TRANSPORTATION PLANNERS AND ENGINEERS

Ascension – Additional Analysis

Transportation Impact Assessment Addendum

Final V1

Prepared for

Highfield Land Management

Date

March 3, 2023

Project Number

02-23-0005

CORPORATE AUTHORIZATION

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Date: 2023-03-03
Project #: 02-23-0005
Status: Final V1

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1. EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) is an addendum to the 2021 Ascension TIA Update[1] completed by Bunt & Associates for Highfield Land Management. That 2021 TIA itself was an update to the original 2017 Ascension TIA[2], also completed by Bunt & Associates.

The Ascension site is located in the southwest corner of the intersection of Highway 1A & 12 Mile Coulee Road, and is comprised of single and multi-family residential, seniors' residential, retail, and office uses.

The purpose of the TIA Addendum was to provide additional analysis as requested by the City of Calgary and Alberta Transportation regarding the intersection configurations of Highway 1A & 12 Mile Coulee Road and Tusslewood Drive/Blueridge Rise & 12 Mile Coulee Road.

It is important to note that the assumed density on site and the site traffic generation remains unchanged from the 2021 TIA Update.

Various at-grade intersection options were reviewed and compared for the Highway 1A/12 Mile Coulee Road intersection using CAP-X software, a standard industry tool intended to provide high-level comparisons of various intersection configurations.

Study findings from the additional analysis are identified in **Table 1.1**.

[1] *Ascension Transportation Impact Assessment Update*, Bunt & Associates Engineering Ltd., May 2021.
[2] *Ascension Transportation Impact Assessment*, Bunt & Associates Engineering Ltd., July 2017.

Table 1.1: Findings & Recommendations

SECTION		FINDINGS
Highway 1A/Crowchild Trail & 12 Mile Coulee Road	Typical Signalized Configuration	In order to operate within typical capacity parameters as an at-grade signalized intersection in 2028, improvements would need to include six through lanes on Highway 1A, triple southbound left turn lanes and triple westbound left turn lanes. By 2039 and 2048, the intersection would be expected to operate at capacity even if eight through lanes were provided, together with the triple southbound and triple westbound left turn lanes noted for the 2028 horizon. A typical at-grade signalized intersection is therefore neither feasible nor desirable for this location.
	Partial Continuous Flow Intersection (CFI)	In all 2028, 2039, and 2048 horizons, certain individual movements at the three intersections involved in the Partial CFI would be expected to operate at capacity, but overall intersection performance would be expected to remain within acceptable operating parameters. The Partial CFI therefore represents the best at-grade improvement option for the subject intersections. The configuration is shown here in **Figure 1.1** and is repeated as **Figure 3.1** later in the report.
Tusslewood Drive/Blueridge Rise & 12 Mile Coulee Rd	Roundabout Options	Three roundabout options were assessed, and all are expected to operate within acceptable capacity limits at all of the 2028, 2039, and 2048 After Development horizons. Option 2, as shown in **Figure 1.2** below represents the best option from a capacity standpoint. **Figure 1.2** is repeated as **Figure 4.2** later in the report.
Highway 1A	Weaving	All weaving movements are expected to operate within acceptable parameters for westbound Highway 1A between Stoney Trail and 12 Mile Coulee Road with the CFI implementation.

Figure 1.1: Partial Continuous Flow Intersection Proposed Design

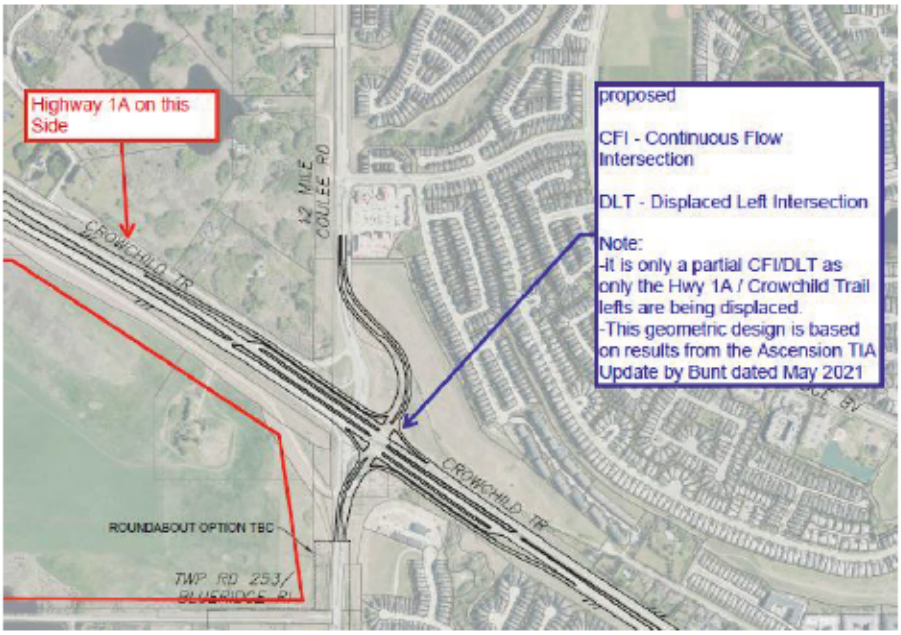
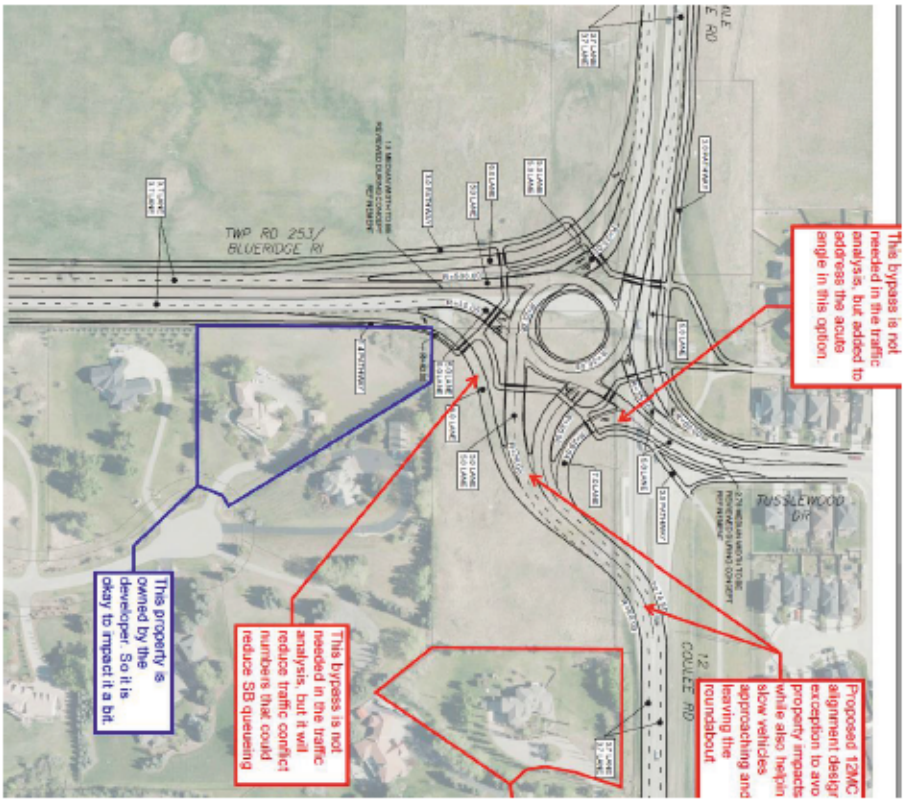


Figure 1.2: Tusslewood Drive/Blueridge Rise Roundabout – Option 2



2. SCOPE OF WORK

Based on discussions with Rocky View County (RVC), the City of Calgary (City), and Alberta Transportation and Economic Corridors (TEC), the scope of work for the additional analysis was confirmed to include the following:

City of Calgary Forecasting Data

- *Forecasts* – Obtain select link forecasts and turning volumes movements at the study intersections for the 2039 and 2048 horizons from the City's Regional Transportation Model. Forecasts are attached in **Appendix A**.

Highway 1A & 12 Mile Coulee Road intersection

- *At-Grade Intersection* – Review laning improvements for an at-grade signalized intersection in Synchro. Improvements will include triple left turn lanes and 3 or 4 through lanes per direction on Highway 1A/Crowchild Trail. This will be done primarily using Synchro software but supporting work in 2028 will be assessed using Vissim software for comparison.
- *Intersection Configuration Options* – Review different possible intersection configuration options, assisted by CAP-X software as developed by the Florida Department of Transportation, to justify the selection of a partial Continuous Flow Intersection.
- *Continuous Flow Intersection (CFI)* – Review the partial CFI configuration using Synchro for the design horizons of 2028, 2039, and 2048.

Tusslewood Drive/Blueridge Rise & 12 Mile Coulee Road intersection(s)

- *Intersection Capacity* – Review different roundabout configurations for the intersections using SIDRA software and discuss possible queueing issues.

Westbound Highway 1A/Crowchild Trail

- *Weaving Analysis* – Using HCS software, conduct weaving analysis along westbound Highway 1A between Stoney Trail and 12 Mile Coulee Road assuming the CFI is in place.

3. HIGHWAY 1A & 12 MILE COULEE ROAD INTERSECTION

3.1 At-Grade Intersection Improvements

As noted in the 2021 TIA Update, the intersection will operate at capacity in the 2028 Background horizon. While improvements are required as a result of background traffic growth prior to the development of the site, this analysis focussed solely on the After Development horizons. Possible mitigation measures to be made to the at-grade intersection include exclusive triple left turn lanes and additional core through lanes on Highway 1A.

All analysis in this TIA addendum follows the same guidelines and methodologies described in Section 4.4 of the 2021 TIA Update. Once again, volume to capacity (v/c) ratio results are not available through Vissim and are instead provided through Synchro. Synchro and Vissim output reports are provided in **Appendix B** and **Appendix C**, respectively.

3.1.1 At-Grade Intersection Improvements Analysis – 2028

The 2028 After Development analysis for the Highway 1A & 12 Mile Coulee Road intersection is summarized in **Table 3.1** for the existing intersection configuration and in **Table 3.2** for the improved intersection with six through lanes on Highway 1A and triple westbound left turn lanes and triple southbound left turn lanes. The analysis is based on the volumes illustrated in **Exhibit 3.1**.

