								
Base Capacity (vph)				763	719			1312	1114		1185	
Starvation Cap Reductn				0	0			207	152		0	
Spillback Cap Reductn				0	0			0	0		0	
Storage Cap Reductn				0	0			0	0		0	
Reduced v/c Ratio				0.16	0.06			0.62	0.24		0.41	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 44.1	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 8.7	Intersection LOS: A
Intersection Capacity Utilization 69.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: 29 St & Richmond Road SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	680	10	10	960	53	10	20	45	110	10	30
Future Volume (vph)	30	680	10	10	960	53	10	20	45	110	10	30
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.94			0.95	
Frt		0.998			0.993			0.920			0.973	
Flt Protected		0.998			0.999			0.993			0.965	
Satd. Flow (prot)	0	1784	0	0	1772	0	0	1550	0	0	1653	0
Flt Permitted		0.934			0.992			0.949			0.790	
Satd. Flow (perm)	0	1669	0	0	1759	0	0	1473	0	0	1305	0
Satd. Flow (RTOR)		2			7			47			13	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	32	716	11	11	1011	56	11	21	47	116	11	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	759	0	0	1078	0	0	79	0	0	159	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		52.9			52.9			14.5			14.5	
Actuated g/C Ratio		0.68			0.68			0.19			0.19	
v/c Ratio		0.67			0.90			0.25			0.63	
Control Delay		11.3			23.0			17.0			39.5	
Queue Delay		0.0			7.7			0.0			0.0	
Total Delay		11.3			30.6			17.0			39.5	
LOS		B			C			B			D	
Approach Delay		11.3			30.6			17.0			39.5	
Approach LOS		B			C			B			D	
Queue Length 50th (m)		54.9			109.5			4.2			21.2	
Queue Length 95th (m)		109.0			#251.3			15.6			41.7	

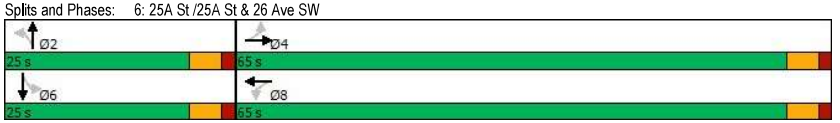
6: 25A St /25A St & 26 Ave SW
04/16/2024

PM Peak Hour
2048 After Development With 25 St Connection

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		73.4			75.2			100.7			70.0	
Turn Bay Length (m)												
Base Capacity (vph)		1319			1392			422			353	
Starvation Cap Reductn		0			278			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.58			0.97			0.19			0.45	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 77.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 23.7	Intersection LOS: C
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 6: 25A St /25A St & 26 Ave SW

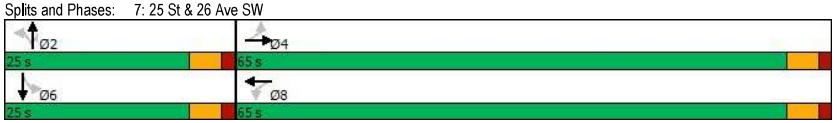


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	670	145	145	990	50	40	20	125	40	25	45
Future Volume (vph)	50	670	145	145	990	50	40	20	125	40	25	45
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99	1.00			0.97	0.91		0.94	
Frt		0.977			0.993				0.850		0.945	
Flt Protected		0.997		0.950				0.968			0.982	
Satd. Flow (prot)	0	1723	0	1704	1774	0	0	1736	1525	0	1603	0
Flt Permitted		0.756		0.325				0.722			0.853	
Satd. Flow (perm)	0	1307	0	576	1774	0	0	1257	1386	0	1366	0
Satd. Flow (RTOR)		24			6				132		36	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	53	705	153	153	1042	53	42	21	132	42	26	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	911	0	153	1095	0	0	63	132	0	115	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%	27.8%	27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		62.3		62.3	62.3			11.5	11.5		11.5	
Actuated g/C Ratio		0.74		0.74	0.74			0.14	0.14		0.14	
v/c Ratio		0.93		0.36	0.83			0.37	0.44		0.53	
Control Delay		28.3		7.0	15.2			38.0	10.9		31.8	
Queue Delay		38.2		0.0	0.0			0.0	0.0		0.0	
Total Delay		66.4		7.0	15.2			38.0	10.9		31.8	
LOS		E		A	B			D	B		C	
Approach Delay		66.4			14.2			19.6			31.8	
Approach LOS		E			B			B			C	
Queue Length 50th (m)		85.8		6.2	84.0			9.0	0.0		11.3	
Queue Length 95th (m)		#222.8		18.9	#233.4			20.1	14.3		26.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)				50.0					50.0			
Base Capacity (vph)		977		428	1320			300	432		354	
Starvation Cap Reductn		136		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		1.08		0.36	0.83			0.21	0.31		0.32	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 83.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 34.7	Intersection LOS: C
Intersection Capacity Utilization 112.6%	ICU Level of Service H
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: 25 St & 26 Ave SW



8: 25 St /25 St & Richmond Road SW
04/16/2024

AM Peak Hour
2048 After Development With 25 St Connection



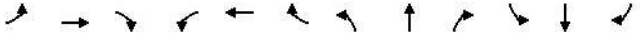
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	56	62	28	77	130	32	155	19	25	55	85
Future Volume (vph)	20	56	62	28	77	130	32	155	19	25	55	85
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	21	60	66	30	82	138	34	165	20	27	59	90

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	147	250	219	176
Volume Left (vph)	21	30	34	27
Volume Right (vph)	66	138	20	90
Hadj (s)	-0.21	-0.27	0.01	-0.24
Departure Headway (s)	5.1	4.9	5.2	5.0
Degree Utilization, x	0.21	0.34	0.32	0.25
Capacity (veh/h)	635	680	632	652
Control Delay (s)	9.5	10.4	10.6	9.7
Approach Delay (s)	9.5	10.4	10.6	9.7
Approach LOS	A	B	B	A

Intersection Summary					
Delay			10.1		
Level of Service			B		
Intersection Capacity Utilization			41.2%	ICU Level of Service	A
Analysis Period (min)			15		

8: 25 St /25 St & Richmond Road SW
04/16/2024

PM Peak Hour
2048 After Development With 25 St Connection



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	84	68	12	23	55	55	90	36	155	195	5
Future Volume (vph)	40	84	68	12	23	55	55	90	36	155	195	5
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)	42	88	72	13	24	58	58	95	38	163	205	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	202	95	191	373
Volume Left (vph)	42	13	58	163
Volume Right (vph)	72	58	38	5
Hadj (s)	-0.14	-0.30	-0.02	0.11
Departure Headway (s)	5.4	5.5	5.3	5.1
Degree Utilization, x	0.30	0.14	0.28	0.53
Capacity (veh/h)	604	571	632	668
Control Delay (s)	10.8	9.4	10.3	13.9
Approach Delay (s)	10.8	9.4	10.3	13.9
Approach LOS	B	A	B	B

Intersection Summary					
Delay			11.9		
Level of Service			B		
Intersection Capacity Utilization			54.6%	ICU Level of Service	A
Analysis Period (min)			15		

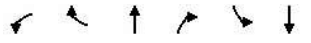
Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	23.7	32.0	25.8	34.8
Average Queue (m)	10.7	15.0	10.4	12.2
95th Queue (m)	17.9	25.7	20.1	25.0
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
2048 After Development With 25 St Connection 04/12/2024

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	26.6	17.8	26.0	49.4
Average Queue (m)	12.5	8.8	9.2	18.2
95th Queue (m)	21.0	15.5	18.3	36.3
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	544	30	5	521
Future Volume (Veh/h)	0	0	544	30	5	521
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)	0	0	579	32	5	554
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			32
pX, platoon unblocked	0.84	0.84			0.84	
vC, conflicting volume	907	620			611	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	796	455			445	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	266	455			937	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	611	190	369
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	937	1700
Volume to Capacity	0.36	0.01	0.22
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.1	
Approach LOS			

Intersection Summary				
Average Delay			0.0	
Intersection Capacity Utilization			46.9%	ICU Level of Service A
Analysis Period (min)			15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	194	5	5	248	5	27	5	5	5	5	7
Future Volume (Veh/h)	5	194	5	5	248	5	27	5	5	5	5	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	206	5	5	264	5	29	5	5	5	5	7
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		122										
pX, platoon unblocked												
vC, conflicting volume	294			236			554	548	258	552	548	316
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	294			236			554	548	258	552	548	316
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			93	99	99	99	99	99
cM capacity (veh/h)	1240			1302			399	421	746	402	421	692

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	216	274	39	17
Volume Left	5	5	29	5
Volume Right	5	5	5	7
cSH	1240	1302	427	494
Volume to Capacity	0.00	0.00	0.09	0.03
Queue Length 95th (m)	0.1	0.1	2.3	0.8
Control Delay (s)	0.2	0.2	14.3	12.5
Lane LOS	A	A	B	B
Approach Delay (s)	0.2	0.2	14.3	12.5
Approach LOS			B	B

Intersection Summary				
Average Delay			1.6	
Intersection Capacity Utilization			32.5%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	148	7	5	182	6	9	8	5	5	5	6
Future Volume (Veh/h)	29	148	7	5	182	6	9	8	5	5	5	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	157	7	5	194	6	10	9	5	5	5	6
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	225			189			488	482	210	489	483	247
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	225			189			488	482	210	489	483	247
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			98	98	99	99	99	99
cM capacity (veh/h)	1314			1354			436	450	793	434	450	757

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	195	205	24	16
Volume Left	31	5	10	5
Volume Right	7	6	5	6
cSH	1314	1354	488	523
Volume to Capacity	0.02	0.00	0.05	0.03
Queue Length 95th (m)	0.6	0.1	1.2	0.7
Control Delay (s)	1.4	0.2	12.8	12.1
Lane LOS	A	A	B	B
Approach Delay (s)	1.4	0.2	12.8	12.1
Approach LOS			B	B

Intersection Summary					
Average Delay	1.9				
Intersection Capacity Utilization	39.5%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	637	5	5	403	5	8	5	23	7	5	13
Future Volume (Veh/h)	10	637	5	5	403	5	8	5	23	7	5	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	678	5	5	429	5	9	5	24	7	5	14
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					99							
pX, platoon unblocked	0.90						0.90	0.90		0.90	0.90	0.90
vC, conflicting volume	459			708			1210	1196	730	1220	1196	482
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	347			708			1179	1164	730	1190	1164	372
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			93	97	94	94	97	98
cM capacity (veh/h)	1070			871			132	165	404	125	165	582

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	694	439	38	26
Volume Left	11	5	9	7
Volume Right	5	5	24	14
cSH	1070	871	240	235
Volume to Capacity	0.01	0.01	0.16	0.11
Queue Length 95th (m)	0.2	0.1	4.2	2.8
Control Delay (s)	0.3	0.2	22.8	22.2
Lane LOS	A	A	C	C
Approach Delay (s)	0.3	0.2	22.8	22.2
Approach LOS			C	C

Intersection Summary					
Average Delay	1.4				
Intersection Capacity Utilization	56.8%	ICU Level of Service		B	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	68	52	5	88	166	82	160	5	36	34	17
Future Volume (Veh/h)	29	68	52	5	88	166	82	160	5	36	34	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	72	55	5	94	177	87	170	5	38	36	18
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	296			152			440	492	150	494	432	232
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	296			152			440	492	150	494	432	232
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			80	62	99	88	93	98
cM capacity (veh/h)	1237			1397			439	443	858	308	480	771

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	158	276	262	92
Volume Left	31	5	87	38
Volume Right	55	177	5	18
cSH	1237	1397	446	415
Volume to Capacity	0.03	0.00	0.59	0.22
Queue Length 95th (m)	0.6	0.1	28.0	6.4
Control Delay (s)	1.7	0.2	23.9	16.1
Lane LOS	A	A	C	C
Approach Delay (s)	1.7	0.2	23.9	16.1
Approach LOS			C	C

Intersection Summary					
Average Delay			10.2		
Intersection Capacity Utilization			48.2%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	8	5	5	12	61	5	5	5	18	5	5
Future Volume (Veh/h)	5	8	5	5	12	61	5	5	5	18	5	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	9	5	5	13	65	5	5	5	19	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	184	116	58	122	116	58	35			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	184	116	58	122	116	58	35			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	99	98	93	100			99		
cM capacity (veh/h)	653	729	965	767	729	965	1541			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	19	83	15	29
Volume Left	5	5	5	19
Volume Right	5	65	5	5
cSH	754	905	1541	1541
Volume to Capacity	0.03	0.09	0.00	0.01
Queue Length 95th (m)	0.6	2.3	0.1	0.3
Control Delay (s)	9.9	9.4	2.5	4.9
Lane LOS	A	A	A	A
Approach Delay (s)	9.9	9.4	2.5	4.9
Approach LOS	A	A		

Intersection Summary					
Average Delay			7.8		
Intersection Capacity Utilization			26.2%	ICU Level of Service	A
Analysis Period (min)			15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	187	69	25	5	355	196	7	338	39
Future Volume (vph)	0	0	0	187	69	25	5	355	196	7	338	39
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.98			1.00	0.94		0.99	
Frt					0.959				0.850		0.986	
Flt Protected				0.950				0.999			0.999	
Satd. Flow (prot)	0	0	0	1704	1689	0	0	1792	1525	0	1755	0
Flt Permitted				0.950				0.995			0.993	
Satd. Flow (perm)	0	0	0	1666	1689	0	0	1784	1427	0	1744	0
Satd. Flow (RTOR)					27				209		13	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	0	0	0	199	73	27	5	378	209	7	360	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	199	100	0	0	383	209	0	408	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2		2	6		
Detector Phase				8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)				26.0	26.0		34.0	34.0	34.0	34.0	34.0	
Total Split (%)				43.3%	43.3%		56.7%	56.7%	56.7%	56.7%	56.7%	
Maximum Green (s)				21.0	21.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)				3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)				5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				None	None		Min	Min	Min	Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				11.0	11.0			24.2	24.2		24.2	
Actuated g/C Ratio				0.27	0.27			0.59	0.59		0.59	
v/c Ratio				0.45	0.21			0.37	0.23		0.40	
Control Delay				16.0	10.2			8.2	2.2		8.4	
Queue Delay				0.0	0.0			0.1	0.0		0.0	
Total Delay				16.0	10.2			8.3	2.2		8.4	
LOS				B	B			A	A		A	
Approach Delay					14.1			6.2			8.4	
Approach LOS					B			A			A	
Queue Length 50th (m)				11.5	3.9			14.4	0.0		15.2	
Queue Length 95th (m)				24.1	11.3			35.5	7.6		37.7	

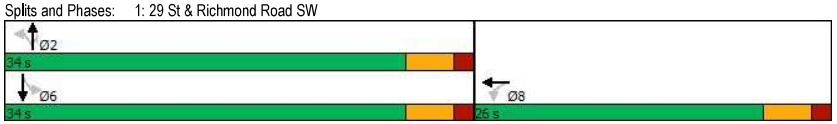
1: 29 St & Richmond Road SW
04/23/2024

AM Peak Hour
After Development (75% Build Out)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)				50.0								
Base Capacity (vph)				851	876			1357	1136		1330	
Starvation Cap Reductn				0	0			191	0		0	
Spillback Cap Reductn				0	0			0	0		0	
Storage Cap Reductn				0	0			0	0		0	
Reduced v/c Ratio				0.23	0.11			0.33	0.18		0.31	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 41.1	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 8.7	Intersection LOS: A
Intersection Capacity Utilization 48.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: 29 St & Richmond Road SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	700	39	121	353	304	27	148	204	364	157	5
Future Volume (vph)	122	700	39	121	353	304	27	148	204	364	157	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		0.99	0.95			0.98		0.99	1.00	
Frt		0.992			0.931			0.919			0.996	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3363	0	1704	3024	0	0	3046	0	1704	1784	0
Flt Permitted	0.227			0.192				0.910		0.353		
Satd. Flow (perm)	400	3363	0	340	3024	0	0	2779	0	625	1784	0
Satd. Flow (RTOR)		5			195			217			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	130	745	41	129	376	323	29	157	217	387	167	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	786	0	129	699	0	0	403	0	387	172	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		20.0	37.8	
Total Split (s)	13.2	28.0		13.2	28.0		38.8	38.8		20.0	58.8	
Total Split (%)	13.2%	28.0%		13.2%	28.0%		38.8%	38.8%		20.0%	58.8%	
Maximum Green (s)	7.0	20.6		7.0	20.6		31.0	31.0		15.5	51.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		1.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		4.5	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0			8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0			22.0	
Pedestrian Calls (#/hr)		0			0		5	5			5	
Act Effct Green (s)	29.1	20.8		29.1	20.8			14.2		37.1	33.8	
Actuated g/C Ratio	0.35	0.25		0.35	0.25			0.17		0.45	0.41	
v/c Ratio	0.52	0.93		0.55	0.78			0.62		0.82	0.24	
Control Delay	26.5	50.9		28.4	28.8			18.2		32.0	16.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0		6.3	0.2	
Total Delay	26.5	50.9		28.4	28.8			18.2		38.4	16.5	
LOS	C	D		C	C			B		D	B	
Approach Delay		47.4			28.8			18.2			31.7	
Approach LOS		D			C			B			C	
Queue Length 50th (m)	11.6	60.2		11.4	37.1			13.9		42.0	17.1	
Queue Length 95th (m)	#33.1	#128.7		#32.7	#83.3			26.5		#68.4	28.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			158.5			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	250	843		234	901			1180		481	1104	
Starvation Cap Reductn	0	0		0	0			0		58	407	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.52	0.93		0.55	0.78			0.34		0.91	0.25	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 83.2	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 34.1	Intersection LOS: C
Intersection Capacity Utilization 95.4%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW

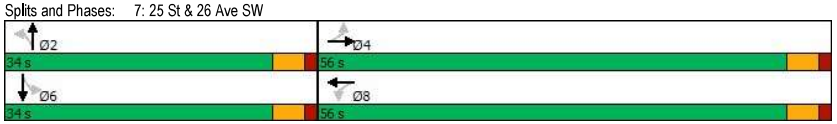


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	625	34	46	318	10	64	10	280	17	8	20
Future Volume (vph)	15	625	34	46	318	10	64	10	280	17	8	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.92			0.95	
Frt		0.993			0.996			0.893			0.941	
Flt Protected		0.999			0.994			0.991			0.982	
Satd. Flow (prot)	0	1772	0	0	1772	0	0	1479	0	0	1595	0
Flt Permitted		0.989			0.874			0.932			0.853	
Satd. Flow (perm)	0	1753	0	0	1555	0	0	1378	0	0	1374	0
Satd. Flow (RTOR)		5			3			209			21	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	16	665	36	49	338	11	68	11	298	18	9	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	717	0	0	398	0	0	377	0	0	48	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	56.0	56.0		56.0	56.0		34.0	34.0		34.0	34.0	
Total Split (%)	62.2%	62.2%		62.2%	62.2%		37.8%	37.8%		37.8%	37.8%	
Maximum Green (s)	51.0	51.0		51.0	51.0		29.0	29.0		29.0	29.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		29.6			29.6			15.6			15.6	
Actuated g/C Ratio		0.53			0.53			0.28			0.28	
v/c Ratio		0.78			0.49			0.71			0.12	
Control Delay		17.9			11.2			17.5			13.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		17.9			11.2			17.5			13.4	
LOS		B			B			B			B	
Approach Delay		17.9			11.2			17.5			13.4	
Approach LOS		B			B			B			B	
Queue Length 50th (m)		43.3			19.1			11.7			1.7	
Queue Length 95th (m)		127.0			58.2			54.1			10.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)												
Base Capacity (vph)		1535			1361			872			788	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.47			0.29			0.43			0.06	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 56.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 16.0	Intersection LOS: B
Intersection Capacity Utilization 77.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: 25 St & 26 Ave SW





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	860	66	14	396
Future Volume (Veh/h)	0	0	860	66	14	396
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)	0	0	905	69	15	417
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			32
pX, platoon unblocked	0.77	0.77			0.77	
vC, conflicting volume	1203	964			974	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1114	805			817	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			98	
cM capacity (veh/h)	149	245			621	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	974	154	278
Volume Left	0	15	0
Volume Right	69	0	0
cSH	1700	621	1700
Volume to Capacity	0.57	0.02	0.16
Queue Length 95th (m)	0.0	0.6	0.0
Control Delay (s)	0.0	1.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.5	
Approach LOS			

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		66.2%	ICU Level of Service	C
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	288	12	13	203	5	67	5	16	5	5	5
Future Volume (Veh/h)	5	288	12	13	203	5	67	5	16	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	303	13	14	214	5	71	5	17	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		122										
pX, platoon unblocked												
vC, conflicting volume	244			341			622	616	360	634	620	266
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	244			341			622	616	360	634	620	266
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			80	99	97	99	99	99
cM capacity (veh/h)	1293			1191			359	382	655	345	380	738

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	321	233	93	15
Volume Left	5	14	71	5
Volume Right	13	5	17	5
cSH	1293	1191	392	436
Volume to Capacity	0.00	0.01	0.24	0.03
Queue Length 95th (m)	0.1	0.3	6.9	0.8
Control Delay (s)	0.2	0.6	17.0	13.6
Lane LOS	A	A	C	B
Approach Delay (s)	0.2	0.6	17.0	13.6
Approach LOS			C	B

Intersection Summary				
Average Delay		3.0		
Intersection Capacity Utilization		37.8%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	217	12	5	132	5	6	5	5	5	9	25
Future Volume (Veh/h)	46	217	12	5	132	5	6	5	5	5	9	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	48	228	13	5	139	5	6	5	5	5	9	26
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	169			266			562	534	284	540	538	192
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	169			266			562	534	284	540	538	192
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			98	99	99	99	98	97
cM capacity (veh/h)	1377			1269			374	415	721	400	413	813

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	289	149	16	40
Volume Left	48	5	6	5
Volume Right	13	5	5	26
cSH	1377	1269	457	604
Volume to Capacity	0.03	0.00	0.04	0.07
Queue Length 95th (m)	0.8	0.1	0.8	1.6
Control Delay (s)	1.5	0.3	13.2	11.4
Lane LOS	A	A	B	B
Approach Delay (s)	1.5	0.3	13.2	11.4
Approach LOS			B	B

Intersection Summary					
Average Delay	2.3				
Intersection Capacity Utilization	45.4%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	574	17	12	669	11	5	5	34	5	5	16
Future Volume (Veh/h)	17	574	17	12	669	11	5	5	34	5	5	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	18	604	18	13	704	12	5	5	36	5	5	17
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					99							
pX, platoon unblocked	0.75						0.75	0.75		0.75	0.75	0.75
vC, conflicting volume	741			647			1454	1441	663	1474	1444	760
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	484			647			1439	1421	663	1465	1425	510
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			93	95	92	92	95	96
cM capacity (veh/h)	788			918			68	94	441	63	93	403

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	640	729	46	27
Volume Left	18	13	5	5
Volume Right	18	12	36	17
cSH	788	918	221	154
Volume to Capacity	0.02	0.01	0.21	0.18
Queue Length 95th (m)	0.5	0.3	5.8	4.7
Control Delay (s)	0.6	0.4	25.5	33.3
Lane LOS	A	A	D	D
Approach Delay (s)	0.6	0.4	25.5	33.3
Approach LOS			D	D

Intersection Summary					
Average Delay	1.9				
Intersection Capacity Utilization	58.7%	ICU Level of Service		B	
Analysis Period (min)	15				

8: 25 St /25 St & Richmond Road SW
04/23/2024

PM Peak Hour
After Development (75% Build Out)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	95	98	5	64	98	52	83	5	168	162	20
Future Volume (Veh/h)	45	95	98	5	64	98	52	83	5	168	162	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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	100	103	5	67	103	55	87	5	177	171	21
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	195			228			530	476	202	472	476	168
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	195			228			530	476	202	472	476	168
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			81	81	99	54	62	97
cM capacity (veh/h)	1348			1311			284	449	803	382	449	837

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	250	175	147	369
Volume Left	47	5	55	177
Volume Right	103	103	5	21
cSH	1348	1311	373	424
Volume to Capacity	0.03	0.00	0.39	0.87
Queue Length 95th (m)	0.8	0.1	13.9	67.0
Control Delay (s)	1.7	0.3	20.8	48.9
Lane LOS	A	A	C	E
Approach Delay (s)	1.7	0.3	20.8	48.9
Approach LOS			C	E

Intersection Summary					
Average Delay	22.9				
Intersection Capacity Utilization	62.6%	ICU Level of Service		B	
Analysis Period (min)	15				

9: 25 St & 30 Ave SW
04/23/2024

PM Peak Hour
After Development (75% Build Out)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	18	5	5	10	33	5	5	5	59	6	5
Future Volume (Veh/h)	5	18	5	5	10	33	5	5	5	59	6	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	5	19	5	5	11	35	5	5	5	62	6	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								235				
pX, platoon unblocked												
vC, conflicting volume	240	202	58	214	202	58	36			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	240	202	58	214	202	58	36			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	97	99	99	98	96	100			96		
cM capacity (veh/h)	607	635	963	645	635	965	1540			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	29	51	15	73
Volume Left	5	5	5	62
Volume Right	5	35	5	5
cSH	669	831	1540	1541
Volume to Capacity	0.04	0.06	0.00	0.04
Queue Length 95th (m)	1.0	1.5	0.1	1.0
Control Delay (s)	10.6	9.6	2.5	6.4
Lane LOS	B	A	A	A
Approach Delay (s)	10.6	9.6	2.5	6.4
Approach LOS	B	A		

Intersection Summary					
Average Delay	7.7				
Intersection Capacity Utilization	27.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	116	116	11	5	482	327	8	312	68
Future Volume (vph)	0	0	0	116	116	11	5	482	327	8	312	68
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.99			1.00	0.94		0.99	
Frt					0.987				0.850		0.976	
Flt Protected				0.950							0.999	
Satd. Flow (prot)	0	0	0	1704	1760	0	0	1794	1525	0	1729	0
Flt Permitted				0.950				0.996			0.990	
Satd. Flow (perm)	0	0	0	1666	1760	0	0	1786	1427	0	1713	0
Satd. Flow (RTOR)					9				344		26	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	0	0	0	122	122	12	5	507	344	8	328	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	122	134	0	0	512	344	0	408	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2		2	6		
Detector Phase				8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)				25.0	25.0		35.0	35.0	35.0	35.0	35.0	
Total Split (%)				41.7%	41.7%		58.3%	58.3%	58.3%	58.3%	58.3%	
Maximum Green (s)				20.0	20.0		30.0	30.0	30.0	30.0	30.0	
Yellow Time (s)				3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)				5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				None	None		Min	Min	Min	Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				10.4	10.4			25.2	25.2		25.2	
Actuated g/C Ratio				0.25	0.25			0.61	0.61		0.61	
v/c Ratio				0.29	0.30			0.47	0.34		0.39	
Control Delay				15.3	14.5			8.5	2.0		7.2	
Queue Delay				0.0	0.0			0.1	0.0		0.0	
Total Delay				15.3	14.5			8.6	2.0		7.2	
LOS				B	B			A	A		A	
Approach Delay					14.9			6.0			7.2	
Approach LOS					B			A			A	
Queue Length 50th (m)				6.7	6.8			21.3	0.0		14.6	
Queue Length 95th (m)				18.5	19.1			44.2	8.1		31.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)				50.0								
Base Capacity (vph)				806	856			1386	1184		1335	
Starvation Cap Reductn				0	0			207	89		0	
Spillback Cap Reductn				0	0			0	0		0	
Storage Cap Reductn				0	0			0	0		0	
Reduced v/c Ratio				0.15	0.16			0.43	0.31		0.31	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 41.5	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 53.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: 29 St & Richmond Road SW

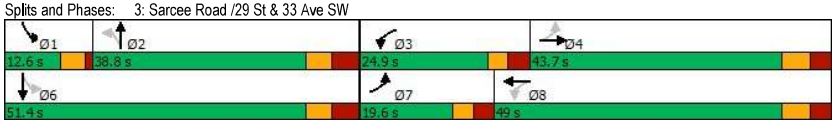


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	479	80	226	667	475	31	223	147	236	157	5
Future Volume (vph)	231	479	80	226	667	475	31	223	147	236	157	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.98		0.98	0.96			0.98		0.99	1.00	
Frt		0.979			0.938			0.945			0.996	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3284	0	1704	3054	0	0	3149	0	1704	1784	0
Flt Permitted	0.094			0.373				0.905		0.303		
Satd. Flow (perm)	169	3284	0	655	3054	0	0	2856	0	536	1784	0
Satd. Flow (RTOR)		16			164			92			1	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	243	504	84	238	702	500	33	235	155	248	165	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	588	0	238	1202	0	0	423	0	248	170	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		11.5	37.8	
Total Split (s)	19.6	43.7		24.9	49.0		38.8	38.8		12.6	51.4	
Total Split (%)	16.3%	36.4%		20.8%	40.8%		32.3%	32.3%		10.5%	42.8%	
Maximum Green (s)	13.4	36.3		18.7	41.6		31.0	31.0		8.1	43.6	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		1.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		4.5	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0			8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0			22.0	
Pedestrian Calls (#/hr)		0			0		5	5			5	
Act Effct Green (s)	57.1	42.4		55.7	41.7			18.7		34.6	31.3	
Actuated g/C Ratio	0.53	0.39		0.52	0.39			0.17		0.32	0.29	
v/c Ratio	0.87	0.45		0.52	0.94			0.74		0.96	0.33	
Control Delay	57.3	26.7		16.7	42.8			41.0		78.9	31.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0		42.8	0.5	
Total Delay	57.3	26.7		16.7	42.8			41.0		121.7	31.8	
LOS	E	C		B	D			D		F	C	
Approach Delay		35.6			38.5			41.0			85.1	
Approach LOS		D			D			D			F	
Queue Length 50th (m)	34.0	44.7		22.3	110.4			35.1		41.1	27.7	
Queue Length 95th (m)	#96.0	77.5		45.4	#185.3			51.2		#81.5	44.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			158.5			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	280	1299		556	1280			888		259	723	
Starvation Cap Reductn	0	0		0	0			0		49	284	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.87	0.45		0.43	0.94			0.48		1.18	0.39	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 44.3	Intersection LOS: D
Intersection Capacity Utilization 112.8%	ICU Level of Service H
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	30	448	127	173	595	34	58	12	150	15	58	25
Future Volume (vph)	30	448	127	173	595	34	58	12	150	15	58	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.99			0.93			0.97	
Frt		0.972			0.994			0.908			0.966	
Flt Protected		0.997			0.989			0.987			0.992	
Satd. Flow (prot)	0	1709	0	0	1757	0	0	1508	0	0	1679	0
Flt Permitted		0.941			0.758			0.890			0.913	
Satd. Flow (perm)	0	1612	0	0	1341	0	0	1344	0	0	1538	0
Satd. Flow (RTOR)		32			5			110			17	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	32	472	134	182	626	36	61	13	158	16	61	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	638	0	0	844	0	0	232	0	0	103	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		54.5			54.5			13.8			13.8	
Actuated g/C Ratio		0.69			0.69			0.18			0.18	
v/c Ratio		0.57			0.91			0.71			0.36	
Control Delay		8.5			26.6			30.0			29.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		8.5			26.6			30.0			29.7	
LOS		A			C			C			C	
Approach Delay		8.5			26.6			30.0			29.7	
Approach LOS		A			C			C			C	
Queue Length 50th (m)		35.6			81.6			18.3			12.3	
Queue Length 95th (m)		78.7			#212.7			42.2			26.1	

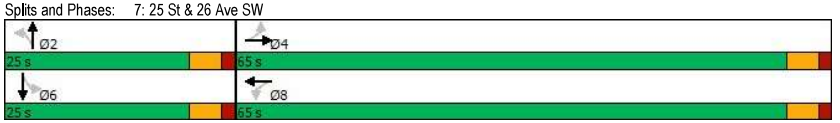
7: 25 St & 26 Ave SW
04/23/2024

PM Peak Hour
After Development (75% Build out)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)												
Base Capacity (vph)		1263			1046			431			413	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.51			0.81			0.54			0.25	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 78.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 112.7%	ICU Level of Service H
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: 25 St & 26 Ave SW

