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MEMORANDUM

Date: June 22, 2023
To: Dan Kutzner, Town of Okotoks
From: Bruce Nelligan, WATT Consulting Group
Our File No: 3689.T01
Subject: Okotoks TMP Network Analysis Update Memorandum

INTRODUCTION

In 2020, WATT Consulting Group (WATT) was retained by the Town of Okotoks (Town) to prepare an update to the Transportation Master Plan (TMP) originally developed in 2016. The TMP identifies long-term improvement strategies for the transportation network within the Town to facilitate growth and support increased traffic volumes in future horizons.

Recent updates to the Town's traffic forecast model have resulted in an interest to provide an updated network analysis Memorandum to update results presented in the TMP report. This Memo is intended to accompany the TMP prepared in 2020, and supplement original recommendations.

BACKGROUND

Traffic volumes and recommended improvements presented in the 2020 TMP were based on a traffic forecast model developed using the Visum software platform. This model incorporates assumptions on land use, population, regional growth, and anticipated development both within the Town and MD Foothills County.

The forecast model was developed to support future development initiatives within the Town, with the potential to incorporate new development scenarios and generate forecast turning movement volumes for analysis in the 2025, 2035 and 2045 horizons. Land use assumptions assumed in the model are created for development cells, or Traffic Analysis Zones (TAZs), which can be updated and modified as development progresses.

Further to recent analysis in support of development within Okotoks, a lane assignment and development assumption error was discovered for the segment of Highway 7 between Highway 2 and Highway 2A, to the southeast of the Town in the 2045 horizon. The development in question is the Aldersyde Junction Development located in Foothills County. Development over and above what is anticipated was assigned to this location

in the 2045 horizon. This issue along with an incorrect assumed lane configuration is observed to have caused shortcutting along 32 Street as vehicles destined for Highway 2 were assigned to the local transportation network rather than the adjacent Highway 7 / Highway 2 interchange.

It is important to note that this error only influenced the 2045 horizon, with no consequence to the 2025 and 2035 modeling and analysis results.

Intersection Performance Evaluation Criteria

Intersection capacity analysis for existing and proposed conditions was completed using the Synchro software package, which are based on the Highway Capacity Manual (HCM 6) evaluation method.

The Level-of-Service (LOS) for unsignalized (stop-controlled) intersection is determined by the calculated delay for each critical movement. LOS 'A' represents minimal delay for minor-street traffic movements while LOS 'F' is associated with inadequate gaps for minor-street traffic operate without significant delay. The LOS for a signalized intersection is includes additional factors such as geometry, traffic and pedestrian volumes and signal phase/timing. As part of the analysis, the average delay for each lane group is calculated as well as the overall intersection delay and operating conditions are expressed as volume to capacity (v/c) ratios.

Table 1 provides an overview of associated delay per vehicle corresponding with the LOS.

Table 1: Level of Service Criteria

LEVEL OF SERVICE (LOS)	AVERAGE DELAY FOR **UNSIGNALIZED** & **ROUNDABOUT** INTERSECTION MOVEMENTS	AVERAGE DELAY FOR **SIGNALIZED** INTERSECTION MOVMENETS
A	0-10 seconds per vehicle	0-10 seconds per vehicle
B	> 10-15 seconds per vehicle	>10-20 seconds per vehicle
C	>15-25 seconds per vehicle	>20-35 seconds per vehicle
D	>25-35 seconds per vehicle	>35-55 seconds per vehicle
E	>35-50 seconds per vehicle	>55-80 seconds per vehicle
F	>50 seconds per vehicle	>80 seconds per vehicle

Updated Analysis

Following the model correction, capacity analysis results for intersections along 32 Street were re-evaluated in the 2045 horizon to reflect updated turning movement volumes. An overview of the resulting operating conditions is presented in **Table 2** which reflect the following assumptions:

- Four-lane cross section along 32 Street
- Intersection control consistent with the earlier TMP for the 2045 horizon, modified to reflect the intersection geometry assumed in the Trilogy Plains ASP

Detailed Synchro reports are also included in **Appendix A**.

Table 2: 2045 Operating Conditions

INTERSECTION / MOVEMENT			PM PEAK HOUR			
			v/c Ratio	LOS	Delay (s)	Queue (m)
32 Street / Highway 7 (Signalized)	EB	Left	0.64	B	19	36
		Through / Right	0.46	B	10	80
	WB	Left / Through	0.84	C	29	195
		Right	0.25	A	0	0
	NB	Left / Through / Right	0.05	C	25	7
	SB	Left / Through	0.77	D	52	76
		Right	0.69	B	11	27
	Intersection Summary		-	**B**	**19**	-
32 Street / Southbank Boulevard (Signalized)	EB	Left / Through / Right	0.47	C	21	35
	WB	Left	0.12	B	13	11
		Through	0.18	B	13	20
		Right	0.23	A	4	10
	NB	Left	0.12	B	12	9
		Through	0.36	B	14	33
		Right	0.11	A	2	4
	SB	Left	0.41	C	24	28
		Through	0.48	B	20	45
		Right	0.35	A	5	14
	Intersection Summary		-	**B**	**15**	-