Table 3.1: 2028 After Development Intersection Analysis – At-grade – Existing configuration

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
12 Mile Coulee Road & Highway 1A *(Signalized)* *Synchro*	EBL	2	0.28	E	66	15	1.17	F	173	67
	EBT	2	1.24	F	151	376	1.09	F	99	254
	EBR	1	0.08	A	1	0	0.16	A	1	0
	WBL	2	1.34	F	217	116	1.33	F	198	234
	WBT	2	0.57	C	33	137	1.05	E	75	343
	WBR	1	0.15	A	1	0	0.49	A	1	0
	NBL	1	0.69	E	74	59	0.78	E	75	88
	NBT	2	0.36	D	44	39	0.39	D	46	47
	NBR	1	0.60	A	2	0	0.41	A	1	0
	SBL	2	1.33	F	206	173	0.92	F	97	73
	SBT	2	0.20	D	40	26	0.72	E	63	73
	SBR	1	0.07	A	1	0	0.14	A	1	0
	Overall		-	F	95.1	-	-	E	76.5	-
12 Mile Coulee Road & Highway 1A *(Signalized)* *Vissim*	EBL	2	-	E	62	30	-	F	178	171
	EBT	2	-	D	46	290	-	D	49	209
	EBR	1	-	A	1	0	-	A	1	0
	WBL	2	-	F	226	411	-	F	110	510
	WBT	2	-	D	39	403	-	D	37	510
	WBR	1	-	A	1	0	-	A	1	<5
	NBL	1	-	E	69	125	-	E	68	122
	NBT	2	-	D	40	57	-	D	42	62
	NBR	1	-	A	1	<5	-	A	1	<5
	SBL	2	-	F	100	441	-	E	80	91
	SBT	2	-	D	36	40	-	E	47	74
	SBR	1	-	A	1	0	-	A	1	0
	Overall		-	D	52.0	-	-	D	46.4	-

Table 3.2: 2028 After Development Intersection Analysis – At-grade – 6 lane Hwy 1A and triple lefts

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
12 Mile Coulee Road & Highway 1A *(Signalized)* *Synchro*	EBL	2	0.28	E	66	15	0.71	E	75	50
	EBT	3	0.87	D	44	209	0.87	E	56	139
	EBR	1	0.08	A	1	0	0.17	A	1	0
	WBL	3	0.92	F	85	68	0.87	E	61	120
	WBT	3	0.40	C	29	85	0.84	D	42	185
	WBR	1	0.15	A	1	0	0.51	A	1	0
	NBL	1	0.69	E	74	59	0.81	E	79	101
	NBT	2	0.36	D	44	39	0.37	D	44	48
	NBR	1	0.60	A	2	0	0.43	A	1	0
	SBL	3	0.92	E	73	99	0.79	F	80	47
	SBT	2	0.20	D	40	26	0.72	E	62	74
	SBR	1	0.07	A	1	0	0.15	A	1	0
	Overall		-	D	38.0	-	-	D	40.2	-
12 Mile Coulee Road & Highway 1A *(Signalized)* *Vissim*	EBL	2	-	E	65	28	-	E	65	51
	EBT	3	-	D	47	175	-	D	49	123
	EBR	1	-	A	1	0	-	A	1	<5
	WBL	3	-	E	69	77	-	D	55	123
	WBT	3	-	D	36	92	-	D	39	149
	WBR	1	-	A	1	<5	-	A	1	<5
	NBL	1	-	E	65	114	-	E	68	110
	NBT	2	-	D	38	51	-	D	39	54
	NBR	1	-	A	1	<5	-	A	1	<5
	SBL	3	-	E	62	93	-	E	69	53
	SBT	2	-	C	32	34	-	D	45	82
	SBR	1	-	A	1	0	-	A	1	0
	Overall		-	D	36.7	-	-	D	35.6	-

From the above analysis results, it is noted that the existing intersection configuration requires multiple improvements. To remain an at-grade signalized intersection, Highway 1A would need to be widened to six through lanes and triple left turn lanes would need to be constructed for both the southbound and westbound left turn movements. Comparing the Synchro and Vissim results, the two software outputs differ slightly with the existing configuration. This was expected given the nature of both software when assessing intersection at levels that are mathematically beyond operational capacity levels. The improved intersection configuration will operate with LOS D for both peak hours and all v/c ratios will be less than 1.00. For this analysis, it can be seen that the Synchro and Vissim results are quite comparable.

3.1.2 At-Grade Intersection Improvements Analysis – 2039

The 2039 After Development analysis for the Highway 1A & 12 Mile Coulee Road intersection is summarized in **Table 3.3** and is based on the volumes illustrated in **Exhibit 3.2**. To maintain acceptable operating conditions for an at-grade signalized intersection configuration in 2039, eight through lanes would be required on Highway 1A, in addition to the triple southbound and triple westbound left turn lanes noted previously in the 2028 horizon.

Table 3.3: 2039 After Development Intersection Analysis – At-grade – 8 lane Hwy 1A and triple lefts

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(Signalized)* *Synchro*	EBL	2	0.48	E	66	28	1.09	F	151	64
	EBT	4	1.24	F	146	335	1.06	F	90	185
	EBR	1	0.13	A	1	0	0.20	A	1	0
	WBL	3	1.25	F	172	114	1.38	F	216	228
	WBT	4	0.44	C	33	85	1.05	E	75	279
	WBR	1	0.18	A	1	0	0.69	A	3	0
	NBL	1	0.76	E	75	75	0.82	E	73	105
	NBT	2	0.42	D	41	46	0.36	D	38	51
	NBR	1	0.78	A	4	0	0.53	A	1	0
	SBL	3	1.24	F	166	122	1.18	F	164	71
	SBT	2	0.29	D	43	31	0.79	E	65	89
	SBR	1	0.07	A	1	0	0.19	A	1	0
	Overall		-	F	91.0	-	-	F	81.4	-
12 Mile Coulee Road & Highway 1A *(Signalized)* *Vissim*	EBL	2	-	E	72	37	-	F	94	74
	EBT	4	-	D	46	209	-	D	54	129
	EBR	1	-	A	1	0	-	A	1	<5
	WBL	3	-	F	168	233	-	F	94	510
	WBT	4	-	D	39	73	-	D	54	129
	WBR	1	-	A	1	<5	-	A	4	<5
	NBL	1	-	E	73	210	-	E	63	122
	NBT	2	-	D	36	222	-	C	33	64
	NBR	1	-	A	2	<5	-	A	1	<5
	SBL	3	-	F	142	462	-	F	100	88
	SBT	2	-	D	38	48	-	D	47	84
	SBR	1	-	A	1	0	-	A	1	0
	Overall		-	D	53.1	-	-	D	43.9	-

In this analysis, Highway 1A was widened to eight through lanes for the 2039 horizon, while maintaining the triple left turn lanes for the southbound and westbound movements. Even with all mitigation measures put in place, the intersection will have many movements operating at capacity. The numeric differences in the Synchro and Vissim outputs are again significant, which continues to highlight the challenges of assessing traffic volumes during at-capacity conditions. However, both software outputs identify the same basic conclusion. That is, if an at-grade signalized configuration is developed for 2039, then the intersection can be expected to operate at-capacity even with eight through lanes on Highway 1A and with triple westbound and southbound left turn lanes included.

3.1.3 At-Grade Intersection Improvements Analysis – 2048

While it is acknowledged that an at-grade signalized intersection option would likely not be in place at this location in the 2048 horizon, analysis was nonetheless performed for the 2048 horizon with eight lanes on Highway 1A and triple westbound and southbound left turn lanes. The 2048 After Development analysis for the Highway 1A & 12 Mile Coulee Road intersection is summarized in Error! Reference source not found. and is based on the volumes illustrated in **Exhibit 3.3**.

Table 3.4: 2048 After Development Intersection Analysis – At-grade – 8 lane Hwy 1A and triple lefts

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(Signalized)* *Synchro*	EBL	2	0.52	E	67	30	1.02	F	137	56
	EBT	4	1.27	F	162	347	1.18	F	134	204
	EBR	1	0.14	A	1	0	0.19	A	1	0
	WBL	3	1.38	F	225	128	1.49	F	264	239
	WBT	4	0.49	C	34	96	1.23	F	146	332
	WBR	1	0.22	A	1	0	0.64	A	2	0
	NBL	1	0.78	E	76	79	0.87	E	78	125
	NBT	2	0.43	D	41	48	0.30	D	36	46
	NBR	1	0.74	A	4	0	0.57	A	2	0
	SBL	3	1.24	F	168	122	1.19	F	170	68
	SBT	2	0.32	D	44	35	0.84	E	70	98
	SBR	1	0.06	A	1	0	0.23	A	1	0
	Overall		-	F	101.3	-	-	F	115.7	-
12 Mile Coulee Road & Highway 1A *(Signalized)* *Vissim*	EBL	2	-	E	74	42	-	E	79	67
	EBT	4	-	D	46	237	-	D	54	137
	EBR	1	-	A	1	0	-	A	1	<5
	WBL	3	-	F	244	563	-	F	95	510
	WBT	4	-	D	38	83	-	D	40	510
	WBR	1	-	A	1	<5	-	A	3	<5
	NBL	1	-	E	71	103	-	E	64	149
	NBT	2	-	D	37	101	-	C	34	73
	NBR	1	-	A	2	<5	-	A	1	<5
	SBL	3	-	F	168	414	-	F	94	77
	SBT	2	-	D	38	55	-	D	49	114
	SBR	1	-	A	1	0	-	A	1	0
	Overall		-	E	60.2	-	-	D	43.2	-

With eight through lanes and triple left turns for the southbound and westbound left movements, the intersection would be expected to operate with multiple movements at-capacity. It is recommended that a different intersection type be constructed at this location well before the 2048 horizon. Again, both Vissim and Synchro produced similar findings, but as the intersection is operating at-capacity, the two software produce different outputs respective to detailing delay and queues.

3.1.4 At-Grade Intersection Improvements Summary

The analysis completed for the at-grade intersection option identified the following conclusions:

- By the 2028 After Development horizon, triple westbound and southbound left turn lanes, as well as six through lanes on Highway 1A would be required in order for the at-grade intersection to operate with an overall LOS D in both peak hours.
- In the 2039 After Development horizon, the intersection would be expected to operate at-capacity even with the inclusion of eight through lanes on Highway 1A and triple westbound and southbound left turn lanes. Multiple movements will operate at capacity.
- The 2039 conditions would deteriorate further by 2048 as no additional improvements are feasible beyond those identified and included in the 2039 analysis.