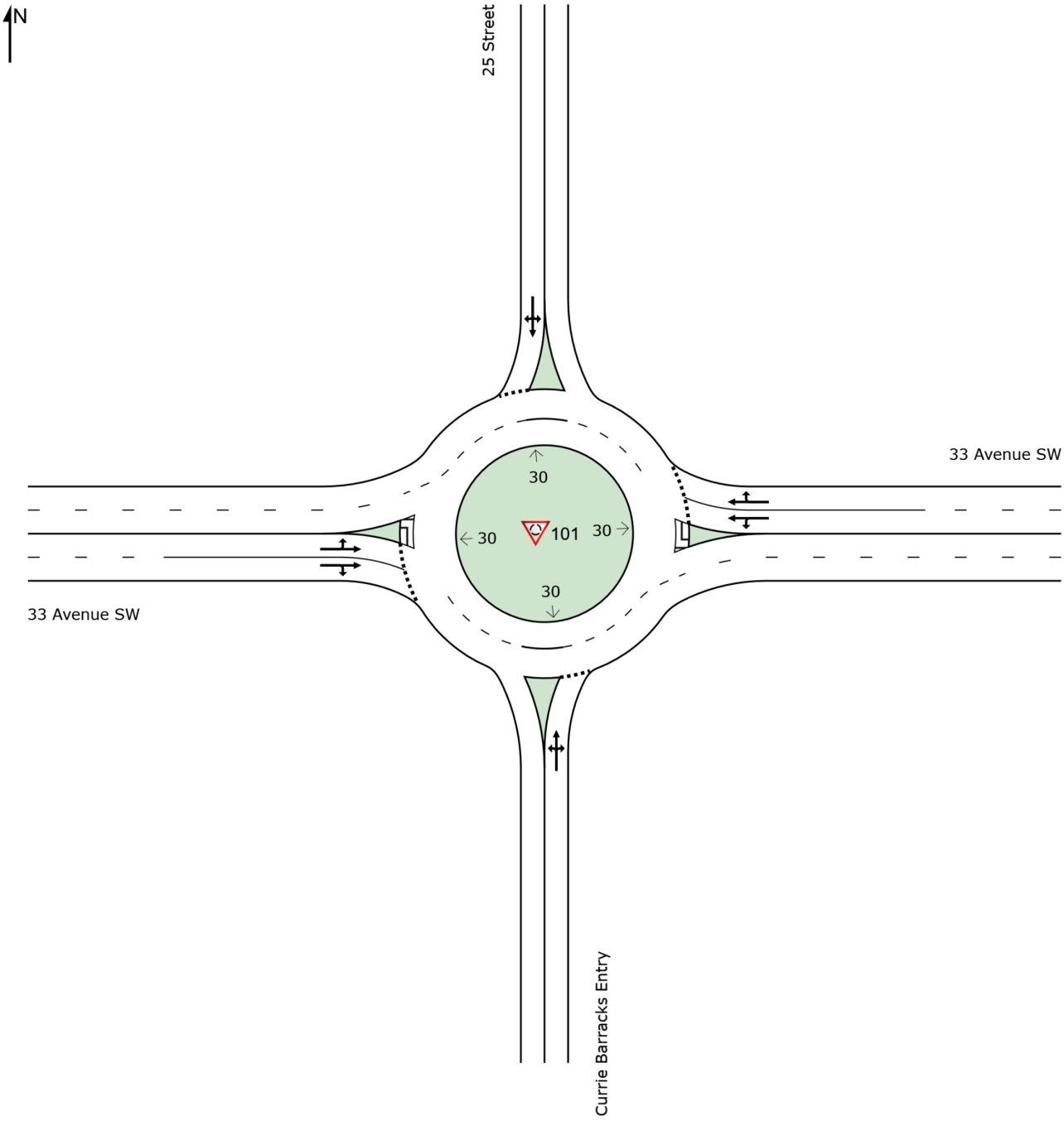


SITE LAYOUT

Site: 101 [2028 AD AM (Site Folder: General)]

2501 Richmond Road SW TIA
Site Category: 2028 After Development AM
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 101 [2028 AD AM (Site Folder: General)]

2501 Richmond Road SW TIA
Site Category: 2028 After Development AM
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Currie Barracks Entry													
Lane 1[d]	164	2.0	531	0.309	100	8.0	LOS A	1.4	9.9	Full	500	0.0	0.0
Approach	164	2.0		0.309		8.0	LOS A	1.4	9.9				
East: 33 Avenue SW													
Lane 1	353	2.0	1256	0.281	100	3.6	LOS A	1.8	12.6	Full	500	0.0	0.0
Lane 2[d]	406	2.0	1442	0.281	100	2.7	LOS A	1.8	12.9	Full	500	0.0	0.0
Approach	759	2.0		0.281		3.1	LOS A	1.8	12.9				
North: 25 Street													
Lane 1[d]	216	2.0	725	0.298	100	7.1	LOS A	1.3	9.1	Full	500	0.0	0.0
Approach	216	2.0		0.298		7.1	LOS A	1.3	9.1				
West: 33 Avenue SW													
Lane 1	546	2.0	1166	0.468	100	3.9	LOS A	3.4	24.5	Full	500	0.0	0.0
Lane 2[d]	636	2.0	1358	0.468	100	3.2	LOS A	3.5	25.2	Full	500	0.0	0.0
Approach	1182	2.0		0.468		3.5	LOS A	3.5	25.2				
Intersection	2321	2.0		0.468		4.1	LOS A	3.5	25.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Currie Barracks Entry

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	79	11	74	164	2.0	531	0.309	100	NA	NA
Approach	79	11	74	164	2.0		0.309			

East: 33 Avenue SW

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	58	295	-	353	2.0	1256	0.281	100	NA	NA
Lane 2	-	291	115	406	2.0	1442	0.281	100	NA	NA
Approach	58	586	115	759	2.0		0.281			

North: 25 Street

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	153	3	60	216	2.0	725	0.298	100	NA	NA
Approach	153	3	60	216	2.0		0.298			

West: 33 Avenue SW

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	41	505	-	546	2.0	1166	0.468	100	NA	NA
Lane 2	-	558	78	636	2.0	1358	0.468	100	NA	NA
Approach	41	1063	78	1182	2.0		0.468			

	Total	%HV	Deg.Satn (v/c)
Intersection	2321	2.0	0.468

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Currie Barracks Entry Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
East Exit: 33 Avenue SW Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: 25 Street Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: 33 Avenue SW Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

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LANE SUMMARY

Site: 101 [2028 AD PM (Site Folder: General)]

2501 Richmond Road SW TIA
Site Category: 2028 After Development PM
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Currie Barracks Entry													
Lane 1[d]	102	2.0	674	0.151	100	4.7	LOS A	0.6	4.2	Full	500	0.0	0.0
Approach	102	2.0		0.151		4.7	LOS A	0.6	4.2				
East: 33 Avenue SW													
Lane 1	655	2.0	1296	0.506	100	3.6	LOS A	3.9	27.8	Full	500	0.0	0.0
Lane 2[d]	760	2.0	1502	0.506	100	2.8	LOS A	3.9	28.1	Full	500	0.0	0.0
Approach	1415	2.0		0.506		3.2	LOS A	3.9	28.1				
North: 25 Street													
Lane 1[d]	136	2.0	545	0.249	100	7.7	LOS A	1.0	7.4	Full	500	0.0	0.0
Approach	136	2.0		0.249		7.7	LOS A	1.0	7.4				
West: 33 Avenue SW													
Lane 1	397	2.0	1214	0.327	100	4.0	LOS A	2.1	14.7	Full	500	0.0	0.0
Lane 2[d]	459	2.0	1401	0.327	100	2.9	LOS A	2.1	15.0	Full	500	0.0	0.0
Approach	856	2.0		0.327		3.4	LOS A	2.1	15.0				
Intersection	2509	2.0		0.506		3.6	LOS A	3.9	28.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Currie Barracks Entry

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	19	23	60	102	2.0	674	0.151	100	NA	NA
Approach	19	23	60	102	2.0		0.151			

East: 33 Avenue SW

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	89	566	-	655	2.0	1296	0.506	100	NA	NA
Lane 2	-	625	135	760	2.0	1502	0.506	100	NA	NA
Approach	89	1191	135	1415	2.0		0.506			

North: 25 Street

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	68	16	52	136	2.0	545	0.249	100	NA	NA
Approach	68	16	52	136	2.0		0.249			

West: 33 Avenue SW

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	75	322	-	397	2.0	1214	0.327	100	NA	NA
Lane 2	-	388	71	459	2.0	1401	0.327	100	NA	NA
Approach	75	710	71	856	2.0		0.327			

	Total	%HV	Deg.Satn (v/c)
Intersection	2509	2.0	0.506

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Currie Barracks Entry Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
East Exit: 33 Avenue SW Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: 25 Street Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: 33 Avenue SW Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

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Project: O:\Dept SAB\Projects\2022\0203 Viscount Bennett TIA\4.0 Analysis & Design\Sidra\25 Street and 33 Ave SW.sip9

LANE SUMMARY

Site: 101 [2048 AD AM (Site Folder: General)]

2501 Richmond Road SW TIA
Site Category: 2048 After Development AM
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Currie Barracks Entry													
Lane 1[d]	320	2.0	529	0.605	100	10.1	LOS B	3.7	26.1	Full	500	0.0	0.0
Approach	320	2.0		0.605		10.1	LOS B	3.7	26.1				
East: 33 Avenue SW													
Lane 1	497	2.0	1249	0.398	100	5.8	LOS A	3.0	21.3	Full	500	0.0	0.0
Lane 2[d]	573	2.0	1442	0.398	100	2.7	LOS A	3.1	21.9	Full	500	0.0	0.0
Approach	1070	2.0		0.398		4.1	LOS A	3.1	21.9				
North: 25 Street													
Lane 1[d]	118	2.0	584	0.202	100	8.3	LOS A	0.8	5.9	Full	500	0.0	0.0
Approach	118	2.0		0.202		8.3	LOS A	0.8	5.9				
West: 33 Avenue SW													
Lane 1	528	2.0	1023	0.516	100	4.9	LOS A	3.8	27.1	Full	500	0.0	0.0
Lane 2[d]	627	2.0	1216	0.516	100	4.2	LOS A	3.9	27.9	Full	500	0.0	0.0
Approach	1155	2.0		0.516		4.5	LOS A	3.9	27.9				
Intersection	2663	2.0		0.605		5.2	LOS A	3.9	27.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Currie Barracks Entry

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	113	7	200	320	2.0	529	0.605	100	NA	NA
Approach	113	7	200	320	2.0		0.605			

East: 33 Avenue SW

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	270	227	-	497	2.0	1249	0.398	100	NA	NA
Lane 2	-	543	30	573	2.0	1442	0.398	100	NA	NA
Approach	270	770	30	1070	2.0		0.398			

North: 25 Street

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	90	6	22	118	2.0	584	0.202	100	NA	NA
Approach	90	6	22	118	2.0		0.202			

West: 33 Avenue SW

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	12	516	-	528	2.0	1023	0.516	100	NA	NA
Lane 2	-	553	74	627	2.0	1216	0.516	100	NA	NA
Approach	12	1069	74	1155	2.0		0.516			

	Total	%HV	Deg.Satn (v/c)
Intersection	2663	2.0	0.605

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Currie Barracks Entry Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
East Exit: 33 Avenue SW Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: 25 Street Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: 33 Avenue SW Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

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LANE SUMMARY

Site: 101 [2048 AD PM (Site Folder: General)]

2501 Richmond Road SW TIA
Site Category: 2048 After Development PM
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Currie Barracks Entry													
Lane 1[d]	410	2.0	448	0.915	100	25.1	LOS C	9.4	66.7	Full	500	0.0	0.0
Approach	410	2.0		0.915		25.1	LOS C	9.4	66.7				
East: 33 Avenue SW													
Lane 1	775	2.0	1067	0.726	100	8.6	LOS A	9.0	64.1	Full	500	0.0	0.0
Lane 2[d]	915	2.0	1261	0.726	100	5.3	LOS A	9.0	64.1	Full	500	0.0	0.0
Approach	1690	2.0		0.726		6.8	LOS A	9.0	64.1				
North: 25 Street													
Lane 1[d]	87	2.0	336	0.259	100	10.0	LOS B	1.2	8.6	Full	500	0.0	0.0
Approach	87	2.0		0.259		10.0	LOS B	1.2	8.6				
West: 33 Avenue SW													
Lane 1	653	2.0	976	0.668	100	7.4	LOS A	7.3	52.0	Full	500	0.0	0.0
Lane 2[d]	779	2.0	1166	0.668	100	5.8	LOS A	7.5	53.2	Full	500	0.0	0.0
Approach	1432	2.0		0.668		6.6	LOS A	7.5	53.2				
Intersection	3619	2.0		0.915		8.9	LOS A	9.4	66.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Currie Barracks Entry

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	197	23	190	410	2.0	448	0.915	100	NA	NA
Approach	197	23	190	410	2.0		0.915			

East: 33 Avenue SW

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	320	455	-	775	2.0	1067	0.726	100	NA	NA
Lane 2	-	813	102	915	2.0	1261	0.726	100	NA	NA
Approach	320	1268	102	1690	2.0		0.726			

North: 25 Street

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	41	15	31	87	2.0	336	0.259	100	NA	NA
Approach	41	15	31	87	2.0		0.259			

West: 33 Avenue SW

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	68	585	-	653	2.0	976	0.668	100	NA	NA
Lane 2	-	604	175	779	2.0	1166	0.668	100	NA	NA
Approach	68	1189	175	1432	2.0		0.668			

	Total	%HV	Deg.Satn (v/c)
Intersection	3619	2.0	0.915

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Currie Barracks Entry Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
East Exit: 33 Avenue SW Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: 25 Street Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: 33 Avenue SW Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

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Existing

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	10.9	8.4	4.3	2.2	0.2	0.4	2.4	0.9	0.4	1.6

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	0.7	1.1	7.5	3.5	2.1

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	15.5	17.1	11.7	14.7	13.7	8.0	23.2	17.2	0.0	27.7	16.4	7.7

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	15.6

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.8	0.1	0.1	1.0	0.0	0.3	3.1	4.0	2.9	2.8	2.7	2.7

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.8

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.4	0.0	0.1	0.6	0.2	0.2	2.8	2.4	3.0	2.8	2.8	2.6

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.7

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.9	0.2	0.0	1.4	0.1	0.0	12.0	4.1	6.0	8.9	8.8	4.5

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.6

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.0	0.1	0.7	4.6	0.1	0.2	10.1	9.6	5.8	10.4	9.7	5.3

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.8

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.3	0.4	0.1	0.3	0.0	0.0	2.8	3.2	3.0	3.6	3.4	2.7

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.3

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.6	2.2	2.7	2.5	2.3	2.6	0.3	0.0	0.1	0.1	0.1	0.1

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.2

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	11.2	6.0	37.9	9.9	7.4	5.2	0.0	10.7

Total Network Performance

Stop Del/Veh (s)	11.2

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	SB
Directions Served	L	TR	LTR	LTR
Maximum Queue (m)	16.6	21.9	23.3	28.0
Average Queue (m)	5.6	8.4	5.1	5.0
95th Queue (m)	12.7	17.1	16.7	18.7
Link Distance (m)	102.9	102.9	24.6	65.9
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	28.9	29.5	15.7
Average Queue (m)	5.7	11.3	1.9
95th Queue (m)	18.9	28.4	9.3
Link Distance (m)	30.4	24.6	24.6
Upstream Blk Time (%)	0	4	0
Queuing Penalty (veh)	0	7	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	L	TR
Maximum Queue (m)	47.4	72.5	69.3	30.3	45.6	49.6	39.5	30.0	35.9	32.4
Average Queue (m)	18.8	51.5	34.8	12.7	25.0	22.2	16.5	2.2	30.5	16.5
95th Queue (m)	42.5	75.6	60.0	24.3	40.5	41.3	31.1	13.1	39.5	30.1
Link Distance (m)		65.9	65.9		117.6	117.6	51.4	51.4	30.4	30.4
Upstream Blk Time (%)		4	1				0		19	1
Queuing Penalty (veh)		0	0				0		33	1
Storage Bay Dist (m)	45.0			85.0						
Storage Blk Time (%)	0	11								
Queuing Penalty (veh)	0	10								

Queuing and Blocking Report
04/23/2024
AM Peak Hour
Sim Traffic

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	8.0	7.8	14.8	10.6
Average Queue (m)	0.4	0.3	4.6	4.6
95th Queue (m)	3.5	3.2	10.8	12.1
Link Distance (m)	102.9	515.2	56.5	58.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.4	5.9	6.4	5.2
Average Queue (m)	0.8	0.2	1.9	2.0
95th Queue (m)	5.1	2.2	6.1	5.9
Link Distance (m)	515.2	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	41.7	18.6	14.6	14.7
Average Queue (m)	6.3	2.3	7.2	5.4
95th Queue (m)	23.0	10.5	14.4	13.2
Link Distance (m)	92.3	85.7	114.4	88.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	22.4	20.7	19.0	17.1
Average Queue (m)	4.5	4.7	8.2	7.6
95th Queue (m)	15.3	15.3	16.0	15.5
Link Distance (m)	85.7	188.2	122.8	73.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.1	3.2	5.4	5.5
Average Queue (m)	0.7	0.1	2.0	3.1
95th Queue (m)	4.5	1.6	6.0	7.1
Link Distance (m)	90.4	80.8	220.3	122.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	9.1	10.5	5.4
Average Queue (m)	3.3	3.5	0.2
95th Queue (m)	10.3	10.8	2.3
Link Distance (m)	68.2	70.6	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
04/23/2024
AM Peak Hour
Sim Traffic

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	107.6	74.4	8.8	68.2	51.3	6.4	8.3
Average Queue (m)	64.2	43.4	1.1	40.2	16.5	0.3	0.7
95th Queue (m)	92.3	69.2	5.5	60.4	39.3	3.0	4.4
Link Distance (m)	107.5	107.5	91.1	91.1	91.1	90.3	90.3
Upstream Blk Time (%)	0			0			
Queuing Penalty (veh)	0			0			
Storage Bay Dist (m)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 53

SimTraffic Report
BR

Existing

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	9.7	5.8	6.4	2.8	0.1	0.2	4.3	0.3	0.3	1.3

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	0.8	0.7	7.0	1.3	1.0

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	27.8	16.2	9.6	13.1	19.5	22.7	26.2	23.4	0.0	32.5	20.4	11.1

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	19.4

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.9	0.1	0.0	0.6	0.1	0.1	3.7	3.6	3.4	3.7	3.5	3.1

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.1

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.3	0.1	0.0	1.2	0.2	0.3	4.5	3.0	2.8	2.7	3.8	2.4

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.8

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	3.6	0.2	0.3	2.3	0.2	0.4	9.7	5.6	5.1	22.7	7.3	5.5

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.7

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	4.2	0.5	0.1	3.9	0.3	0.4	16.5	9.6	6.7	19.7	16.9	8.2

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.3

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.7	0.0	0.1	0.2	0.0	0.0	4.1	2.8	2.7	2.9	2.2	2.7

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.3

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.3	2.9	2.1	2.7	2.9	2.3	0.5	0.1	0.0	0.1	0.0	0.1

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.0

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	11.9	7.5	23.4	15.3	8.0	4.1	0.0	14.0

Total Network Performance

Stop Del/Veh (s)	13.6

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	SB
Directions Served	L	TR	LTR	LTR
Maximum Queue (m)	13.7	22.3	25.1	28.6
Average Queue (m)	5.4	9.9	5.4	4.0
95th Queue (m)	11.4	18.5	17.9	16.3
Link Distance (m)	102.9	102.9	24.6	65.9
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			1	
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	36.3	25.9	18.2
Average Queue (m)	11.1	6.1	2.1
95th Queue (m)	30.5	19.2	10.1
Link Distance (m)	30.4	24.6	24.6
Upstream Blk Time (%)	1	0	0
Queuing Penalty (veh)	4	1	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	L	TR
Maximum Queue (m)	47.3	70.4	55.8	58.5	110.9	123.3	42.7	34.5	34.7	33.6
Average Queue (m)	27.2	37.4	24.3	20.3	57.7	71.2	21.6	4.9	23.9	18.5
95th Queue (m)	45.6	61.9	45.9	43.5	92.7	115.2	37.1	20.1	36.8	32.0
Link Distance (m)		65.9	65.9		117.6	117.6	51.4	51.4	30.4	30.4
Upstream Blk Time (%)		1	0		0	1	0		6	2
Queuing Penalty (veh)		0	0		0	0	0		8	3
Storage Bay Dist (m)	45.0			85.0						
Storage Blk Time (%)	1	3		0	1					
Queuing Penalty (veh)	1	5		0	1					

Queuing and Blocking Report
04/23/2024
PM Peak Hour
Sim Traffic

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	7.8	12.1	17.3	10.5
Average Queue (m)	0.5	0.9	6.5	3.9
95th Queue (m)	3.8	6.0	12.6	11.3
Link Distance (m)	102.9	515.2	56.5	58.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	7.8	3.1	6.2	10.0
Average Queue (m)	0.9	0.1	1.9	3.6
95th Queue (m)	5.0	1.6	6.0	8.1
Link Distance (m)	515.2	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	28.5	32.3	19.3	13.1
Average Queue (m)	6.6	7.0	7.3	5.7
95th Queue (m)	20.2	23.1	15.5	12.9
Link Distance (m)	92.3	85.7	114.4	88.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

SimTraffic Report
BR

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	39.0	51.4	21.2	18.3
Average Queue (m)	9.7	9.5	8.3	9.2
95th Queue (m)	27.1	31.1	17.1	17.6
Link Distance (m)	85.7	188.2	122.8	73.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	13.9	2.9	6.6	6.8
Average Queue (m)	1.4	0.1	2.1	3.6
95th Queue (m)	7.1	1.5	6.3	7.6
Link Distance (m)	90.4	80.8	220.3	122.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	9.1	9.1	5.4
Average Queue (m)	2.8	3.8	0.4
95th Queue (m)	9.6	10.9	3.2
Link Distance (m)	68.2	70.6	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	73.0	59.7	42.5	99.9	95.7	8.9	5.4
Average Queue (m)	50.4	31.7	3.0	82.1	59.4	0.5	0.4
95th Queue (m)	69.9	59.7	24.6	107.4	90.8	3.6	3.5
Link Distance (m)	107.5	107.5	91.1	91.1	91.1	90.3	90.3
Upstream Blk Time (%)			0	7	1		
Queuing Penalty (veh)			0	0	0		
Storage Bay Dist (m)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 25

Background

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	17.4	9.1	5.2	2.0	0.2	0.2	11.1	3.9	2.1	3.0

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	0.8	0.9	5.9	7.4	3.7

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	16.7	18.7	13.1	17.1	15.1	10.6	22.6	19.7	0.3	32.3	18.6	11.8

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	17.1

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.2	0.1	0.1	0.7	0.1	0.1	3.7	3.6	2.4	3.1	3.7	3.0

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.8

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.3	0.1	0.0	0.2	0.2	0.2	2.6	2.4	4.0	3.3	3.0	2.3

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.7

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.9	0.1	0.0	3.2	0.1	0.1	8.6	4.1	6.2	8.4	9.1	4.1

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.5

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.2	0.2	0.3	3.2	0.1	0.5	13.0	10.4	8.9	11.8	13.9	5.6

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.0

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.4	0.1	0.2	0.2	0.0	0.0	3.0	2.8	2.6	3.7	2.0	2.7

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.0

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.3	2.5	2.3	2.5	2.7	2.6	0.7	0.0	0.2	0.6	0.1	0.2

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.5

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	10.6	7.0	40.4	8.9	15.1	5.9	0.0	10.7

Total Network Performance

Stop Del/Veh (s)	12.6

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	SB
Directions Served	L	TR	LTR	LTR
Maximum Queue (m)	19.9	18.3	25.3	44.7
Average Queue (m)	6.9	8.0	4.4	11.0
95th Queue (m)	15.5	15.6	16.4	39.0
Link Distance (m)	102.9	102.9	24.6	65.9
Upstream Blk Time (%)			0	1
Queuing Penalty (veh)			1	0
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	35.9	29.4	13.1
Average Queue (m)	7.5	17.8	1.2
95th Queue (m)	25.6	34.4	7.5
Link Distance (m)	30.4	24.6	24.6
Upstream Blk Time (%)	0	12	0
Queuing Penalty (veh)	2	24	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	L	TR
Maximum Queue (m)	47.4	71.2	71.9	35.0	51.1	70.8	38.4	36.7	36.0	32.4
Average Queue (m)	22.5	56.7	41.7	15.7	27.0	32.3	20.6	6.8	32.2	16.5
95th Queue (m)	49.7	81.0	69.7	29.5	45.9	58.4	34.7	25.1	38.2	30.3
Link Distance (m)		65.9	65.9		117.6	117.6	51.4	51.4	30.4	30.4
Upstream Blk Time (%)		6	1						33	1
Queuing Penalty (veh)		0	0						64	2
Storage Bay Dist (m)	45.0			85.0						
Storage Blk Time (%)	0	16								
Queuing Penalty (veh)	1	14								

Queuing and Blocking Report
04/23/2024
AM Peak Hour
Sim Traffic

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	8.3	7.4	12.5	10.5
Average Queue (m)	0.6	0.4	3.9	4.7
95th Queue (m)	4.0	3.7	9.4	12.2
Link Distance (m)	102.9	515.2	56.5	58.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.6	1.6	5.0	5.2
Average Queue (m)	0.9	0.1	1.8	2.4
95th Queue (m)	5.5	1.5	5.7	6.4
Link Distance (m)	515.2	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	32.0	17.0	15.6	12.1
Average Queue (m)	5.1	2.4	6.5	5.4
95th Queue (m)	20.9	10.6	14.5	12.8
Link Distance (m)	92.3	85.7	114.4	88.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	34.2	17.0	25.1	17.2
Average Queue (m)	5.7	4.2	9.3	7.9
95th Queue (m)	20.3	14.0	18.8	15.6
Link Distance (m)	85.7	188.2	122.8	73.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.8	3.0	5.4	6.8
Average Queue (m)	0.8	0.1	1.9	2.9
95th Queue (m)	5.7	1.5	5.9	7.2
Link Distance (m)	90.4	80.8	220.3	122.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.1	12.0	7.1	3.7
Average Queue (m)	3.4	4.0	0.4	0.3
95th Queue (m)	10.5	11.7	3.3	3.0
Link Distance (m)	68.2	70.6		220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
04/23/2024
AM Peak Hour
Sim Traffic

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	107.9	87.8	30.4	68.5	46.8	26.6	22.3
Average Queue (m)	66.9	49.4	11.0	39.9	17.2	11.5	8.9
95th Queue (m)	97.1	76.2	23.1	60.8	40.5	22.6	17.4
Link Distance (m)	107.5	107.5	91.1	91.1	91.1	90.3	90.3
Upstream Blk Time (%)	0	0					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (m)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 107

SimTraffic Report
BR

Background

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	25.2	12.1	12.7	1.1	0.2	0.3	5.2	7.5	5.7	4.8

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	1.0	0.8	17.4	10.0	4.0

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	33.0	18.1	13.6	18.4	24.2	30.5	30.3	28.7	0.4	50.7	25.1	12.6

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	24.8

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.7	0.0	0.2	0.5	0.1	0.1	3.9	3.2	3.1	3.6	4.4	2.7

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.1

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.5	0.1	0.1	1.4	0.2	0.2	3.2	2.8	2.8	3.4	2.6	2.5

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.7

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	3.7	0.2	0.3	3.0	0.2	0.0	18.8	2.6	5.9	8.5	8.4	6.6

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.7

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	4.3	0.7	0.5	1.8	0.2	0.3	18.7	9.8	6.6	16.9	16.2	10.0

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.4

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.4	0.3	0.0	0.4	0.0	0.1	3.0	3.5	2.8	3.1	1.5	2.8

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.1

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.6	2.6	2.3	2.5	2.5	2.3	0.5	0.2	0.0	0.5	0.1	0.0

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.1

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	12.5	6.4	35.0	15.1	14.8	2.9	0.0	14.3

Total Network Performance

Stop Del/Veh (s)	17.6

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	SB
Directions Served	L	TR	LTR	LTR
Maximum Queue (m)	25.1	30.4	27.6	64.6
Average Queue (m)	8.9	12.4	7.0	16.6
95th Queue (m)	22.5	23.5	21.6	53.4
Link Distance (m)	102.9	102.9	24.6	65.9
Upstream Blk Time (%)			1	3
Queuing Penalty (veh)			4	0
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	37.0	31.2	21.4
Average Queue (m)	14.7	18.8	4.0
95th Queue (m)	36.8	35.4	14.8
Link Distance (m)	30.4	24.6	24.6
Upstream Blk Time (%)	1	17	1
Queuing Penalty (veh)	10	31	2
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	L	TR
Maximum Queue (m)	47.4	70.5	62.2	86.6	124.7	125.3	56.0	44.8	37.8	34.7
Average Queue (m)	33.1	44.8	31.9	30.8	71.1	89.1	30.8	14.0	31.4	22.5
95th Queue (m)	53.0	72.4	55.5	64.4	119.6	135.6	50.2	39.0	39.9	36.6
Link Distance (m)		65.9	65.9		117.6	117.6	51.4	51.4	30.4	30.4
Upstream Blk Time (%)		2	0		2	7	1	0	40	6
Queuing Penalty (veh)		0	0		0	0	0	0	68	10
Storage Bay Dist (m)	45.0			85.0						
Storage Blk Time (%)	3	7		0	2					
Queuing Penalty (veh)	6	11		0	4					

Queuing and Blocking Report
04/23/2024
PM Peak Hour
Sim Traffic

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.2	7.8	16.5	9.2
Average Queue (m)	0.6	0.4	6.9	3.9
95th Queue (m)	4.1	3.6	12.5	11.3
Link Distance (m)	102.9	515.2	56.5	58.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.2	8.1	7.8	9.7
Average Queue (m)	1.4	0.3	2.0	3.4
95th Queue (m)	6.9	3.8	6.4	8.2
Link Distance (m)	515.2	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	31.6	29.5	18.2	14.6
Average Queue (m)	6.4	5.3	7.5	5.0
95th Queue (m)	20.7	18.1	15.7	13.0
Link Distance (m)	92.3	85.7	114.4	88.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	55.4	37.7	21.5	23.8
Average Queue (m)	10.1	8.1	9.6	9.3
95th Queue (m)	33.6	24.9	17.8	18.1
Link Distance (m)	85.7	188.2	122.8	73.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.2	6.0	6.6	6.5
Average Queue (m)	1.1	0.3	1.9	3.7
95th Queue (m)	5.5	2.7	6.0	7.7
Link Distance (m)	90.4	80.8	220.3	122.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.1	9.2	7.2	3.6
Average Queue (m)	3.8	3.5	0.4	0.1
95th Queue (m)	11.0	10.7	3.2	1.8
Link Distance (m)	68.2	70.6		220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
04/23/2024
PM Peak Hour
Sim Traffic

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	78.7	62.7	72.0	97.2	95.7	19.4	17.4
Average Queue (m)	53.3	36.3	19.7	82.7	61.8	5.9	6.2
95th Queue (m)	75.1	61.4	46.5	108.8	92.4	15.8	14.7
Link Distance (m)	107.5	107.5	91.1	91.1	91.1	90.3	90.3
Upstream Blk Time (%)			0	7	1		
Queuing Penalty (veh)			0	0	0		
Storage Bay Dist (m)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 145

SimTraffic Report
BR

2028 After Development (50% Build Out)

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	10.9	5.1	4.1	8.4	5.0	2.8	12.1	7.3	6.4	6.2

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	1.4	1.1	6.7	3.2	2.3

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	35.0	33.7	28.1	28.5	25.9	23.7	29.3	26.8	0.5	17.3	13.0	6.1

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	24.4

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.5	0.5	0.6	0.8	0.1	0.0	4.4	3.4	3.5	4.6	4.6	4.9

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.8

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.8	0.1	0.3	0.6	0.2	0.2	4.8	3.6	2.7	3.9	2.8	2.2