Table 3: 2045 Operating Conditions Continued

INTERSECTION / MOVEMENT			PM PEAK HOUR			
			v/c Ratio	LOS	Delay (s)	Queue (m)
32 Street / Cimarron Estates Gate (Signalized)	EB	Left / Through / Right	0.09	B	16	5
	WB	Left / Through	0.22	C	22	10
		Right	0.18	A	1	0
	NB	Left	0.05	A	10	4
		Through	0.32	A	10	35
		Right	0.07	A	0	0
	SB	Left	0.10	A	4	5
		Through	0.32	A	5	25
		Right	0.02	A	0	0
	Intersection Summary		-	**A**	**8**	-
32 Street / North Railway Street (Signalized)	EB	Left / Through / Right	0.12	B	15	6
	WB	Left / Through / Right	0.55	C	27	25
	NB	Left	0.13	A	5	7
		Through	0.27	A	6	24
		Right	0.08	A	2	4
	SB	Left	0.03	B	10	3
		Through	0.33	B	10	38
		Right	0.02	A	0	0
	Intersection Summary		-	**B**	**11**	-
32 Street / Stockton Avenue (Stop-Controlled)	EB	Left / Through / Right	0.19	D	30	5
	WB	Left / Through / Right	0.04	D	26	1
	NB	Left / Through / Right	0.18	A	0	0
	SB	Left / Through	0.25	A	0	0
		Right	0.04	A	0	0
	Intersection Summary		-	**A**	**1**	-
32 Street / Crystal Ridge Gate (Signalized)	EB	Left / Through / Right	0.13	B	14	8
	WB	Left / Through / Right	0.36	B	15	15
	NB	Left	0.04	A	4	2
		Through / Right	0.26	A	5	21
	SB	Left	0.11	A	8	10
		Through	0.29	A	7	36
		Right	0.04	A	0	0
	Intersection Summary		-	**A**	**7**	-

Table 3: 2045 Operating Conditions Continued

INTERSECTION / MOVEMENT			PM PEAK HOUR			
			v/c Ratio	LOS	Delay (s)	Queue (m)
32 Street / Milligan Drive (Signalized)	EB	Left / Through / Right	0.57	B	17	22
	WB	Left / Through / Right	0.48	B	14	20
	NB	Left	0.15	A	6	8
		Through / Right	0.40	B	12	35
	SB	Left	0.20	A	6	10
		Through	0.38	B	12	38
		Right	0.19	A	3	9
	Intersection Summary		-	**B**	**12**	-
32 Street / Crystal Shores Road (Signalized)	EB	Left / Through	0.43	C	27	23
		Right	0.06	A	0	0
	WB	Left / Through / Right	0.16	B	12	9
	NB	Left	0.12	A	5	6
		Through / Right	0.34	A	9	45
	SB	Left	0.08	A	5	5
		Through	0.41	B	11	54
		Right	0.17	A	3	9
	Intersection Summary		-	**B**	**10**	-
32 Street / 338 Avenue (Signalized)	EB	Left / Through	0.80	C	34	65
		Right	0.60	B	13	36
	WB	Left	0.81	D	36	56
		Through / Right	0.82	C	23	103
	NB	Left	0.51	B	19	40
		Through / Right	0.28	A	5	17
	SB	Left / Through / Right	0.25	C	21	27
	Intersection Summary		-	**C**	**24**	-

As indicated in **Table 2**, all intersections are observed to provide an acceptable overall LOS C or above during the PM peak hour, indicating that no additional improvements are required to support future traffic along the corridor.

It is recommended that the corridor be monitored and improved to the assumed four-lane cross section as warranted.

CONCLUSION

Based on the updated analysis and results presented in this Memo, it is recommended that the four-lane cross section be retained for the ultimate configuration and built out as required for future developments. No additional improvements are anticipated to be warranted at the intersections along 32 Street, with all intersections noted to provide an acceptable overall LOS C or better in the 2045 horizon.

We trust this Memo provides the information requested. Please feel free to reach out to me directly if you have any questions or require more information.

Sincerely,
WATT Consulting Group

Bruce Nelligan, *M.Eng., P.Eng.,*
President & CEO

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#WEAREWATT

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BRUCE M. NELLIGAN
ID 79691
JUN 22, 2023

PERMIT TO PRACTICE
WATT CONSULTING GROUP LTD.
RM Signature _____
RM APEGA ID #: 251987
Date: 2023-06-22
PERMIT NUMBER: P003818
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

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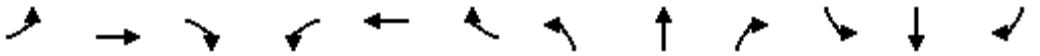
APPENDIX A: CAPACITY ANALYSIS RESULTS



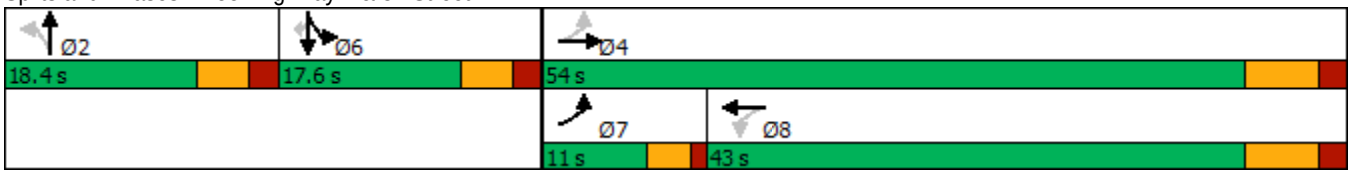
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	456	5	5	679	364	5	5	5	197	5	407
Future Volume (vph)	177	456	5	5	679	364	5	5	5	197	5	407
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Storage Length (m)	195.0		0.0	40.0		145.0	0.0		0.0	70.0		0.0
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (m)	95.0			30.0			2.5			40.0		
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
Frt		0.998				0.850		0.955				0.850
Flt Protected	0.950							0.984			0.953	
Satd. Flow (prot)	1630	1669	0	0	1782	1544	0	1758	0	0	1700	1590
Flt Permitted	0.140				0.997						0.953	
Satd. Flow (perm)	240	1669	0	0	1777	1544	0	1786	0	0	1700	1590
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				383		5				428
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		352.3			293.1			58.8			315.8	
Travel Time (s)		25.4			21.1			4.2			22.7	
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
Heavy Vehicles (%)	9%	12%	0%	0%	5%	3%	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	186	480	5	5	715	383	5	5	5	207	5	428
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	485	0	0	720	383	0	15	0	0	212	428
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	1		1	1	1	1	1		1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	8.0	4.0		8.0	4.0	6.1	8.0	4.0		8.0	4.0	6.1
Trailing Detector (m)	2.0	2.0		0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0
Detector 1 Position(m)	2.0	2.0		0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0
Detector 1 Size(m)	6.0	2.0		8.0	2.0	4.1	8.0	2.0		8.0	2.0	4.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Free	Perm	NA		Split	NA	Perm
Protected Phases	7	4			8			2		6	6	
Permitted Phases	4			8		Free	2					6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	12.0
Minimum Split (s)	11.0	22.0		22.0	22.0		17.5	17.5		17.5	17.5	17.5