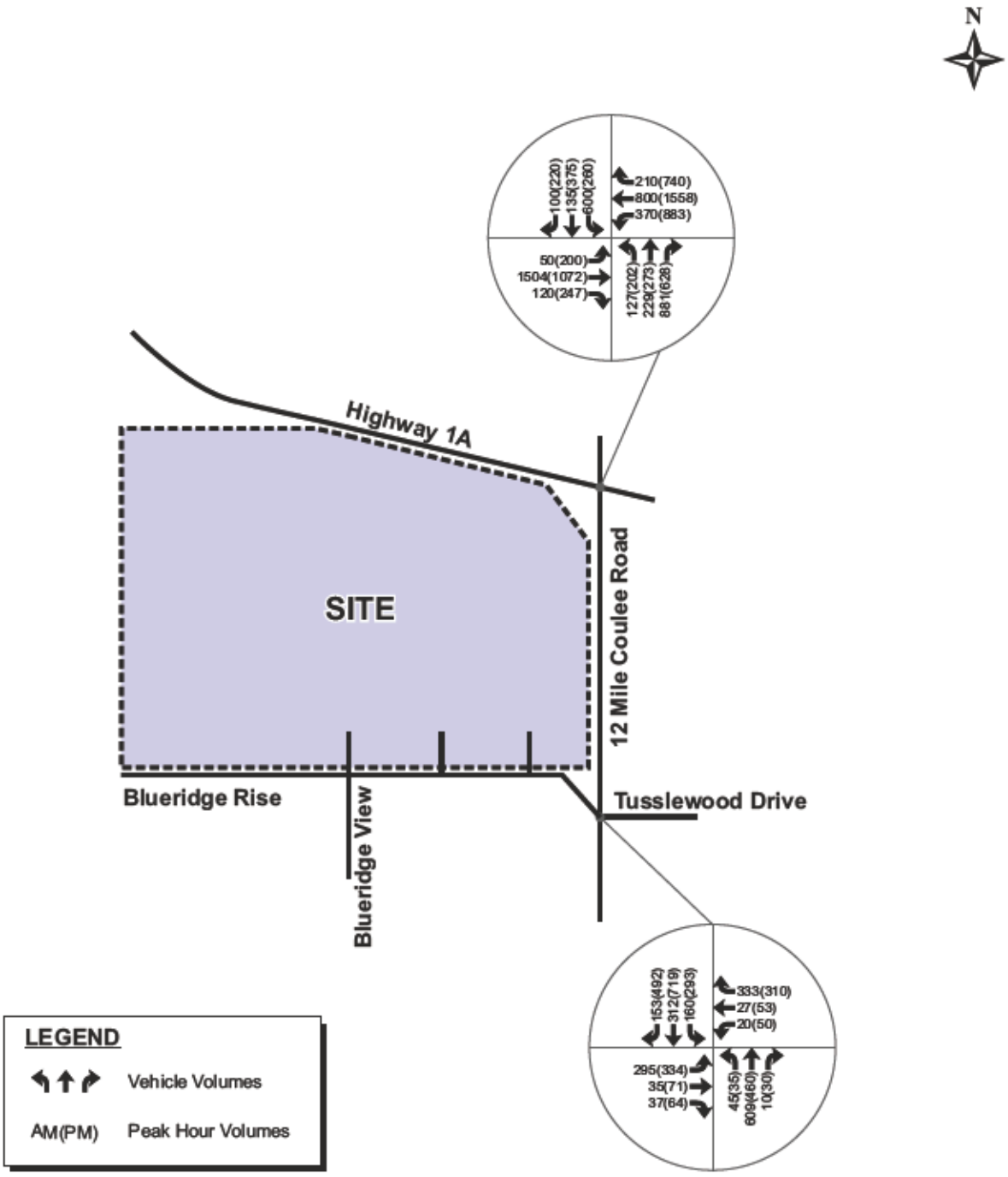


Exhibit 3.1

2028 After Development Traffic Volumes

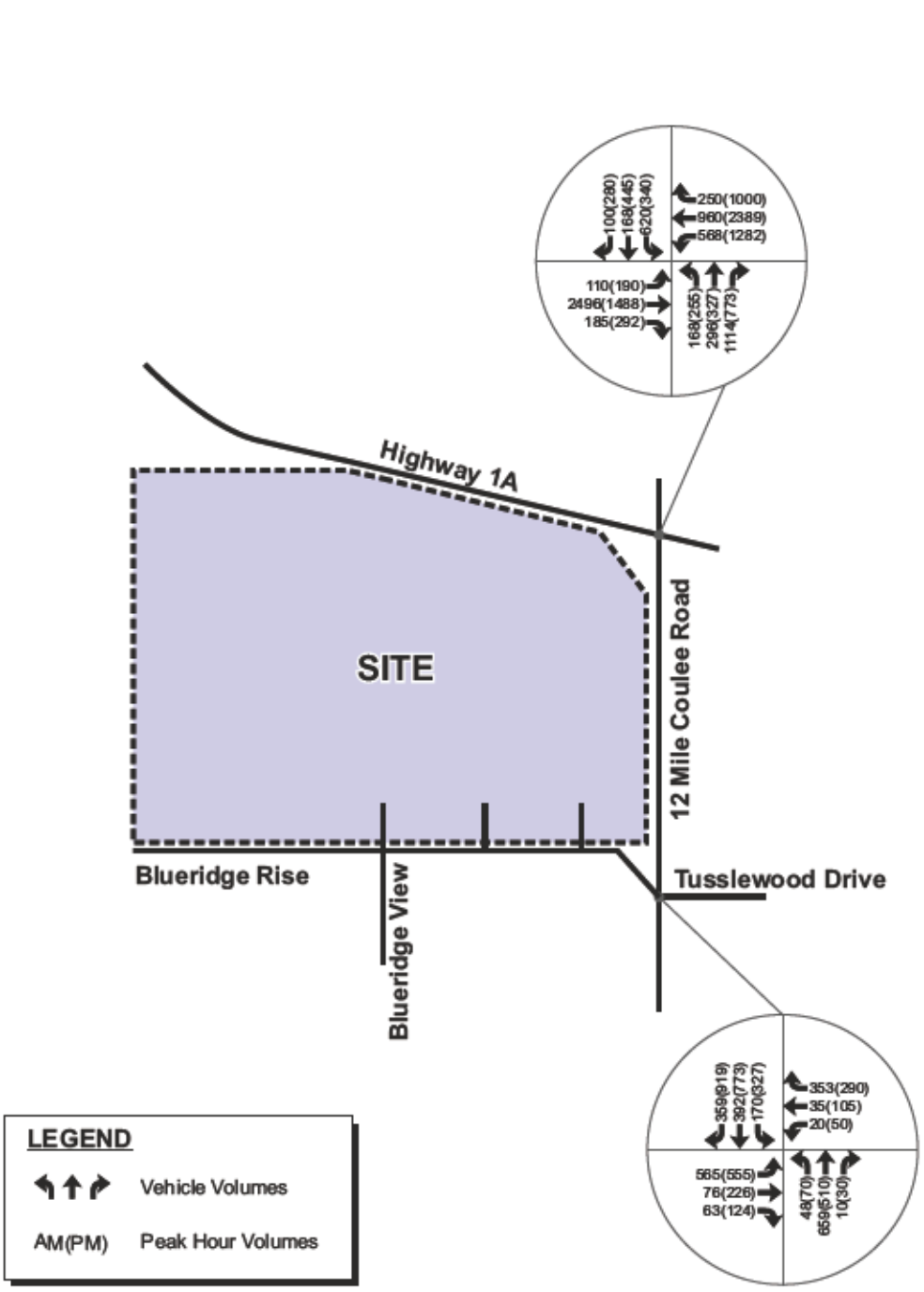


Exhibit 3.2

2039 After Development Traffic Volumes

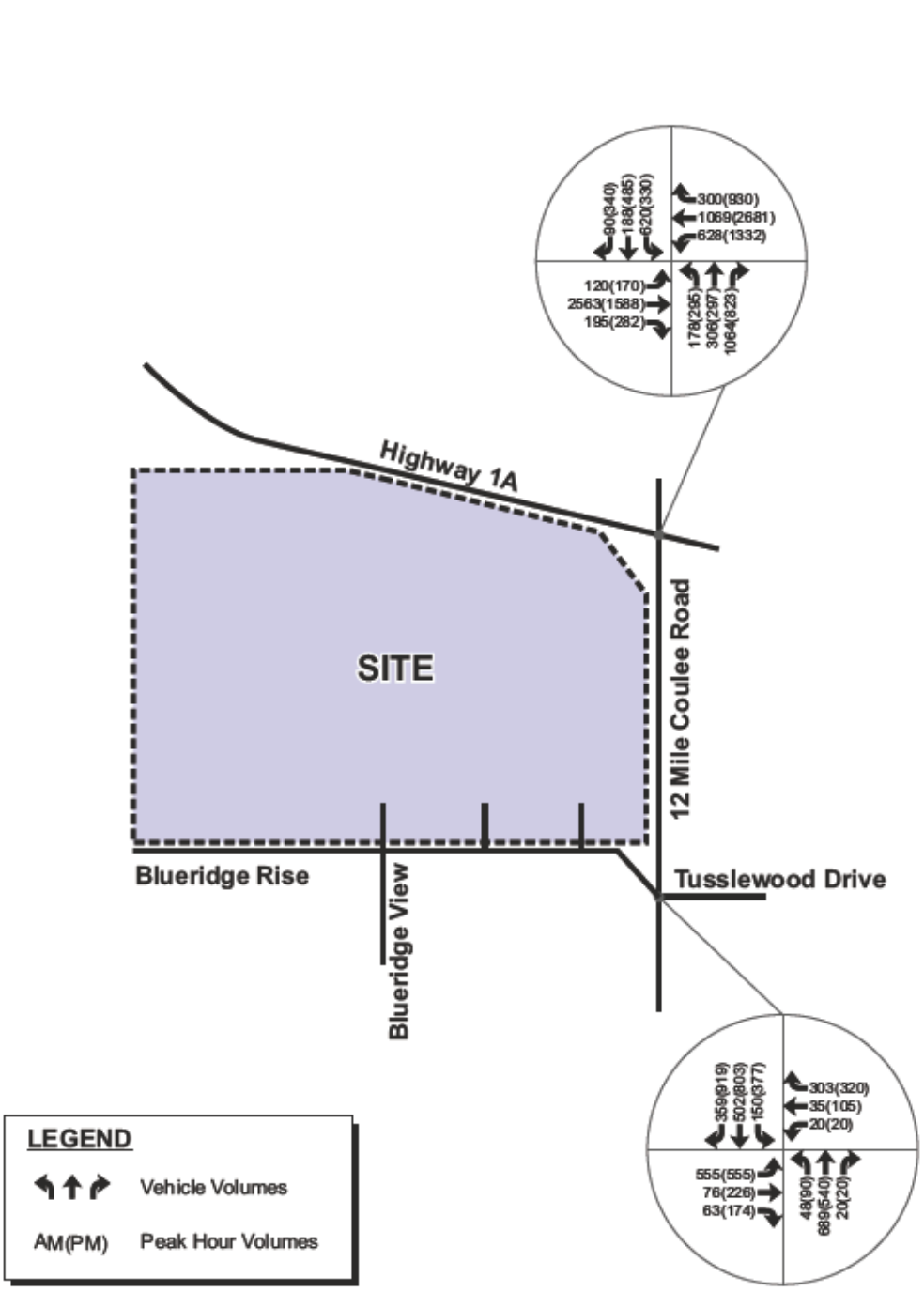


Exhibit 3.3

2048 After Development Traffic Volumes

3.2 Intersection Configuration Options

As established in Section 3.1, Highway 1A & 12 Mile Coulee Road will require substantial at-grade changes to the intersection to continue to operate within acceptable capacity limits at future horizons. It is therefore necessary to review other possible options for intersection configurations in order to establish realistic options for improvement. Using the Capacity Analysis at Junctions (CAP-X) software, as developed by the Florida Department of Transportation (FDOT), multiple different intersection and interchange options were able to be compared. CAP-X results do not provide an accurate value to represent the performance of each option but rather they serve as a comparison tool to rank the options that have been considered. Further analysis is required to view the expected effectiveness of an intersection. Once compared, the best option was then selected for further, more detailed analysis using Synchro software.

It is noted that the v/c ratios calculated by CAP-X represent a baseline analysis calculated solely on number of lanes and volumes. Through further analysis with Synchro and Vissim (as seen in the sections below) further optimization of laning and signal timings is possible and therefore the overall performance of the intersections can be improved to provide more capacity to the intersection than estimated by CAP-X.

The configurations assessed in this analysis are listed below:

- Partial Cloverleaf A and B Interchanges
- Diamond and Diverging Diamond Interchanges
- Displaced Left Turn Interchange
- Single Point Urban Interchange
- Traffic Signal
- Quadrant Roadway SW, NE, SE, and NW
- Partial Displaced Left (Partial CFI)
- Displaced Left (same as a Continuous Flow Intersection, or CFI)
- Signalized Restricted Crossing U-Turn
- Unsignalized Restricted Crossing U-Turn
- Median U-Turn
- Partial Median U-Turn
- Bowtie
- Signalized Thru-Cut
- Unsignalized Thru-Cut

The CAP-X results for each scenario at each horizon year are outlined in **Appendix D**. The full displaced left turn intersection (CFI) has displaced left turns on all legs, whereas the partial displaced left turn (partial CFI) has displaced left turns on two opposing legs. Geometrically, the location analyzed in this report does not have adequate space for a full displaced left turn. A partial displaced left turn, or CFI, with displaced left turns on the east and west legs was therefore assessed.