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.6

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	3.1	1.7	1.2	4.3	0.3	0.1	19.9	9.4	16.7	17.2	17.8	8.0

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	2.0

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	18.0	13.1	13.3	42.7	24.4	22.8	8.5	6.2	7.5	9.8	6.5	3.9

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	15.5

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.4	0.1	0.2	1.5	0.1	0.2	4.3	4.8	3.1	5.0	4.6	3.6

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	2.2

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.3	3.2	2.3	2.2	2.8	2.4	0.2	0.0	0.0	0.3	0.2	0.2

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.3

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	10.8	7.1	43.3	8.6	14.1	5.9	0.0	10.7

Total Network Performance

Stop Del/Veh (s)	19.4

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	32.1	21.2	31.7	29.7	66.0
Average Queue (m)	15.3	8.8	21.7	12.4	24.6
95th Queue (m)	27.1	17.6	33.1	23.3	49.2
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)			5	0	1
Queuing Penalty (veh)			12	1	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	37.2	30.2	18.0
Average Queue (m)	13.7	16.7	2.4
95th Queue (m)	35.1	34.8	10.7
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	2	5	0
Queuing Penalty (veh)	8	13	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	L	TR
Maximum Queue (m)	47.4	76.6	73.0	47.8	76.3	95.6	51.3	45.8	36.0	34.5
Average Queue (m)	29.7	65.9	54.1	19.6	39.1	49.5	24.8	10.4	30.7	17.2
95th Queue (m)	55.2	81.1	79.6	36.8	65.6	86.7	42.1	33.3	40.3	32.8
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	30.4	30.4
Upstream Blk Time (%)		19	9				0	0	19	1
Queuing Penalty (veh)		0	0				0	0	45	3
Storage Bay Dist (m)	45.0			85.0						
Storage Blk Time (%)	0	32			0					
Queuing Penalty (veh)	2	36			0					

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	14.9	13.6	13.6	9.5
Average Queue (m)	1.8	1.2	4.8	2.8
95th Queue (m)	8.9	6.7	10.6	8.4
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	13.5	7.2	4.9	5.2
Average Queue (m)	2.0	0.5	2.5	2.1
95th Queue (m)	9.1	3.8	6.5	6.1
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	75.8	25.1	19.0	16.8
Average Queue (m)	14.4	4.0	7.4	5.6
95th Queue (m)	49.5	16.1	15.9	14.3
Link Distance (m)	92.3	85.7	114.4	88.9
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	90.9	137.9	41.7	15.7
Average Queue (m)	56.9	47.1	20.6	6.4
95th Queue (m)	92.8	100.6	34.2	14.3
Link Distance (m)	85.7	188.2	122.8	73.3
Upstream Blk Time (%)	3	0		
Queuing Penalty (veh)	21	0		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	14.2	13.0	27.0	12.4
Average Queue (m)	2.2	2.0	9.9	5.9
95th Queue (m)	8.9	8.6	18.9	10.4
Link Distance (m)	90.4	80.8	220.3	122.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.2	16.5	1.8	3.6
Average Queue (m)	3.7	8.0	0.1	0.1
95th Queue (m)	10.8	14.8	1.8	1.8
Link Distance (m)	68.2	70.6		220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	112.0	83.9	42.5	67.4	48.8	28.1	21.1
Average Queue (m)	70.8	52.5	12.5	39.1	20.6	11.9	8.6
95th Queue (m)	99.6	80.1	28.5	62.7	42.6	23.5	18.1
Link Distance (m)	107.7	107.7		91.0	91.0	90.4	90.4
Upstream Blk Time (%)	0						
Queuing Penalty (veh)	0						
Storage Bay Dist (m)			50.0				
Storage Blk Time (%)	16		0	2			
Queuing Penalty (veh)	0		0	1			

Network Summary

Network wide Queuing Penalty: 142

2028 After Development (50% Build Out)

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	11.9	4.3	5.2	14.5	4.9	2.8	24.1	10.3	8.9	6.4

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	1.8	1.4	14.0	4.6	2.8

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	62.7	25.7	19.7	27.3	46.2	69.5	34.0	34.7	0.9	30.6	20.0	11.8

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	39.5

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.1	0.4	0.4	2.0	0.2	0.7	5.0	4.0	3.8	6.2	4.4	4.0

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.2

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.8	0.1	0.1	0.5	0.2	0.4	3.3	3.2	3.1	3.9	4.3	3.3

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.6

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	5.1	2.8	3.0	3.4	0.5	0.6	14.4	4.2	19.0	18.7	11.6	5.3

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	2.4

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	29.8	16.8	15.2	135.3	131.2	138.4	10.2	6.2	6.6	8.2	6.8	6.2

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	65.5

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.0	0.2	0.1	0.6	0.1	0.1	4.4	4.2	3.6	5.1	5.1	3.7

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	2.6

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.6	2.8	2.3	3.1	2.4	2.4	0.0	0.1	0.2	0.5	0.3	0.3

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.8

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	9.5	5.2	26.6	10.8	16.5	3.7	0.0	10.6

Total Network Performance

Stop Del/Veh (s)	35.9

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	27.6	27.0	31.5	29.2	70.7
Average Queue (m)	10.8	11.2	25.0	15.8	27.9
95th Queue (m)	21.6	22.1	35.2	26.4	59.2
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)			9	1	2
Queuing Penalty (veh)			35	2	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	37.6	30.2	22.2
Average Queue (m)	23.8	14.2	3.9
95th Queue (m)	44.6	32.0	14.6
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	4	6	0
Queuing Penalty (veh)	34	13	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B13	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	T	L	TR
Maximum Queue (m)	47.4	72.2	71.1	87.4	171.3	179.5	56.7	45.7	1.2	36.2	35.3
Average Queue (m)	42.4	57.7	43.7	53.4	119.2	139.9	33.5	20.2	0.0	29.7	21.6
95th Queue (m)	55.6	83.1	72.5	103.8	188.1	196.7	53.1	46.0	0.8	40.0	37.1
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	37.7	30.4	30.4
Upstream Blk Time (%)		15	3		5	12	1	0		19	5
Queuing Penalty (veh)		0	0		0	0	0	0		36	10
Storage Bay Dist (m)	45.0			85.0							
Storage Blk Time (%)	22	11		0	16						
Queuing Penalty (veh)	51	23		1	37						

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	12.1	16.9	20.6	9.2
Average Queue (m)	1.4	2.3	6.9	2.9
95th Queue (m)	7.2	10.4	13.7	8.5
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	13.4	6.1	7.8	20.3
Average Queue (m)	2.5	0.3	2.1	4.2
95th Queue (m)	9.6	2.7	6.5	11.4
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	74.1	41.1	21.0	11.8
Average Queue (m)	15.2	5.8	7.7	5.8
95th Queue (m)	50.4	22.9	17.8	13.0
Link Distance (m)	92.3	85.7	114.4	88.9
Upstream Blk Time (%)	2			
Queuing Penalty (veh)	0			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	90.0	206.8	34.9	19.3
Average Queue (m)	55.4	195.2	16.1	9.5
95th Queue (m)	93.6	202.0	27.7	18.4
Link Distance (m)	85.7	188.2	122.8	73.3
Upstream Blk Time (%)	5	99		
Queuing Penalty (veh)	26	0		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	17.3	10.5	19.4	23.7
Average Queue (m)	3.5	0.9	7.2	10.7
95th Queue (m)	11.3	5.4	14.2	19.3
Link Distance (m)	90.4	80.8	220.3	122.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.6	13.5	5.3	9.1
Average Queue (m)	4.6	6.0	0.2	0.8
95th Queue (m)	12.2	13.3	2.6	5.2
Link Distance (m)	68.2	70.6		220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	85.8	67.5	52.4	100.7	91.8	21.0	19.5
Average Queue (m)	47.6	31.3	22.9	74.0	52.2	7.7	7.2
95th Queue (m)	70.8	58.7	53.4	103.6	79.7	18.6	15.9
Link Distance (m)	107.7	107.7		91.0	91.0	90.4	90.4
Upstream Blk Time (%)				3	0		
Queuing Penalty (veh)				0	0		
Storage Bay Dist (m)			50.0				
Storage Blk Time (%)	4		0	16			
Queuing Penalty (veh)	0		1	15			

Network Summary

Network wide Queuing Penalty: 284

2028 After Development (75% Build Out)

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	16.7	9.4	6.0	9.3	5.8	2.7	13.7	7.6	6.0	7.8

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	1.3	1.1	7.0	3.1	2.2

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	39.0	37.3	31.4	27.8	26.0	25.0	24.8	27.3	0.5	17.0	12.4	7.1

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	25.5

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.5	0.4	0.6	1.2	0.1	0.1	5.2	4.6	3.1	5.1	4.3	3.4

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.7

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.9	0.1	0.3	0.5	0.3	0.4	4.4	3.7	2.8	5.8	4.0	2.5

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.6

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.7	0.5	0.5	4.1	0.4	0.8	16.2	6.5	9.1	16.8	12.2	5.5

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.0

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	11.0	9.0	7.8	29.4	15.6	13.1	17.5	15.8	16.3	22.0	11.0	9.3

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	13.1

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.7	0.1	0.1	0.3	0.2	0.2	6.7	8.5	6.2	6.2	5.1	4.8

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	3.3

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.6	2.6	2.0	2.7	2.9	2.6	0.1	0.0	0.0	0.5	0.3	0.1

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.4

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	11.3	7.5	42.1	9.4	14.8	5.1	0.0	11.3

Total Network Performance

Stop Del/Veh (s)	19.8

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	44.7	36.4	29.6	28.3	60.9
Average Queue (m)	22.0	11.1	23.0	12.9	25.2
95th Queue (m)	38.7	25.3	33.5	22.7	50.0
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)			5	0	0
Queuing Penalty (veh)			15	1	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)	0				
Queuing Penalty (veh)	0				

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	36.1	30.6	19.6
Average Queue (m)	13.8	17.0	2.8
95th Queue (m)	32.9	35.1	12.5
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	1	6	0
Queuing Penalty (veh)	5	15	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	L	TR
Maximum Queue (m)	47.4	75.8	81.2	45.3	79.6	100.3	54.7	40.9	36.3	33.6
Average Queue (m)	32.5	66.0	56.2	18.6	39.3	47.9	26.3	11.5	32.3	17.9
95th Queue (m)	58.9	82.2	83.8	35.3	65.9	86.2	43.3	34.5	39.6	32.0
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	30.4	30.4
Upstream Blk Time (%)		25	14				0	0	21	2
Queuing Penalty (veh)		0	0				0	0	54	4
Storage Bay Dist (m)	45.0			85.0						
Storage Blk Time (%)	1	36			0					
Queuing Penalty (veh)	3	44			0					

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	12.2	15.8	14.2	8.0
Average Queue (m)	1.5	1.9	4.6	3.0
95th Queue (m)	7.7	9.2	10.6	8.4
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	11.5	12.5	7.7	6.6
Average Queue (m)	1.9	0.9	2.8	2.1
95th Queue (m)	8.4	5.7	7.3	6.3
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	58.9	29.0	18.3	14.4
Average Queue (m)	10.3	5.0	6.9	5.4
95th Queue (m)	33.8	19.2	15.1	13.5
Link Distance (m)	92.3	85.7	114.4	88.9
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	87.8	100.0	84.7	25.3
Average Queue (m)	53.5	41.5	37.7	8.4
95th Queue (m)	85.6	83.8	69.4	19.1
Link Distance (m)	85.7	188.2	122.8	73.3
Upstream Blk Time (%)	1		0	
Queuing Penalty (veh)	6		0	
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	13.3	21.5	41.0	16.9
Average Queue (m)	3.2	3.0	15.3	6.7
95th Queue (m)	10.5	11.7	30.2	12.9
Link Distance (m)	90.4	80.8	220.3	122.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.0	17.8	3.6	5.6
Average Queue (m)	3.2	9.7	0.1	0.4
95th Queue (m)	10.2	15.1	1.8	3.4
Link Distance (m)	68.2	70.6		220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	105.2	95.5	51.9	72.5	50.7	34.7	19.3
Average Queue (m)	69.5	52.9	14.1	40.7	23.5	12.8	8.2
95th Queue (m)	98.3	81.7	33.0	62.9	45.6	27.0	17.5
Link Distance (m)	107.7	107.7		91.0	91.0	90.4	90.4
Upstream Blk Time (%)	1	0					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (m)			50.0				
Storage Blk Time (%)	17		0	2			
Queuing Penalty (veh)	0		0	1			

Network Summary

Network wide Queuing Penalty: 149

2028 After Development (75% Build Out)

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	34.2	10.7	13.2	9.2	5.8	3.3	33.0	20.9	18.1	11.9

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	2.3	2.4	19.8	10.3	5.0

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	95.9	24.7	21.1	36.5	59.1	98.6	46.5	43.0	2.2	41.5	24.8	22.7

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	52.4

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.1	0.4	0.2	3.1	2.2	0.5	10.6	4.4	3.9	4.8	4.6	6.0

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	2.3

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.5	0.1	0.1	1.5	0.3	0.3	3.3	3.8	4.6	5.2	4.4	3.2

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.6

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	6.2	1.9	1.8	4.0	0.4	0.6	29.2	7.1	14.5	25.0	15.7	7.1

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	2.0

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	22.2	11.0	10.3	83.6	79.9	77.1	30.3	19.4	19.4	31.3	27.6	18.3

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	44.1

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.2	0.3	0.2	1.0	0.1	0.2	5.7	6.2	5.1	6.8	6.7	6.7

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	3.7

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.5	2.7	2.2	3.0	2.6	2.6	0.5	0.1	0.0	0.5	0.3	0.4

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.9

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	9.6	5.5	27.2	11.7	14.1	3.6	0.0	11.2

Total Network Performance

Stop Del/Veh (s)	39.0

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	35.2	46.7	31.4	30.8	76.4
Average Queue (m)	17.1	16.9	26.8	18.6	38.5
95th Queue (m)	35.2	47.1	34.1	29.7	75.3
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)		2	12	1	12
Queuing Penalty (veh)		5	51	6	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)	3	1			
Queuing Penalty (veh)	4	2			

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	38.3	30.4	28.8
Average Queue (m)	28.2	21.4	6.0
95th Queue (m)	46.6	36.3	19.7
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	7	18	1
Queuing Penalty (veh)	64	39	2
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B13	B13	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	T	T	L	TR
Maximum Queue (m)	47.4	76.5	76.9	87.4	179.8	180.9	64.6	55.8	8.9	1.2	36.8	35.3
Average Queue (m)	45.3	64.8	54.1	62.4	154.9	163.1	41.4	26.5	0.4	0.0	32.4	24.4
95th Queue (m)	53.8	86.2	82.9	110.4	217.9	208.0	62.1	52.8	4.3	0.8	39.3	38.3
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	37.7	37.7	30.4	30.4
Upstream Blk Time (%)		51	8		27	51	4	1			42	8
Queuing Penalty (veh)		0	0		0	0	0	0			82	15
Storage Bay Dist (m)	45.0			85.0								
Storage Blk Time (%)	56	29		1	29							
Queuing Penalty (veh)	134	66		2	64							

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	14.6	31.6	22.4	10.7
Average Queue (m)	1.9	4.0	7.6	2.7
95th Queue (m)	8.7	21.3	16.8	8.4
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.0	12.0	6.2	12.8
Average Queue (m)	2.5	1.2	2.0	3.9
95th Queue (m)	9.9	6.5	6.1	9.1
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	79.0	48.7	21.0	16.7
Average Queue (m)	17.3	8.0	8.8	5.2
95th Queue (m)	55.3	27.5	18.1	13.6
Link Distance (m)	92.3	85.7	114.4	88.9
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	87.8	202.7	62.8	34.6
Average Queue (m)	53.2	180.8	30.8	17.3
95th Queue (m)	91.9	239.1	51.6	31.7
Link Distance (m)	85.7	188.2	122.8	73.3
Upstream Blk Time (%)	4	63		
Queuing Penalty (veh)	22	0		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	15.8	14.6	26.3	36.0
Average Queue (m)	4.1	1.7	9.9	17.3
95th Queue (m)	12.3	8.2	18.6	29.8
Link Distance (m)	90.4	80.8	220.3	122.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.1	16.9	3.6	9.2
Average Queue (m)	5.2	7.4	0.2	0.9
95th Queue (m)	12.4	14.3	2.6	5.4
Link Distance (m)	68.2	70.6		220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	79.5	66.7	52.4	100.1	95.6	26.2	18.6
Average Queue (m)	48.0	32.8	22.9	81.0	57.3	8.7	7.4
95th Queue (m)	70.7	59.8	52.3	109.2	90.4	20.7	16.2
Link Distance (m)	107.7	107.7		91.0	91.0	90.4	90.4
Upstream Blk Time (%)				5	1		
Queuing Penalty (veh)				0	0		
Storage Bay Dist (m)			50.0				
Storage Blk Time (%)	5		0	20			
Queuing Penalty (veh)	0		1	18			

Network Summary

Network wide Queuing Penalty: 580

2028 After Development (100% Build Out) - Without 25 St

SimTraffic Performance Report
After Development (100 Build Out) 04/24/2024

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	187.1	72.4	77.9	10.9	6.9	3.0	117.2	105.2	92.9	65.8

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	2.0	1.0	25.5	22.4	10.4

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	22.3	18.8	13.6	17.4	17.7	14.3	28.4	24.3	0.4	42.8	28.2	18.9

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	20.3

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.9	0.5	0.5	148.2	211.9	236.2	573.0	285.6	576.6	350.6	443.4	608.2

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	147.7

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.5	0.1	0.3	1.0	0.6	0.5	4.5	4.3	3.2	4.4	4.2	4.2

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.8

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	15.0	12.7	11.2	18.1	6.6	5.2	9.3	3.6	5.9	7.8	4.2	4.7

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	10.0

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	13.5	11.3	10.0	37.9	5.8	4.2	12.9	9.7	15.0	30.4	9.0	6.5

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	12.0

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	5.0	3.8	3.5	6.7	6.0	5.6	5.0	5.6	4.8	4.5	4.7	4.4

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	5.1

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	3.2	2.3	2.2	2.5	3.0	2.5	0.4	0.0	0.0	0.6	0.5	0.6

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.1

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	SBT	All
Stop Del/Veh (s)	11.5	8.3	49.2	9.4	15.6	15.4	0.0	11.9

Total Network Performance

Stop Del/Veh (s)	43.7

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	52.4	112.4	29.8	28.2	80.9
Average Queue (m)	48.6	90.3	24.2	14.1	66.7
95th Queue (m)	63.8	151.9	33.5	24.8	90.7
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)		56	8	0	80
Queuing Penalty (veh)		188	23	1	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)	69	42			
Queuing Penalty (veh)	73	96			

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	38.1	31.4	28.3
Average Queue (m)	18.6	28.9	4.4
95th Queue (m)	41.4	33.1	17.2
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	3	60	1
Queuing Penalty (veh)	21	171	3
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	L	TR
Maximum Queue (m)	47.4	75.3	68.7	32.9	56.5	80.0	50.2	47.1	37.8	35.1
Average Queue (m)	28.7	56.8	40.3	15.2	30.9	40.0	24.2	9.8	34.7	21.8
95th Queue (m)	53.0	81.2	63.6	27.5	51.0	66.9	43.8	31.9	37.7	37.7
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	30.4	30.4
Upstream Blk Time (%)		6	1				0	0	69	7
Queuing Penalty (veh)		0	0				0	0	193	19
Storage Bay Dist (m)	45.0			85.0						
Storage Blk Time (%)	0	15								
Queuing Penalty (veh)	1	21								

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	14.8	320.3	50.4	37.8
Average Queue (m)	1.3	145.8	24.8	15.9
95th Queue (m)	7.4	375.7	61.7	45.3
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)			27	8
Queuing Penalty (veh)			0	0
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	19.7	11.7	9.1	6.2
Average Queue (m)	3.2	1.3	2.9	2.0
95th Queue (m)	12.5	6.5	7.4	6.1
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	101.2	72.6	15.8	15.4
Average Queue (m)	58.9	32.1	5.7	3.4
95th Queue (m)	102.5	59.7	13.7	11.0
Link Distance (m)	92.3	85.6	114.3	88.8
Upstream Blk Time (%)	6	0		
Queuing Penalty (veh)	0	1		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	L	TR	LT	R	LTR
Maximum Queue (m)	87.8	31.2	48.6	67.4	57.2	19.6
Average Queue (m)	61.1	9.7	22.2	14.8	35.3	8.2
95th Queue (m)	90.4	22.7	41.9	36.8	55.6	17.3
Link Distance (m)	85.6		184.4	121.0		71.6
Upstream Blk Time (%)	1					
Queuing Penalty (veh)	6					
Storage Bay Dist (m)		50.0			50.0	
Storage Blk Time (%)			0		3	
Queuing Penalty (veh)			0		3	

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	22.1	40.9	35.2	20.2
Average Queue (m)	12.9	20.3	16.3	7.6
95th Queue (m)	20.5	34.2	27.7	15.1
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.6	16.6	3.1	5.5
Average Queue (m)	4.4	9.9	0.1	0.4
95th Queue (m)	11.9	14.5	2.2	3.5
Link Distance (m)	68.2	70.6	59.3	220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	TR	LT
Maximum Queue (m)	113.4	101.6	52.0	75.2	51.2	51.4
Average Queue (m)	77.6	59.3	12.9	42.9	22.8	21.7
95th Queue (m)	108.8	90.1	31.3	64.8	47.9	41.2
Link Distance (m)	107.7	107.7		91.0	91.0	90.4
Upstream Blk Time (%)	1	0		0		
Queuing Penalty (veh)	0	0		0		
Storage Bay Dist (m)			50.0			
Storage Blk Time (%)	19		0	2		
Queuing Penalty (veh)	0		0	1		

Network Summary

Network wide Queuing Penalty: 819

2028 After Development (100% Build Out) - Without 25 St

SimTraffic Performance Report
After Development (100 Build Out) 04/24/2024

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	217.6	41.9	64.8	10.3	6.3	3.8	138.4	135.0	123.1	49.4

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	2.8	2.3	66.2	38.5	11.5

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	124.8	19.5	13.9	30.5	43.1	93.2	42.4	41.4	3.5	87.6	35.3	24.3

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	53.7

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.8	0.4	0.5	53.9	82.0	68.6	97.2	41.4	30.7	7.5	18.0	26.9

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	37.6

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.8	0.1	0.2	4.3	0.6	0.5	6.1	6.3	3.2	4.0	4.1	3.4

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.7

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	46.9	41.0	36.9	22.4	15.5	16.2	9.1	2.7	7.9	9.7	5.4	6.1

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	26.5

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	35.9	24.5	22.1	129.4	62.1	65.3	16.8	11.7	8.7	13.2	12.1	11.8

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	46.3

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	5.7	5.9	5.3	5.0	4.5	4.1	4.3	4.6	3.8	7.8	7.4	8.0

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	5.9

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.8	2.6	1.9	2.8	2.9	2.3	0.3	0.0	0.2	0.8	0.6	0.6

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.1

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	13.1	7.6	40.9	15.4	13.0	3.7	0.0	14.9

Total Network Performance

Stop Del/Veh (s)	57.5

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	52.4	111.8	30.1	29.9	81.7
Average Queue (m)	44.1	67.8	27.3	20.8	69.2
95th Queue (m)	64.0	138.8	32.6	31.0	83.9
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)		29	13	2	87
Queuing Penalty (veh)		88	60	10	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)	49	15			
Queuing Penalty (veh)	69	20			

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	38.2	31.2	29.1
Average Queue (m)	31.7	28.9	4.0
95th Queue (m)	45.8	31.5	17.2
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	11	72	1
Queuing Penalty (veh)	105	161	2
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B13	B13	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	T	T	L	TR
Maximum Queue (m)	47.5	77.9	71.6	87.4	179.8	183.9	69.3	60.4	12.2	12.6	38.7	35.5
Average Queue (m)	46.5	68.1	51.7	55.4	152.8	163.5	38.5	26.0	0.6	0.5	34.6	20.6
95th Queue (m)	52.1	85.7	83.8	106.3	208.2	200.8	62.9	55.7	5.0	5.7	38.2	37.6
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	37.7	37.7	30.4	30.4
Upstream Blk Time (%)		78	6		20	44	5	2			80	7
Queuing Penalty (veh)		0	0		0	0	0	0			167	14
Storage Bay Dist (m)	45.0			85.0								
Storage Blk Time (%)	76	51		1	17							
Queuing Penalty (veh)	182	129		3	39							

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	14.8	172.8	55.4	8.9
Average Queue (m)	2.4	48.7	18.1	2.6
95th Queue (m)	10.1	206.6	47.5	8.2
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)			11	
Queuing Penalty (veh)			0	
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	19.5	13.0	8.7	13.6
Average Queue (m)	3.7	1.2	2.4	4.0
95th Queue (m)	12.6	6.7	6.8	9.4
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	109.5	88.6	18.2	14.1
Average Queue (m)	84.6	66.1	6.6	4.4
95th Queue (m)	126.6	102.9	15.5	12.2
Link Distance (m)	92.3	85.6	114.3	88.8
Upstream Blk Time (%)	51	4		
Queuing Penalty (veh)	0	30		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	L	TR	LT	R	LTR
Maximum Queue (m)	90.0	57.5	202.3	27.0	36.8	28.7
Average Queue (m)	75.0	53.9	173.6	13.2	16.6	13.8
95th Queue (m)	102.6	70.1	248.7	23.6	29.1	25.5
Link Distance (m)	85.6		184.4	121.0		71.6
Upstream Blk Time (%)	10		64			
Queuing Penalty (veh)	66		0			
Storage Bay Dist (m)		50.0			50.0	
Storage Blk Time (%)		36	32		0	
Queuing Penalty (veh)		227	71		0	

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	33.5	28.7	19.4	53.7
Average Queue (m)	18.0	13.8	9.6	24.4
95th Queue (m)	29.0	22.9	16.9	42.7
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	13.4	17.1	1.8	10.3
Average Queue (m)	6.5	8.2	0.1	1.2
95th Queue (m)	13.9	14.8	1.8	6.5
Link Distance (m)	68.2	70.6		220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	99.0	82.7	52.5	100.2	98.4	23.5	18.2
Average Queue (m)	59.4	42.5	27.4	85.7	64.0	8.9	6.7
95th Queue (m)	87.1	71.9	58.7	109.1	96.9	20.4	15.9
Link Distance (m)	107.7	107.7		91.0	91.0	90.4	90.4
Upstream Blk Time (%)	0			9	2		
Queuing Penalty (veh)	0			0	0		
Storage Bay Dist (m)			50.0				
Storage Blk Time (%)	10		0	25			
Queuing Penalty (veh)	0		2	23			

Network Summary

Network wide Queuing Penalty: 1468

2028 After Development (100% Build Out) - With 25 St

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	11.7	7.3	4.5	11.0	5.6	2.5	8.9	5.4	3.9	5.6

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	1.1	1.4	6.7	2.2	1.6

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	23.3	26.1	22.3	21.3	20.0	14.0	23.9	26.9	0.7	20.9	15.3	7.5

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	20.1

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.9	0.4	0.5	0.7	0.1	0.0	4.1	4.6	2.6	2.7	3.9	3.2

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.9

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.6	0.1	0.0	1.0	0.5	0.5	3.4	2.7	2.8	3.6	4.1	2.8

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.8

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	23.2	17.5	25.0	13.8	5.5	4.7	7.7	1.6	5.9	9.2	5.8	4.1

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	12.5

SimTraffic Performance Report AM Peak Hour
04/25/2024 2028 After Development with 25 Street Connection

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	15.0	13.3	12.2	51.5	5.7	4.0	14.3	12.4	16.3	29.9	16.7	7.4

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	14.1

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	5.0	3.3	3.4	5.7	5.9	6.2	6.3	6.5	6.5	4.2	4.2	3.9

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	5.7

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	3.1	2.9	3.6	4.4	3.7	3.4	0.6	0.2	0.0	0.8	0.5	0.4

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.2

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	21.8	19.1	15.3	26.0	15.0	8.0	17.8	18.5	6.9	21.0	25.3	10.8

33: 25 St SW & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	17.1

Total Network Performance

Stop Del/Veh (s)	21.9

SimTraffic Report BR

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	18.9	20.4	29.5	24.7	50.5
Average Queue (m)	7.2	8.8	21.7	8.9	20.6
95th Queue (m)	16.6	16.8	33.5	18.8	39.2
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)			4	0	0
Queuing Penalty (veh)			9	0	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	33.7	29.4	21.8
Average Queue (m)	10.1	9.0	2.9
95th Queue (m)	27.6	26.6	12.6
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	0	2	0
Queuing Penalty (veh)	2	4	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	L	TR
Maximum Queue (m)	47.4	77.7	75.3	38.1	62.0	70.0	43.5	46.6	35.8	34.0
Average Queue (m)	27.5	65.5	51.8	19.3	32.4	33.1	24.4	12.1	28.0	18.7
95th Queue (m)	53.5	81.0	77.2	32.8	52.7	57.9	39.1	36.2	39.8	34.3
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	30.4	30.4
Upstream Blk Time (%)		14	5				0	0	11	3
Queuing Penalty (veh)		0	0				0	0	20	5
Storage Bay Dist (m)	45.0			85.0						
Storage Blk Time (%)	0	26								
Queuing Penalty (veh)	1	28								

Queuing and Blocking Report
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Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	8.3	8.0	11.8	6.5
Average Queue (m)	0.7	0.5	4.0	2.5
95th Queue (m)	4.4	3.9	9.3	7.6
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	8.9	6.9	7.6	6.5
Average Queue (m)	0.8	0.7	2.7	2.0
95th Queue (m)	4.8	4.6	7.0	6.1
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	102.1	62.5	15.4	11.8
Average Queue (m)	67.5	29.6	5.5	3.7
95th Queue (m)	112.7	53.5	13.7	11.0
Link Distance (m)	92.3	85.6	114.3	88.8
Upstream Blk Time (%)	15			
Queuing Penalty (veh)	0			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	L	TR	LT	R	LTR
Maximum Queue (m)	89.0	40.4	40.8	62.1	56.5	23.4
Average Queue (m)	69.4	14.0	20.8	18.7	36.4	9.2
95th Queue (m)	98.6	30.9	36.9	43.9	57.7	20.3
Link Distance (m)	85.6		184.4	121.0		71.6
Upstream Blk Time (%)	2					
Queuing Penalty (veh)	13					
Storage Bay Dist (m)		50.0			50.0	
Storage Blk Time (%)		0			4	
Queuing Penalty (veh)		0			4	

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	17.3	41.4	46.8	18.5
Average Queue (m)	8.7	19.8	17.8	9.1
95th Queue (m)	14.6	32.6	34.7	16.0
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.3	24.5	15.6	10.5
Average Queue (m)	4.1	11.1	1.2	0.8
95th Queue (m)	11.5	19.0	8.4	5.2
Link Distance (m)	68.2	70.6	59.3	220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
04/25/2024
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Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (m)	52.3	118.7	113.9	52.4	74.0	66.0	32.1	23.9	66.7
Average Queue (m)	16.0	90.9	72.6	15.5	44.7	30.8	13.1	9.4	27.9
95th Queue (m)	46.6	122.8	106.3	40.5	68.5	56.9	27.9	19.2	50.5
Link Distance (m)		107.7	107.7		91.0	91.0	90.4	90.4	149.8
Upstream Blk Time (%)		4	1		0				
Queuing Penalty (veh)		0	0		0				
Storage Bay Dist (m)	50.0			50.0					
Storage Blk Time (%)	0	27		0	4				
Queuing Penalty (veh)	0	11		0	2				

Network Summary

Network wide Queuing Penalty: 101

SimTraffic Report
BR

2028 After Development (100% Build Out) - Without 25 St

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	20.5	6.6	6.8	10.7	5.1	2.9	26.7	15.6	11.7	8.5

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	2.0	1.7	24.0	9.4	4.5

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	48.1	18.3	14.4	20.6	23.8	30.7	38.7	36.7	2.8	59.5	25.9	14.1

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	26.8

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.6	0.5	0.5	1.2	0.2	0.0	4.4	3.8	3.4	3.3	4.1	3.5