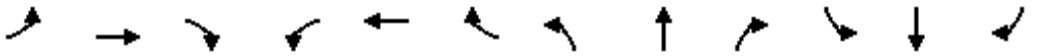
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	11.0	54.0		43.0	43.0		18.4	18.4		17.6	17.6	17.6
Total Split (%)	12.2%	60.0%		47.8%	47.8%		20.4%	20.4%		19.6%	19.6%	19.6%
Maximum Green (s)	7.0	47.0		36.0	36.0		12.9	12.9		12.1	12.1	12.1
Yellow Time (s)	3.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	2.0		2.0	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
Total Lost Time (s)	4.0	7.0			7.0			5.5			5.5	5.5
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	3.5
Recall Mode	None	None		None	None		None	None		None	None	None
Act Effct Green (s)	50.4	47.4			36.3	75.1		12.1			12.2	12.2
Actuated g/C Ratio	0.67	0.63			0.48	1.00		0.16			0.16	0.16
v/c Ratio	0.64	0.46			0.84	0.25		0.05			0.77	0.69
Control Delay	19.1	10.2			29.4	0.4		25.2			52.0	10.5
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay	19.1	10.2			29.4	0.4		25.2			52.0	10.5
LOS	B	B			C	A		C			D	B
Approach Delay		12.7			19.4			25.2			24.2	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	6.9	26.8			75.8	0.0		1.1			27.4	0.0
Queue Length 95th (m)	#35.5	79.9			#194.9	0.0		6.9			#76.4	27.3
Internal Link Dist (m)		328.3			269.1			34.8			291.8	
Turn Bay Length (m)	195.0					145.0						
Base Capacity (vph)	291	1052			858	1544		312			276	616
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	0.46			0.84	0.25		0.05			0.77	0.69

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 75.1			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 18.8		Intersection LOS: B	
Intersection Capacity Utilization 96.3%		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: 55: Highway 7 & 32 Street



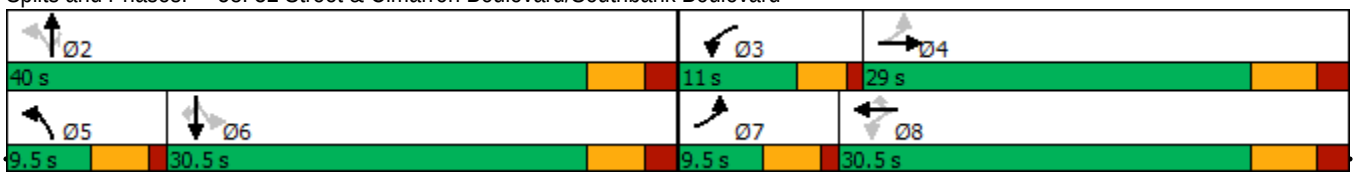


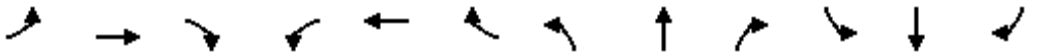
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	171	68	52	243	154	42	434	68	111	487	215
Future Volume (vph)	117	171	68	52	243	154	42	434	68	111	487	215
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Storage Length (m)	70.0		30.0	70.0		35.0	65.0		40.0	70.0		35.0
Storage Lanes	0		0	1		1	1		1	1		1
Taper Length (m)	30.0			30.0			35.0			30.0		
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.971				0.850			0.850			0.850
Flt Protected		0.984		0.950			0.950			0.950		
Satd. Flow (prot)	0	3302	0	1742	3554	1574	1742	3231	1559	1777	3417	1559
Flt Permitted		0.765		0.432			0.327			0.489		
Satd. Flow (perm)	0	2567	0	792	3554	1574	600	3231	1559	915	3417	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39				162			102			226
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		250.0			228.7			315.8			299.7	
Travel Time (s)		18.0			16.5			22.7			21.6	
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
Heavy Vehicles (%)	4%	0%	8%	2%	0%	1%	2%	10%	2%	0%	4%	2%
Adj. Flow (vph)	123	180	72	55	256	162	44	457	72	117	513	226
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	375	0	55	256	162	44	457	72	117	513	226
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	8.0	4.0		8.0	4.0	6.1	8.0	4.0	6.1	8.0	4.0	6.1
Trailing Detector (m)	0.0	2.0		2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Detector 1 Position(m)	0.0	2.0		2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Detector 1 Size(m)	8.0	2.0		6.0	2.0	4.1	8.0	2.0	6.1	6.0	2.0	4.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	15.0		7.0	15.0	15.0	5.0	12.0	12.0	12.0	12.0	12.0
Minimum Split (s)	9.5	29.0		11.0	29.0	29.0	9.5	28.5	28.5	28.5	28.5	28.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	9.5	29.0		11.0	30.5	30.5	9.5	40.0	40.0	30.5	30.5	30.5
Total Split (%)	11.9%	36.3%		13.8%	38.1%	38.1%	11.9%	50.0%	50.0%	38.1%	38.1%	38.1%
Maximum Green (s)	5.0	23.0		7.0	24.5	24.5	5.0	34.5	34.5	25.0	25.0	25.0
Yellow Time (s)	3.5	4.0		3.0	4.0	4.0	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	1.0	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	0.0	0.0	0.0
Total Lost Time (s)		6.0		4.0	6.0	6.0	4.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		2.5	4.0	4.0	3.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None		None	None	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		16.0			16.0	16.0		16.0	16.0	16.0	16.0	16.0
Pedestrian Calls (#/hr)		0			0	0		0	0	0	0	0
Act Effct Green (s)		17.8		25.4	23.2	23.2	24.3	23.2	23.2	18.5	18.5	18.5
Actuated g/C Ratio		0.30		0.43	0.39	0.39	0.41	0.39	0.39	0.31	0.31	0.31
v/c Ratio		0.47		0.12	0.18	0.23	0.12	0.36	0.11	0.41	0.48	0.35
Control Delay		20.8		12.8	13.4	3.8	12.1	13.6	1.9	24.4	19.8	4.9
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		20.8		12.8	13.4	3.8	12.1	13.6	1.9	24.4	19.8	4.9
LOS		C		B	B	A	B	B	A	C	B	A
Approach Delay		20.8			10.0			12.0			16.5	
Approach LOS		C			B			B			B	
Queue Length 50th (m)		19.4		3.9	10.4	0.0	2.9	18.6	0.0	11.6	27.5	0.0
Queue Length 95th (m)		34.9		10.7	19.6	10.2	8.7	32.5	3.9	27.9	45.2	14.0
Internal Link Dist (m)		226.0			204.7			291.8			275.7	
Turn Bay Length (m)				70.0		35.0	65.0		40.0	70.0		35.0
Base Capacity (vph)		1117		464	1741	853	353	2157	1074	424	1585	844
Starvation Cap Reductn		0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.34		0.12	0.15	0.19	0.12	0.21	0.07	0.28	0.32	0.27