The CAP-X analysis confirmed that the partial cloverleaf interchange configuration would be expected to operate with the lowest v/c ratio in all horizons. The diamond interchange configuration provided the second lowest v/c ratio in all but the 2048 PM horizon. In the 2048 PM horizon a full displaced left turn and partial displaced left turn were found to operate with lower v/c ratios.

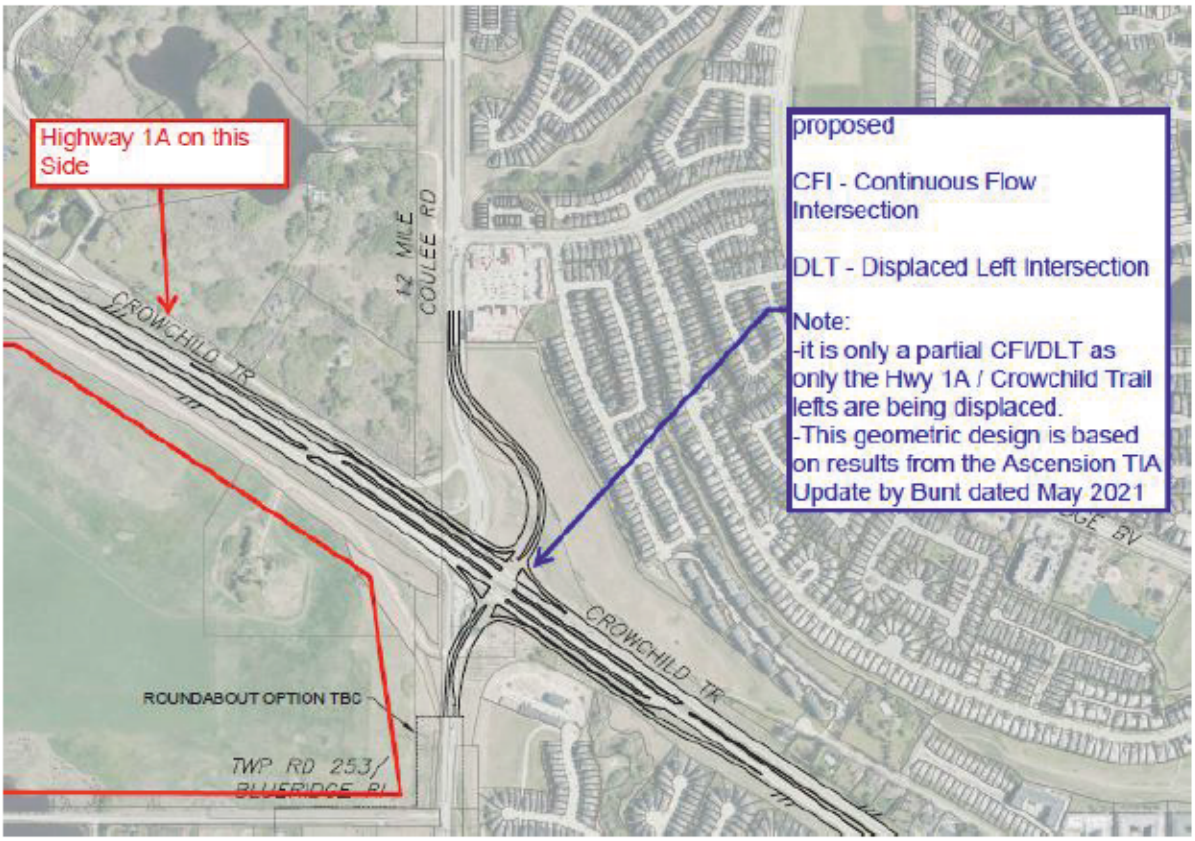
The single at-grade signalized option was evaluated with triple left turns for the westbound and southbound and six through lanes on Highway 1A in the 2028 horizon. By the 2039 horizon, it was evaluated with eight through lanes on Highway 1A. The CFI continued to operate with a lower v/c ratio than the signal in each horizon, according to CAP-X.

Other alternatives, notably a quadrant roadway (similar to a jughandle), performed equal or better than the CFI in certain time horizons. The quadrant roadways performed better in the 2039 and 2048 AM horizons however, by the 2039 and 2048 PM horizons, the CFI was found to continually maintained a v/c below 1.00 while the quadrant began to fail with a v/c much higher than 1.00. Despite better performance in some horizons, quadrant roadways were ruled out as they would not remain within the available right of way.

The CFI will remain within the existing right of way of the intersection to a greater degree than alternatives and can be built at a much lower cost than full interchange options. The higher v/c ratios seen in certain horizons can also be further optimized with modified laning and adjusted signal timings. Therefore, the CFI is the recommended design option for this intersection, and was the only configuration further assessed with Synchro in the balance of the analysis outlined in this report.

The CFI conceptual design proposed by ISL is shown below in **Figure 3.1.**

Figure 3.1: Partial Continuous Flow Intersection Proposed Design



3.3 Continuous Flow Intersection Analysis

The CFI was selected as the best intersection configuration option in the mid-term as it generally remains within the existing right-of-way and provides better service for the high intersection left turn volumes. The CAP-X results also concluded that the CFI was the best feasible non-interchange option. The 2017 and 2021 Ascension TIAs have also considered the CFI as the best mid-term option. For the extent of this report "CFI" refers to a continuous flow intersection with displaced left turns on the east and west legs.

The previous TIAs had also analyzed the CFI using Vissim software. The results of the previous analysis are as follows:

- The CFI is expected to operate within acceptable capacity conditions at the 2028 After Development horizon with two through lanes in each direction on Highway 1A.
- In the 2039 After Development horizon, the CFI is expected to operate within acceptable capacity conditions with three through lanes per direction on Highway 1A.

Additional CFI analysis was required to account for the newly added 2048 horizon and to provide further validation of the previous Vissim analysis results. All Synchro output reports are included in **Appendix B**.

Various signal timing options were analyzed to gain a full understanding of the feasibility of the CFI arrangement. Note that the synchro analysis represents the worst-case scenario where the pedestrian phase is running. In reality, this intersection has very low pedestrian volumes and it is likely that the pedestrian phase will not be actuated. It is expected that a full signal cycle with no pedestrian phase would provide better performance than what is shown in many of the results in this report. Full Synchro results and tables can be seen in **Appendix E**. A Summary of the Synchro results in shown below for the following options:

- Full phase pedestrian crossing on east leg
- Full phase pedestrian crossing on west and north leg
- Full phase pedestrian crossing on east leg with triple southbound left laning and split north/south phasing
- Staged pedestrian crossing on east leg
- Staged pedestrian crossing on west and north leg
- Staged pedestrian crossing on east leg with triple southbound left laning and split north/south phasing
- No pedestrian phase included

3.3.1 Synchro CFI Analysis Summary

Based on the analysis completed for the at-grade intersections, the following conclusions have been made:

- By 2028 After Development, the CFI is expected to operate within acceptable capacity limits with four through lanes on Highway 1A and an overall LOS D and a max v/c of 0.98 in the worst case and a maximum v/c of 0.91 in the best case in the AM peak hour. Performance in the PM peak hour was better overall in all scenarios.

- In the 2039 After Development horizon, the intersection is expected to require six through lanes on Highway 1A, and is expected to operate with an overall LOS D and a maximum v/c of 1.07 in the worst case and a maximum v/c of 0.98 in the best case in the AM peak hour. In the PM peak hour, the intersection is expected to operate with an overall LOS of C and a maximum v/c of 1.33 in the worst case and a maximum v/c of 0.93 in the best case. This is a similar conclusion to the Vissim results from the 2021 TIA.
- By the 2048 After Development horizon, the intersection, with triple southbound left turn lanes and six through lanes on Highway 1A, is expected to operate with an overall LOS D and a maximum v/c of 1.10 in the worst case and a maximum v/c of 1.01 in the best case. In the PM peak hour the intersection is expected to operate with an overall LOS of C and a maximum v/c of 1.33 in the worst case and a maximum v/c of 1.03 in the best case.

3.4 At-Grade Intersection Comparison

The following tables summarize and compare the results for all Synchro analysis of the intersection of Twelve Mile Coulee Road and Crowchild Trail for the 2028, 2039 and 2048 horizons. The tables include the analysis of the typical at-grade signalized intersection as well as the analysis of the Continuous Flow Intersection (CFI). The tables only show the analysis results for the main intersection of the CFI, not for the additional east and west intersections. For a more detailed summary of the results, see **Appendix E**.

By the 2039 horizon the typical at grade intersection is expected to operate with a very high v/c (over 1.20) despite the presence of 8 through lanes on Crowchild Trail/Highway 1 and triple southbound and westbound lefts. By Contrast the CFI is expected to operate within, or very close to, acceptable capacity limits for many of the arrangements assessed. The same can be said for the 2048 horizon. Although by 2048 certain movements in the CFI are expected to operate slightly over capacity with v/c ratios exceeding 1.00. Despite the lower performance of certain movements in 2048, all overall intersection results are expected to be below acceptable capacity limits in all arrangements. No intersection operates with a LOS greater than a D. This shows that the CFI is expected to operate better than a typical signalized at-grade intersection and is that the intersection as a whole is expected to continue to operate through the 2048 horizon.

By the 2048 horizon, the westbound left turn queue at the east CFI intersection meets or occasionally marginally exceeds the storage length available. This also occurs in some analysis scenarios at the main intersection. It is noted that this only occurs with the 95th percentile queue which is a very conservative value. This also only occurs in the 2048 horizon, and in one 2039 scenario, when significant congestion is already expected.