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.3

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.5	0.1	0.2	1.5	0.6	0.5	4.2	4.4	2.8	4.5	3.6	2.6

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.8

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	34.7	36.7	38.5	17.8	13.2	12.6	9.0	2.3	11.4	10.1	6.0	4.8

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	24.3

SimTraffic Performance Report PM Peak Hour
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7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	40.4	23.7	23.4	157.6	66.9	81.7	17.6	7.4	8.7	15.0	11.9	11.1

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	48.3

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	4.6	4.7	4.7	4.9	5.3	4.5	5.4	5.5	4.3	8.5	8.8	9.8

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	6.5

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	4.1	4.4	3.1	4.4	3.5	3.6	0.4	0.0	0.0	1.6	0.6	0.5

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.0

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	23.7	12.1	7.2	14.7	15.5	11.7	18.6	18.0	4.1	23.5	12.3	15.3

33: 25 St SW & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	14.2

Total Network Performance

Stop Del/Veh (s)	34.8

SimTraffic Report BR

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	21.3	25.5	31.7	26.7	67.8
Average Queue (m)	8.1	12.0	26.2	12.2	30.7
95th Queue (m)	18.0	23.1	34.1	23.0	63.6
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)			9	0	7
Queuing Penalty (veh)			32	1	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	37.6	30.0	26.9
Average Queue (m)	24.0	16.5	5.2
95th Queue (m)	43.4	34.7	19.1
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	5	14	1
Queuing Penalty (veh)	35	24	1
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B13	B13	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	T	T	L	TR
Maximum Queue (m)	47.4	70.5	69.6	77.1	125.4	147.5	64.5	55.1	12.8	7.8	37.3	34.7
Average Queue (m)	37.7	51.9	39.8	33.7	67.9	83.9	36.5	23.4	0.5	0.5	30.5	24.1
95th Queue (m)	55.2	79.7	67.5	66.1	107.3	131.2	58.2	52.6	6.0	5.2	40.7	38.5
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	37.7	37.7	30.4	30.4
Upstream Blk Time (%)		7	1		0	0	3	2			35	6
Queuing Penalty (veh)		0	0		0	0	0	0			55	9
Storage Bay Dist (m)	45.0			85.0								
Storage Blk Time (%)	13	7		0	1							
Queuing Penalty (veh)	35	14		0	3							

Queuing and Blocking Report
04/25/2024
PM Peak Hour
2028 After Development with 25 Street Connection

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.8	17.4	16.5	8.1
Average Queue (m)	0.9	1.8	7.3	2.7
95th Queue (m)	5.5	8.7	13.5	8.1
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.2	7.7	7.9	8.9
Average Queue (m)	1.2	0.4	1.8	3.6
95th Queue (m)	5.9	3.2	6.1	7.8
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	107.9	88.1	18.8	12.8
Average Queue (m)	83.6	55.5	6.3	4.5
95th Queue (m)	123.2	102.0	15.5	12.1
Link Distance (m)	92.3	85.6	114.3	88.8
Upstream Blk Time (%)	46	3		
Queuing Penalty (veh)	0	24		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	L	TR	LT	R	LTR
Maximum Queue (m)	91.1	57.5	199.1	34.1	38.3	33.5
Average Queue (m)	75.8	55.2	169.9	14.9	17.5	14.4
95th Queue (m)	103.6	66.4	248.5	27.9	30.7	26.9
Link Distance (m)	85.6		184.4	121.0		71.6
Upstream Blk Time (%)	12		61			
Queuing Penalty (veh)	76		0			
Storage Bay Dist (m)		50.0			50.0	
Storage Blk Time (%)		49	22		0	
Queuing Penalty (veh)		311	50		0	

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	26.6	31.4	32.1	67.2
Average Queue (m)	12.1	14.9	12.8	25.9
95th Queue (m)	20.9	26.0	23.5	50.5
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	14.3	17.1	10.5	16.7
Average Queue (m)	5.7	9.0	1.0	3.9
95th Queue (m)	13.6	14.2	5.9	12.5
Link Distance (m)	68.2	70.6	59.3	220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
04/25/2024
PM Peak Hour
2028 After Development with 25 Street Connection

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (m)	46.3	91.1	75.4	52.4	99.2	99.6	21.9	19.5	43.5
Average Queue (m)	16.4	50.2	36.6	22.9	85.7	70.8	6.9	7.4	19.1
95th Queue (m)	39.7	76.9	62.6	57.3	110.2	105.0	17.9	16.3	36.6
Link Distance (m)		107.7	107.7		91.0	91.0	90.4	90.4	149.8
Upstream Blk Time (%)		0			9	4			
Queuing Penalty (veh)		0			0	0			
Storage Bay Dist (m)	50.0			50.0					
Storage Blk Time (%)	0	6		0	23				
Queuing Penalty (veh)	0	4		1	21				

Network Summary

Network wide Queuing Penalty: 698

SimTraffic Report
BR

2048 Background

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	24.1	8.6	3.9	9.5	6.1	3.0	22.3	15.7	14.2	10.1

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	1.8	3.6	8.2	8.2	4.4

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	64.4	18.4	14.0	44.8	80.6	87.1	47.1	39.8	0.4	26.3	27.7	36.7

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	46.5

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.5	0.4	0.3	0.6	0.2	0.0	4.1	3.0	4.6	7.1	3.5	3.1

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.9

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.9	0.1	0.3	1.3	0.4	0.3	2.6	3.6	4.8	3.3	1.3	4.6

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.6

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	14.6	12.8	12.2	16.8	4.3	3.9	8.3	40.0	14.3	26.0	33.9	15.0

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	11.2

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	5.1	5.7	3.0	29.5	4.3	3.2	20.9	23.7	12.8	28.1	16.7	12.0

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	8.0

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.4	0.0	0.1	0.0	0.0	0.0	4.7	4.2	4.2	3.2	4.4	3.0

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.5

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.1	2.1	1.9	2.9	2.7	3.6	0.1	0.1	0.0	0.2	0.3	0.0

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.0

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	23.1	17.7	30.4	8.8	21.4	9.2	0.0	17.8

Total Network Performance

Stop Del/Veh (s)	31.8

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	25.9	21.7	29.4	22.1	85.3
Average Queue (m)	11.5	10.7	26.0	13.2	40.3
95th Queue (m)	22.2	18.9	33.6	24.3	72.9
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)			10	0	8
Queuing Penalty (veh)			32	0	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	36.8	30.9	26.8
Average Queue (m)	20.7	24.3	2.2
95th Queue (m)	44.4	39.3	12.4
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	5	19	0
Queuing Penalty (veh)	34	46	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B13	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	T	L	TR
Maximum Queue (m)	47.5	77.8	70.5	87.5	174.5	174.5	67.9	50.9	6.2	36.1	34.4
Average Queue (m)	47.3	71.1	54.2	42.0	116.3	112.5	27.7	12.3	0.2	33.9	17.2
95th Queue (m)	47.6	74.2	87.4	99.0	193.2	185.2	46.1	35.2	2.0	36.5	31.8
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	37.7	30.4	30.4
Upstream Blk Time (%)		65	8		3	3	1	0		40	2
Queuing Penalty (veh)		0	0		0	0	0	0		97	5
Storage Bay Dist (m)	45.0			85.0							
Storage Blk Time (%)	66	40		0	33						
Queuing Penalty (veh)	210	137		1	33						

Queuing and Blocking Report
04/25/2024
AM Peak Hour
2048 Baseline

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	8.4	15.0	13.5	6.5
Average Queue (m)	1.9	1.5	5.7	3.1
95th Queue (m)	7.7	7.3	11.7	8.2
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	15.2	14.3	4.9	12.4
Average Queue (m)	2.5	1.5	1.3	2.5
95th Queue (m)	9.9	7.3	4.9	8.1
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	104.2	63.1	28.7	28.4
Average Queue (m)	76.7	21.4	8.5	8.8
95th Queue (m)	117.8	43.7	20.0	20.3
Link Distance (m)	92.3	85.6	114.3	88.8
Upstream Blk Time (%)	16			
Queuing Penalty (veh)	0			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

SimTraffic Report
BR

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	L	TR	LT	R	LTR
Maximum Queue (m)	89.9	20.4	56.2	21.9	37.2	38.5
Average Queue (m)	58.5	9.1	19.8	10.0	15.4	10.8
95th Queue (m)	97.4	17.2	40.9	20.2	28.4	26.5
Link Distance (m)	85.6		184.4	121.0		71.6
Upstream Blk Time (%)	3					
Queuing Penalty (veh)	25					
Storage Bay Dist (m)		50.0			50.0	
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	20.9	5.4	11.8
Average Queue (m)	3.5	2.6	5.6
95th Queue (m)	13.2	6.8	9.5
Link Distance (m)	90.4	220.3	121.0
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.0	9.1	9.0	8.6
Average Queue (m)	2.1	4.7	0.6	0.3
95th Queue (m)	8.2	12.0	4.2	2.8
Link Distance (m)	68.2	70.6		220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
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Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	112.3	111.7	52.4	95.6	64.4	47.2	36.0
Average Queue (m)	95.1	72.5	36.0	48.7	32.1	20.1	17.5
95th Queue (m)	125.3	101.0	57.9	90.9	54.0	35.5	29.7
Link Distance (m)	107.7	107.7		91.0	91.0	90.4	90.4
Upstream Blk Time (%)	4	0		2			
Queuing Penalty (veh)	0	0		0			
Storage Bay Dist (m)			50.0				
Storage Blk Time (%)	33		7	1			
Queuing Penalty (veh)	0		29	4			

Network Summary

Network wide Queuing Penalty: 653

SimTraffic Report
BR

2048 Background

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	44.5	11.7	9.1	21.7	7.5	3.2	51.9	51.7	47.8	24.5

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	5.0	4.1	21.1	15.1	8.7

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	126.3	20.3	16.2	46.4	63.4	123.2	51.4	58.6	5.8	34.3	31.4	25.6

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	56.6

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.8	0.5	0.5	1.4	0.2	0.4	7.3	7.2	4.6	6.7	4.4	4.3

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.8

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.6	0.1	0.2	0.7	0.3	0.3	3.8	3.6	3.9	4.6	3.3	2.7

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.6

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	105.1	74.6	80.1	19.9	9.6	9.9	48.4	53.8	54.8	92.8	76.6	63.3

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	35.7

SimTraffic Performance Report
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7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	75.0	40.4	42.1	42.8	36.9	38.4	39.4	26.5	10.2	31.1	23.0	27.7

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	37.2

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.4	0.1	0.1	0.2	0.0	0.1	3.3	3.0	2.5	3.6	3.8	3.1

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.8

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.4	3.0	2.1	2.0	2.9	2.2	0.0	0.0	0.1	0.5	0.2	0.2

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.9

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	26.5	22.8	53.3	10.6	32.9	11.1	0.0	21.9

Total Network Performance

Stop Del/Veh (s)	49.7

SimTraffic Report
BR

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	52.0	74.2	30.7	29.1	80.4
Average Queue (m)	26.9	16.2	28.5	14.4	68.8
95th Queue (m)	49.2	45.0	31.6	25.8	86.2
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)		0	23	1	64
Queuing Penalty (veh)		1	102	3	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)	3	1			
Queuing Penalty (veh)	3	1			

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	38.3	31.2	28.0
Average Queue (m)	34.3	27.4	8.3
95th Queue (m)	42.8	34.4	25.0
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	18	37	3
Queuing Penalty (veh)	169	94	7
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B13	B13	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	T	T	L	TR
Maximum Queue (m)	47.5	78.0	79.1	87.4	182.4	183.1	52.7	62.6	3.3	10.5	36.7	35.6
Average Queue (m)	46.9	70.9	62.4	55.0	173.9	175.8	33.8	26.6	0.2	1.1	33.7	25.1
95th Queue (m)	50.7	74.0	88.4	109.7	184.9	181.4	52.2	60.7	3.2	9.4	37.2	39.7
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	37.7	37.7	30.4	30.4
Upstream Blk Time (%)		72	16		38	80	2	4		0	53	15
Queuing Penalty (veh)		0	0		0	0	0	0		0	133	38
Storage Bay Dist (m)	45.0			85.0								
Storage Blk Time (%)	72	36		0	37							
Queuing Penalty (veh)	291	82		1	65							

Queuing and Blocking Report
04/25/2024
PM Peak Hour
2048 Baseline

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	15.9	16.5	25.3	10.2
Average Queue (m)	2.3	2.7	9.4	3.7
95th Queue (m)	9.9	10.9	19.3	9.3
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	15.7	7.0	4.9	12.9
Average Queue (m)	2.0	0.6	1.9	4.0
95th Queue (m)	9.3	4.1	5.9	9.0
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	105.8	88.6	51.1	62.0
Average Queue (m)	96.7	70.5	15.2	25.2
95th Queue (m)	111.0	109.5	35.0	54.1
Link Distance (m)	92.3	85.6	114.3	88.8
Upstream Blk Time (%)	80	8		
Queuing Penalty (veh)	0	83		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	L	TR	LT	R	LTR
Maximum Queue (m)	90.9	57.5	197.9	17.0	26.4	38.4
Average Queue (m)	82.9	29.5	178.6	4.4	12.0	17.8
95th Queue (m)	106.8	70.0	232.6	12.9	21.5	33.1
Link Distance (m)	85.6		184.4	121.0		71.6
Upstream Blk Time (%)	37		43			
Queuing Penalty (veh)	236		0			
Storage Bay Dist (m)		50.0			50.0	
Storage Blk Time (%)		0	40			
Queuing Penalty (veh)		0	34			

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	15.2	4.8	9.4	17.6
Average Queue (m)	1.9	0.2	3.4	7.3
95th Queue (m)	8.6	2.0	7.9	14.0
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.1	9.1	1.8	3.6
Average Queue (m)	3.4	3.6	0.1	0.3
95th Queue (m)	10.5	10.7	1.3	2.9
Link Distance (m)	68.2	70.6		220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
04/25/2024
PM Peak Hour
2048 Baseline

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	121.1	119.1	52.5	100.1	96.7	67.2	41.1
Average Queue (m)	107.3	98.8	48.3	87.9	72.5	33.3	19.0
95th Queue (m)	126.1	129.1	62.0	113.3	103.9	56.5	34.2
Link Distance (m)	107.7	107.7		91.0	91.0	90.4	90.4
Upstream Blk Time (%)	18	12		21	3	0	
Queuing Penalty (veh)	0	0		0	0	0	
Storage Bay Dist (m)			50.0				
Storage Blk Time (%)	40		24	15			
Queuing Penalty (veh)	0		164	45			

Network Summary

Network wide Queuing Penalty: 1552

SimTraffic Report
BR

2048 After Development - Without 25 St

SimTraffic Performance Report
2048 After Development 04/24/2024

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	24.8	10.5	7.8	12.5	6.4	3.1	18.7	16.8	14.8	11.7

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	2.0	1.5	8.3	6.8	4.1

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	56.9	22.6	19.8	24.6	42.9	50.9	25.3	29.4	0.2	24.7	18.5	14.5

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	32.6

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.0	0.5	0.7	2.4	0.1	0.0	6.2	5.5	3.8	4.1	5.6	4.2

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.9

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.3	0.2	0.2	1.2	0.4	0.5	5.4	4.7	3.5	5.1	1.4	3.6

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.6

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	27.6	24.6	21.3	27.0	6.7	5.9	31.6	8.6	19.5	27.9	23.9	12.4

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	19.7

SimTraffic Performance Report
2048 After Development 04/24/2024

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	11.9	9.5	8.0	83.4	8.5	6.2	26.3	25.4	25.1	38.1	37.8	17.3

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	16.6

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	1.4	0.2	0.1	0.5	0.1	0.2	6.2	6.3	3.7	6.2	5.4	5.4

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	3.1

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	3.2	2.2	2.7	2.5	2.7	2.7	0.0	0.0	0.0	0.5	0.2	0.3

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.4

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	21.8	17.5	33.8	7.4	28.1	11.9	0.0	18.0

Total Network Performance

Stop Del/Veh (s)	29.5

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	48.5	46.8	30.0	27.5	73.0
Average Queue (m)	24.7	20.4	26.1	13.5	37.6
95th Queue (m)	44.7	35.8	33.8	23.8	72.4
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)			10	0	4
Queuing Penalty (veh)			31	1	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)	1	0			
Queuing Penalty (veh)	3	0			

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	37.7	30.8	19.2
Average Queue (m)	22.5	21.2	3.5
95th Queue (m)	43.3	37.8	13.2
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	4	14	0
Queuing Penalty (veh)	25	35	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	L	TR
Maximum Queue (m)	47.5	78.3	72.2	65.7	140.0	138.8	38.3	37.4	36.8	34.4
Average Queue (m)	45.8	68.3	57.0	25.5	74.0	78.6	19.3	4.9	32.8	20.7
95th Queue (m)	53.4	81.2	82.2	69.1	132.1	138.8	33.5	21.9	39.8	36.8
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	30.4	30.4
Upstream Blk Time (%)		42	13		1	2			35	4
Queuing Penalty (veh)		0	0		0	0			85	9
Storage Bay Dist (m)	45.0			85.0						
Storage Blk Time (%)	41	27		0	9					
Queuing Penalty (veh)	162	82		0	9					

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.0	20.1	12.0	10.7
Average Queue (m)	2.4	2.1	5.2	3.8
95th Queue (m)	10.0	11.0	10.1	9.6
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	14.7	11.8	9.3	6.7
Average Queue (m)	3.4	1.2	2.4	2.7
95th Queue (m)	11.2	6.2	7.0	6.9
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	109.5	77.3	24.8	27.9
Average Queue (m)	98.4	26.9	9.5	11.1
95th Queue (m)	103.9	59.5	20.1	23.3
Link Distance (m)	92.3	85.6	114.3	88.8
Upstream Blk Time (%)	56	0		
Queuing Penalty (veh)	0	0		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	L	TR	LT	R	LTR
Maximum Queue (m)	90.2	55.8	121.3	40.8	56.1	29.5
Average Queue (m)	77.6	26.9	30.4	16.1	29.7	11.6
95th Queue (m)	108.0	51.4	95.2	32.0	50.5	24.5
Link Distance (m)	85.6		184.4	121.0		71.6
Upstream Blk Time (%)	7		3			
Queuing Penalty (veh)	71		0			
Storage Bay Dist (m)		50.0			50.0	
Storage Blk Time (%)		6	1		1	
Queuing Penalty (veh)		23	1		1	

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	13.8	18.7	33.7	36.4
Average Queue (m)	2.5	2.3	14.5	12.0
95th Queue (m)	9.8	10.3	26.8	23.7
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	9.1	20.2	10.4
Average Queue (m)	3.0	10.5	1.3
95th Queue (m)	9.9	16.5	6.6
Link Distance (m)	68.2	70.6	220.3
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	114.5	112.3	52.2	90.5	70.4	49.5	45.7
Average Queue (m)	97.2	81.8	38.8	44.7	29.0	22.1	21.0
95th Queue (m)	126.3	117.8	59.4	82.9	55.8	40.1	37.1
Link Distance (m)	107.7	107.7		91.0	91.0	90.4	90.4
Upstream Blk Time (%)	8	4		1	0		
Queuing Penalty (veh)	0	0		0	0		
Storage Bay Dist (m)			50.0				
Storage Blk Time (%)	33		6	1			
Queuing Penalty (veh)	0		25	4			

Network Summary

Network wide Queuing Penalty: 567

2048 After Development - Without 25 St

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	21.4	9.4	6.5	13.6	6.5	3.3	25.9	18.2	17.0	11.0

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	3.7	3.4	16.2	8.3	5.2

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	127.0	15.5	12.8	36.9	53.2	110.5	54.2	53.3	5.5	37.2	29.7	20.7

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	52.0

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.8	0.5	0.4	1.7	0.1	0.0	5.8	4.8	3.2	6.2	5.3	3.0

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.9

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.3	0.1	0.3	0.6	0.4	0.4	3.8	3.3	2.6	4.5	3.0	2.6

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.4

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	98.1	85.3	85.5	12.8	9.0	9.2	38.9	60.8	52.0	175.0	212.7	146.5

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	46.5

SimTraffic Performance Report
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7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	72.7	39.7	36.5	57.7	35.6	36.5	38.9	34.8	12.9	29.7	30.4	33.8

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	37.1

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.7	0.2	0.3	1.7	0.1	0.1	5.0	4.5	2.8	7.0	7.4	7.2

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	3.6

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.6	3.9	2.1	3.0	3.0	2.4	0.4	0.0	0.0	0.5	0.3	0.3

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.8

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBT	All
Stop Del/Veh (s)	31.2	25.7	57.4	10.1	32.8	12.3	0.0	24.2

Total Network Performance

Stop Del/Veh (s)	47.0

SimTraffic Report
BR

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	42.8	27.8	30.4	30.1	74.5
Average Queue (m)	22.1	8.0	28.3	18.6	42.8
95th Queue (m)	39.2	18.7	31.7	30.0	78.2
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)			18	1	11
Queuing Penalty (veh)			96	7	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)	1	0			
Queuing Penalty (veh)	0	0			

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	42.7	30.2	29.2
Average Queue (m)	35.3	17.7	11.1
95th Queue (m)	45.2	35.8	27.4
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	15	11	3
Queuing Penalty (veh)	166	23	6
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B13	B13	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	T	T	L	TR
Maximum Queue (m)	47.5	81.0	71.7	87.4	181.9	185.7	62.2	67.1	7.8	11.1	35.9	35.3
Average Queue (m)	47.2	71.3	59.0	43.8	174.9	175.9	39.3	32.2	0.4	0.7	31.4	29.2
95th Queue (m)	48.1	75.3	87.8	98.9	179.1	181.0	58.4	65.9	4.0	6.7	39.3	39.8
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	37.7	37.7	30.4	30.4
Upstream Blk Time (%)		78	11		34	81	3	4			31	18
Queuing Penalty (veh)		0	0		0	0	0	0			68	40
Storage Bay Dist (m)	45.0			85.0								
Storage Blk Time (%)	79	39		0	29							
Queuing Penalty (veh)	384	108		1	41							

Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.2	11.2	14.2	11.0
Average Queue (m)	2.2	1.3	5.5	4.3
95th Queue (m)	9.6	6.9	12.0	10.2
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	11.8	7.2	6.4	15.4
Average Queue (m)	1.7	0.3	1.8	3.6
95th Queue (m)	7.7	2.7	5.9	9.7
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	108.0	88.6	50.2	97.5
Average Queue (m)	98.1	73.4	17.2	63.9
95th Queue (m)	103.4	110.3	39.8	109.8
Link Distance (m)	92.3	85.6	114.3	88.8
Upstream Blk Time (%)	88	7		27
Queuing Penalty (veh)	0	78		0
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	L	TR	LT	R	LTR
Maximum Queue (m)	90.7	57.5	197.9	32.9	31.8	48.0
Average Queue (m)	85.7	37.7	187.8	11.4	14.8	21.9
95th Queue (m)	102.6	74.6	215.3	25.9	25.8	38.9
Link Distance (m)	85.6		184.4	121.0		71.6
Upstream Blk Time (%)	38		46			0
Queuing Penalty (veh)	318		0			0
Storage Bay Dist (m)		50.0			50.0	
Storage Blk Time (%)		2	39			
Queuing Penalty (veh)		17	53			

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	21.2	10.1	17.4	47.5
Average Queue (m)	4.0	0.8	7.3	17.8
95th Queue (m)	13.7	5.0	14.0	33.9
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.5	16.0	1.8	14.0
Average Queue (m)	3.5	8.2	0.1	1.8
95th Queue (m)	10.7	14.3	1.3	8.5
Link Distance (m)	68.2	70.6		220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
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Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	TR	LT	R
Maximum Queue (m)	122.5	121.6	52.5	102.6	97.9	83.0	45.9
Average Queue (m)	110.4	106.3	50.7	88.0	72.6	39.1	20.4
95th Queue (m)	122.8	126.8	58.3	114.7	104.4	67.4	36.0
Link Distance (m)	107.7	107.7		91.0	91.0	90.4	90.4
Upstream Blk Time (%)	25	21		28	3	0	
Queuing Penalty (veh)	0	0		0	0	0	
Storage Bay Dist (m)			50.0				
Storage Blk Time (%)	45		32	16			
Queuing Penalty (veh)	0		222	52			

Network Summary

Network wide Queuing Penalty: 1681

SimTraffic Report
BR

2048 After Development - With 25 St

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	14.9	8.6	5.8	8.8	6.0	2.6	12.1	7.7	6.8	7.0

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	1.8	1.2	11.5	2.8	2.2

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	41.5	19.7	17.1	21.4	30.0	28.3	28.4	26.3	0.2	23.0	17.1	14.1

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	24.7

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.6	0.5	0.9	0.6	0.1	0.0	4.6	4.1	4.3	3.9	3.8	4.0

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.8

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.9	0.1	0.0	1.3	0.5	0.6	3.1	3.6	3.5	3.9	1.7	3.0

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.7

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	26.9	25.5	23.9	26.5	6.6	7.4	25.9	11.1	22.9	36.0	28.0	12.3

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	20.6

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	15.0	9.9	9.7	94.6	8.7	10.9	28.9	26.0	28.5	54.0	16.3	18.1

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	3.8	3.5	3.9	5.0	3.9	3.9	3.7	3.8	3.3	4.9	4.6	4.2

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	4.0

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	2.8	3.2	3.1	3.5	3.4	2.5	0.2	0.2	0.1	0.8	0.5	0.5

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.3

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	19.2	22.1	16.8	32.3	8.3	5.5	28.5	24.5	12.7	27.6	7.4	16.0

33: 25 St SW & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	18.3

Total Network Performance

Stop Del/Veh (s)	26.1

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	30.3	31.5	31.7	26.1	58.0
Average Queue (m)	12.5	16.0	25.3	10.8	25.5
95th Queue (m)	23.4	26.9	34.6	21.2	48.6
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)			8	0	1
Queuing Penalty (veh)			24	0	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	37.0	29.5	19.9
Average Queue (m)	18.8	11.0	2.8
95th Queue (m)	39.7	28.1	12.1
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	3	3	0
Queuing Penalty (veh)	15	6	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	L	TR
Maximum Queue (m)	47.4	75.1	73.1	61.7	112.5	122.8	44.3	33.0	36.7	34.7
Average Queue (m)	43.3	62.2	52.0	18.3	58.9	58.0	17.8	3.0	29.4	19.2
95th Queue (m)	55.4	84.9	78.1	43.6	93.8	98.3	34.7	16.5	38.9	33.8
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	30.4	30.4
Upstream Blk Time (%)		21	5				0		14	2
Queuing Penalty (veh)		0	0				0		27	4
Storage Bay Dist (m)	45.0			85.0						
Storage Blk Time (%)	22	16		0	2					
Queuing Penalty (veh)	87	48		0	2					

Queuing and Blocking Report
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Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.8	17.6	14.8	8.8
Average Queue (m)	1.3	1.5	5.0	4.2
95th Queue (m)	6.3	8.6	11.2	9.4
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.4	13.3	7.4	9.1
Average Queue (m)	2.0	1.4	1.9	3.1
95th Queue (m)	7.9	7.2	6.1	7.8
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	109.4	77.2	24.2	33.4
Average Queue (m)	98.2	24.6	9.5	12.7
95th Queue (m)	104.1	58.0	20.4	26.3
Link Distance (m)	92.3	85.6	114.3	88.8
Upstream Blk Time (%)	58	1		
Queuing Penalty (veh)	0	2		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	L	TR	LT	R	LTR
Maximum Queue (m)	89.6	51.9	98.8	69.1	56.6	30.7
Average Queue (m)	78.5	26.5	36.1	20.0	30.3	11.1
95th Queue (m)	105.9	52.2	107.1	46.1	51.6	24.0
Link Distance (m)	85.6		184.4	121.0		71.6
Upstream Blk Time (%)	7		3			
Queuing Penalty (veh)	74		0			
Storage Bay Dist (m)		50.0			50.0	
Storage Blk Time (%)		7	1	0	4	
Queuing Penalty (veh)		29	1	0	3	

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	24.0	31.8	22.7	27.8
Average Queue (m)	11.1	15.0	10.2	11.4
95th Queue (m)	18.5	25.7	18.3	21.3
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.6	19.2	10.4	10.4
Average Queue (m)	4.8	10.0	0.6	1.5
95th Queue (m)	12.2	16.2	4.5	7.1
Link Distance (m)	68.2	70.6	59.3	220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
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Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (m)	52.3	114.7	113.8	52.4	95.6	81.4	47.1	56.8	44.8
Average Queue (m)	5.6	95.9	77.3	38.3	47.2	32.8	19.5	23.0	18.7
95th Queue (m)	28.0	124.1	109.2	57.9	84.3	60.2	39.0	41.7	34.8
Link Distance (m)		107.7	107.7		91.0	91.0	90.4	90.4	149.8
Upstream Blk Time (%)		6	1		2	0		0	
Queuing Penalty (veh)		0	0		0	0		0	
Storage Bay Dist (m)	50.0			50.0					
Storage Blk Time (%)	0	32		5	2				
Queuing Penalty (veh)	0	4		20	6				

Network Summary

Network wide Queuing Penalty: 355

SimTraffic Report
BR

2048 After Development - With 25 St

1: 29 St & Richmond Road SW Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Stop Del/Veh (s)	19.3	10.6	6.7	12.5	6.1	2.6	28.0	15.8	13.9	9.8

2: 29 St & 31 Ave SW Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	3.9	3.8	17.2	6.4	4.7

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	114.9	16.9	13.3	37.6	49.2	90.0	46.4	45.1	4.4	39.4	30.1	19.5

3: Sarcee Road /29 St & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	44.8

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.8	0.4	0.6	0.4	0.1	0.3	4.5	4.4	3.3	5.1	4.7	3.0

4: 28 St /28 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	1.0

5: 25A St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	0.5	0.1	0.2	1.5	0.6	0.6	2.9	3.3	3.2	4.5	4.5	3.0

5: 25A St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.7

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	85.8	70.8	56.8	14.8	9.6	11.4	49.4	42.5	44.1	149.9	143.4	139.2

6: 25A St /25A St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	43.2

7: 25 St & 26 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	58.4	33.0	31.8	68.1	42.2	37.8	31.8	27.0	12.6	34.6	28.3	28.0

7: 25 St & 26 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	38.3

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	4.3	4.4	4.2	3.7	3.5	3.2	4.1	3.5	4.3	5.1	5.2	3.8

8: 25 St /25 St & Richmond Road SW Performance by movement

Movement	All
Stop Del/Veh (s)	4.4

9: 25 St & 30 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	3.5	4.7	2.6	4.1	3.7	3.6	0.5	0.0	0.0	1.2	0.5	0.5

9: 25 St & 30 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	0.9

33: 25 St SW & 33 Ave SW Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	32.0	27.7	25.4	55.6	12.8	9.8	32.2	35.4	11.6	29.3	14.8	15.9

33: 25 St SW & 33 Ave SW Performance by movement

Movement	All
Stop Del/Veh (s)	23.8

Total Network Performance

Stop Del/Veh (s)	44.0

Intersection: 1: 29 St & Richmond Road SW

Movement	WB	WB	NB	NB	SB
Directions Served	L	TR	LT	R	LTR
Maximum Queue (m)	29.8	19.6	30.6	26.3	77.8
Average Queue (m)	15.2	6.6	28.6	13.0	41.9
95th Queue (m)	26.7	16.1	31.2	22.2	75.5
Link Distance (m)		103.0	26.3	26.3	66.1
Upstream Blk Time (%)			20	0	7
Queuing Penalty (veh)			90	1	0
Storage Bay Dist (m)	50.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: 29 St & 31 Ave SW