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 59			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 14.7		Intersection LOS: B	
Intersection Capacity Utilization 66.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 58: 32 Street & Cimarron Boulevard/Southbank Boulevard



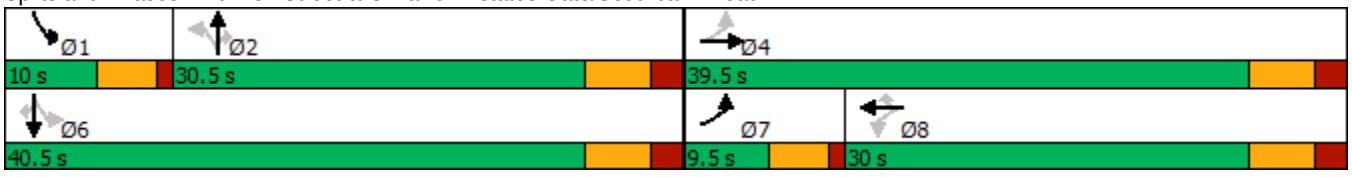


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	18	13	77	21	68	18	623	64	54	723	18
Future Volume (vph)	13	18	13	77	21	68	18	623	64	54	723	18
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Storage Length (m)	0.0		0.0	0.0		45.0	65.0		35.0	95.0		35.0
Storage Lanes	0		0	0		1	1		1	1		1
Taper Length (m)	2.5			2.5			35.0			35.0		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.955				0.850			0.850			0.850
Flt Protected		0.985			0.962		0.950			0.950		
Satd. Flow (prot)	0	3278	0	0	3352	1559	1742	3484	1559	1742	3484	1559
Flt Permitted		0.840			0.759		0.363			0.346		
Satd. Flow (perm)	0	2795	0	0	2645	1559	666	3484	1559	635	3484	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				164			164			102
Link Speed (k/h)		30			50			50			50	
Link Distance (m)		258.6			224.9			299.7			1173.6	
Travel Time (s)		31.0			16.2			21.6			84.5	
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
Adj. Flow (vph)	14	19	14	81	22	72	19	656	67	57	761	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	103	72	19	656	67	57	761	19
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	8.0	4.0		8.0	4.0	6.1	8.0	4.0	6.1	8.0	4.0	6.1
Trailing Detector (m)	0.0	2.0		0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Detector 1 Position(m)	0.0	2.0		0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Detector 1 Size(m)	8.0	2.0		8.0	2.0	4.1	6.0	2.0	4.1	6.0	2.0	4.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	7	4		8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	20.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.5	34.0		30.0	30.0	30.0	27.0	27.0	27.0	9.5	29.0	29.0
Total Split (s)	9.5	39.5		30.0	30.0	30.0	30.5	30.5	30.5	10.0	40.5	40.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	11.9%	49.4%		37.5%	37.5%	37.5%	38.1%	38.1%	38.1%	12.5%	50.6%	50.6%
Maximum Green (s)	5.0	33.5		24.0	24.0	24.0	24.5	24.5	24.5	5.5	34.5	34.5
Yellow Time (s)	3.5	4.0		4.0	4.0	4.0	4.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	4.5	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	5.0	5.0	5.0	3.0	5.0	5.0
Recall Mode	None	None		None	None	None	Max	Max	Max	None	Max	Max
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0		17.0	17.0	17.0	14.0	14.0	14.0		16.0	16.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0	0		0	0
Act Effct Green (s)		10.0			10.0	10.0	33.4	33.4	33.4	39.7	39.4	39.4
Actuated g/C Ratio		0.18			0.18	0.18	0.59	0.59	0.59	0.70	0.69	0.69
v/c Ratio		0.09			0.22	0.18	0.05	0.32	0.07	0.10	0.32	0.02
Control Delay		15.8			21.6	0.9	9.9	9.6	0.1	4.3	5.3	0.1
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		15.8			21.6	0.9	9.9	9.6	0.1	4.3	5.3	0.1
LOS		B			C	A	A	A	A	A	A	A
Approach Delay		15.8			13.1			8.7			5.1	
Approach LOS		B			B			A			A	
Queue Length 50th (m)		1.5			4.8	0.0	1.1	23.3	0.0	1.8	17.3	0.0
Queue Length 95th (m)		5.1			10.3	0.1	4.2	34.7	0.0	4.7	25.3	0.0
Internal Link Dist (m)		234.6			200.9			275.7			1149.6	
Turn Bay Length (m)						45.0	65.0		35.0	95.0		35.0
Base Capacity (vph)		1651			1116	752	390	2042	981	549	2412	1110
Starvation Cap Reductn		0			0	0	0	0	0	0	0	0
Spillback Cap Reductn		0			0	0	0	0	0	0	0	0
Storage Cap Reductn		0			0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.03			0.09	0.10	0.05	0.32	0.07	0.10	0.32	0.02