Table 3.5: 2028 Synchro Results Summary

ALTERNATIVE	AM PEAK HOUR	PM PEAK HOUR
At Grade Signalized - 6-lane Hwy 1A - Triple SBL & WBL	Highest v/c = 0.92 (WBL) Overall LOS = D Overall Delay =38.0s	Highest v/c = 0.87 (WBL) Overall LOS = D Overall Delay = 40.2s
CFI - East Leg Pedestrian Crossing - Full Crossing	Highest v/c = 0.98 (EBT) Overall LOS = D Overall Delay = 37.2s	Highest v/c = 0.82 (SBT) Overall LOS = C Overall Delay = 24.1s
CFI - West and North Leg Pedestrian Crossing - Full Crossing	Highest v/c = 0.91 (EBT) Overall LOS = C Overall Delay = 30.6s	Highest v/c = 0.82 (SBT) Overall LOS = C Overall Delay = 24.1s
CFI - East Leg Pedestrian Crossing - Full Crossing - Triple SBL - Split N/S phase	Highest v/c = 0.95 (EBT) Overall LOS = C Overall Delay = 31.3s	Highest v/c = 0.92 (WBT) Overall LOS = C Overall Delay = 25.9s
CFI - East Leg Pedestrian Crossing - Staged Crossing	Highest v/c = 0.97 (EBT) Overall LOS = C Overall Delay = 32.2s	Highest v/c = 0.84 (SBL) Overall LOS = C Overall Delay = 20.4s
CFI - West Leg Pedestrian Crossing - Staged Crossing	Highest v/c = 0.94 (SBL) Overall LOS = C Overall Delay = 30.2s	Highest v/c = 0.86 (WBT) Overall LOS = B Overall Delay = 19.4s
CFI - East Leg Pedestrian Crossing - Stage Crossing - Triple SBL - Split N/S phase	Highest v/c = 0.94 (EBT) Overall LOS = C Overall Delay = 33.6s	Highest v/c = 0.92 (WBT) Overall LOS = C Overall Delay = 22.9s
CFI - No Pedestrian Crossing	Highest v/c = 0.94 (SBL) Overall LOS = C Overall Delay = 29.3s	Highest v/c = 0.86 (SBT) Overall LOS = C Overall Delay = 20.4s

Table 3.6: 2039 Synchro Results Summary

ALTERNATIVE	AM PEAK HOUR	PM PEAK HOUR
At Grade Signalized - 8-lane Hwy 1A - Triple SBL & WBL	Highest v/c = 1.25 (WBL) Overall LOS = F Overall Delay = 91.0	Highest v/c = 1.38 (WBL) Overall LOS = F Overall Delay = 81.4
CFI - East Leg Pedestrian Crossing - Full Crossing	Highest v/c = 1.04 (EBT) Overall LOS = D Overall Delay = 41.3s	Highest v/c = 0.96 (SBL) Overall LOS = C Overall Delay = 26.6s
CFI - West and North Leg Pedestrian Crossing - Full Crossing	Highest v/c = 1.07 (EBT) Overall LOS = D Overall Delay = 43.6s	Highest v/c = 0.95 (WBT) Overall LOS = C Overall Delay = 25.9s
CFI - East Leg Pedestrian Crossing - Full Crossing - Triple SBL - Split N/S phase	Highest v/c = 0.98 (EBT) Overall LOS = C Overall Delay = 32.6s	Highest v/c = 1.02 (WBT) Overall LOS = C Overall Delay = 34.6s
CFI - East Leg Pedestrian Crossing - Staged Crossing	Highest v/c = 1.03 (EBT and SBL) Overall LOS = D Overall Delay = 41.3s	Highest v/c = 0.93 (WBT) Overall LOS = C Overall Delay = 32.6s
CFI - West and north leg Pedestrian Crossing - Staged Crossing	Highest v/c = 1.02 (EBT) Overall LOS = D Overall Delay = 40.3s	Highest v/c = 0.93 (WBT) Overall LOS = C Overall Delay = 25.9s
CFI - East Leg Pedestrian Crossing - Staged Crossing - Triple SBL - Split N/S phase	Highest v/c = 1.00 (EBT) Overall LOS = C Overall Delay = 33.8s	Highest v/c = 0.98 (WBT) Overall LOS = C Overall Delay = 30.7s
CFI - No Pedestrian Crossing	Highest v/c = 1.01 (EBT) Overall LOS = D Overall Delay = 39.3s	Highest v/c = 0.93 (WBT) Overall LOS = C Overall Delay =32.6s

Table 3.7: 2048 Synchro Results Summary

ALTERNATIVE	AM PEAK HOUR	PM PEAK HOUR
At-Grade Signalized - 8-lane Hwy 1A - Triple SBL & WBL	Highest v/c = 1.38 (WBL) Overall LOS = F Overall Delay = 101.3	Highest v/c = 1.49 (SBL) Overall LOS = F Overall Delay = 115.7
CFI - East Leg Pedestrian Crossing - Full Crossing	Highest v/c = 1.03 (EBT) Overall LOS = D Overall Delay = 42.2s	Highest v/c = 1.33 (SBL) Overall LOS = D Overall Delay = 42.0s
CFI - West and north Leg Pedestrian Crossing - Full Crossing	Highest v/c = 1.10 (EBT) Overall LOS = D Overall Delay = 48.16s	Highest v/c = 1.08 (WBT) Overall LOS = D Overall Delay = 37.3s
CFI - East Leg Pedestrian Crossing - Full Crossing - Triple SBL - Split N/S phase	Highest v/c = 1.02 (EBT) Overall LOS = D Overall Delay = 37.9s	Highest v/c = 1.09 (WBT) Overall LOS = D Overall Delay = 41.2s
CFI - East Leg Pedestrian Crossing - Staged Crossing	Highest v/c = 1.06 (EBTL) Overall LOS = D Overall Delay = 44.0s	Highest v/c = 1.03 (WBT) Overall LOS = C Overall Delay = 32.6s
CFI - West and North Leg Pedestrian Crossing - Staged Crossing	Highest v/c = 1.05 (NBT) Overall LOS = D Overall Delay = 41.4s	Highest v/c = 1.03 (WBT) Overall LOS = C Overall Delay = 32.2s
CFI - East Leg Pedestrian Crossing - Staged Crossing - Triple SBL - Split N/S phase	Highest v/c = 1.01 (EBT) Overall LOS = D Overall Delay = 35.7s	Highest v/c = 1.09 (WBT) Overall LOS = D Overall Delay = 41.0s
CFI - No Pedestrian Crossing	Highest v/c = 1.03 (EBT) Overall LOS = D Overall Delay = 41.3s	Highest v/c = 1.05 (SBT) Overall LOS = C Overall Delay =29.5s

4. TUSSLEWOOD DRIVE/BLUERIDGE RISE & 12 MILE COULEE ROAD INTERSECTION

Given the proximity of the Tusslewood Drive and Blueridge Rise intersections with 12 Mile Coulee Road, it is proposed that the intersections be combined into either a single roundabout or two closely spaced roundabouts. Roundabout analysis for this intersection was therefore performed using Vissim in the 2021 TIA Update. However, SIDRA 9 software was used for the updated roundabout analysis.

All analysis in the TIA addendum follows the same guidelines and methodologies described in Section 4.4 of the 2021 TIA Update. SIDRA output reports are provided in **Appendix F**.

There are three proposed roundabout options for the intersection(s) drawn by ISL and they are illustrated below in **Figure 4.1** (Option 1), **Figure 4.2** (Option 2), and **Figure 4.3** (Option 3).