Movement	NB	SB	SB
Directions Served	TR	LT	T
Maximum Queue (m)	38.5	30.1	29.2
Average Queue (m)	34.0	11.3	9.2
95th Queue (m)	44.3	29.6	25.5
Link Distance (m)	30.4	26.3	26.3
Upstream Blk Time (%)	14	5	2
Queuing Penalty (veh)	129	9	3
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Sarcee Road /29 St & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B13	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	TR	T	L	TR
Maximum Queue (m)	47.5	76.8	78.0	87.4	183.2	187.8	56.0	63.9	8.5	36.8	35.6
Average Queue (m)	47.0	71.0	63.3	58.0	164.9	171.0	32.8	25.2	0.3	28.6	27.9
95th Queue (m)	49.4	74.3	90.6	113.2	202.1	196.4	51.5	59.9	6.0	41.6	39.9
Link Distance (m)		65.9	65.9		169.9	169.9	51.0	51.0	37.7	30.4	30.4
Upstream Blk Time (%)		67	20		26	59	1	3	0	22	14
Queuing Penalty (veh)		0	0		0	0	0	0	0	40	26
Storage Bay Dist (m)	45.0			85.0							
Storage Blk Time (%)	66	35		0	33						
Queuing Penalty (veh)	337	80		1	52						

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Intersection: 4: 28 St /28 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.9	9.3	15.8	10.8
Average Queue (m)	1.0	0.6	5.2	3.8
95th Queue (m)	5.7	4.7	11.0	9.7
Link Distance (m)	103.0	514.7	54.8	56.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: 25A St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.5	7.5	5.0	13.0
Average Queue (m)	1.5	0.5	1.9	3.8
95th Queue (m)	6.9	3.7	5.8	9.0
Link Distance (m)	514.7	90.4	48.0	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 25A St /25A St & 26 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	108.0	89.4	42.1	95.7
Average Queue (m)	96.2	79.8	15.2	62.8
95th Queue (m)	112.2	107.4	31.1	109.9
Link Distance (m)	92.3	85.6	114.3	88.8
Upstream Blk Time (%)	80	7		25
Queuing Penalty (veh)	0	76		0
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 25 St & 26 Ave SW

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	L	TR	LT	R	LTR
Maximum Queue (m)	91.8	57.6	198.7	31.0	33.5	48.8
Average Queue (m)	84.7	42.0	188.5	11.6	14.7	20.4
95th Queue (m)	102.3	74.3	205.7	24.2	26.4	37.4
Link Distance (m)	85.6		184.4	121.0		71.6
Upstream Blk Time (%)	33		51			
Queuing Penalty (veh)	275		0			
Storage Bay Dist (m)		50.0			50.0	
Storage Blk Time (%)		5	42			
Queuing Penalty (veh)		47	60			

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	28.3	16.3	24.4	40.8
Average Queue (m)	13.2	9.1	9.5	16.9
95th Queue (m)	22.5	14.6	18.9	31.9
Link Distance (m)	90.4	80.8	220.3	121.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: 25 St & 30 Ave SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.2	16.9	10.5	15.2
Average Queue (m)	4.5	8.4	1.0	3.8
95th Queue (m)	11.8	15.1	6.6	11.9
Link Distance (m)	68.2	70.6	59.3	220.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

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Intersection: 33: 25 St SW & 33 Ave SW

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (m)	52.3	120.8	118.7	52.5	101.1	104.9	71.0	41.0	35.7
Average Queue (m)	20.9	108.8	103.5	50.4	90.5	77.9	39.1	19.7	14.6
95th Queue (m)	51.8	128.4	130.3	59.0	112.9	111.7	65.8	34.7	28.6
Link Distance (m)		107.7	107.7		91.0	91.0	90.4	90.4	149.8
Upstream Blk Time (%)		22	16		28	6	0		
Queuing Penalty (veh)		0	0		0	0	0		
Storage Bay Dist (m)	50.0			50.0					
Storage Blk Time (%)	0	39		30	17				
Queuing Penalty (veh)	0	27		190	55				

Network Summary

Network wide Queuing Penalty: 1500

SimTraffic Report
BR

APPENDIX C

Signal Warrants

City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)	26 Avenue	Direction (EW or NS)	EW	Road Authority:	City of Calgary
Side Street (name)	25 Street	Direction (EW or NS)	NS	City:	Calgary
Quadrant / Int #	SW	Comments	Historical (1993)	Analysis Date:	2023 Jan 04, Wed
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET			Count Date:	1993 May 18, Tue
				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

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

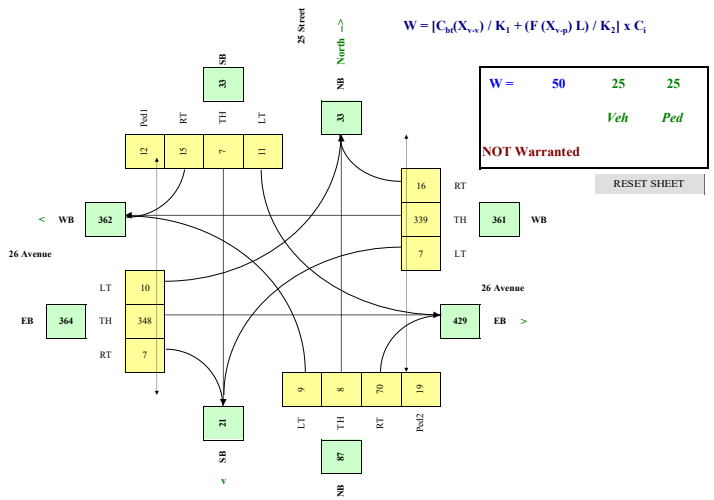
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue	EW	50	3.0%	y	0.0
25 Street	NS		1.0%	n	

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
Historical (6-Hour)	51	48	420	68	44	88	39	2035	93	58	2087	41	74	112	29	69
Total (6-hour peak)	51	48	420	68	44	88	39	2,035	93	58	2,087	41	74	112	29	69
Average (6-hour peak)	9	8	70	11	7	15	7	339	16	10	348	7	12	19	5	12

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 = 50 Veh 25 Ped

NOT Warranted

RESET SHEET

City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)	26 Avenue	Direction (EW or NS)	EW	Road Authority:	City of Calgary
Side Street (name)	25 Street	Direction (EW or NS)	NS	City:	Calgary
Quadrant / Int #	SW	Comments	Historical (2014)	Analysis Date:	2022 Jun 17, Fri
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET			Count Date:	2014 May 27, Tue
				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

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

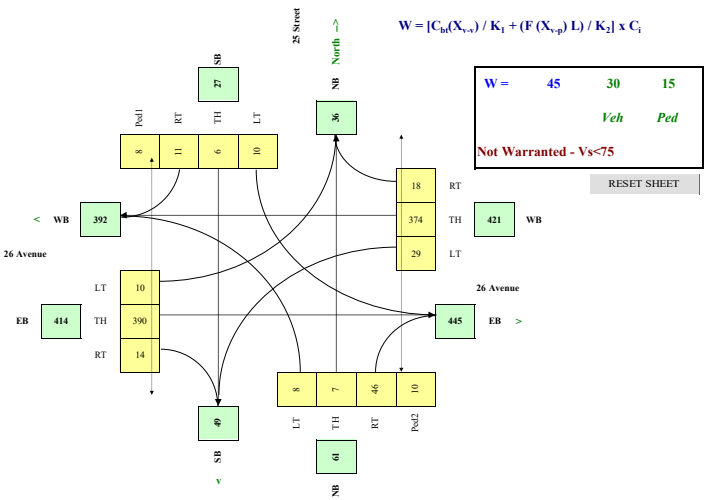
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue	EW	50	3.0%	y	0.0
25 Street	NS		1.0%	n	

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
Historical (6-Hour)	46	44	274	60	35	64	173	2243	110	62	2338	86	50	57	45	65
Total (6-hour peak)	46	44	274	60	35	64	173	2,243	110	62	2,338	86	50	57	45	65
Average (6-hour peak)	8	7	46	10	6	11	29	374	18	10	390	14	8	10	8	11

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 = 45 Veh 30 Ped 15

Not Warranted - Vs<75

RESET SHEET

City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)	26 Avenue		Direction (EW or NS)	EW		Road Authority:	City of Calgary		
Side Street (name)	25 Street		Direction (EW or NS)	NS		City:	Calgary		
Quadrant / Int #	SW		Comments	Existing (2022)		Analysis Date:	2022 Dec 22, Thu		
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET					Count Date:	2022 Dec 14, 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				

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

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

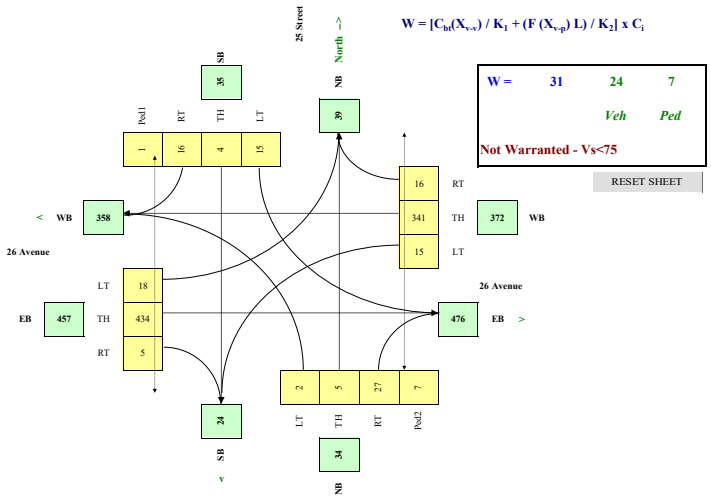
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue	EW	50	2.0%	y	0.0
25 Street	NS		1.0%	n	

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)	10	28	164	88	24	96	92	2043	96	109	2605	29	6	41	51	22
Total (6-hour peak)	10	28	164	88	24	96	92	2,043	96	109	2,605	29	6	41	51	22
Average (6-hour peak)	2	5	27	15	4	16	15	341	16	18	434	5	1	7	9	4

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 = 31 24 7
Veh Ped

Not Warranted - Vs<75

RESET SHEET

Main Street (name)	26 Avenue		Direction (EW or NS)	EW		Road Authority:	City of Calgary		
Side Street (name)	25 Street		Direction (EW or NS)	NS		City:	Calgary		
Quadrant / Int #	SW		Comments	Background		Analysis Date:	2023 Jan 04, Wed		
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET					Count Date:	2022 Dec 14, 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				

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

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

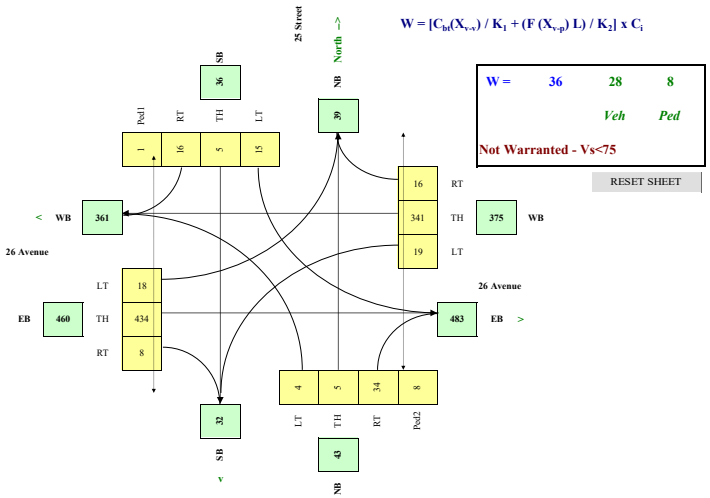
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue	EW	50	2.0%	y	0.0
25 Street	NS		1.0%	n	

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)	10	28	164	88	24	96	92	2043	96	109	2605	29	6	41	51	22
Background (6-Hour)	16	2	40		7		21					19		5		5
Total (6-hour peak)	26	30	204	88	31	96	113	2,043	96	109	2,605	48	6	46	51	27
Average (6-hour peak)	4	5	34	15	5	16	19	341	16	18	434	8	1	8	9	5

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 = 36 28 8
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	After Development (1250 units)
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET		

Road Authority:	City of Calgary
City:	Calgary
Analysis Date:	2023 Oct 16, Mon
Count Date:	2022 Dec 14, 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

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

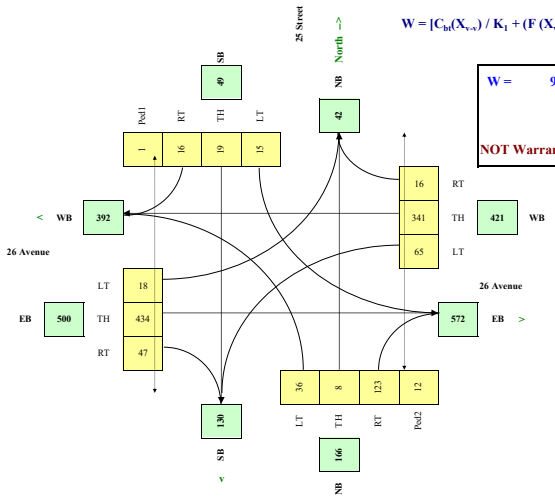
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue	EW	50	2.0%	y	0.0
25 Street	NS		1.0%	n	

Set Peak Hours

Traffic Input	NB			SB			WB			EB			Ped1	Ped2	Ped3	Ped4
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	NS	NS	EW	EW
Existing (6-Hour)	10	28	164	88	24	96	92	2043	96	109	2605	29	6	41	51	22
Background (6-Hour)	16	2	40		7		21					19		5		5
Site (6-Hour)	187	16	534		80		274					236		25		25
Total (6-hour peak)	213	46	738	88	111	96	387	2,043	96	109	2,605	284	6	71	51	52
Average (6-hour peak)	36	8	123	15	19	16	65	341	16	18	434	47	1	12	9	9

Average 6-hour Peak Turning Movements

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



W =	94	81	13
		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	After Development (2500 units)
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET		

Road Authority:	City of Calgary
City:	Calgary
Analysis Date:	2023 Oct 16, Mon
Count Date:	2022 Dec 14, 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

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

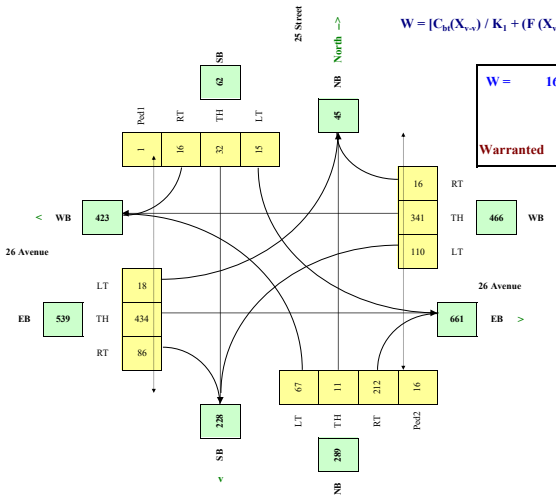
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue	EW	50	2.0%	y	0.0
25 Street	NS		1.0%	n	

Set Peak Hours

Traffic Input	NB			SB			WB			EB			Ped1	Ped2	Ped3	Ped4
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	NS	NS	EW	EW
Existing (6-Hour)	10	28	164	88	24	96	92	2043	96	109	2605	29	6	41	51	22
Background (6-Hour)	16	2	40		7		21					19		5		5
Site (6-Hour)	374	33	1067		159		545					470		50		50
Total (6-hour peak)	400	63	1,271	88	190	96	658	2,043	96	109	2,605	518	6	96	51	77
Average (6-hour peak)	67	11	212	15	32	16	110	341	16	18	434	86	1	16	9	13

Average 6-hour Peak Turning Movements

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



W =	163	143	20
		Veh	Ped

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	Historical (1990)
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET		

Road Authority:	City of Calgary	
City:	Calgary	
Analysis Date:	2023 Jan 04, Wed	
Count Date:	1990 Apr 26, 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								

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

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):

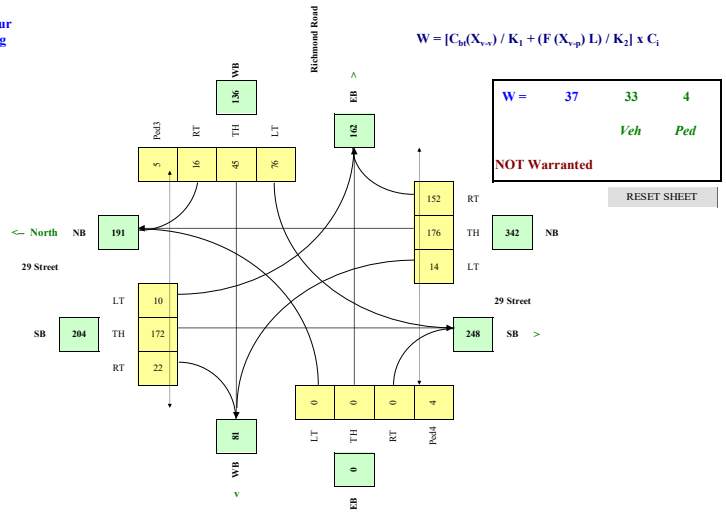
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
29 Street	NS	50	3.0%	n	0.0
Richmond Road	EW		2.0%	n	

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
Historical (6-Hour)	86	1053	914	60	1034	130	454	269	94				14	35	28	23
Total (6-hour peak)	86	1,053	914	60	1,034	130	454	269	94	0	0	0	14	35	28	23
Average (6-hour peak)	14	176	152	10	172	22	76	45	16	0	0	0	2	6	5	4

Average 6-hour Peak Turning Movements

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



W = 37 Veh 33 Ped 4

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	Historical (2010)
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET		

Road Authority:	City of Calgary	
City:	Calgary	
Analysis Date:	2023 Jan 04, Wed	
Count Date:	2010 Jun 24, 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								

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

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):

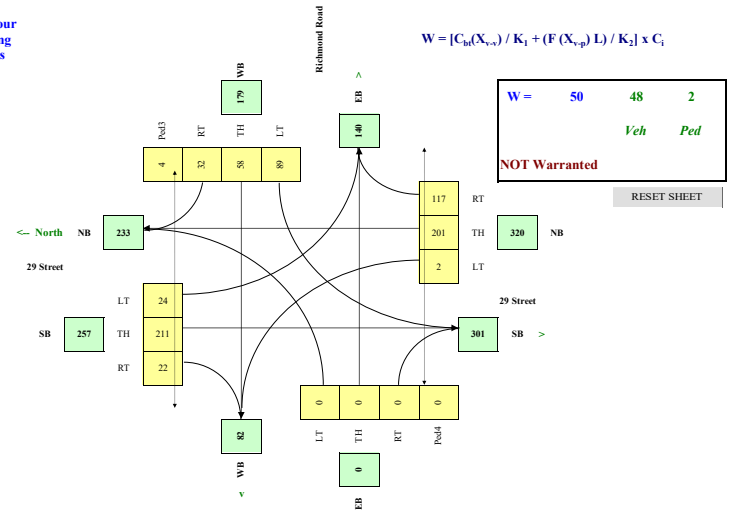
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
29 Street	NS	50	3.0%	n	0.0
Richmond Road	EW		2.0%	n	

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
Historical (6-Hour)	9	1207	701	141	1268	134	536	349	189				0	47	21	1
Total (6-hour peak)	9	1,207	701	141	1,268	134	536	349	189	0	0	0	0	47	21	1
Average (6-hour peak)	2	201	117	24	211	22	89	58	32	0	0	0	0	8	4	0

Average 6-hour Peak Turning Movements

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



W = 50 Veh 48 Ped 2

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 (2022)
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET		

Road Authority:	City of Calgary		
City:	Calgary		
Analysis Date:	2023 Jan 12, Thu		
Count Date:	2022 Dec 14, 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
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	

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

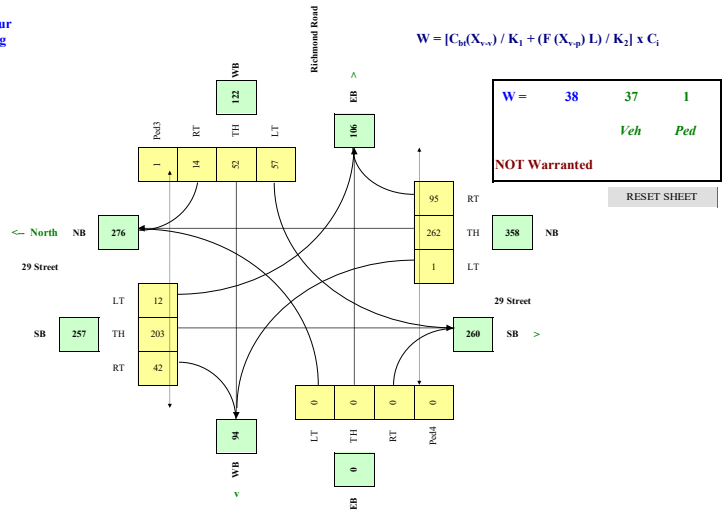
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
29 Street	NS	50	2.0%	n	0.0
Richmond Road	EW		1.0%	n	

Set Peak Hours

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)	6	1574	567	69	1220	250	341	309	84				8	2	8	0
Total (6-hour peak)	6	1,574	567	69	1,220	250	341	309	84	0	0	0	8	2	8	0
Average (6-hour peak)	1	262	95	12	203	42	57	52	14	0	0	0	1	0	1	0

Average 6-hour Peak Turning Movements

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



W =	38	37	1
		Veh	Ped

NOT Warranted

RESET SHEET

Main Street (name)	29 Street	Direction (EW or NS)	NS
Side Street (name)	Richmond Road	Direction (EW or NS)	EW
Quadrant / Int #	SW	Comments	Background
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET		

Road Authority:	City of Calgary		
City:	Calgary		
Analysis Date:	2023 Jan 12, Thu		
Count Date:	2022 Dec 14, 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
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	

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

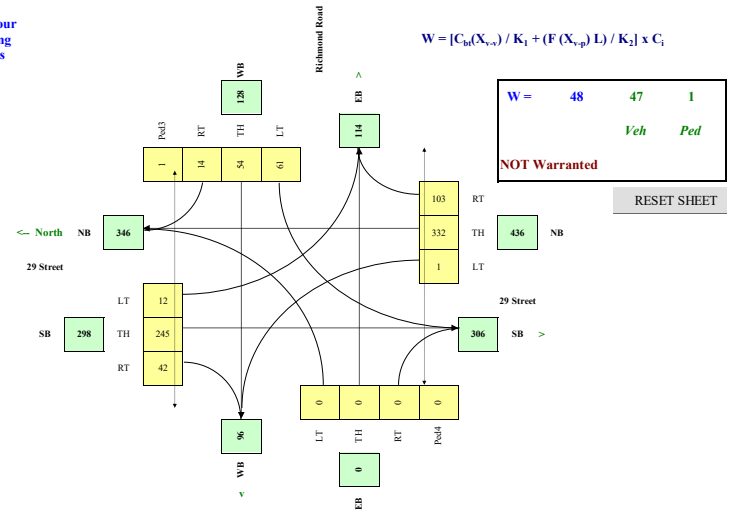
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
29 Street	NS	50	2.0%	n	0.0
Richmond Road	EW		1.0%	n	

Set Peak Hours

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)	6	1574	567	69	1220	250	341	309	84				8	2	8	0
Background (6-Hour)		420	49		251		22	12								
Total (6-hour peak)	6	1,994	616	69	1,471	250	363	321	84	0	0	0	8	2	8	0
Average (6-hour peak)	1	332	103	12	245	42	61	54	14	0	0	0	1	0	1	0

Average 6-hour Peak Turning Movements

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



W =	48	47	1
		Veh	Ped

NOT Warranted

RESET SHEET

City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)	29 Street	Direction (EW or NS)	NS	Road Authority:	City of Calgary
Side Street (name)	Richmond Road	Direction (EW or NS)	EW	City:	Calgary
Quadrant / Int #	SW	Comments	After Development (1250 units)	Analysis Date:	2023 Oct 16, Mon
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET			Count Date:	2022 Dec 14, 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
29 Street	NB				1				1
29 Street	SB				1				1
Richmond Road	WB	1				1			
Richmond Road	EB								

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

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):

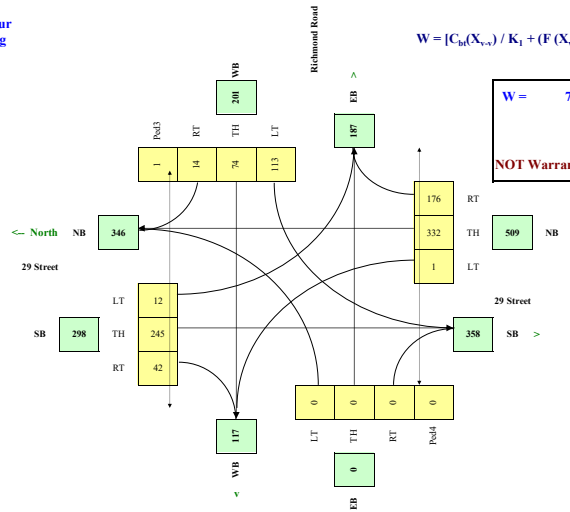
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
29 Street	NS	50	2.0%	n	0.0
Richmond Road	EW		1.0%	n	

Set Peak Hours

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)	6	1574	567	69	1220	250	341	309	84				8	2	8	0
Background (6-Hour)		420	49		251		22	12								
Site (6-Hour)			437				315	122								
Total (6-hour peak)	6	1,994	1,053	69	1,471	250	678	443	84	0	0	0	8	2	8	0
Average (6-hour peak)	1	332	176	12	245	42	113	74	14	0	0	0	1	0	1	0

Average 6-hour Peak Turning Movements

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



W = 75 74 1
Veh Ped
NOT Warranted

RESET SHEET

Traffic Signal Warrant Spreadsheet - v3H © 2007 Transportation Association of Canada

City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)	29 Street	Direction (EW or NS)	NS	Road Authority:	City of Calgary
Side Street (name)	Richmond Road	Direction (EW or NS)	EW	City:	Calgary
Quadrant / Int #	SW	Comments	After Development (2500 units)	Analysis Date:	2023 Oct 16, Mon
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET			Count Date:	2022 Dec 14, 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
29 Street	NB				1				1
29 Street	SB				1				1
Richmond Road	WB	1				1			
Richmond Road	EB								

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

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):

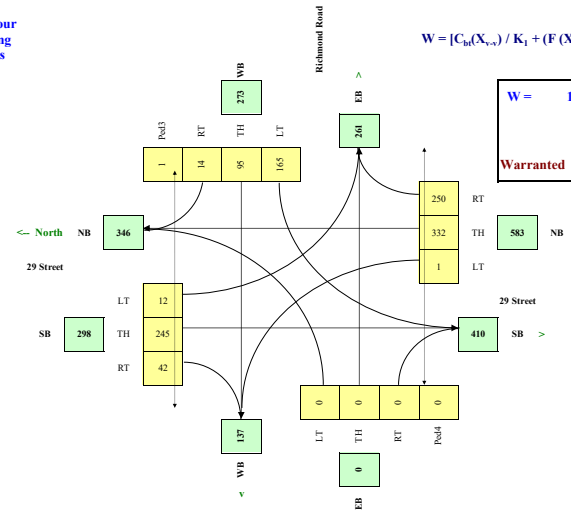
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
29 Street	NS	50	2.0%	n	0.0
Richmond Road	EW		1.0%	n	

Set Peak Hours

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)	6	1574	567	69	1220	250	341	309	84				8	2	8	0
Background (6-Hour)		420	49		251		22	12								
Site (6-Hour)			881				625	246								
Total (6-hour peak)	6	1,994	1,497	69	1,471	250	988	567	84	0	0	0	8	2	8	0
Average (6-hour peak)	1	332	250	12	245	42	165	95	14	0	0	0	1	0	1	0

Average 6-hour Peak Turning Movements

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



W = 101 101 0
Veh Ped
Warranted

RESET SHEET

Traffic Signal Warrant Spreadsheet - v3H © 2007 Transportation Association of Canada

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	After Development (1875 units)

for Warrant Calculation Results, please hit 'Page Down'

CHECK SHEET

Road Authority:	City of Calgary
City:	Calgary
Analysis Date:	2024 Apr 23, Tue
Count Date:	2022 Dec 14, 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

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

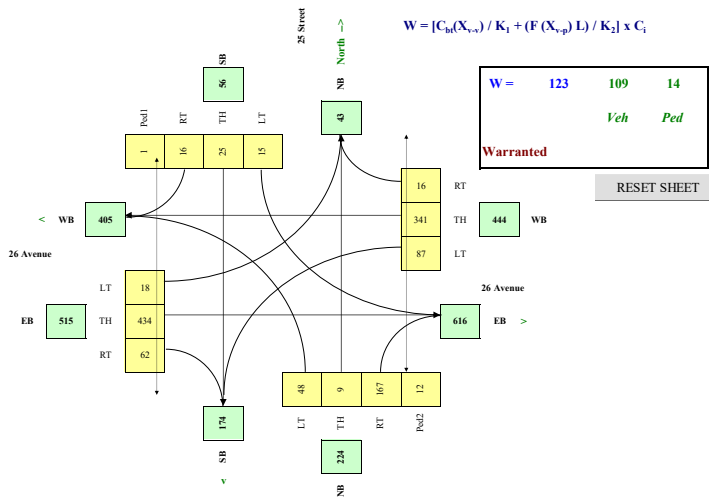
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue	EW	50	2.0%	y	0.0
25 Street	NS		1.0%	n	

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)	10	28	164	88	24	96	92	2043	96	109	2605	29	6	41	51	22
Background (6-Hour)	16	2	40		7		21					19		5		5
Site (6-Hour)	262	23	798		119		410					325		25		25
Total (6-hour peak)	288	53	1,002	88	150	96	523	2,043	96	109	2,605	373	6	71	51	52
Average (6-hour peak)	48	9	167	15	25	16	87	341	16	18	434	62	1	12	9	9

Average 6-hour Peak Turning Movements

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



W =	123	109	14
		Veh	Ped

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	After Development (1875 units)

for Warrant Calculation Results, please hit 'Page Down'

CHECK SHEET

Road Authority:	City of Calgary
City:	Calgary
Analysis Date:	2024 Apr 23, Tue
Count Date:	2022 Dec 14, 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
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)

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

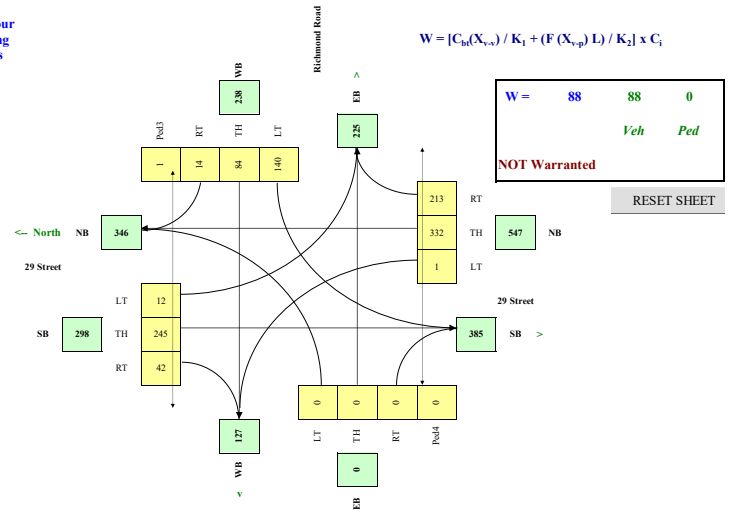
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
29 Street	NS	50	2.0%	n	0.0
Richmond Road	EW		1.0%	n	

Set Peak Hours

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)	6	1574	567	69	1220	250	341	309	84					8	2	8	0
Background (6-Hour)		420	49		251		22	12									
Site (6-Hour)			664				476	183									
Total (6-hour peak)	6	1,994	1,280	69	1,471	250	839	504	84	0	0	0	8	2	8	0
Average (6-hour peak)	1	332	213	12	245	42	140	84	14	0	0	0	1	0	1	0