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 56.9			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 7.7		Intersection LOS: A	
Intersection Capacity Utilization 63.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 61: 32 Street & Cimarron Estates Gate/Southbank Road

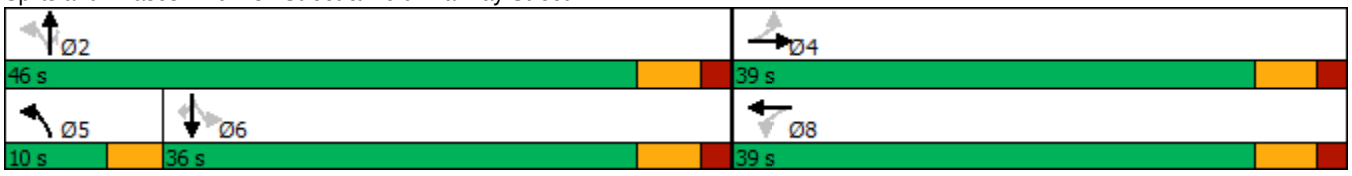


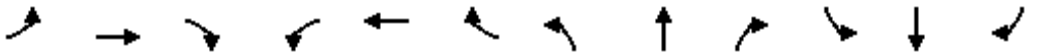
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	26	24	177	58	23	67	558	80	11	594	16
Future Volume (vph)	10	26	24	177	58	23	67	558	80	11	594	16
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Storage Length (m)	0.0		0.0	0.0		0.0	70.0		45.0	70.0		35.0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (m)	2.5			2.5			25.0			30.0		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.940			0.987				0.850			0.850
Flt Protected		0.991			0.967		0.950			0.950		
Satd. Flow (prot)	0	3246	0	0	3326	0	1742	3484	1559	1742	3484	1559
Flt Permitted		0.869			0.759		0.367			0.431		
Satd. Flow (perm)	0	2846	0	0	2610	0	673	3484	1559	790	3484	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			14				84			83
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		270.7			183.5			1173.6			372.6	
Travel Time (s)		19.5			13.2			84.5			26.8	
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)	11	27	25	186	61	24	71	587	84	12	625	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	0	0	271	0	71	587	84	12	625	17
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	8.0	4.0		8.0	4.0		8.0	4.0	6.1	8.0	4.0	6.1
Trailing Detector (m)	0.0	2.0		0.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Detector 1 Position(m)	0.0	2.0		0.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Detector 1 Size(m)	8.0	2.0		8.0	2.0		6.0	2.0	4.1	6.0	2.0	4.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	20.0	20.0	10.0	10.0	10.0
Minimum Split (s)	39.0	39.0		39.0	39.0		9.5	33.0	33.0	33.0	33.0	33.0
Total Split (s)	39.0	39.0		39.0	39.0		10.0	46.0	46.0	36.0	36.0	36.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	45.9%	45.9%		45.9%	45.9%		11.8%	54.1%	54.1%	42.4%	42.4%	42.4%
Maximum Green (s)	33.0	33.0		33.0	33.0		6.5	40.0	40.0	30.0	30.0	30.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	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	0.0
Total Lost Time (s)		6.0			6.0		3.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0	4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	26.0	26.0		26.0	26.0			20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)	0	0		0	0			0	0	0	0	0
Act Effct Green (s)		11.9			11.9		43.5	41.0	41.0	35.1	35.1	35.1
Actuated g/C Ratio		0.18			0.18		0.67	0.63	0.63	0.54	0.54	0.54
v/c Ratio		0.12			0.55		0.13	0.27	0.08	0.03	0.33	0.02
Control Delay		15.1			27.1		4.7	6.0	1.8	10.4	10.3	0.1
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		15.1			27.1		4.7	6.0	1.8	10.4	10.3	0.1
LOS		B			C		A	A	A	B	B	A
Approach Delay		15.1			27.1			5.4			10.1	
Approach LOS		B			C			A			B	
Queue Length 50th (m)		2.0			14.5		2.3	13.6	0.0	0.7	22.8	0.0
Queue Length 95th (m)		6.2			24.7		6.7	24.1	4.3	3.4	37.8	0.0
Internal Link Dist (m)		246.7			159.5			1149.6			348.6	
Turn Bay Length (m)							70.0		45.0	70.0		35.0
Base Capacity (vph)		1460			1334		558	2201	1016	427	1885	881
Starvation Cap Reductn		0			0		0	0	0	0	0	0
Spillback Cap Reductn		0			0		0	0	0	0	0	0
Storage Cap Reductn		0			0		0	0	0	0	0	0
Reduced v/c Ratio		0.04			0.20		0.13	0.27	0.08	0.03	0.33	0.02

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 64.9			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 56.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 67: 32 Street & North Railway Street