Figure 4.1: Tusslewood Drive/Blueridge Rise Roundabout – Option 1

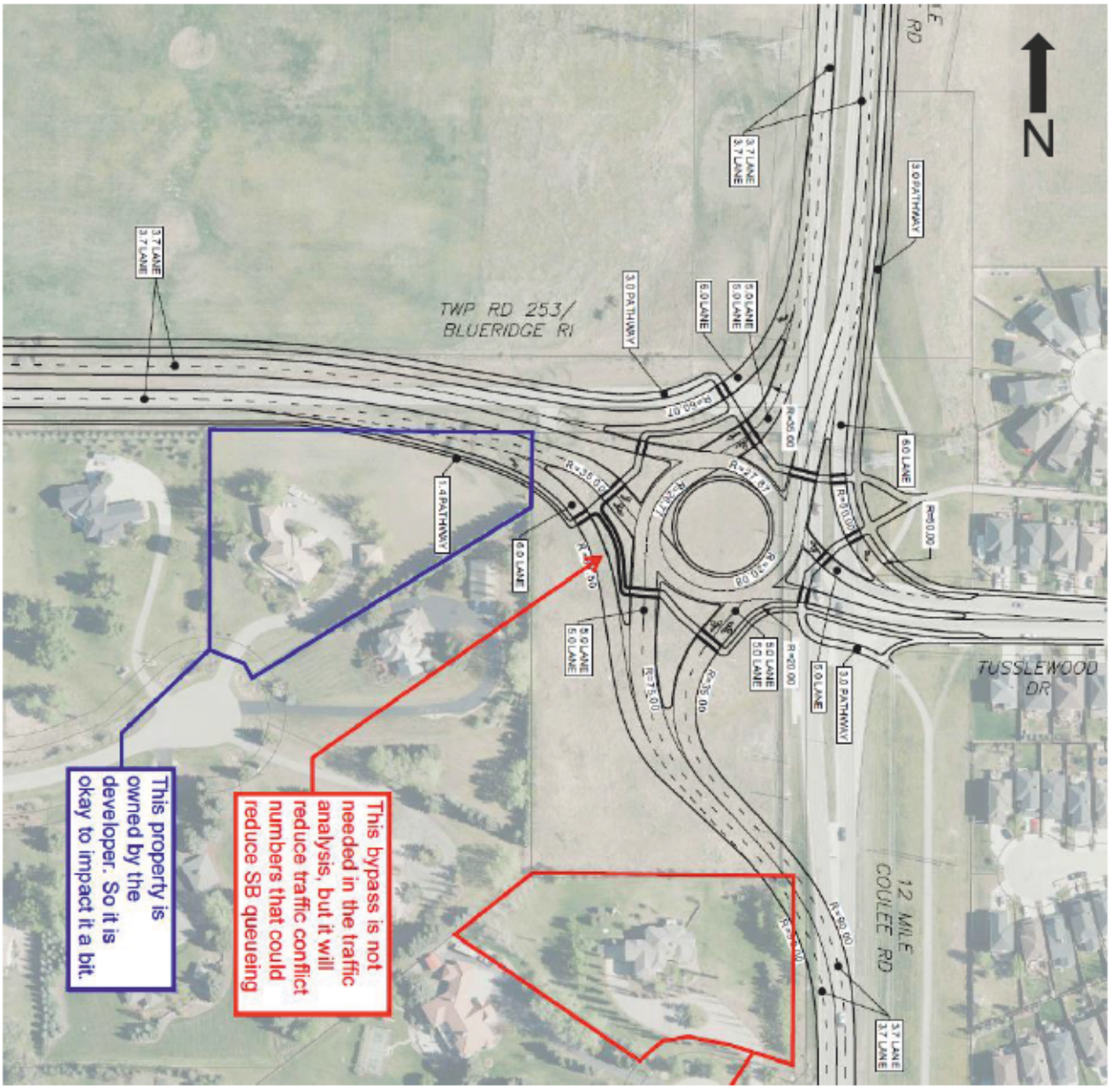


Figure 4.2: Tusslewood Drive/Blueridge Rise Roundabout – Option 2

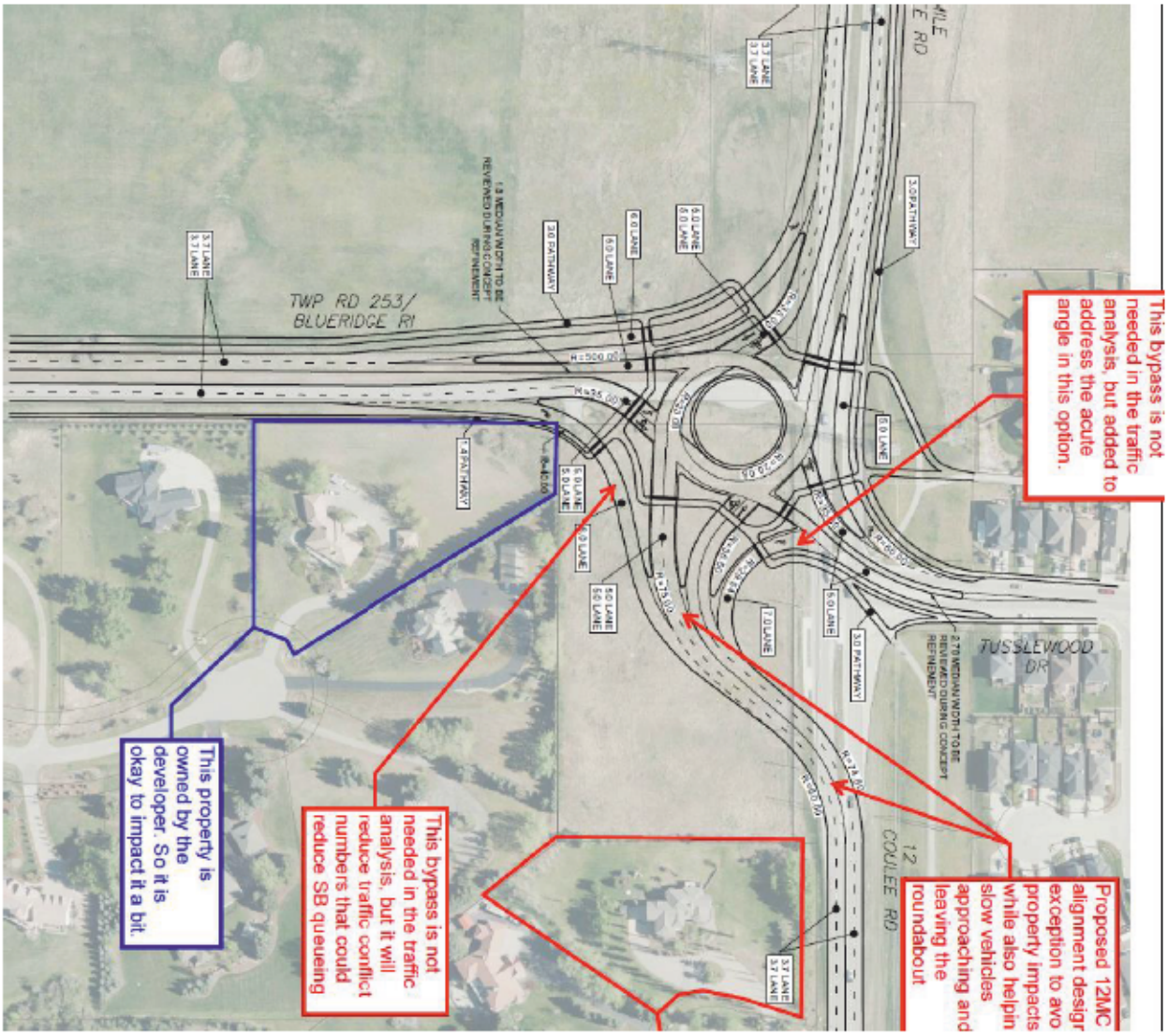
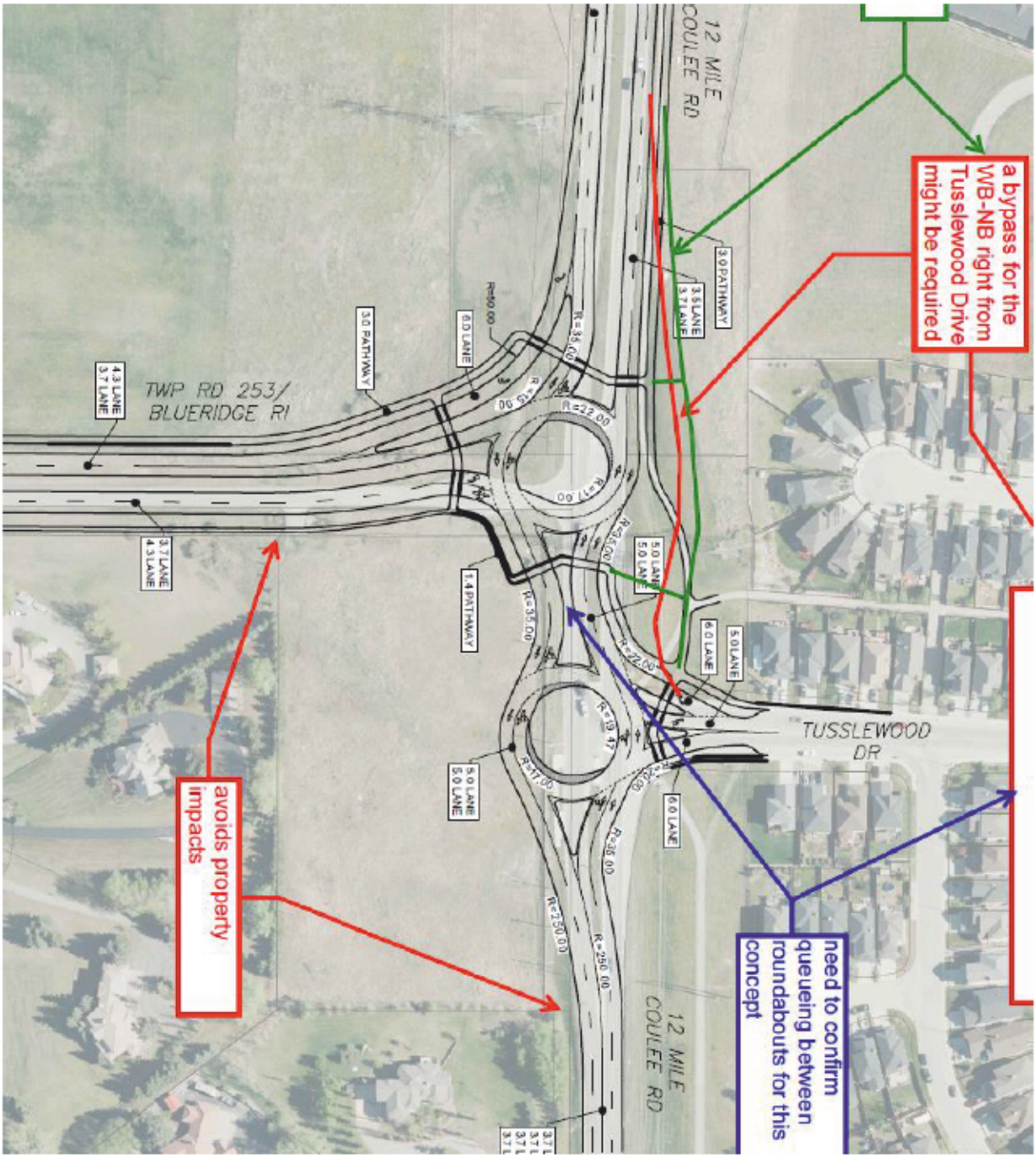


Figure 4.3: Tusslewood Drive/Blueridge Rise Roundabout – Option 3



4.1 Roundabout Intersection Analysis – 2028

2028 After Development analysis for the Tusslewood Drive/Blueridge Rise & 12 Mile Coulee Road intersection is summarized in **Table 4.1** and is based on the volumes illustrated in **Exhibit 3.1**.

Table 4.1: 2028 After Development Intersection Analysis

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
12 Mile Coulee Road & Tusslewood Drive/ Blueridge Rise *(Option 1 – Roundabout)* *SIDRA*	EB	2	0.15	A	10	5	0.24	B	11	10
	WB	2	0.47	A	8	20	0.41	B	8	16
	NB	2	0.38	A	7	15	0.35	A	8	14
	SB	2	0.19	A	6	7	0.42	A	6	21
	Overall		-	*A*	*7.3*	-	-	*A*	*7.3*	-
12 Mile Coulee Road & Tusslewood Drive/ Blueridge Rise *(Option 2 – Roundabout)* *SIDRA*	EB	2	0.15	A	10	5	0.24	B	11	10
	WB	2	0.47	A	8	20	0.41	A	8	16
	NB	2	0.32	A	6	13	0.27	A	7	12
	SB	2	0.19	A	6	7	0.42	A	6	21
	Overall		-	*A*	*7.1*	-	-	*A*	*7.1*	-
12 Mile Coulee Road & Tusslewood Drive/ Blueridge Rise *(Option 3 – N Roundabout)* *SIDRA*	EB	2	0.21	B	11	<5	0.36	B	12	5
	NB	2	0.53	A	5	10	0.47	A	5	8
	SB	2	0.19	A	4	<5	0.41	A	5	10
	Overall		-	*A*	*5.7*	-	-	*A*	*5.9*	-
12 Mile Coulee Road & Tusslewood Drive/ Blueridge Rise *(Option 3 – S Roundabout)* *SIDRA*	WB	2	0.45	A	7	8	0.42	A	7	7
	NB	2	0.29	A	5	5	0.26	A	6	5
	SB	2	0.20	A	5	<5	0.44	A	5	11
	Overall		-	*A*	*5.4*	-	-	*A*	*5.4*	-

All three roundabout configurations are expected to operate within acceptable capacity limits in the 2028 After Development horizon. Option 2 is expected to operate marginally better than Option 1. Meanwhile, Option 3 has the highest individual v/c ratio, but provides flexibility with intersection spacing and alignment, and both of the Option 3 roundabouts have lower overall delay than Options 1 and 2.

4.2 Roundabout Intersection Analysis – 2039

2039 After Development analysis for the Tusslewood Drive/Blueridge Rise & 12 Mile Coulee Road intersection is summarized in **Table 4.2** and is based on the volumes illustrated in **Exhibit 3.2**.

Table 4.2: 2039 After Development Intersection Analysis

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Tusslewood Drive/ Blueridge Rise *(Option 1 – Roundabout)* *SIDRA*	EB	2	0.31	B	10	12	0.50	B	12	28
	WB	2	0.58	B	10	27	0.44	A	9	18
	NB	2	0.51	A	9	25	0.57	B	13	31
	SB	2	0.28	A	6	12	0.76	A	7	68
	Overall		-	*A*	*8.5*	-	-	*A*	*9.1*	-
12 Mile Coulee Road & Tusslewood Drive/ Blueridge Rise *(Option 2 – Roundabout)* *SIDRA*	EB	2	0.31	B	10	12	0.50	B	12	28
	WB	2	0.58	B	11	27	0.44	A	9	18
	NB	2	0.42	A	7	19	0.43	A	10	23
	SB	2	0.28	A	6	12	0.76	A	7	68
	Overall		-	*A*	*8.0*	-	-	*A*	*8.6*	-
12 Mile Coulee Road & Tusslewood Drive/ Blueridge Rise *(Option 3 – N Roundabout)* *SIDRA*	EB	2	0.43	B	12	7	0.78	B	18	20
	NB	2	0.70	A	8	18	0.64	A	8	16
	SB	2	0.28	A	4	6	0.77	A	6	33
	Overall		-	*A*	*7.9*	-	-	*A*	*9.3*	-
12 Mile Coulee Road & Tusslewood Drive/ Blueridge Rise *(Option 3 – S Roundabout)* *SIDRA*	WB	2	0.52	A	8	9	0.50	A	8	9
	NB	2	0.33	A	5	6	0.36	A	8	8
	SB	2	0.26	A	4	5	0.56	A	5	17
	Overall		-	*A*	*5.6*	-	-	*A*	*6.1*	-

All three roundabout configurations are expected to operate within acceptable capacity limits in the 2039 After Development horizon. Option 2 is again expected to operate marginally better than Option 1. Option 3 once again has the highest individual v/c ratio.