Average 6-hour Peak Turning Movements

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



W =	88	88	0
		Veh	Ped

NOT Warranted

RESET SHEET

APPENDIX D

Sensitivity Analysis

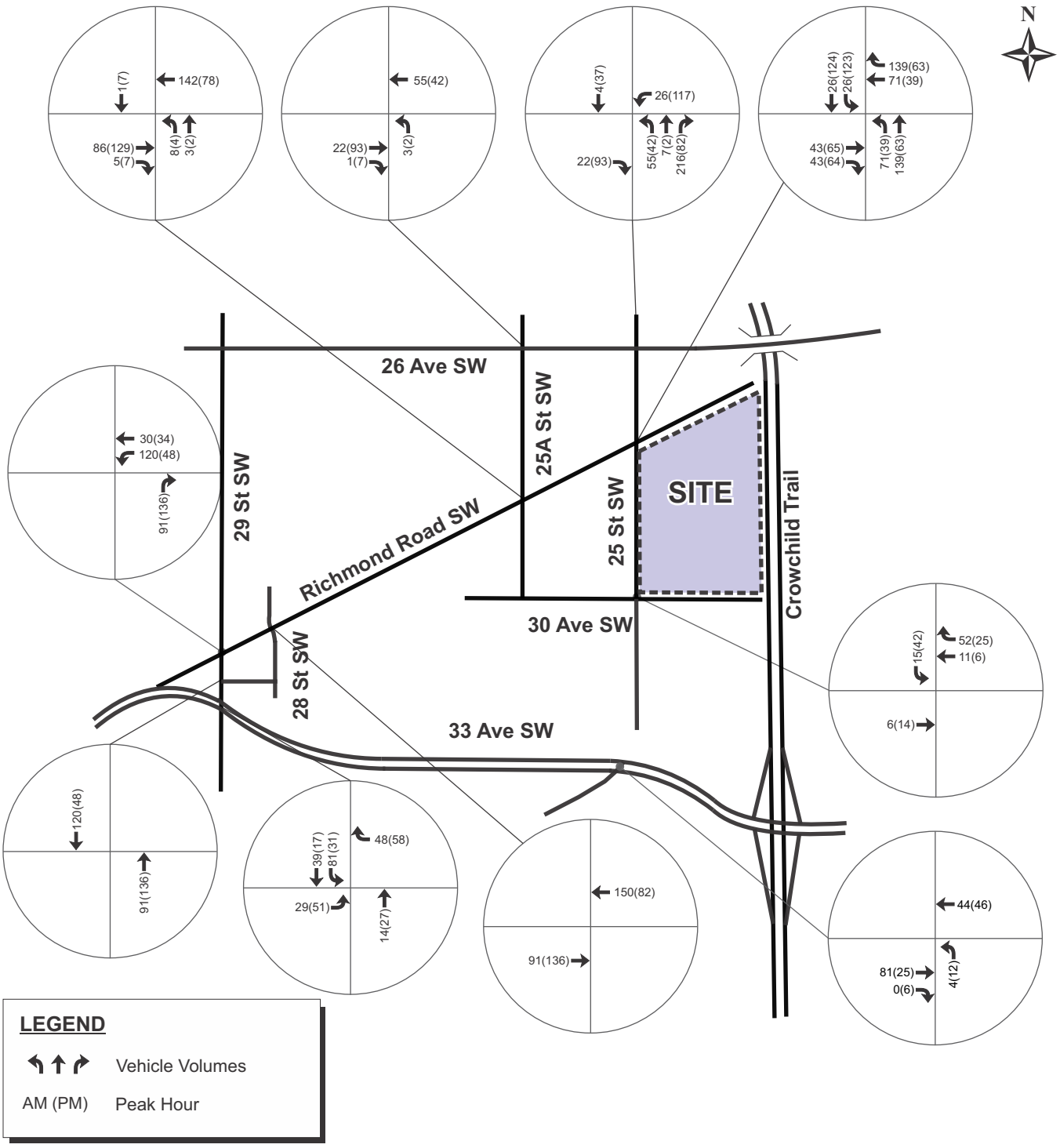


Exhibit 3.2 (Sensitivity)

Site Traffic Volumes - Lower Range

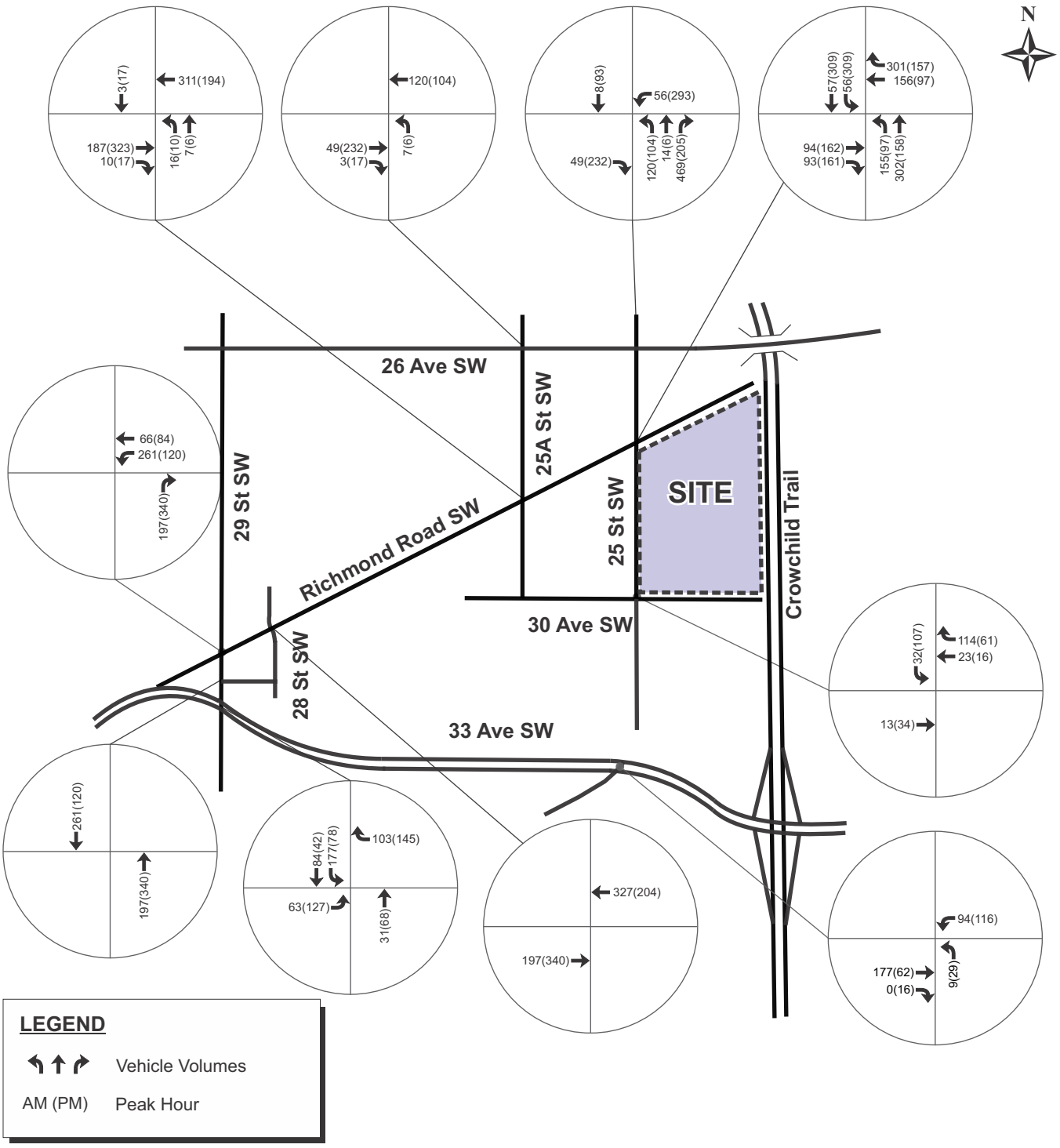


Exhibit 3.2 (Sensitivity)

Site Traffic Volumes - Upper Range

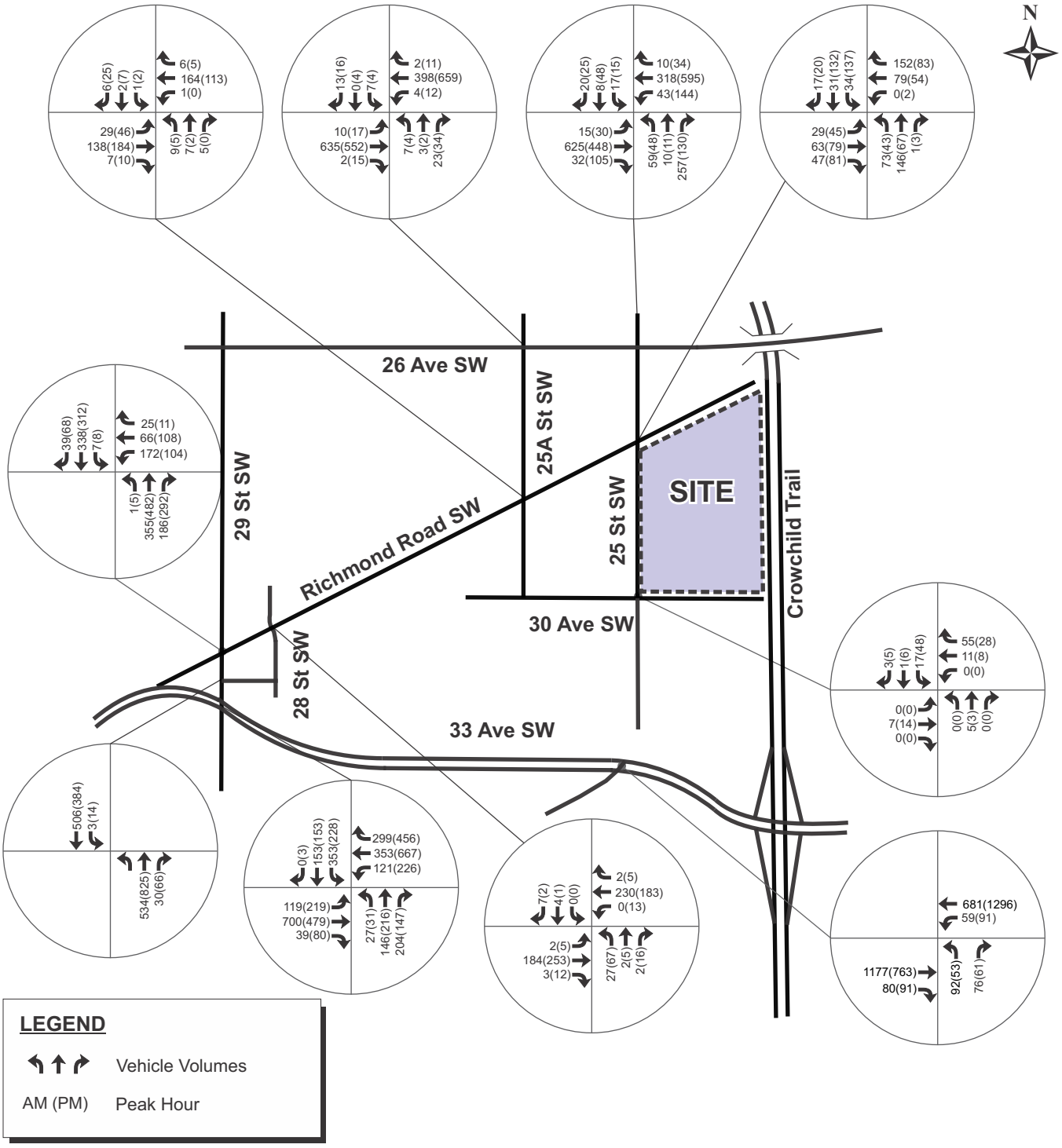


Exhibit 4.5 Sensitivity

After Development (100% Build Out) Traffic Volumes - Lower Range

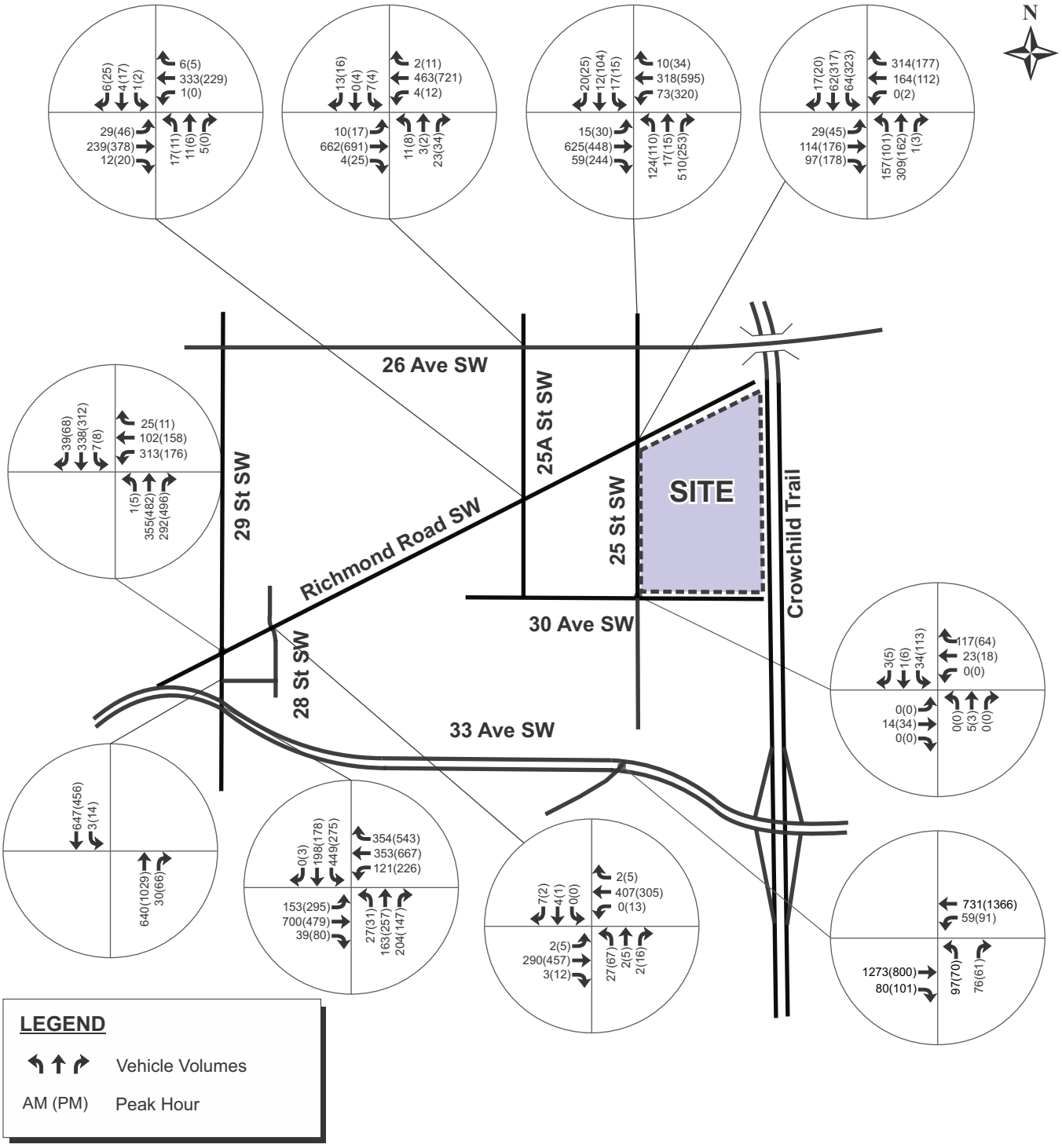


Exhibit 4.5 Sensitivity

After Development (100% Build Out) Traffic Volumes - Upper Range

Intersection Analysis (Sensitivity Tables)

Table 4.9: 2028 Intersection Analysis Summary – Sensitivity

INTERSECTION		BACKGROUND	AFTER DEVELOPMENT – 100% BUILD OUT		
			Lower Range Sensitivity	Main Analysis	Upper Range Sensitivity
29 Street &	Richmond Rd SW	Operates acceptably.	Signal required.	Signal required with turn lane (north right).	
	31 Avenue SW	Operates acceptably but impacted by 33 Avenue queuing.	Due to queue spillback from 33 Ave, southbound left turn restrictions should be provided (peak hours or all times).		
	33 Avenue SW	Operates acceptably.	Southbound left turn arrow required.	Southbound left turn arrow required. Eastbound left will operate at capacity during the PM.	Southbound left turn arrow required. Eastbound left and southbound left will operate at capacity.
28 Street &	Richmond Rd SW	Operates acceptably.			
25A Street &	26 Avenue SW	Operates acceptably.			
	Richmond Rd SW	Operates acceptably.			
25 Street &	26 Avenue SW	Operates acceptably.	Signal required.	Signal required with turn lanes (westbound left + northbound right).	
	Richmond Rd SW	Operates acceptably.		All-way stop required.	Signal required.
	30 Avenue SW	Operates acceptably.			

Table 4.10: 2028 Intersection Analysis (29 Street SW – Richmond Road and 31 Avenue) – Sensitivity

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
29 Street & Richmond Rd SW *(West Stop)*	After Development (100% Build) *Lower Range*	WBL	1	0.80	F	64	45	0.66	F	61	29
		WBT/R	1	0.33	C	24	11	0.67	F	56	30
		NB	1	<0.02	A	0	<5	<0.02	A	0	<5
		SB	1	<0.02	A	0	<5	<0.02	A	0	<5
		Overall		-	*A*	*11.1*	-	-	*A*	*9.5*	-
	After Development (100% Build) *Lower Range* **With Signal**	WBL	1	0.42	B	17	28	0.30	B	20	19
		WBT/R	1	0.21	B	12	14	0.33	B	19	20
		NB	1	0.54	A	10	55	0.72	B	15	117
		SB	1	0.39	A	8	37	0.35	A	6	30
		Overall		-	*B*	*10.2*	-	-	*B*	*13.3*	-
	After Development (100% Build) *Upper Range* **With Signal**	WBL	1	0.64	B	19	44	0.43	B	17	<29
		WBT/R	1	0.25	B	11	16	0.38	B	16	27
		NBL/T	1	0.46	B	12	47	0.57	B	11	51
		NBR	1	0.38	A	3	11	0.53	A	3	11
		SB	1	0.50	B	12	50	0.47	A	9	37
		Overall		-	*B*	*11.6*	-	-	*A*	*9.3*	-
29 Street & 31 Avenue SW	After Development *Lower Range*	NBT/R	1	0.35	A	0	<5	0.55	A	0	<5
		SBL/T	2	0.21	A	0	<5	0.16	A	0	<5
		Overall		-	*A*	*0.0*	-	-	*A*	*0.1*	-
	After Development *Upper Range*	NBT/R	1	0.42	A	0	<5	0.68	A	0	<5
		SBL/T	2	0.27	A	0	<5	0.19	A	1	<5
		Overall		-	*A*	*0.0*	-	-	*A*	*0.2*	-

Table 4.11: 2028 Intersection Analysis (29 Street SW – 33 Avenue) – Sensitivity

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
29 Street & 33 Avenue SW *(Signal)*	After Development (100% Build) *Lower Range* **With SBL Turn Arrow**	EBL	1	0.40	B	16	20	0.89	E	57	73
		EBT/R	2	0.79	C	34	83	0.46	C	23	57
		WBL	1	0.45	B	18	20	0.55	B	17	35
		WBT/R	2	0.65	B	19	51	0.92	D	36	138
		NBL/T/R	2	0.79	C	30	41	0.77	D	39	47
		SBL	1	0.91	E	61	109	0.90	F	108	80
		SBT/R	1	0.27	C	24	39	0.32	C	30	42
		Overall		-	*C*	*31.1*	-	-	*D*	*39.1*	-
	After Development (100% Build) *Upper Range* **With SBL Turn Arrow**	EBL	1	0.59	C	26	38	0.99	F	84	132
		EBT/R	2	0.86	D	38	114	0.44	C	28	79
		WBL	1	0.49	C	21	28	0.53	B	19	47
		WBT/R	2	0.75	C	23	76	1.05	E	73	222
		NBL/T/R	2	0.60	B	16	25	0.80	D	52	67
		SBL	1	1.35	F	201	145	1.08	F	121	117
		SBT/R	1	0.35	B	19	36	0.35	D	36	55
		Overall		-	*D*	*54.7*	-	-	*E*	*61.4*	-

**Southbound analyzed with de-facto left turn. Northbound analyzed with one of two lanes as de-facto left turn.*

Table 4.12: 2028 Intersection Analysis (28 Street SW – Richmond Road) – Sensitivity

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
28 Street & Richmond Rd SW *(North-South Stop)*	After Development (100% Build) *Lower Range*	EB	1	<0.02	A	0	<5	<0.02	A	0	<5
		WB	1	<0.02	A	0	<5	<0.02	A	1	<5
		NB	1	0.09	B	14	<5	0.22	C	16	6
		SB	1	0.03	B	12	<5	0.03	B	13	<5
		Overall		-	*A*	*1.6*	-	-	*A*	*3.0*	-
	After Development (100% Build) *Upper Range*	EB	1	<0.02	A	0	<5	<0.02	A	0	<5
		WB	1	<0.02	A	0	<5	<0.02	A	1	<5
		NB	1	0.14	C	20	<5	0.36	D	27	12
		SB	1	0.05	C	16	<5	0.05	C	18	<5
		Overall		-	*A*	*1.4*	-	-	*A*	*3.1*	-

Table 4.13: 2028 Intersection Analysis (25A Street SW – 26 Avenue and Richmond Road) – Sensitivity

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
25A Street & 26 Avenue SW *(North-South Stop)*	After Development (100% Build) *Lower Range*	EB	1	<0.02	A	0	<5	0.02	A	1	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.14	C	21	<5	0.17	C	21	5
		SB	1	0.11	C	21	<5	0.14	D	27	<5
		Overall		-	*A*	*1.3*	-	-	*A*	*1.6*	-
	After Development (100% Build) *Upper Range*	EB	1	<0.02	A	0	<5	0.02	A	1	<5
		WB	1	<0.02	A	0	<5	0.02	A	0	<5
		NB	1	0.19	D	26	5	0.27	D	32	7
		SB	1	0.12	C	24	<5	0.18	D	35	5
		Overall		-	*A*	*1.5*	-	-	*A*	*2.0*	-
25A Street & Richmond Rd SW *(North-South Stop)*	After Development (100% Build) *Lower Range*	EB	1	0.02	A	2	<5	0.03	A	2	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.04	B	12	<5	0.03	B	12	<5
		SB	1	0.03	B	12	<5	0.06	B	11	<5
		Overall		-	*A*	*1.9*	-	-	*A*	*2.5*	-
	After Development (100% Build) *Upper Range*	EB	1	0.03	A	1	<5	0.04	A	1	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.11	C	17	<5	0.08	C	19	<5
		SB	1	0.04	C	15	<5	0.12	B	15	<5
		Overall		-	*A*	*1.7*	-	-	*A*	*2.2*	-

Table 4.14: 2028 Intersection Analysis (25 Street SW – 26 Avenue) – Sensitivity

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
25 Street & 26 Avenue SW *(North-South Stop)*	After Development (100% Build) *Lower Range* **With Signal**	EB	1	0.81	C	20	125	0.56	A	9	65
		WB	1	0.50	B	11	49	0.85	C	23	145
		NB	1	0.69	B	17	39	0.51	B	12	19
		SB	1	0.12	B	10	8	0.27	B	15	14
		Overall		-	B	16.8	-	-	B	16.2	-
	After Development (100% Build) *Upper Range* **With Signal & Turn Lanes**	EB	1	0.92	C	34	137	0.82	B	19	127
		WBL	1	0.32	B	15	14	0.94	D	51	77
		WBT/R	1	0.42	B	12	41	0.64	B	11	76
		NBT/L	1	0.36	B	17	25	0.48	C	23	23
		NBR	1	0.91	D	36	96	0.50	A	6	13
		SB	1	0.10	A	9	8	0.38	B	17	22
		Overall		-	*C*	*27.5*	-	-	*C*	*20.1*	-

Table 4.15: 2028 Intersection Analysis (25 Street SW – Richmond Road and 30 Avenue) – Sensitivity

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
25 Street & Richmond Rd SW *(North-South Stop)*	After Development (100% Build) *Lower Range*	EB	1	0.02	A	2	<5	0.03	A	2	<5
		WB	1	<0.02	A	0	<5	<0.02	A	0	<5
		NB	1	0.51	C	21	22	0.28	C	17	9
		SB	1	0.19	C	15	5	0.65	D	26	34
		Overall		-	*A*	*9.0*	-	-	*B*	*13.1*	-
	After Development (100% Build) *Upper Range* **All-Way Stop**	EB	1	0.55	C	20	67	0.94	**F**	**57**	96
		WB	1	0.99	**F**	**64**	93	0.74	D	31	84
		NB	1	**1.05**	**F**	**82**	125	0.71	D	31	208
		SB	1	0.37	C	16	17	**1.66**	**F**	**328**	72
		Overall		-	*E*	*57.6*	-	-	***F***	***159***	-
	After Development (100% Build) *Upper Range* **Signal**	EB	1	0.39	B	13	36	0.89	D	45	96
		WB	1	0.74	B	19	90	0.61	B	20	47
		NB	1	0.83	C	28	89	0.43	B	11	36
		SB	1	0.29	B	12	22	0.99	D	49	159
		Overall		-	*C*	*20.5*	-	-	*D*	*36.1*	-
25 Street & 30 Ave SW *(East-West Stop)*	After Development (100% Build) *Lower Range*	EB	1	0.02	A	10	<5	0.04	B	10	<5
		WB	1	0.08	A	9	<5	0.05	A	10	<5
		NB	1	<0.02	A	3	<5	<0.02	A	3	<5
		SB	1	<0.02	A	5	<5	0.03	A	6	<5
		Overall		-	*A*	*7.7*	-	-	*A*	*7.5*	-
	After Development (100% Build) *Upper Range*	EB	1	0.04	B	11	<5	0.08	B	12	<5
		WB	1	0.17	A	10	5	0.12	B	10	<5
		NB	1	<0.02	A	3	<5	<0.02	A	3	<5
		SB	1	0.02	A	6	<5	0.08	A	7	<5
		Overall		-	*A*	*8.7*	-	-	*A*	*8.6*	-

Signal Warrant Analysis (Sensitivity Table)

Table 4.16: Signal Warrant Analysis – Sensitivity

INTERSECTION	HORIZON	SIGNAL WARRANT SCORE	COMMENT
25 Street & 26 Avenue SW	After Development (100% Build Out) – Lower Range Sensitivity	114/100	Warranted
	After Development (100% Build Out) – Upper Range Sensitivity	235/100	
29 Street & Richmond Road SW	After Development (100% Build Out) – Lower Range Sensitivity	83/100	Not warranted
	After Development (100% Build Out) – Upper Range Sensitivity	127/100	Warranted

Daily Volume (Sensitivity Table)

Table 4.17: Daily Link Volume Analysis – Sensitivity

ROADWAY	SECTION	CLASSIFI-CATION	GUIDELINE	DAILY VOLUMES (AFTER DEVELOPMENT – 100% BUILD OUT)		
				Lower Range	Main Analysis	Upper Range
25 Street SW	N of Richmond Rd	Collector	2,000-8,000	4,850	7,350	10,450
	S of Richmond Rd	Residential	<2,000	3,230	5,170	7,580
Richmond Road SW	West of 28 Street	Collector	2,000-8,000	5,470	6,910	8,730
	East of 28 Street	Collector	2,000-8,000	4,680	6,120	7,940
	West of 25 Street	Collector	2,000-8,000	3,110	4,480	6,210
	East of 25 Street	Collector	2,000-8,000	3,600	5,530	7.950

1: 29 St & Richmond Road SW
10/31/2023

AM Peak Hour
After Development - Lower Range Sensitivity

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	172	66	25	5	355	168	7	338	39
Future Volume (Veh/h)	0	0	0	172	66	25	5	355	168	7	338	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	183	70	27	5	378	179	7	360	41
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.91	0.91		0.91	0.91	0.91				0.91		
vC, conflicting volume	984	1012	430	922	942	518	426			582		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	935	965	430	868	890	425	426			496		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	21	72	95	100			99		
cM capacity (veh/h)	159	225	611	232	249	550	1133			955		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	183	97	562	408
Volume Left	183	0	5	7
Volume Right	0	27	179	41
cSH	232	294	1133	955
Volume to Capacity	0.79	0.33	0.00	0.01
Queue Length 95th (m)	43.7	10.6	0.1	0.2
Control Delay (s)	60.9	23.2	0.1	0.2
Lane LOS	F	C	A	A
Approach Delay (s)	47.8		0.1	0.2
Approach LOS	E			

Intersection Summary				
Average Delay			10.8	
Intersection Capacity Utilization			49.9%	ICU Level of Service
Analysis Period (min)			15	

2: 29 St & 31 Ave SW
10/31/2023

AM Peak Hour
After Development - Lower Range Sensitivity

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	534	30	5	506
Future Volume (Veh/h)	0	0	534	30	5	506
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)	0	0	568	32	5	538
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.88	0.88			0.88	
vC, conflicting volume	888	609			600	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	801	482			472	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	274	454			951	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	600	184	359
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	951	1700
Volume to Capacity	0.35	0.01	0.21
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.1	
Approach LOS			

Intersection Summary				
Average Delay			0.0	
Intersection Capacity Utilization			46.4%	ICU Level of Service
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	184	5	5	230	5	27	5	5	5	5	7
Future Volume (Veh/h)	5	184	5	5	230	5	27	5	5	5	5	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	196	5	5	245	5	29	5	5	5	5	7
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	275			226			526	518	248	524	518	298
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	275			226			526	518	248	524	518	298
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			93	99	99	99	99	99
cM capacity (veh/h)	1260			1313			417	438	756	420	438	710

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	206	255	39	17
Volume Left	5	5	29	5
Volume Right	5	5	5	7
cSH	1260	1313	446	512
Volume to Capacity	0.00	0.00	0.09	0.03
Queue Length 95th (m)	0.1	0.1	2.2	0.8
Control Delay (s)	0.2	0.2	13.9	12.3
Lane LOS	A	A	B	B
Approach Delay (s)	0.2	0.2	13.9	12.3
Approach LOS			B	B

Intersection Summary					
Average Delay			1.6		
Intersection Capacity Utilization			31.5%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	138	7	5	164	6	9	7	5	5	5	6
Future Volume (Veh/h)	29	138	7	5	164	6	9	7	5	5	5	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	147	7	5	174	6	10	7	5	5	5	6
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	205			179			458	452	200	458	453	227
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	205			179			458	452	200	458	453	227
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			98	99	99	99	99	99
cM capacity (veh/h)	1336			1366			457	468	804	457	468	777

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	185	185	22	16
Volume Left	31	5	10	5
Volume Right	7	6	5	6
cSH	1336	1366	511	545
Volume to Capacity	0.02	0.00	0.04	0.03
Queue Length 95th (m)	0.5	0.1	1.0	0.7
Control Delay (s)	1.5	0.2	12.4	11.8
Lane LOS	A	A	B	B
Approach Delay (s)	1.5	0.2	12.4	11.8
Approach LOS			B	B

Intersection Summary					
Average Delay			1.9		
Intersection Capacity Utilization			38.4%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	10	636	5	5	401	5	7	5	23	7	5	13
Future Volume (Veh/h)	10	636	5	5	401	5	7	5	23	7	5	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	677	5	5	427	5	7	5	24	7	5	14
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	457			707			1208	1194	730	1218	1194	480
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	457			707			1208	1194	730	1218	1194	480
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			95	97	94	95	97	98
cM capacity (veh/h)	1079			872			139	176	404	132	176	561

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	693	437	36	26
Volume Left	11	5	7	7
Volume Right	5	5	24	14
cSH	1079	872	261	245
Volume to Capacity	0.01	0.01	0.14	0.11
Queue Length 95th (m)	0.2	0.1	3.6	2.7
Control Delay (s)	0.3	0.2	21.0	21.5
Lane LOS	A	A	C	C
Approach Delay (s)	0.3	0.2	21.0	21.5
Approach LOS			C	C

Intersection Summary					
Average Delay	1.3				
Intersection Capacity Utilization	56.7%	ICU Level of Service		B	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	29	66	82	5	83	153	77	148	5	34	32	17
Future Volume (Veh/h)	29	66	82	5	83	153	77	148	5	34	32	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	70	87	5	88	163	82	157	5	36	34	18
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	276			182			440	486	164	488	448	220
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	276			182			440	486	164	488	448	220
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			81	65	99	89	93	98
cM capacity (veh/h)	1259			1362			441	447	843	321	470	784