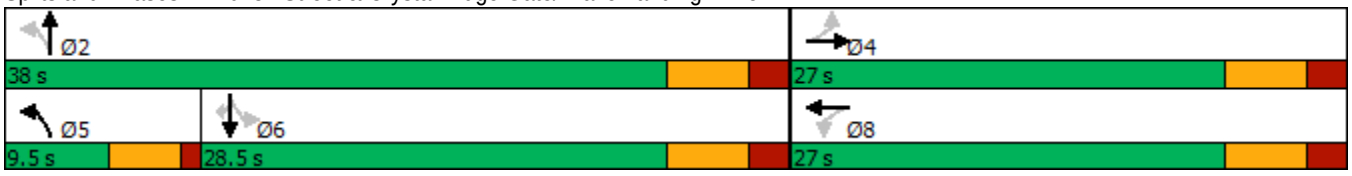


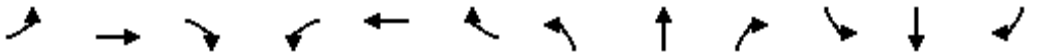
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	5	17	43	7	54	19	559	44	54	631	37
Future Volume (vph)	13	5	17	43	7	54	19	559	44	54	631	37
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Storage Length (m)	0.0		5.0	0.0		5.0	25.0		0.0	75.0		35.0
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (m)	2.5			2.5			5.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.934			0.929			0.989				0.850
Flt Protected		0.981			0.980		0.950			0.950		
Satd. Flow (prot)	0	1680	0	0	1670	0	1742	3446	0	1742	3484	1559
Flt Permitted		0.873			0.849		0.354			0.411		
Satd. Flow (perm)	0	1495	0	0	1446	0	649	3446	0	754	3484	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			57			17				126
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		226.5			280.0			742.0			568.0	
Travel Time (s)		16.3			20.2			53.4			40.9	
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)	14	5	18	45	7	57	20	588	46	57	664	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	109	0	20	634	0	57	664	39
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	8.0	4.0		8.0	4.0		8.0	4.0		8.0	4.0	6.1
Trailing Detector (m)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	2.0
Detector 1 Position(m)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	2.0
Detector 1 Size(m)	8.0	2.0		8.0	2.0		6.0	2.0		6.0	2.0	4.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	20.0		20.0	20.0	20.0
Minimum Split (s)	27.0	27.0		27.0	27.0		9.5	26.0		26.0	26.0	26.0
Total Split (s)	27.0	27.0		27.0	27.0		9.5	38.0		28.5	28.5	28.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	41.5%	41.5%		41.5%	41.5%		14.6%	58.5%		43.8%	43.8%	43.8%
Maximum Green (s)	21.0	21.0		21.0	21.0		5.0	32.0		22.5	22.5	22.5
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	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)		6.0			6.0		4.5	6.0		6.0	6.0	6.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.0		5.0	5.0	5.0
Recall Mode	None	None		None	None		None	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0			12.0		12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	0
Act Effct Green (s)		10.3			10.3		40.0	39.8		37.8	37.8	37.8
Actuated g/C Ratio		0.18			0.18		0.70	0.69		0.66	0.66	0.66
v/c Ratio		0.13			0.36		0.04	0.26		0.11	0.29	0.04
Control Delay		13.7			14.9		4.2	5.0		8.2	7.1	0.1
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		13.7			14.9		4.2	5.0		8.2	7.1	0.1
LOS		B			B		A	A		A	A	A
Approach Delay		13.7			14.9			5.0			6.8	
Approach LOS		B			B			A			A	
Queue Length 50th (m)		1.6			4.6		0.6	13.4		2.1	14.5	0.0
Queue Length 95th (m)		7.5			15.1		2.4	21.2		9.7	35.8	0.0
Internal Link Dist (m)		202.5			256.0			718.0			544.0	
Turn Bay Length (m)							25.0			75.0		35.0
Base Capacity (vph)		563			569		548	2394		496	2295	1070
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		0.07			0.19		0.04	0.26		0.11	0.29	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 57.4			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 6.8		Intersection LOS: A	
Intersection Capacity Utilization 57.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 70: 32 Street & Crystal Ridge Gate/Drake Landing Drive