4.3 Roundabout Intersection Analysis – 2048

2048 After Development analysis for the Tusslewood Drive/Blueridge Rise & 12 Mile Coulee Road intersection is summarized in **Table 4.3** and is based on the volumes illustrated in **Exhibit 3.3.**

Table 4.3: 2048 After Development Intersection Analysis

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Tusslewood Drive/ Blueridge Rise *(Option 1 – Roundabout)* *SIDRA*	EB	2	0.32	B	11	13	0.51	B	12	30
	WB	2	0.51	B	10	27	0.49	A	9	21
	NB	2	0.54	A	9	22	0.62	B	15	39
	SB	2	0.28	A	5	12	0.77	A	7	73
	Overall		-	*A*	*8.3*	-	-	*A*	*9.7*	-
12 Mile Coulee Road & Tusslewood Drive/ Blueridge Rise *(Option 2 – Roundabout)* *SIDRA*	EB	2	0.32	B	11	13	0.51	B	12	30
	WB	2	0.51	B	10	27	0.49	A	9	21
	NB	2	0.43	A	7	20	0.49	B	11	29
	SB	2	0.28	A	5	12	0.77	A	7	73
	Overall		-	*A*	*7.8*	-	-	*A*	*9.1*	-
12 Mile Coulee Road & Tusslewood Drive/ Blueridge Rise *(Option 3 – N Roundabout)* *SIDRA*	EB	2	0.44	B	12	7	0.90	C	26	30
	NB	2	0.68	A	8	17	0.70	A	10	20
	SB	2	0.28	A	4	6	0.79	A	6	36
	Overall		-	*A*	*7.8*	-	-	*B*	*11.6*	-
12 Mile Coulee Road & Tusslewood Drive/ Blueridge Rise *(Option 3 – S Roundabout)* *SIDRA*	WB	2	0.45	A	8	7	0.60	A	8	12
	NB	2	0.34	A	5	7	0.43	A	8	9
	SB	2	0.30	A	4	6	0.59	A	5	20
	Overall		-	*A*	*5.3*	-	-	*A*	*6.2*	-

Once again, all three roundabout configurations are expected to operate within acceptable capacity limits in the 2048 After Development horizon. Option 2 is again expected to operate better than Option 1 and Option 3.

4.4 Roundabout Intersection Summary

Based on the analysis completed for the at-grade intersections, the following conclusions have been made:

- By 2028 After Development, Option 2 represents the best option and will operate with an overall LOS A and a max v/c of 0.47 in the AM Peak Hour.
- In the 2039 After Development horizon, Option 2 represents the best option and is expected to operate with an overall LOS A and a max v/c of 0.76 in the PM Peak Hour.
- By the 2048 After Development horizon, Option 2 represents the best option and is expected to operate with an overall LOS A and a max v/c of 0.77 in the PM Peak Hour.
- In any of the horizons, there will not be any issues with the roundabouts queueing back towards the Highway 1A intersection.

5. WEAVING ANALYSIS

With the implementation of the CFI, the construction of the eastern intersection will be positioned much closer to Stoney Trail than the current intersection location. Therefore, the weaving on westbound Crowchild Trail/Highway 1A needed to be verified to ensure there is adequate weave distance for vehicles maneuvering from Stoney Trail towards southbound 12 Mile Coulee Road. The anticipated weave distance from the southbound Stoney Trail ramp to the westbound left turn lane towards 12 Mile Coulee Road is approximately 510 metres.

Weaving analysis was performed using HCS software. All weaving results and assumptions are included in **Appendix G** and it should be noted that Highway 1A was assumed to be six lanes in 2039 and beyond, based on the conclusions from the CFI analysis.

The results of the HCS weaving analysis are summarized in **Table 5.1**.

Table 5.1: HCS Weaving Results

HORIZON	LOS	V/C
2028 After Development – AM Peak	A	0.21
2028 After Development – PM Peak	B	0.46
2039 After Development – AM Peak	A	0.18
2039 After Development – PM Peak	B	0.41
2048 After Development – AM Peak	A	0.20
2048 After Development – PM Peak	B	0.42

The results show that weaving along westbound Highway 1A is expected to operate within acceptable capacity parameters in all horizons assessed with the CFI in place.

6. CONCLUSION

6.1 Highway 1A/Crowchild Trail & 12 Mile Coulee Road intersection(s)

As a signalised at-grade configuration, this intersection will require six through lanes on Highway 1A and triple southbound and westbound left turn lanes to operate within acceptable capacity limits in 2028. For 2039 and 2048, the intersection will operate at capacity with eight through lanes on Highway 1A and triple southbound and westbound left turn lanes. Therefore, it is recommended that a different intersection configuration be considered for this intersection. Upon evaluating all of the stated intersection configuration options, the Partial Continuous Flow Intersection (Partial CFI), also referred to as a displaced left turn intersection, was selected as the best option. This corresponds with the improvement selection made in the 2021 Ascension TIA.

The overall operation of the Partial CFI configuration remains within acceptable capacity limits through to the 2048 horizon. Certain movements in the Partial CFI operate above capacity limits due to longer delays typical with a long cycle length or due to longer queues. This exceeds the performance of a typical signalized at-grade intersection. Therefore, the Partial CFI is expected to be an appropriate mid to long term solution (beyond 2048) for the intersection of Highway 1A/Crowchild Trail & 12 Mile Coulee Road prior to the construction of a full grade-separated interchange. This is dependant on the growth rate that occurs along Crowchild Trail over the next 20+ years.

By the 2048 horizon, the westbound left queue at the east intersection of the Partial CFI meets, and occasionally marginally exceeds, the available storage length of 250 metres. This also occurs for the westbound left movement of the main intersection in certain analysis scenarios. It is noted that this occurs with the 95th percentile queue length, which is a very conservative value, but the capacity analysis may help inform the functional design.

6.2 Tusslewood Drive/Blueridge Rise & 12 Mile Coulee Road intersection(s)

Three different roundabout options were considered for this currently offset intersection. Options 1 and 2 were single roundabouts, whereas Option 3 had 2 separate roundabouts spaced closely together. All three roundabout options are expected to operate within acceptable capacity limits in the 2028, 2039, and 2048 After Development horizons. Option 2 represents the best option from a capacity standpoint. There are not expected to be any issues related to vehicle queueing back towards Highway 1A.

6.3 Weaving Analysis

Weaving analysis was performed for westbound Highway 1A between Stoney Trail and 12 Mile Coulee Road. With the construction of the Partial CFI and a new intersection being created further to the east, weaving operations are expected to function within acceptable capacity guidelines in all horizons (2028, 2039, and 2048). The road section is expected to operate with LOS A in the AM peak hours and LOS B in the PM peak hours.

APPENDIX A

City of Calgary Forecasts

Land Use and Network Assumptions

R2557 - Ascension TIA Update

Client: Daniel Blischak
Bunt & Associates Engineering Ltd

Prepared By: Xiaolin Qin, P.Eng.
January 19, 2023

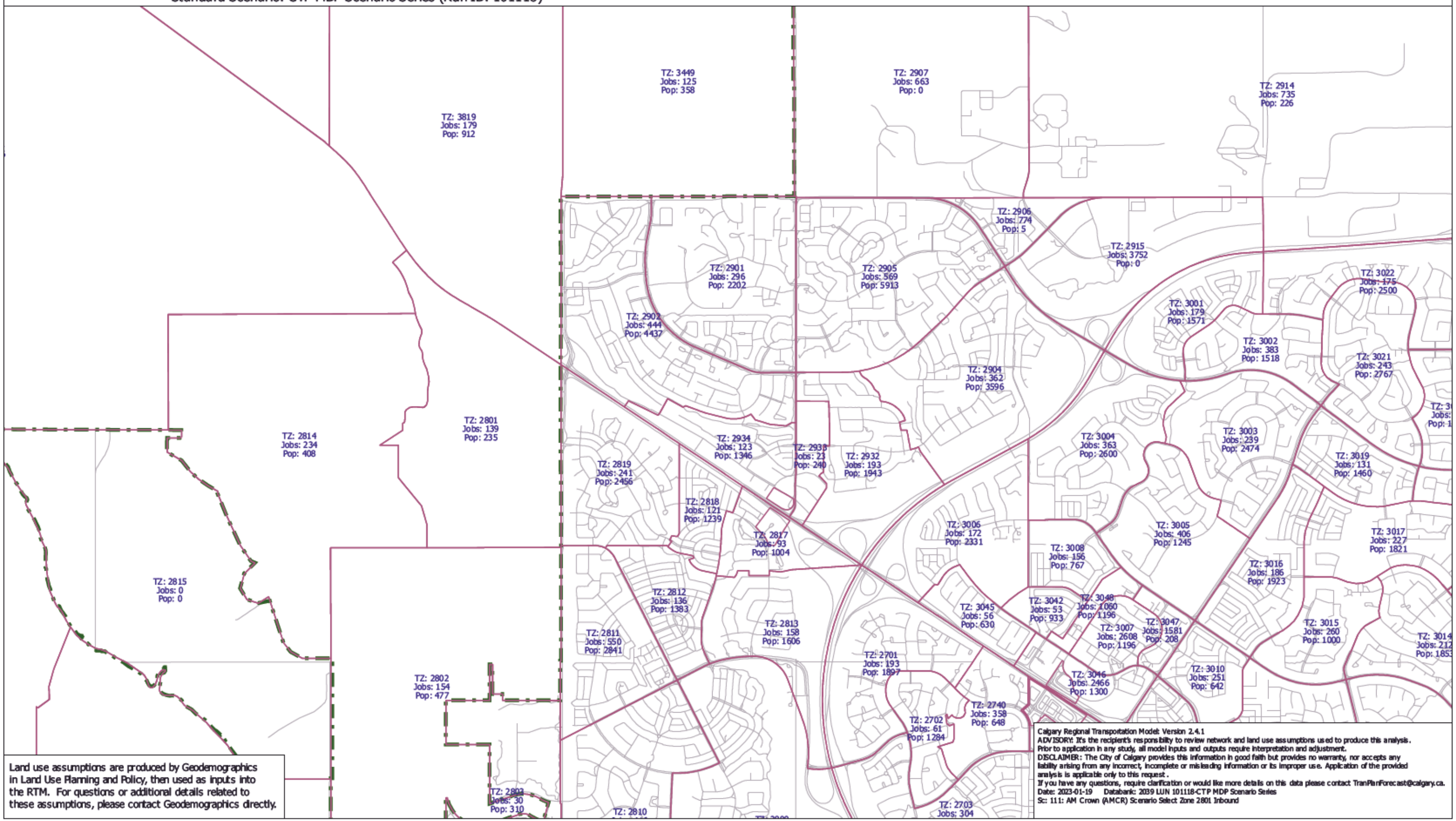
Notes:
Databanks: 2039 LUN 101118-CTP MDP Scenario Series,
2048 LUN 050421-CTP MDP Scenario Series

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

Scenario Assumptions: Total Jobs & Population
2039 LUN

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)

N



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 2.4.1
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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: 2023-01-19 Databank: 2039 LUN 101118-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