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	188	256	244	88
Volume Left	31	5	82	36
Volume Right	87	163	5	18
cSH	1259	1362	449	424
Volume to Capacity	0.02	0.00	0.54	0.21
Queue Length 95th (m)	0.6	0.1	24.1	5.9
Control Delay (s)	1.5	0.2	22.1	15.7
Lane LOS	A	A	C	C
Approach Delay (s)	1.5	0.2	22.1	15.7
Approach LOS			C	C

Intersection Summary					
Average Delay	9.2				
Intersection Capacity Utilization	48.5%	ICU Level of Service		A	
Analysis Period (min)	15				

9: 25 St & 30 Ave SW
10/31/2023

AM Peak Hour
After Development - Lower Range Sensitivity

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	7	5	5	11	5	5	5	5	5	5	5
Future Volume (Veh/h)	5	7	5	5	11	5	5	5	5	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	7	5	5	12	5	5	5	5	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	42			37			102	96	60	102	96	64
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	42			37			102	96	60	102	96	64
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	99	99	99	99	99
cM capacity (veh/h)	1532			1539			801	754	962	801	754	956

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	17	22	15	15
Volume Left	5	5	5	5
Volume Right	5	5	5	5
cSH	1532	1539	830	828
Volume to Capacity	0.00	0.00	0.02	0.02
Queue Length 95th (m)	0.1	0.1	0.4	0.4
Control Delay (s)	2.2	1.7	9.4	9.4
Lane LOS	A	A	A	A
Approach Delay (s)	2.2	1.7	9.4	9.4
Approach LOS			A	A

Intersection Summary					
Average Delay	5.2				
Intersection Capacity Utilization	24.6%	ICU Level of Service		A	
Analysis Period (min)	15				

1: 29 St & Richmond Road SW
10/31/2023

PM Peak Hour
After Development - Lower Range Sensitivity

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	104	108	11	5	482	292	8	312	68
Future Volume (Veh/h)	0	0	0	104	108	11	5	482	292	8	312	68
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	0	109	114	12	5	507	307	8	328	72
Pedestrians		25			25			25			25	
Lane Width (m)		0.0			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			2			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								78				
pX, platoon unblocked	0.82	0.82		0.82	0.82	0.82				0.82		
vC, conflicting volume	1170	1254	414	1100	1136	710	425			839		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1099	1201	414	1015	1059	541	425			697		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	34	36	97	100			99		
cM capacity (veh/h)	71	146	624	166	178	426	1134			724		

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	109	126	819	408
Volume Left	109	0	5	8
Volume Right	0	12	307	72
cSH	166	188	1134	724
Volume to Capacity	0.66	0.67	0.00	0.01
Queue Length 95th (m)	28.6	30.4	0.1	0.3
Control Delay (s)	60.8	55.9	0.1	0.3
Lane LOS	F	F	A	A
Approach Delay (s)	58.1		0.1	0.3
Approach LOS	F			

Intersection Summary					
Average Delay	9.5				
Intersection Capacity Utilization	65.0%	ICU Level of Service		C	
Analysis Period (min)	15				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	825	66	14	384
Future Volume (Veh/h)	0	0	825	66	14	384
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)	0	0	868	69	15	404
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.80	0.80			0.80	
vC, conflicting volume	1160	928			937	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1076	787			799	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			98	
cM capacity (veh/h)	164	263			658	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	937	150	269
Volume Left	0	15	0
Volume Right	69	0	0
cSH	1700	658	1700
Volume to Capacity	0.55	0.02	0.16
Queue Length 95th (m)	0.0	0.5	0.0
Control Delay (s)	0.0	1.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.5	
Approach LOS			

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		64.4%	ICU Level of Service	C
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	253	12	13	183	5	67	5	16	5	5	5
Future Volume (Veh/h)	5	253	12	13	183	5	67	5	16	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	266	13	14	193	5	71	5	17	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	223			304			564	558	322	576	562	246
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	223			304			564	558	322	576	562	246
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			82	99	98	99	99	99
cM capacity (veh/h)	1316			1229			393	412	687	378	410	759

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	284	212	93	15
Volume Left	5	14	71	5
Volume Right	13	5	17	5
cSH	1316	1229	427	469
Volume to Capacity	0.00	0.01	0.22	0.03
Queue Length 95th (m)	0.1	0.3	6.2	0.8
Control Delay (s)	0.2	0.6	15.8	12.9
Lane LOS	A	A	C	B
Approach Delay (s)	0.2	0.6	15.8	12.9
Approach LOS			C	B

Intersection Summary				
Average Delay		3.0		
Intersection Capacity Utilization		36.4%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	184	10	5	113	5	5	5	5	5	5	25
Future Volume (Veh/h)	46	184	10	5	113	5	5	5	5	5	5	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	48	194	11	5	119	5	5	5	5	5	5	26
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	149			230			506	480	250	484	482	172
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	149			230			506	480	250	484	482	172
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			99	99	99	99	99	97
cM capacity (veh/h)	1401			1308			412	447	755	436	445	834

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	253	129	15	36
Volume Left	48	5	5	5
Volume Right	11	5	5	26
cSH	1401	1308	501	668
Volume to Capacity	0.03	0.00	0.03	0.05
Queue Length 95th (m)	0.8	0.1	0.7	1.3
Control Delay (s)	1.7	0.3	12.4	10.7
Lane LOS	A	A	B	B
Approach Delay (s)	1.7	0.3	12.4	10.7
Approach LOS			B	B

Intersection Summary					
Average Delay	2.4				
Intersection Capacity Utilization	35.9%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	559	11	12	661	11	5	5	34	5	5	16
Future Volume (Veh/h)	17	559	11	12	661	11	5	5	34	5	5	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	18	588	12	13	696	12	5	5	36	5	5	17
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	733			625			1428	1414	644	1446	1414	752
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	733			625			1428	1414	644	1446	1414	752
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			95	96	92	94	96	96
cM capacity (veh/h)	853			935			94	127	452	88	127	392

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	618	721	46	27
Volume Left	18	13	5	5
Volume Right	12	12	36	17
cSH	853	935	267	193
Volume to Capacity	0.02	0.01	0.17	0.14
Queue Length 95th (m)	0.5	0.3	4.6	3.6
Control Delay (s)	0.6	0.4	21.2	26.6
Lane LOS	A	A	C	D
Approach Delay (s)	0.6	0.4	21.2	26.6
Approach LOS			C	D

Intersection Summary					
Average Delay	1.6				
Intersection Capacity Utilization	58.2%	ICU Level of Service		B	
Analysis Period (min)	15				

8: 25 St /25 St & Richmond Road SW
10/31/2023

PM Peak Hour
After Development - Lower Range Sensitivity

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	82	78	5	56	84	45	68	5	141	135	20
Future Volume (Veh/h)	45	82	78	5	56	84	45	68	5	141	135	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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	86	82	5	59	88	47	72	5	148	142	21
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	172			193			476	428	177	425	425	153
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	172			193			476	428	177	425	425	153
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			86	85	99	65	70	98
cM capacity (veh/h)	1374			1350			338	478	828	427	480	854

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	215	152	124	311
Volume Left	47	5	47	148
Volume Right	82	88	5	21
cSH	1374	1350	419	466
Volume to Capacity	0.03	0.00	0.30	0.67
Queue Length 95th (m)	0.8	0.1	9.3	36.7
Control Delay (s)	1.9	0.3	17.2	26.9
Lane LOS	A	A	C	D
Approach Delay (s)	1.9	0.3	17.2	26.9
Approach LOS			C	D

Intersection Summary					
Average Delay	13.7				
Intersection Capacity Utilization	57.1%	ICU Level of Service		B	
Analysis Period (min)	15				

9: 25 St & 30 Ave SW
10/31/2023

PM Peak Hour
After Development - Lower Range Sensitivity

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	10	5	5	8	5	5	5	5	6	6	5
Future Volume (Veh/h)	5	10	5	5	8	5	5	5	5	6	6	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	11	5	5	8	5	5	5	5	6	6	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	38			41			102	96	64	102	96	60
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	38			41			102	96	64	102	96	60
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	99	99	99	99	99
cM capacity (veh/h)	1538			1534			799	754	957	801	754	961

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	21	18	15	17
Volume Left	5	5	5	6
Volume Right	5	5	5	5
cSH	1538	1534	828	823
Volume to Capacity	0.00	0.00	0.02	0.02
Queue Length 95th (m)	0.1	0.1	0.4	0.5
Control Delay (s)	1.8	2.1	9.4	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	1.8	2.1	9.4	9.5
Approach LOS			A	A

Intersection Summary					
Average Delay	5.3				
Intersection Capacity Utilization	24.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	172	66	25	5	355	168	7	338	39
Future Volume (vph)	0	0	0	172	66	25	5	355	168	7	338	39
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.98			0.98			0.99	
Frt					0.958			0.957			0.986	
Flt Protected				0.950							0.999	
Satd. Flow (prot)	0	0	0	1704	1686	0	0	1682	0	0	1755	0
Flt Permitted				0.950				0.997			0.991	
Satd. Flow (perm)	0	0	0	1666	1686	0	0	1676	0	0	1741	0
Satd. Flow (RTOR)					27			56			13	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	183	70	27	5	378	179	7	360	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	183	97	0	0	562	0	0	408	0
Turn Type				Perm	NA		Perm	NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2			6		
Detector Phase				8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)				25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)				41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)				20.0	20.0		30.0	30.0		30.0	30.0	
Yellow Time (s)				3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode				None	None		Min	Min		Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0		0	0	
Act Effct Green (s)				11.2	11.2			25.9			25.9	
Actuated g/C Ratio				0.26	0.26			0.60			0.60	
v/c Ratio				0.42	0.21			0.54			0.39	

1: 29 St & Richmond Road SW
11/01/2023
AM Peak Hour
After Development - Lower Range Sensitivity

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay				17.2	11.5			9.3			7.9	
Queue Delay				0.0	0.0			0.2			0.0	
Total Delay				17.2	11.5			9.5			7.9	
LOS				B	B			A			A	
Approach Delay					15.2			9.5			7.9	
Approach LOS					B			A			A	
Queue Length 50th (m)				10.5	3.7			21.4			15.2	
Queue Length 95th (m)				28.2	13.9			55.4			37.2	
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)												
Base Capacity (vph)				784	808			1281			1320	
Starvation Cap Reductn				0	0			165			0	
Spillback Cap Reductn				0	0			0			0	
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.23	0.12			0.50			0.31	

Intersection Summary			
Cycle Length: 60			
Actuated Cycle Length: 43			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 54.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: 29 St & Richmond Road SW



O:\Dept SAB\Projects\2022\0203 Viscount Bennett TIA\4.0 Analysis & Design\Synchro\2500 Unit Sensitivity\Build Out\Lower Range\AD Lower Sens_Impr
Synchro 11
BR

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	700	39	121	353	299	27	146	204	353	153	5
Future Volume (vph)	119	700	39	121	353	299	27	146	204	353	153	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98	1.00		0.98	0.96			0.94		0.99	1.00	
Frt		0.992			0.931			0.919			0.996	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3364	0	1704	3036	0	0	2940	0	1704	1784	0
Flt Permitted	0.266			0.206				0.913		0.277		
Satd. Flow (perm)	468	3364	0	364	3036	0	0	2691	0	491	1784	0
Satd. Flow (RTOR)		6			249			217			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	127	745	41	129	376	318	29	155	217	376	163	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	786	0	129	694	0	0	401	0	376	168	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		17.8	17.8		20.0	37.8	
Total Split (s)	16.2	47.4		16.2	47.4		17.8	17.8		20.0	37.8	
Total Split (%)	16.0%	46.7%		16.0%	46.7%		17.6%	17.6%		19.7%	37.3%	
Maximum Green (s)	10.0	40.0		10.0	40.0		10.0	10.0		15.5	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		1.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		4.5	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0						8.0	
Flash Dont Walk (s)		11.0			11.0						22.0	
Pedestrian Calls (#/hr)		0			0						5	
Act Effct Green (s)	35.1	25.2		35.2	25.3			10.1		33.5	30.2	
Actuated g/C Ratio	0.41	0.29		0.41	0.30			0.12		0.39	0.35	
v/c Ratio	0.40	0.79		0.45	0.65			0.79		0.91	0.27	

3: Sarcee Road /29 St & 33 Ave SW AM Peak Hour
11/01/2023 After Development - Lower Range Sensitivity

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	16.2	33.9		17.6	19.3			30.2		52.2	22.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0		8.9	1.2	
Total Delay	16.2	33.9		17.6	19.3			30.2		61.1	23.7	
LOS	B	C		B	B			C		E	C	
Approach Delay		31.4			19.0			30.2			49.5	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	11.0	61.3		11.2	32.5			15.0		46.2	18.8	
Queue Length 95th (m)	20.0	82.6		20.3	50.7			#41.2		#108.9	39.0	
Internal Link Dist (m)		48.7			0.1			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	344	1583		312	1557			507		412	629	
Starvation Cap Reductn	0	0		0	0			0		26	287	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.37	0.50		0.41	0.45			0.79		0.97	0.49	

Intersection Summary	
Cycle Length: 101.4	
Actuated Cycle Length: 85.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 31.1	Intersection LOS: C
Intersection Capacity Utilization 88.3%	ICU Level of Service E
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



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Synchro 11 BR

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	625	33	43	318	10	62	10	257	17	8	20
Future Volume (vph)	15	625	33	43	318	10	62	10	257	17	8	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.94			0.96	
Frt		0.993			0.996			0.895			0.941	
Flt Protected		0.999			0.994			0.991			0.982	
Satd. Flow (prot)	0	1774	0	0	1773	0	0	1508	0	0	1609	0
Flt Permitted		0.989			0.882			0.929			0.863	
Satd. Flow (perm)	0	1755	0	0	1571	0	0	1404	0	0	1404	0
Satd. Flow (RTOR)		6			3			156			21	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	665	35	46	338	11	66	11	273	18	9	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	716	0	0	395	0	0	350	0	0	48	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	34.0	34.0		34.0	34.0		26.0	26.0		26.0	26.0	
Total Split (%)	56.7%	56.7%		56.7%	56.7%		43.3%	43.3%		43.3%	43.3%	
Maximum Green (s)	29.0	29.0		29.0	29.0		21.0	21.0		21.0	21.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		24.5			24.5			13.8			13.8	
Actuated g/C Ratio		0.50			0.50			0.28			0.28	
v/c Ratio		0.81			0.50			0.69			0.12	

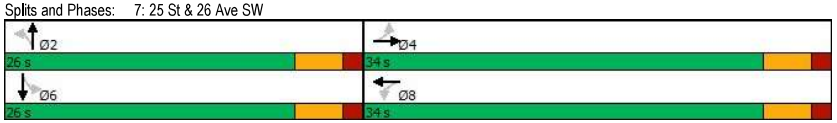
7: 25 St & 26 Ave SW
11/01/2023

AM Peak Hour
After Development - Lower Range Sensitivity

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		20.3			11.3			16.7			10.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.3			11.3			16.7			10.2	
LOS		C			B			B			B	
Approach Delay		20.3			11.3			16.7			10.2	
Approach LOS		C			B			B			B	
Queue Length 50th (m)		42.4			18.5			13.6			1.7	
Queue Length 95th (m)		#124.8			48.6			38.6			7.6	
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)												
Base Capacity (vph)		1079			964			710			635	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.66			0.41			0.49			0.08	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 48.6	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 16.8	Intersection LOS: B
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: 25 St & 26 Ave SW



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Synchro 11 BR

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	104	108	11	5	482	292	8	312	68
Future Volume (vph)	0	0	0	104	108	11	5	482	292	8	312	68
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.99			0.98			0.99	
Frt					0.986			0.949			0.976	
Flt Protected				0.950							0.999	
Satd. Flow (prot)	0	0	0	1704	1757	0	0	1661	0	0	1729	0
Flt Permitted				0.950				0.998			0.986	
Satd. Flow (perm)	0	0	0	1666	1757	0	0	1658	0	0	1706	0
Satd. Flow (RTOR)					9			72			26	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	109	114	12	5	507	307	8	328	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	109	126	0	0	819	0	0	408	0
Turn Type				Perm	NA		Perm	NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2			6		
Detector Phase				8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)				25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)				41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)				20.0	20.0		30.0	30.0		30.0	30.0	
Yellow Time (s)				3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode				None	None		Min	Min		Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0		0	0	
Act Effct Green (s)				10.4	10.4			32.3			32.3	
Actuated g/C Ratio				0.22	0.22			0.67			0.67	
v/c Ratio				0.30	0.33			0.72			0.35	

1: 29 St & Richmond Road SW
11/01/2023

PM Peak Hour
After Development - Lower Range Sensitivity

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay				19.6	18.7			12.7			5.9	
Queue Delay				0.0	0.0			2.7			0.0	
Total Delay				19.6	18.7			15.3			5.9	
LOS				B	B			B			A	
Approach Delay					19.1			15.3			5.9	
Approach LOS					B			B			A	
Queue Length 50th (m)				8.4	9.0			42.0			14.6	
Queue Length 95th (m)				18.9	20.2			#117.0			30.0	
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)												
Base Capacity (vph)				700	743			1151			1169	
Starvation Cap Reductn				0	0			216			0	
Spillback Cap Reductn				0	0			0			0	
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.16	0.17			0.88			0.35	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 48	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 13.3	Intersection LOS: B
Intersection Capacity Utilization 69.3%	ICU Level of Service C
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: 29 St & Richmond Road SW



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Synchro 11 BR

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	479	80	226	667	456	31	216	147	228	153	5
Future Volume (vph)	219	479	80	226	667	456	31	216	147	228	153	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99		0.97	0.96			0.97		0.99	1.00	
Frt		0.979			0.939			0.944			0.995	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3291	0	1704	3078	0	0	3126	0	1704	1782	0
Flt Permitted	0.110			0.380				0.906		0.308		
Satd. Flow (perm)	197	3291	0	664	3078	0	0	2839	0	546	1782	0
Satd. Flow (RTOR)		22			198			106			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	231	504	84	238	702	480	33	227	155	240	161	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	231	588	0	238	1182	0	0	415	0	240	166	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		17.8	17.8		11.5	37.8	
Total Split (s)	16.2	47.4		16.2	47.4		25.8	25.8		12.0	37.8	
Total Split (%)	16.0%	46.7%		16.0%	46.7%		25.4%	25.4%		11.8%	37.3%	
Maximum Green (s)	10.0	40.0		10.0	40.0		18.0	18.0		7.5	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		1.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		4.5	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0						8.0	
Flash Dont Walk (s)		11.0			11.0						22.0	
Pedestrian Calls (#/hr)		0			0						5	
Act Effct Green (s)	47.6	36.3		46.6	35.8			14.9		30.4	27.0	
Actuated g/C Ratio	0.50	0.38		0.49	0.38			0.16		0.32	0.29	
v/c Ratio	0.89	0.46		0.55	0.92			0.77		0.90	0.32	

3: Sarcee Road /29 St & 33 Ave SW PM Peak Hour
11/01/2023 After Development - Lower Range Sensitivity

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	57.4	22.5		16.5	35.5			39.1		64.8	29.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0		43.4	1.1	
Total Delay	57.4	22.5		16.5	35.5			39.1		108.2	30.2	
LOS	E	C		B	D			D		F	C	
Approach Delay		32.3			32.3			39.1			76.3	
Approach LOS		C			C			D			E	
Queue Length 50th (m)	27.4	40.8		21.1	93.0			30.3		36.6	25.0	
Queue Length 95th (m)	#73.3	57.1		35.4	#138.2			47.0		#80.2	42.3	
Internal Link Dist (m)		48.7			0.1			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	260	1417		441	1427			631		267	571	
Starvation Cap Reductn	0	0		0	0			0		45	232	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.89	0.41		0.54	0.83			0.66		1.08	0.49	

Intersection Summary		
Cycle Length: 101.4		
Actuated Cycle Length: 94.5		
Natural Cycle: 90		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.92		
Intersection Signal Delay: 39.1	Intersection LOS: D	
Intersection Capacity Utilization 104.2%	ICU Level of Service G	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



O:\Dept SAB\Projects\2022\0203 Viscount Bennett TIA\4.0 Analysis & Design\Synchro\2500 Unit Sensitivity\Build Out\Lower Range\AD Lower Sens_Impr
Synchro 11 BR

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	448	112	144	595	34	50	11	130	15	48	25
Future Volume (vph)	30	448	112	144	595	34	50	11	130	15	48	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.95			0.98	
Frt		0.974			0.994			0.908			0.962	
Flt Protected		0.997			0.991			0.987			0.991	
Satd. Flow (prot)	0	1721	0	0	1762	0	0	1534	0	0	1678	0
Flt Permitted		0.945			0.801			0.884			0.922	
Satd. Flow (perm)	0	1630	0	0	1421	0	0	1362	0	0	1554	0
Satd. Flow (RTOR)		28			6			137			26	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	32	472	118	152	626	36	53	12	137	16	51	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	622	0	0	814	0	0	202	0	0	93	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	35.0	35.0		35.0	35.0		25.0	25.0		25.0	25.0	
Total Split (%)	58.3%	58.3%		58.3%	58.3%		41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	30.0	30.0		30.0	30.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		34.1			34.1			10.7			10.7	
Actuated g/C Ratio		0.67			0.67			0.21			0.21	
v/c Ratio		0.56			0.85			0.51			0.27	

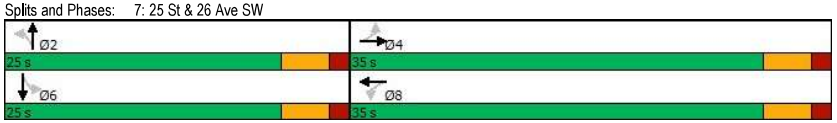
7: 25 St & 26 Ave SW
11/01/2023

PM Peak Hour
After Development - Lower Range Sensitivity

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		8.9			22.9			11.9			15.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		8.9			22.9			11.9			15.0	
LOS		A			C			B			B	
Approach Delay		8.9			22.9			11.9			15.0	
Approach LOS		A			C			B			B	
Queue Length 50th (m)		27.8			56.0			4.9			5.0	
Queue Length 95th (m)		65.1			#144.6			18.8			14.2	
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)												
Base Capacity (vph)		1104			957			620			629	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.56			0.85			0.33			0.15	

Intersection Summary		
Cycle Length: 60		
Actuated Cycle Length: 50.7		
Natural Cycle: 80		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.85		
Intersection Signal Delay: 16.2	Intersection LOS: B	
Intersection Capacity Utilization 108.3%	ICU Level of Service G	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		

Splits and Phases: 7: 25 St & 26 Ave SW



O:\Dept SAB\Projects\2022\0203 Viscount Bennett TIA\4.0 Analysis & Design\Synchro\2500 Unit Sensitivity\Build Out\Lower Range\AD Lower Sens_Impr
Synchro 11 BR

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	640	30	5	647
Future Volume (Veh/h)	0	0	640	30	5	647
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)	0	0	681	32	5	688
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.85	0.85			0.85	
vC, conflicting volume	1076	722			713	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	999	581			570	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	198	378			845	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	713	234	459
Volume Left	0	5	0
Volume Right	32	0	0
cSH	1700	845	1700
Volume to Capacity	0.42	0.01	0.27
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.3	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.1	
Approach LOS			

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		52.1%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	290	5	5	407	5	27	5	5	5	5	7
Future Volume (Veh/h)	5	290	5	5	407	5	27	5	5	5	5	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	309	5	5	433	5	29	5	5	5	5	7
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	463			339			826	820	362	824	820	486
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	463			339			826	820	362	824	820	486
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			89	98	99	98	98	99
cM capacity (veh/h)	1074			1193			260	294	653	262	294	556

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	319	443	39	17
Volume Left	5	5	29	5
Volume Right	5	5	5	7
cSH	1074	1193	287	349
Volume to Capacity	0.00	0.00	0.14	0.05
Queue Length 95th (m)	0.1	0.1	3.5	1.2
Control Delay (s)	0.2	0.1	19.5	15.8
Lane LOS	A	A	C	C
Approach Delay (s)	0.2	0.1	19.5	15.8
Approach LOS			C	C

Intersection Summary			
Average Delay		1.4	
Intersection Capacity Utilization		41.4%	ICU Level of Service A
Analysis Period (min)		15	

5: 25A St & Richmond Road SW
11/02/2023

AM Peak Hour
After Development - Upper Range Sensitivity

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	239	12	5	333	6	17	10	5	5	5	6
Future Volume (Veh/h)	29	239	12	5	333	6	17	10	5	5	5	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	31	254	13	5	354	6	18	11	5	5	5	6
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					110							
pX, platoon unblocked												
vC, conflicting volume	385			292			748	742	310	750	746	407
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	385			292			748	742	310	750	746	407
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			94	97	99	98	98	99
cM capacity (veh/h)	1148			1242			290	318	698	286	317	616

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	298	365	34	16
Volume Left	31	5	18	5
Volume Right	13	6	5	6
cSH	1148	1242	328	372
Volume to Capacity	0.03	0.00	0.10	0.04
Queue Length 95th (m)	0.6	0.1	2.6	1.0
Control Delay (s)	1.1	0.1	17.3	15.1
Lane LOS	A	A	C	C
Approach Delay (s)	1.1	0.1	17.3	15.1
Approach LOS			C	C

Intersection Summary					
Average Delay	1.7				
Intersection Capacity Utilization	47.4%	ICU Level of Service		A	
Analysis Period (min)	15				

6: 25A St /25A St & 26 Ave SW
11/02/2023

AM Peak Hour
After Development - Upper Range Sensitivity

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	665	5	5	470	5	10	5	23	7	5	13
Future Volume (Veh/h)	10	665	5	5	470	5	10	5	23	7	5	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	707	5	5	500	5	11	5	24	7	5	14
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	530			737			1310	1296	760	1320	1296	552
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	530			737			1310	1296	760	1320	1296	552
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			91	97	94	94	97	97
cM capacity (veh/h)	1014			850			118	152	388	112	152	510

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	723	510	40	26
Volume Left	11	5	11	7
Volume Right	5	5	24	14
cSH	1014	850	213	211
Volume to Capacity	0.01	0.01	0.19	0.12
Queue Length 95th (m)	0.2	0.1	5.1	3.1
Control Delay (s)	0.3	0.2	25.8	24.4
Lane LOS	A	A	D	C
Approach Delay (s)	0.3	0.2	25.8	24.4
Approach LOS			D	C

Intersection Summary					
Average Delay	1.5				
Intersection Capacity Utilization	58.7%	ICU Level of Service		B	
Analysis Period (min)	15				

9: 25 St & 30 Ave SW
11/02/2023

AM Peak Hour
After Development - Upper Range Sensitivity



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	13	5	5	22	5	5	5	5	5	5	5
Future Volume (Veh/h)	5	13	5	5	22	5	5	5	5	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	14	5	5	23	5	5	5	5	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	53			44			120	114	66	120	114	76
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	53			44			120	114	66	120	114	76
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	99	99	99	99	99
cM capacity (veh/h)	1518			1530			779	737	954	779	737	943

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	24	33	15	15
Volume Left	5	5	5	5
Volume Right	5	5	5	5
cSH	1518	1530	813	811
Volume to Capacity	0.00	0.00	0.02	0.02
Queue Length 95th (m)	0.1	0.1	0.4	0.4
Control Delay (s)	1.6	1.1	9.5	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	1.6	1.1	9.5	9.5
Approach LOS			A	A

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	24.6%	ICU Level of Service	A	
Analysis Period (min)	15			

2: 29 St & 31 Ave SW
11/02/2023

PM Peak Hour
After Development - Upper Range Sensitivity



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	1029	66	14	456
Future Volume (Veh/h)	0	0	1029	66	14	456
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)	0	0	1083	69	15	480
Pedestrians			25			25
Lane Width (m)			3.5			3.5
Walking Speed (m/s)			1.1			1.1
Percent Blockage			2			2
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			46			
pX, platoon unblocked	0.75	0.75			0.75	
vC, conflicting volume	1412	1142			1152	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1383	1022			1034	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			97	
cM capacity (veh/h)	96	171			499	

Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	1152	175	320
Volume Left	0	15	0
Volume Right	69	0	0
cSH	1700	499	1700
Volume to Capacity	0.68	0.03	0.19
Queue Length 95th (m)	0.0	0.7	0.0
Control Delay (s)	0.0	1.4	0.0
Lane LOS		A	
Approach Delay (s)	0.0	0.5	
Approach LOS			

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	75.4%	ICU Level of Service	D	
Analysis Period (min)	15			

4: 28 St /28 St & Richmond Road SW
11/02/2023

PM Peak Hour
After Development - Upper Range Sensitivity

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	457	12	13	305	5	67	5	16	5	5	5
Future Volume (Veh/h)	5	457	12	13	305	5	67	5	16	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	481	13	14	321	5	71	5	17	5	5	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	351			519			906	902	538	918	906	374
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	351			519			906	902	538	918	906	374
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			69	98	97	98	98	99
cM capacity (veh/h)	1181			1024			229	261	520	219	259	643

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	499	340	93	15
Volume Left	5	14	71	5
Volume Right	13	5	17	5
cSH	1181	1024	257	301
Volume to Capacity	0.00	0.01	0.36	0.05
Queue Length 95th (m)	0.1	0.3	12.0	1.2
Control Delay (s)	0.1	0.5	26.7	17.6
Lane LOS	A	A	D	C
Approach Delay (s)	0.1	0.5	26.7	17.6
Approach LOS			D	C

Intersection Summary					
Average Delay	3.1				
Intersection Capacity Utilization	46.3%	ICU Level of Service		A	
Analysis Period (min)	15				

5: 25A St & Richmond Road SW
11/02/2023

PM Peak Hour
After Development - Upper Range Sensitivity

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	378	20	5	229	5	11	5	5	5	8	25
Future Volume (Veh/h)	46	378	20	5	229	5	11	5	5	5	8	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	48	398	21	5	241	5	12	5	5	5	8	26
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					110							
pX, platoon unblocked												
vC, conflicting volume	271			444			838	810	458	816	818	294
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	271			444			838	810	458	816	818	294
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			95	98	99	98	97	96
cM capacity (veh/h)	1264			1091			241	287	576	259	284	713

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	467	251	22	39
Volume Left	48	5	12	5
Volume Right	21	5	5	26
cSH	1264	1091	290	465
Volume to Capacity	0.04	0.00	0.08	0.08
Queue Length 95th (m)	0.9	0.1	1.9	2.1
Control Delay (s)	1.2	0.2	18.4	13.5
Lane LOS	A	A	C	B
Approach Delay (s)	1.2	0.2	18.4	13.5
Approach LOS			C	B

Intersection Summary					
Average Delay	2.0				
Intersection Capacity Utilization	56.9%	ICU Level of Service		B	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	708	16	12	727	11	7	5	34	5	5	16
Future Volume (Veh/h)	17	708	16	12	727	11	7	5	34	5	5	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	18	745	17	13	765	12	7	5	36	5	5	17
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	802			787			1656	1642	804	1675	1645	821
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	802			787			1656	1642	804	1675	1645	821
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			89	95	90	91	95	95
cM capacity (veh/h)	803			814			64	92	366	59	92	358

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	780	790	48	27
Volume Left	18	13	7	5
Volume Right	17	12	36	17
cSH	803	814	183	144
Volume to Capacity	0.02	0.02	0.26	0.19
Queue Length 95th (m)	0.5	0.4	7.6	5.0
Control Delay (s)	0.6	0.4	31.5	35.6
Lane LOS	A	A	D	E
Approach Delay (s)	0.6	0.4	31.5	35.6
Approach LOS			D	E

Intersection Summary					
Average Delay	2.0				
Intersection Capacity Utilization	65.4%	ICU Level of Service		C	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	25	5	5	17	5	5	5	5	6	6	5
Future Volume (Veh/h)	5	25	5	5	17	5	5	5	5	6	6	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	26	5	5	18	5	5	5	5	6	6	5
Pedestrians		25			25			25			25	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	48			56			127	122	78	126	122	70
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	48			56			127	122	78	126	122	70
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	99	99	99	99	99
cM capacity (veh/h)	1525			1515			770	730	939	771	730	949