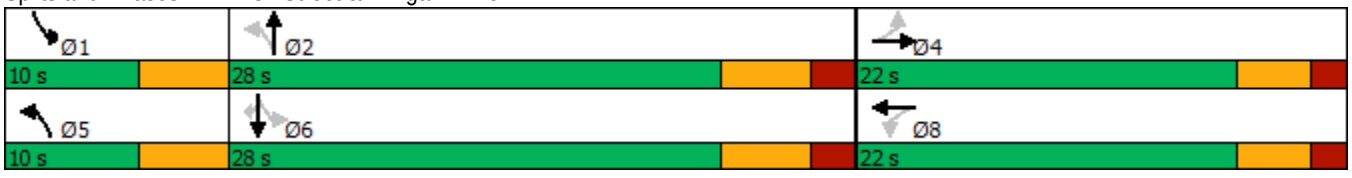


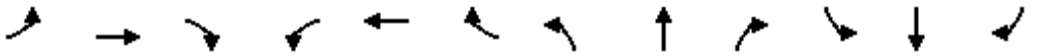
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	118	105	38	180	125	77	500	49	100	579	146
Future Volume (vph)	121	118	105	38	180	125	77	500	49	100	579	146
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	65.0		25.0
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (m)	2.5			2.5			5.0			35.0		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.954			0.945			0.987				0.850
Flt Protected		0.983			0.994		0.950			0.950		
Satd. Flow (prot)	0	3268	0	0	3273	0	1742	3439	0	1742	3484	1559
Flt Permitted		0.732			0.869		0.421			0.406		
Satd. Flow (perm)	0	2433	0	0	2861	0	772	3439	0	745	3484	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		111			132			20				154
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		216.0			184.0			568.0			548.7	
Travel Time (s)		15.6			13.2			40.9			39.5	
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
Adj. Flow (vph)	127	124	111	40	189	132	81	526	52	105	609	154
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	362	0	0	361	0	81	578	0	105	609	154
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	8.0	4.0		8.0	4.0		8.0	4.0		8.0	4.0	6.1
Trailing Detector (m)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	2.0
Detector 1 Position(m)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	2.0
Detector 1 Size(m)	8.0	2.0		8.0	2.0		6.0	2.0		6.0	2.0	4.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		6.0	20.0		6.0	20.0	20.0
Minimum Split (s)	22.0	22.0		22.0	22.0		10.0	28.0		10.0	28.0	28.0
Total Split (s)	22.0	22.0		22.0	22.0		10.0	28.0		10.0	28.0	28.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	36.7%	36.7%		36.7%	36.7%		16.7%	46.7%		16.7%	46.7%	46.7%
Maximum Green (s)	17.0	17.0		17.0	17.0		6.0	22.0		6.0	22.0	22.0
Yellow Time (s)	3.3	3.3		3.3	3.3		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.7	1.7		1.7	1.7		0.0	2.0		0.0	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)		5.0			5.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.0		3.0	5.0	5.0
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0			15.0			15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)		11.9			11.9		28.9	22.2		29.7	24.2	24.2
Actuated g/C Ratio		0.22			0.22		0.55	0.42		0.56	0.46	0.46
v/c Ratio		0.57			0.48		0.15	0.40		0.20	0.38	0.19
Control Delay		16.8			13.9		5.6	12.4		5.9	11.9	3.4
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		16.8			13.9		5.6	12.4		5.9	11.9	3.4
LOS		B			B		A	B		A	B	A
Approach Delay		16.8			13.9			11.6			9.6	
Approach LOS		B			B			B			A	
Queue Length 50th (m)		11.5			10.2		2.5	19.1		3.3	21.1	0.0
Queue Length 95th (m)		22.0			19.8		8.0	34.8		9.8	37.8	9.2
Internal Link Dist (m)		192.0			160.0			544.0			524.7	
Turn Bay Length (m)							25.0			65.0		25.0
Base Capacity (vph)		865			1018		532	1457		531	1596	797
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		0.42			0.35		0.15	0.40		0.20	0.38	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 52.9			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 12.0		Intersection LOS: B	
Intersection Capacity Utilization 59.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 74: 32 Street & Milligan Drive





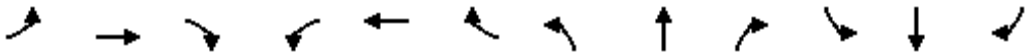
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	7	23	10	6	32	52	676	18	38	792	155
Future Volume (vph)	97	7	23	10	6	32	52	676	18	38	792	155
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	70.0		35.0
Storage Lanes	0		1	0		0	1		0	1		1
Taper Length (m)	2.5			2.5			5.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.910			0.996				0.850
Flt Protected		0.955			0.989		0.950			0.950		
Satd. Flow (prot)	0	1751	1559	0	1650	0	1742	3470	0	1742	3484	1559
Flt Permitted		0.703			0.903		0.293			0.372		
Satd. Flow (perm)	0	1289	1559	0	1507	0	537	3470	0	682	3484	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			117		34			4				163
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		286.6			301.4			548.7			1100.6	
Travel Time (s)		20.6			21.7			39.5			79.2	
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)	102	7	24	11	6	34	55	712	19	40	834	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	109	24	0	51	0	55	731	0	40	834	163
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	8.0	4.0	6.1	8.0	4.0		8.0	4.0		8.0	4.0	6.1
Trailing Detector (m)	0.0	2.0	0.0	0.0	2.0		2.0	2.0		2.0	2.0	2.0
Detector 1 Position(m)	0.0	2.0	0.0	0.0	2.0		2.0	2.0		2.0	2.0	2.0
Detector 1 Size(m)	8.0	2.0	6.1	8.0	2.0		6.0	2.0		6.0	2.0	4.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	27.0	27.0	27.0	27.0	27.0		9.5	26.0		9.5	29.0	29.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0		10.0	33.5		9.5	33.0	33.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	38.6%	38.6%	38.6%	38.6%	38.6%		14.3%	47.9%		13.6%	47.1%	47.1%
Maximum Green (s)	21.0	21.0	21.0	21.0	21.0		5.5	27.5		5.0	27.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0		6.0		4.5	6.0		4.5	6.0	6.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.0		3.0	5.0	5.0
Recall Mode	None	None	None	None	None		None	Max		None	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	14.0			13.0			16.0	16.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	0
Act Effct Green (s)		11.5	11.5		11.5		37.9	35.8		36.5	33.6	33.6
Actuated g/C Ratio		0.20	0.20		0.20		0.66	0.62		0.63	0.58	0.58
v/c Ratio		0.43	0.06		0.16		0.12	0.34		0.08	0.41	0.17
Control Delay		27.0	0.3		12.0		5.3	9.2		5.2	11.2	2.8
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		27.0	0.3		12.0		5.3	9.2		5.2	11.2	2.8
LOS		C	A		B		A	A		A	B	A
Approach Delay		22.2			12.0			8.9			9.6	
Approach LOS		C			B			A			A	
Queue Length 50th (m)		10.8	0.0		1.6		1.8	16.5		1.3	31.9	0.0
Queue Length 95th (m)		23.3	0.0		8.8		5.9	44.8		4.7	53.7	9.0
Internal Link Dist (m)		262.6			277.4			524.7			1076.6	
Turn Bay Length (m)							25.0			70.0		35.0
Base Capacity (vph)		474	647		575		469	2156		525	2034	978
Starvation Cap Reductn		0	0		0		0	0		0	0	0
Spillback Cap Reductn		0	0		0		0	0		0	0	0
Storage Cap Reductn		0	0		0		0	0		0	0	0
Reduced v/c Ratio		0.23	0.04		0.09		0.12	0.34		0.08	0.41	0.17