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	28	15	17
Volume Left	5	5	5	6
Volume Right	5	5	5	5
cSH	1525	1515	804	799
Volume to Capacity	0.00	0.00	0.02	0.02
Queue Length 95th (m)	0.1	0.1	0.4	0.5
Control Delay (s)	1.0	1.3	9.6	9.6
Lane LOS	A	A	A	A
Approach Delay (s)	1.0	1.3	9.6	9.6
Approach LOS			A	A

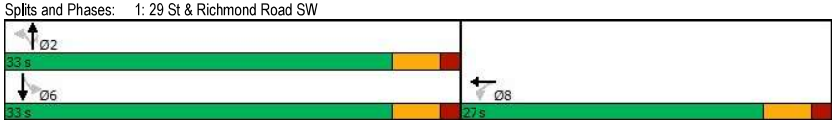
Intersection Summary					
Average Delay	4.0				
Intersection Capacity Utilization	24.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	313	102	25	5	355	292	7	338	39
Future Volume (vph)	0	0	0	313	102	25	5	355	292	7	338	39
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	0.99			1.00	0.94		0.99	
Frt					0.970				0.850		0.986	
Flt Protected				0.950				0.999			0.999	
Satd. Flow (prot)	0	0	0	1704	1717	0	0	1792	1525	0	1755	0
Flt Permitted				0.950				0.995			0.993	
Satd. Flow (perm)	0	0	0	1666	1717	0	0	1784	1426	0	1744	0
Satd. Flow (RTOR)					23				311		13	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	333	109	27	5	378	311	7	360	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	333	136	0	0	383	311	0	408	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2		2	6		
Detector Phase				8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)				27.0	27.0		33.0	33.0	33.0	33.0	33.0	
Total Split (%)				45.0%	45.0%		55.0%	55.0%	55.0%	55.0%	55.0%	
Maximum Green (s)				22.0	22.0		28.0	28.0	28.0	28.0	28.0	
Yellow Time (s)				3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)				5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode				None	None		Min	Min	Min	Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				14.2	14.2			20.9	20.9		20.9	
Actuated g/C Ratio				0.31	0.31			0.46	0.46		0.46	
v/c Ratio				0.64	0.25			0.46	0.38		0.50	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay				19.3	10.8			11.7	3.1		12.0	
Queue Delay				0.0	0.0			0.2	0.0		0.0	
Total Delay				19.3	10.8			11.9	3.1		12.0	
LOS				B	B			B	A		B	
Approach Delay					16.9			7.9			12.0	
Approach LOS					B			A			B	
Queue Length 50th (m)				21.1	6.2			17.9	0.0		18.8	
Queue Length 95th (m)				43.8	16.2			46.9	11.2		49.9	
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)				50.0								
Base Capacity (vph)				821	858			1119	1010		1099	
Starvation Cap Reductn				0	0			195	73		0	
Spillback Cap Reductn				0	0			0	0		0	
Storage Cap Reductn				0	0			0	0		0	
Reduced v/c Ratio				0.41	0.16			0.41	0.33		0.37	

Intersection Summary			
Cycle Length: 60			
Actuated Cycle Length: 45.2			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: 29 St & Richmond Road SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	176	158	11	5	482	496	8	312	68
Future Volume (vph)	0	0	0	176	158	11	5	482	496	8	312	68
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98	1.00			1.00	0.94		0.99	
Frt					0.990				0.850		0.976	
Flt Protected				0.950							0.999	
Satd. Flow (prot)	0	0	0	1704	1768	0	0	1794	1525	0	1729	0
Flt Permitted				0.950				0.996			0.990	
Satd. Flow (perm)	0	0	0	1666	1768	0	0	1786	1427	0	1713	0
Satd. Flow (RTOR)					7				522		26	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	185	166	12	5	507	522	8	328	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	185	178	0	0	512	522	0	408	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2		2	6		
Detector Phase				8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)				25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)				25.0	25.0		35.0	35.0	35.0	35.0	35.0	
Total Split (%)				41.7%	41.7%		58.3%	58.3%	58.3%	58.3%	58.3%	
Maximum Green (s)				20.0	20.0		30.0	30.0	30.0	30.0	30.0	
Yellow Time (s)				3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)				5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode				None	None		Min	Min	Min	Min	Min	
Walk Time (s)				8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)				12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				11.3	11.3			21.8	21.8		21.8	
Actuated g/C Ratio				0.26	0.26			0.50	0.50		0.50	
v/c Ratio				0.43	0.38			0.57	0.53		0.47	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay				17.3	15.9			10.7	3.1		8.8	
Queue Delay				0.0	0.0			0.2	0.1		0.0	
Total Delay				17.3	15.9			10.9	3.2		8.8	
LOS				B	B			B	A		A	
Approach Delay					16.6			7.0			8.8	
Approach LOS					B			A			A	
Queue Length 50th (m)				10.6	9.6			21.3	0.0		14.6	
Queue Length 95th (m)				28.6	26.6			51.2	10.9		36.7	
Internal Link Dist (m)		24.5			98.2			8.0			53.6	
Turn Bay Length (m)				50.0								
Base Capacity (vph)				781	833			1257	1159		1213	
Starvation Cap Reductn				0	0			219	80		0	
Spillback Cap Reductn				0	0			0	0		0	
Storage Cap Reductn				0	0			0	0		0	
Reduced v/c Ratio				0.24	0.21			0.49	0.48		0.34	

Intersection Summary		
Cycle Length: 60		
Actuated Cycle Length: 43.2		
Natural Cycle: 50		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.57		
Intersection Signal Delay: 9.3	Intersection LOS: A	
Intersection Capacity Utilization 64.2%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 1: 29 St & Richmond Road SW

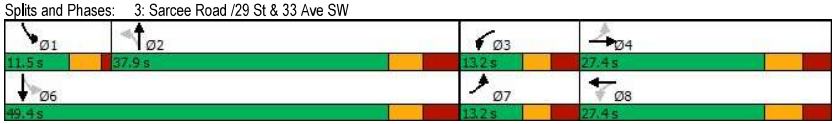


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	700	39	121	353	354	27	163	204	449	198	5
Future Volume (vph)	153	700	39	121	353	354	27	163	204	449	198	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99	0.95			0.98		0.99	1.00	
Frt		0.992			0.925			0.922			0.997	
Flt Protected	0.950			0.950				0.997		0.950		
Satd. Flow (prot)	1704	3364	0	1704	3004	0	0	3067	0	1704	1787	0
Flt Permitted	0.223			0.201				0.907		0.367		
Satd. Flow (perm)	394	3364	0	356	3004	0	0	2787	0	651	1787	0
Satd. Flow (RTOR)		6			259			217			2	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	163	745	41	129	376	377	29	173	217	478	211	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	786	0	129	753	0	0	419	0	478	216	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		11.5	37.8	
Total Split (s)	13.2	27.4		13.2	27.4		37.9	37.9		11.5	49.4	
Total Split (%)	14.7%	30.4%		14.7%	30.4%		42.1%	42.1%		12.8%	54.9%	
Maximum Green (s)	7.0	20.0		7.0	20.0		30.1	30.1		7.0	41.6	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		1.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		4.5	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0			8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0			22.0	
Pedestrian Calls (#/hr)		0			0		5	5			5	
Act Effct Green (s)	28.5	20.2		28.5	20.2			14.0		29.0	25.6	
Actuated g/C Ratio	0.38	0.27		0.38	0.27			0.19		0.39	0.34	
v/c Ratio	0.59	0.86		0.49	0.75			0.60		1.35	0.35	
Control Delay	25.8	38.2		21.3	22.8			16.1		200.1	19.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.5	0.2	
Total Delay	25.8	38.2		21.3	22.8			16.1		200.6	19.4	
LOS	C	D		C	C			B		F	B	
Approach Delay		36.1			22.6			16.1			144.2	
Approach LOS		D			C			B			F	
Queue Length 50th (m)	11.5	50.2		8.8	30.2			13.0		~80.0	21.8	
Queue Length 95th (m)	#38.0	#113.8		#27.7	#75.6			24.7		#144.9	36.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			158.5			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	275	915		263	1002			1265		353	1008	
Starvation Cap Reductn	0	0		0	0			0		17	264	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.59	0.86		0.49	0.75			0.33		1.42	0.29	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 74.5	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 54.7	Intersection LOS: D
Intersection Capacity Utilization 101.4%	ICU Level of Service G
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	479	80	226	667	543	31	257	147	275	178	5
Future Volume (vph)	295	479	80	226	667	543	31	257	147	275	178	5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.98		0.97	0.95			0.98		0.99	1.00	
Frt		0.979			0.933			0.949			0.996	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1704	3282	0	1704	3017	0	0	3164	0	1704	1784	0
Flt Permitted	0.082			0.400				0.907		0.265		
Satd. Flow (perm)	147	3282	0	698	3017	0	0	2876	0	469	1784	0
Satd. Flow (RTOR)		16			172			65			1	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Adj. Flow (vph)	311	504	84	238	702	572	33	271	155	289	187	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	311	588	0	238	1274	0	0	459	0	289	192	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	13.2	27.4		13.2	27.4		37.8	37.8		11.5	37.8	
Total Split (s)	24.3	51.3		24.8	51.8		38.5	38.5		15.4	53.9	
Total Split (%)	18.7%	39.5%		19.1%	39.8%		29.6%	29.6%		11.8%	41.5%	
Maximum Green (s)	18.1	43.9		18.6	44.4		30.7	30.7		10.9	46.1	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.8	3.8		3.5	3.8	
All-Red Time (s)	3.2	3.2		3.2	3.2		4.0	4.0		1.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.2	7.4		6.2	7.4			7.8		4.5	7.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0			8.0	
Flash Dont Walk (s)		11.0			11.0		22.0	22.0			22.0	
Pedestrian Calls (#/hr)		0			0		5	5			5	
Act Effct Green (s)	67.6	49.0		59.3	44.5			21.9		40.7	37.4	
Actuated g/C Ratio	0.56	0.40		0.49	0.37			0.18		0.34	0.31	
v/c Ratio	0.99	0.44		0.53	1.05			0.80		1.08	0.35	
Control Delay	84.3	28.3		18.6	72.9			51.8		112.0	34.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0		9.4	1.5	
Total Delay	84.3	28.3		18.6	72.9			51.8		121.4	35.5	
LOS	F	C		B	E			D		F	D	
Approach Delay		47.7			64.3			51.8			87.1	
Approach LOS		D			E			D			F	
Queue Length 50th (m)	58.9	51.1		26.4	~159.1			48.1		~60.8	35.2	
Queue Length 95th (m)	#131.6	79.1		47.1	#222.2			66.5		#117.4	54.7	

3: Sarcee Road /29 St & 33 Ave SW
04/25/2024

PM Peak Hour
After Development (Upper Sensitivity)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		48.7			158.5			44.8			21.9	
Turn Bay Length (m)	45.0			85.0								
Base Capacity (vph)	314	1333		524	1214			776		268	678	
Starvation Cap Reductn	0	0		0	0			0		31	323	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.99	0.44		0.45	1.05			0.59		1.22	0.54	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 121.4	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 61.4	Intersection LOS: E
Intersection Capacity Utilization 120.1%	ICU Level of Service H
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Sarcee Road /29 St & 33 Ave SW

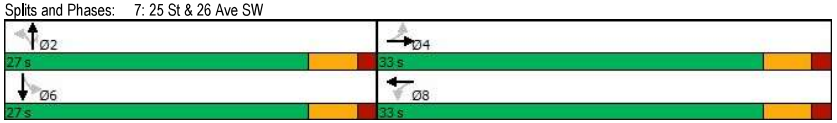


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	625	62	73	318	10	131	17	510	17	12	20
Future Volume (vph)	15	625	62	73	318	10	131	17	510	17	12	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99	1.00			0.97	0.93		0.96	
Frt		0.988			0.995				0.850		0.945	
Flt Protected		0.999		0.950				0.958			0.983	
Satd. Flow (prot)	0	1760	0	1704	1781	0	0	1718	1525	0	1621	0
Flt Permitted		0.990		0.294				0.713			0.899	
Satd. Flow (perm)	0	1744	0	522	1781	0	0	1239	1423	0	1467	0
Satd. Flow (RTOR)		11			4				145		21	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	665	66	78	338	11	139	18	543	18	13	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	747	0	78	349	0	0	157	543	0	52	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0	27.0	27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%	45.0%	45.0%	45.0%	
Maximum Green (s)	28.0	28.0		28.0	28.0		22.0	22.0	22.0	22.0	22.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		26.4		26.4	26.4			20.2	20.2		20.2	
Actuated g/C Ratio		0.47		0.47	0.47			0.36	0.36		0.36	
v/c Ratio		0.92		0.32	0.42			0.36	0.91		0.10	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		33.6		14.7	12.3			16.7	35.6		9.3	
Queue Delay		0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay		33.6		14.7	12.3			16.7	35.6		9.3	
LOS		C		B	B			B	D		A	
Approach Delay		33.6			12.7			31.3			9.3	
Approach LOS		C			B			C			A	
Queue Length 50th (m)		70.5		5.0	23.6			12.2	40.6		2.2	
Queue Length 95th (m)		#137.0		14.1	40.8			25.0	#95.9		8.0	
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)				50.0					50.0			
Base Capacity (vph)		880		261	895			488	648		591	
Starvation Cap Reductn		0		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.85		0.30	0.39			0.32	0.84		0.09	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 56.7	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 27.5	Intersection LOS: C
Intersection Capacity Utilization 99.0%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: 25 St & 26 Ave SW



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	448	261	320	595	34	116	15	253	15	104	25
Future Volume (vph)	30	448	261	320	595	34	116	15	253	15	104	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99	1.00			0.97	0.93		0.99	
Frt		0.952			0.992				0.850		0.977	
Flt Protected		0.998		0.950				0.958			0.995	
Satd. Flow (prot)	0	1665	0	1704	1773	0	0	1718	1525	0	1723	0
Flt Permitted		0.962		0.349				0.722			0.958	
Satd. Flow (perm)	0	1605	0	620	1773	0	0	1261	1422	0	1654	0
Satd. Flow (RTOR)		63			7				266		19	
Confl. Peds. (#/hr)	25		25	25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	32	472	275	337	626	36	122	16	266	16	109	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	779	0	337	662	0	0	138	266	0	151	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0		24.5	24.5		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	34.0	34.0		34.0	34.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	56.7%	56.7%		56.7%	56.7%		43.3%	43.3%	43.3%	43.3%	43.3%	
Maximum Green (s)	29.0	29.0		29.5	29.5		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.0	1.0		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		4.5	4.5			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		29.1		29.6	29.6			11.7	11.7		11.7	
Actuated g/C Ratio		0.57		0.58	0.58			0.23	0.23		0.23	
v/c Ratio		0.82		0.94	0.64			0.48	0.50		0.38	

7: 25 St & 26 Ave SW
11/02/2023

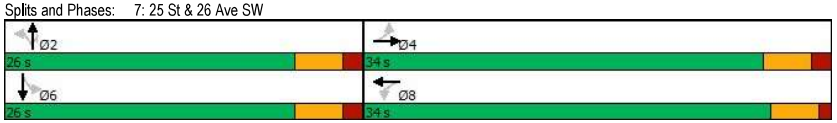
PM Peak Hour
After Development - Upper Range Sensitivity

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		19.2		50.8	11.2			22.7	6.3		17.3	
Queue Delay		0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay		19.2		50.8	11.2			22.7	6.3		17.3	
LOS		B		D	B			C	A		B	
Approach Delay		19.2			24.6			11.9			17.3	
Approach LOS		B			C			B			B	
Queue Length 50th (m)		40.8		21.7	30.7			10.8	0.0		10.0	
Queue Length 95th (m)		#126.6		#76.9	75.5			23.4	13.4		22.0	
Internal Link Dist (m)		75.2			172.6			116.5			62.9	
Turn Bay Length (m)				50.0					50.0			
Base Capacity (vph)		945		360	1034			522	744		696	
Starvation Cap Reductn		0		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.82		0.94	0.64			0.26	0.36		0.22	

Intersection Summary		
Cycle Length: 60		
Actuated Cycle Length: 50.8		
Natural Cycle: 80		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.94		
Intersection Signal Delay: 20.1	Intersection LOS: C	
Intersection Capacity Utilization 119.9%	ICU Level of Service H	
Analysis Period (min) 15		

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: 25 St & 26 Ave SW



O:\Dept SAB\Projects\2022\0203 Viscount Bennett TIA\4.0 Analysis & Design\Synchro\2500 Unit Sensitivity\Build Out\After Development_2,500_Signal_L
Synchro 11 BR



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	29	119	92	5	172	318	165	312	5	66	63	17
Future Volume (vph)	29	119	92	5	172	318	165	312	5	66	63	17
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)	31	127	98	5	183	338	176	332	5	70	67	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	256	526	513	155
Volume Left (vph)	31	5	176	70
Volume Right (vph)	98	338	5	18
Hadj (s)	-0.17	-0.35	0.10	0.05
Departure Headway (s)	7.7	6.8	7.4	8.5
Degree Utilization, x	0.55	0.99	1.05	0.37
Capacity (veh/h)	452	518	494	400
Control Delay (s)	19.9	63.9	82.4	16.3
Approach Delay (s)	19.9	63.9	82.4	16.3
Approach LOS	C	F	F	C

Intersection Summary				
Delay			57.6	
Level of Service			F	
Intersection Capacity Utilization			70.7%	ICU Level of Service C
Analysis Period (min)			15	

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	86.2	98.1	127.2	21.2
Average Queue (m)	31.5	86.2	117.9	8.7
95th Queue (m)	66.8	93.3	124.7	16.5
Link Distance (m)	90.4	80.8	220.3	122.8
Upstream Blk Time (%)	2	100		
Queuing Penalty (veh)	4	0		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				



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	184	170	5	117	180	106	165	5	331	326	20
Future Volume (vph)	45	184	170	5	117	180	106	165	5	331	326	20
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	194	179	5	123	189	112	174	5	348	343	21

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	420	317	291	712
Volume Left (vph)	47	5	112	348
Volume Right (vph)	179	189	5	21
Hadj (s)	-0.20	-0.32	0.10	0.11
Departure Headway (s)	8.0	8.4	8.8	8.4
Degree Utilization, x	0.94	0.74	0.71	1.66
Capacity (veh/h)	438	411	390	429
Control Delay (s)	57.0	31.4	31.1	327.5
Approach Delay (s)	57.0	31.4	31.1	327.5
Approach LOS	F	D	D	F

Intersection Summary				
Delay			158.7	
Level of Service			F	
Intersection Capacity Utilization			106.6%	ICU Level of Service G
Analysis Period (min)			15	

Intersection: 8: 25 St /25 St & Richmond Road SW

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	97.7	85.8	186.0	76.6
Average Queue (m)	93.6	80.6	153.1	28.9
95th Queue (m)	96.4	84.1	208.0	72.4
Link Distance (m)	90.4	80.8	220.3	122.8
Upstream Blk Time (%)	96	100	4	1
Queuing Penalty (veh)	372	0	1	6
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

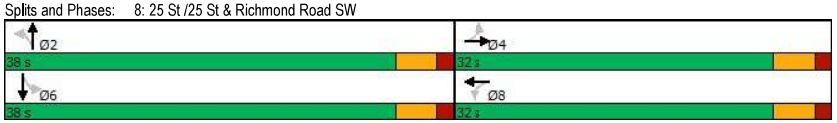
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	119	92	5	172	318	165	312	5	66	63	17
Future Volume (vph)	29	119	92	5	172	318	165	312	5	66	63	17
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.95			0.99			0.98	
Frt		0.948			0.913			0.999			0.984	
Flt Protected		0.994						0.983			0.978	
Satd. Flow (prot)	0	1671	0	0	1562	0	0	1760	0	0	1712	0
Flt Permitted		0.919			0.997			0.835			0.720	
Satd. Flow (perm)	0	1545	0	0	1557	0	0	1477	0	0	1251	0
Satd. Flow (RTOR)		52			151			1			13	
Confl. Peds. (#/hr)				25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	127	98	5	183	338	176	332	5	70	67	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	256	0	0	526	0	0	513	0	0	155	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	32.0	32.0		32.0	32.0		38.0	38.0		38.0	38.0	
Total Split (%)	45.7%	45.7%		45.7%	45.7%		54.3%	54.3%		54.3%	54.3%	
Maximum Green (s)	27.0	27.0		27.0	27.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		23.1			23.1			24.0			24.0	
Actuated g/C Ratio		0.40			0.40			0.42			0.42	
v/c Ratio		0.39			0.74			0.83			0.29	

8: 25 St /25 St & Richmond Road SW AM Peak Hour
11/02/2023 After Development - Upper Range Sensitivity

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		13.3			19.3			28.0			11.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		13.3			19.3			28.0			11.6	
LOS		B			B			C			B	
Approach Delay		13.3			19.3			28.0			11.6	
Approach LOS		B			B			C			B	
Queue Length 50th (m)		14.1			31.0			40.3			8.2	
Queue Length 95th (m)		36.0			#89.8			#89.0			21.5	
Internal Link Dist (m)		85.7			66.2			211.0			116.5	
Turn Bay Length (m)												
Base Capacity (vph)		778			835			878			749	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.33			0.63			0.58			0.21	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 57.4	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 20.5	Intersection LOS: C
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: 25 St /25 St & Richmond Road SW



O:\Dept SAB\Projects\2022\0203 Viscount Bennett TIA\4.0 Analysis & Design\Synchro\2500 Unit Sensitivity\Build Out\AD_Sensitivity_25St&30Ave_Signal
Synchro 11 BR

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	45	184	170	5	117	180	106	165	5	331	326	20
Future Volume (vph)	45	184	170	5	117	180	106	165	5	331	326	20
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.95			0.99			0.98	
Frt		0.942			0.920			0.998			0.996	
Flt Protected		0.994			0.999			0.981			0.976	
Satd. Flow (prot)	0	1656	0	0	1574	0	0	1754	0	0	1740	0
Flt Permitted		0.914			0.994			0.663			0.716	
Satd. Flow (perm)	0	1523	0	0	1566	0	0	1180	0	0	1259	0
Satd. Flow (RTOR)		53			106			2			4	
Confl. Peds. (#/hr)				25		25	25		25	25		25
Confl. Bikes (#/hr)			10			10			10			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	47	194	179	5	123	189	112	174	5	348	343	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	420	0	0	317	0	0	291	0	0	712	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	25.0	25.0		25.0	25.0		45.0	45.0		45.0	45.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		64.3%	64.3%		64.3%	64.3%	
Maximum Green (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		20.0			20.0			40.0			40.0	
Actuated g/C Ratio		0.29			0.29			0.57			0.57	
v/c Ratio		0.89			0.61			0.43			0.99	

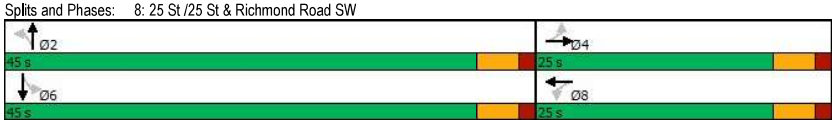
8: 25 St /25 St & Richmond Road SW
11/02/2023
PM Peak Hour
After Development - Upper Range Sensitivity

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		44.7			19.8			11.0			48.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		44.7			19.8			11.0			48.5	
LOS		D			B			B			D	
Approach Delay		44.7			19.8			11.0			48.5	
Approach LOS		D			B			B			D	
Queue Length 50th (m)		46.2			22.9			19.4			82.7	
Queue Length 95th (m)		#95.7			47.1			35.7			#158.6	
Internal Link Dist (m)		85.7			66.2			211.0			116.5	
Turn Bay Length (m)												
Base Capacity (vph)		473			523			675			721	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.89			0.61			0.43			0.99	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 36.1	Intersection LOS: D
Intersection Capacity Utilization 109.1%	ICU Level of Service H
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: 25 St /25 St & Richmond Road SW



O:\Dept SAB\Projects\2022\0203 Viscount Bennett TIA\4.0 Analysis & Design\Synchro\2500 Unit Sensitivity\Build Out\AD_Sensitivity_25St&30Ave_Signal
Synchro 11
BR

City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)	26 Avenue	Direction (EW or NS)	EW	Road Authority:	City of Calgary
Side Street (name)	25 Street	Direction (EW or NS)	NS	City:	Calgary
Quadrant / Int #	SW	Comments	After Development (2500 units) - Lower Range Sensitivity	Analysis Date:	2023 Oct 31, Tue
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET			Count Date:	2022 Dec 14, 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

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

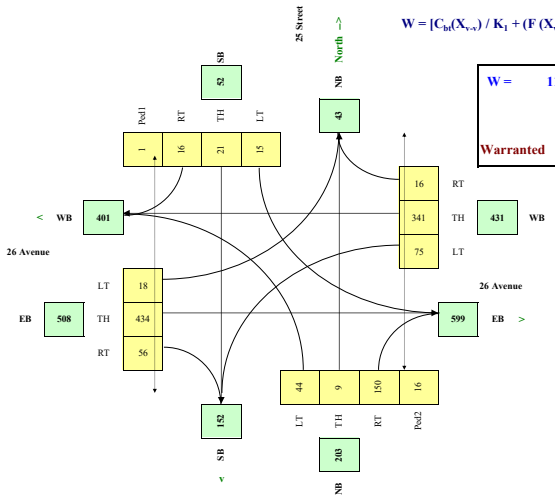
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue	EW	50	2.0%	y	0.0
25 Street	NS		1.0%	n	

Set Peak Hours

Frame Input	NB			SB			WB			EB			Ped1	Ped2	Ped3	Ped4
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	NS	NS	EW	EW
Existing (6-Hour)	10	28	164	88	24	96	92	2043	96	109	2605	29	6	41	51	22
Background (6-Hour)	16	2	40		7		21					19		5		5
Site (6-Hour)	239	21	697		96		335					288		50		50
													W Side	E Side	N Side	S Side
Total (6-hour peak)	265	51	901	88	127	96	448	2,043	96	109	2,605	336	6	96	51	77
Average (6-hour peak)	44	9	150	15	21	16	75	341	16	18	434	56	1	16	9	13

Average 6-hour Peak Turning Movements

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



W =	114	96	18
		Veh	Ped

Warranted

RESET SHEET

City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)	26 Avenue	Direction (EW or NS)	EW	Road Authority:	City of Calgary
Side Street (name)	25 Street	Direction (EW or NS)	NS	City:	Calgary
Quadrant / Int #	SW	Comments	After Development (2500 units) - Upper Range Sensitivity	Analysis Date:	2023 Oct 31, Tue
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET			Count Date:	2022 Dec 14, 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

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

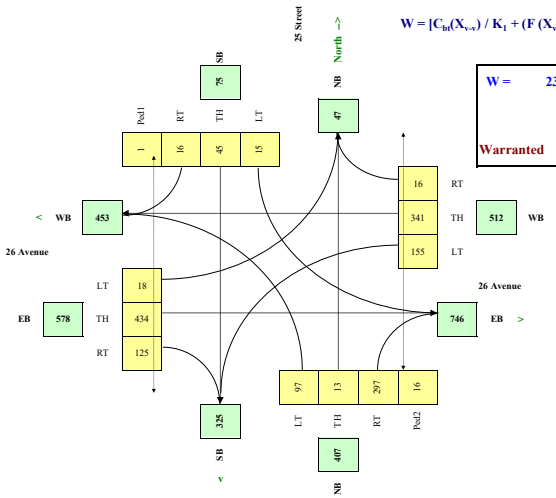
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue	EW	50	2.0%	y	0.0
25 Street	NS		1.0%	n	

Set Peak Hours

Frame Input	NB			SB			WB			EB			Ped1	Ped2	Ped3	Ped4
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	NS	NS	EW	EW
Existing (6-Hour)	10	28	164	88	24	96	92	2043	96	109	2605	29	6	41	51	22
Background (6-Hour)	16	2	40		7		21					19		5		5
Site (6-Hour)	555	47	1577		236		817					704		50		50
													W Side	E Side	N Side	S Side
Total (6-hour peak)	581	77	1,781	88	267	96	930	2,043	96	109	2,605	752	6	96	51	77
Average (6-hour peak)	97	13	297	15	45	16	155	341	16	18	434	125	1	16	9	13

Average 6-hour Peak Turning Movements

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



W =	235	213	22
		Veh	Ped

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	After Development (2500 units) - Lower Range Sensitivity
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET		

Road Authority:	City of Calgary
City:	Calgary
Analysis Date:	2023 Oct 31, Tue
Count Date:	2022 Dec 14, 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
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	

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

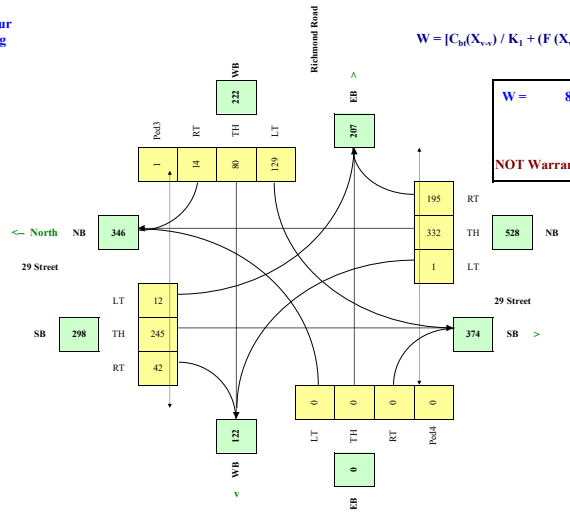
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
29 Street	NS	50	2.0%	n	0.0
Richmond Road	EW		1.0%	n	

Set Peak Hours

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)	6	1574	567	69	1220	250	341	309	84				8	2	8	0
Background (6-Hour)		420	49		251		22	12								
Site (6-Hour)			554				410	156								
Total (6-hour peak)	6	1,994	1,170	69	1,471	250	773	477	84	0	0	0	8	2	8	0
Average (6-hour peak)	1	332	195	12	245	42	129	80	14	0	0	0	1	0	1	0

Average 6-hour Peak Turning Movements

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



W =	83	82	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	After Development (2500 units) - Upper Range Sensitivity
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET		

Road Authority:	City of Calgary
City:	Calgary
Analysis Date:	2023 Oct 31, Tue
Count Date:	2022 Dec 14, 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
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	

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	1,200,000
Central Business District	(y/n)	y

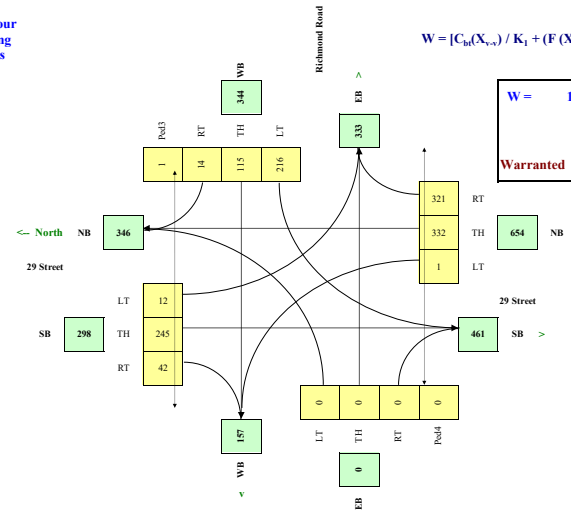
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
29 Street	NS	50	2.0%	n	0.0
Richmond Road	EW		1.0%	n	

Set Peak Hours

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)	6	1574	567	69	1220	250	341	309	84				8	2	8	0
Background (6-Hour)		420	49		251		22	12								
Site (6-Hour)			1310				930	366								
Total (6-hour peak)	6	1,994	1,926	69	1,471	250	1,293	687	84	0	0	0	8	2	8	0
Average (6-hour peak)	1	332	321	12	245	42	216	115	14	0	0	0	1	0	1	0

Average 6-hour Peak Turning Movements

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



W =	127	126	1
		Veh	Ped

Warranted

RESET SHEET