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 57.6			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 77: 32 Street & Crystal Shores Road/Crystal Green Way

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	642	326	250	1181	32	242	54	160	5	114	5
Future Volume (vph)	5	642	326	250	1181	32	242	54	160	5	114	5
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Storage Length (m)	0.0		20.0	30.0		0.0	0.0		0.0	20.0		0.0
Storage Lanes	0		1	1		0	1		0	0		0
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996			0.888			0.995	
Flt Protected				0.950			0.950				0.998	
Satd. Flow (prot)	0	3484	1559	1742	3470	0	1742	1628	0	0	1821	0
Flt Permitted		0.943		0.170			0.568				0.989	
Satd. Flow (perm)	0	3286	1559	312	3470	0	1042	1628	0	0	1805	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			230		5			168			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1651.2			276.6			1100.6			189.1	
Travel Time (s)		118.9			19.9			79.2			13.6	
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)	5	676	343	263	1243	34	255	57	168	5	120	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	681	343	263	1277	0	255	225	0	0	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	8.0	4.0	6.1	8.0	4.0		8.0	4.0		8.0	4.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	8.0	4.0	6.1	8.0	4.0		8.0	4.0		8.0	4.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		0.0			0.0			0.0			0.0	
Detector 2 Size(m)		0.0			0.0			0.0			0.0	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		4		3	8		5	2			6	
Permitted Phases	4		4	8			2			6		

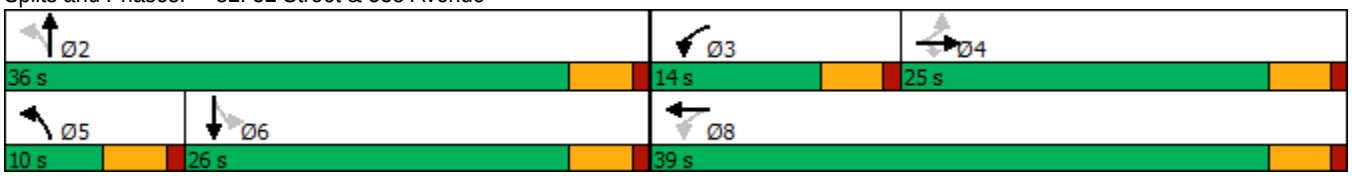


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	25.0	25.0	25.0	14.0	39.0		10.0	36.0		26.0	26.0	
Total Split (%)	33.3%	33.3%	33.3%	18.7%	52.0%		13.3%	48.0%		34.7%	34.7%	
Maximum Green (s)	20.5	20.5	20.5	9.5	34.5		5.5	31.5		21.5	21.5	
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	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.5	4.5	4.5	4.5		4.5	4.5			4.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
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	3.0	
Recall Mode	None	None	None	None	None		None	Max		Max	Max	
Walk Time (s)	7.0	7.0	7.0		7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0		0			0		0	0	
Act Effct Green (s)		18.9	18.9	33.0	33.0		31.5	31.5			21.5	
Actuated g/C Ratio		0.26	0.26	0.45	0.45		0.43	0.43			0.29	
v/c Ratio		0.80	0.60	0.81	0.82		0.51	0.28			0.25	
Control Delay		33.9	13.0	35.8	22.9		19.2	5.4			21.4	
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay		33.9	13.0	35.8	22.9		19.2	5.4			21.4	
LOS		C	B	D	C		B	A			C	
Approach Delay		26.9			25.1			12.7			21.4	
Approach LOS		C			C			B			C	
Queue Length 50th (m)		46.3	12.5	22.6	77.2		23.7	4.7			13.7	
Queue Length 95th (m)		64.7	36.3	#56.4	102.9		40.2	16.9			26.6	
Internal Link Dist (m)		1627.2			252.6			1076.6			165.1	
Turn Bay Length (m)			20.0	30.0								
Base Capacity (vph)		917	601	324	1632		499	794			530	
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	0.57	0.81	0.78		0.51	0.28			0.25	

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 73.5
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 23.6 Intersection LOS: C
Intersection Capacity Utilization 84.6% 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: 82: 32 Street & 338 Avenue



Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	5	9	5	5	16	10	576	5	12	609	71
Future Vol, veh/h	30	5	9	5	5	16	10	576	5	12	609	71
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	-	-	-	-	-	-	70
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	5	9	5	5	17	11	606	5	13	641	75

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	995	1300	321	980	1298	306	641	0	0	611	0	0
Stage 1	667	667	-	631	631	-	-	-	-	-	-	-
Stage 2	328	633	-	349	667	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	199	160	675	204	160	690	939	-	-	964	-	-
Stage 1	414	455	-	436	473	-	-	-	-	-	-	-
Stage 2	659	472	-	640	455	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	183	153	675	190	153	690	939	-	-	964	-	-
Mov Cap-2 Maneuver	183	153	-	190	153	-	-	-	-	-	-	-
Stage 1	407	445	-	428	464	-	-	-	-	-	-	-
Stage 2	624	464	-	609	445	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.7	16.9	0.2	0.2
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	939	-	-	180	388	176	468	964	-	-
HCM Lane V/C Ratio	0.011	-	-	0.19	0.031	0.045	0.042	0.013	-	-
HCM Control Delay (s)	8.9	0.1	-	29.6	14.6	26.4	13	8.8	0.1	-
HCM Lane LOS	A	A	-	D	B	D	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.1	0.1	0.1	0	-	-