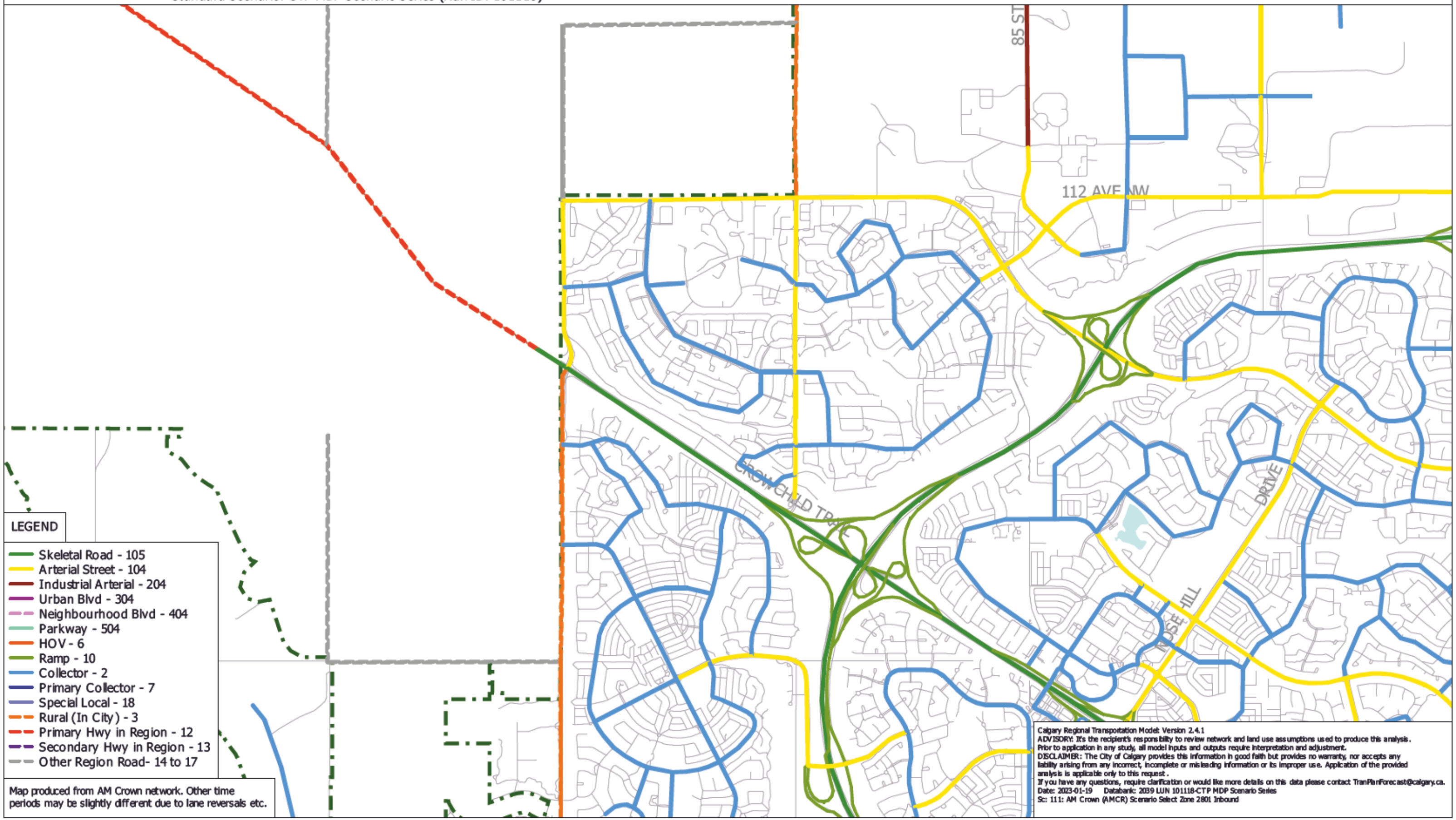
Calgary

Scenario Assumptions: Link Type Classification
2039 LUN

Note: Only Auto links shown; exclusive Bike, Pedestrian, or Transit links are not shown.

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)

N



Map produced from AM Crown network. Other time periods may be slightly different due to lane reversals etc.

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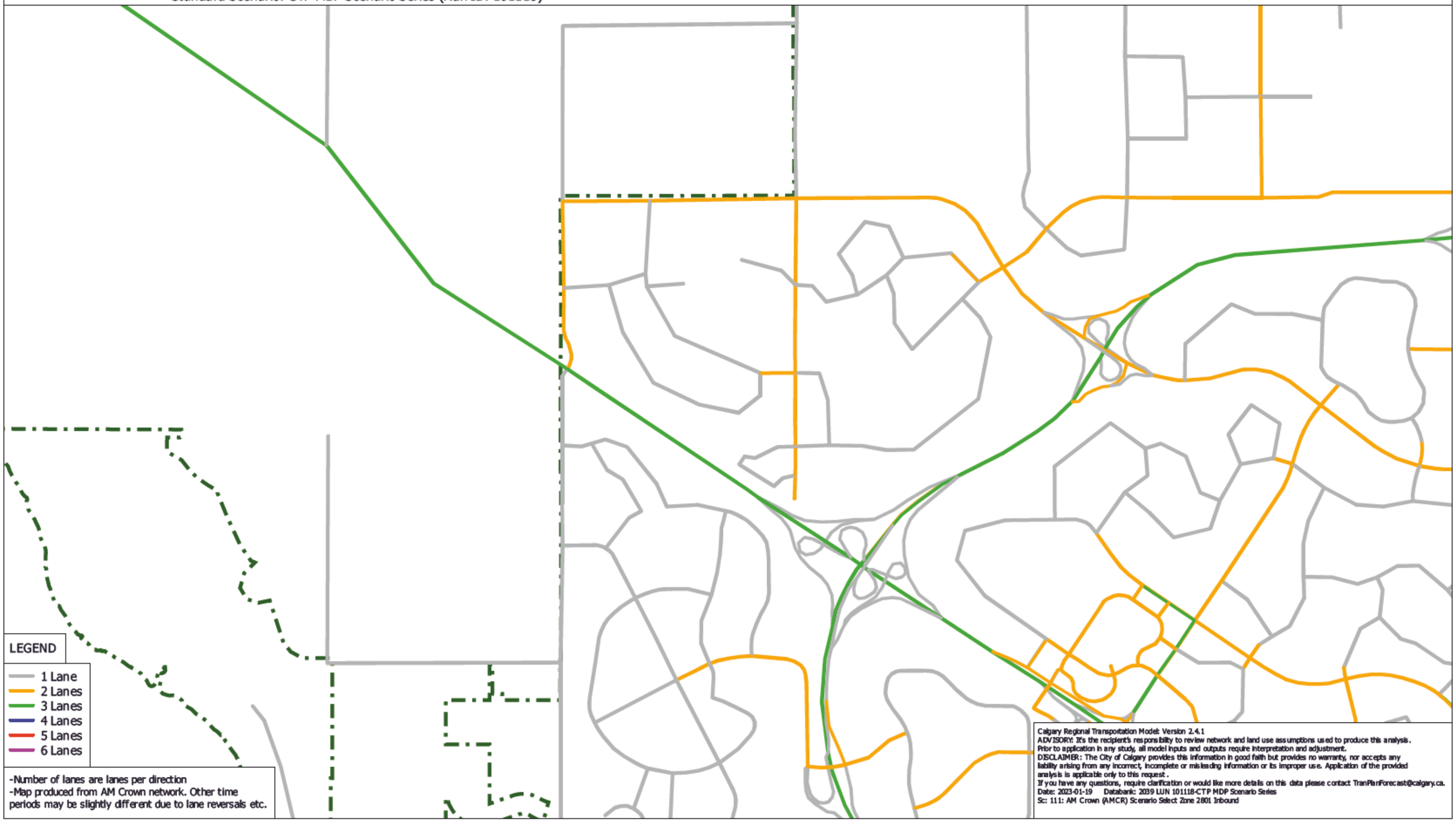
Date: 2023-01-19 Databank: 2039 LUN 101118-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Calgary

Scenario Assumptions: Number of Lanes
2039 LUN

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)

N



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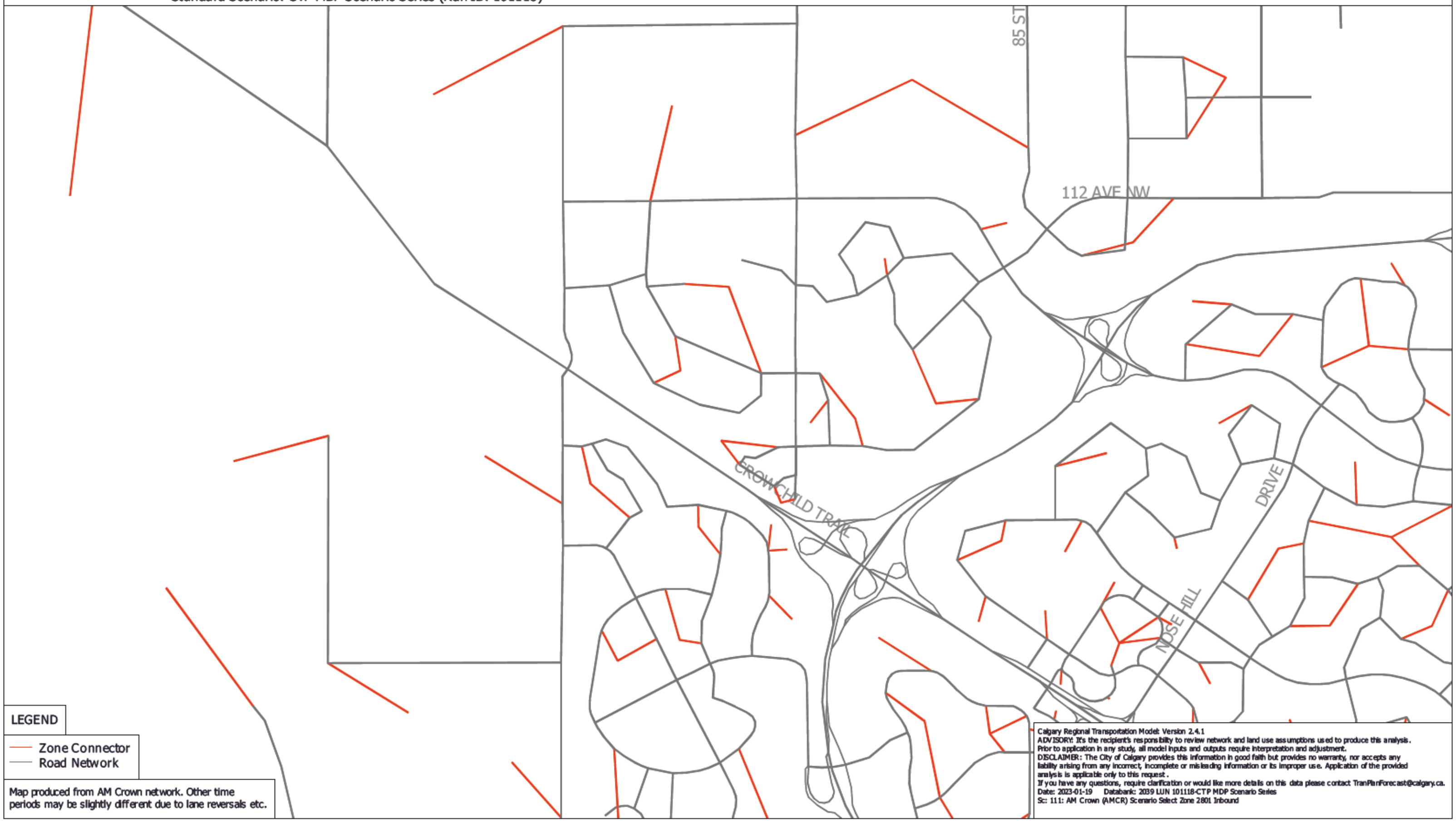
Date: 2023-01-19 Databank: 2039 LUN 101118-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Scenario Assumptions: Zone Connectors
2039 LUN

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)



LEGEND

Zone Connector
Road Network

Map produced from AM Crown network. Other time periods may be slightly different due to lane reversals etc.

Calgary Regional Transportation Model: Version 2.4.1
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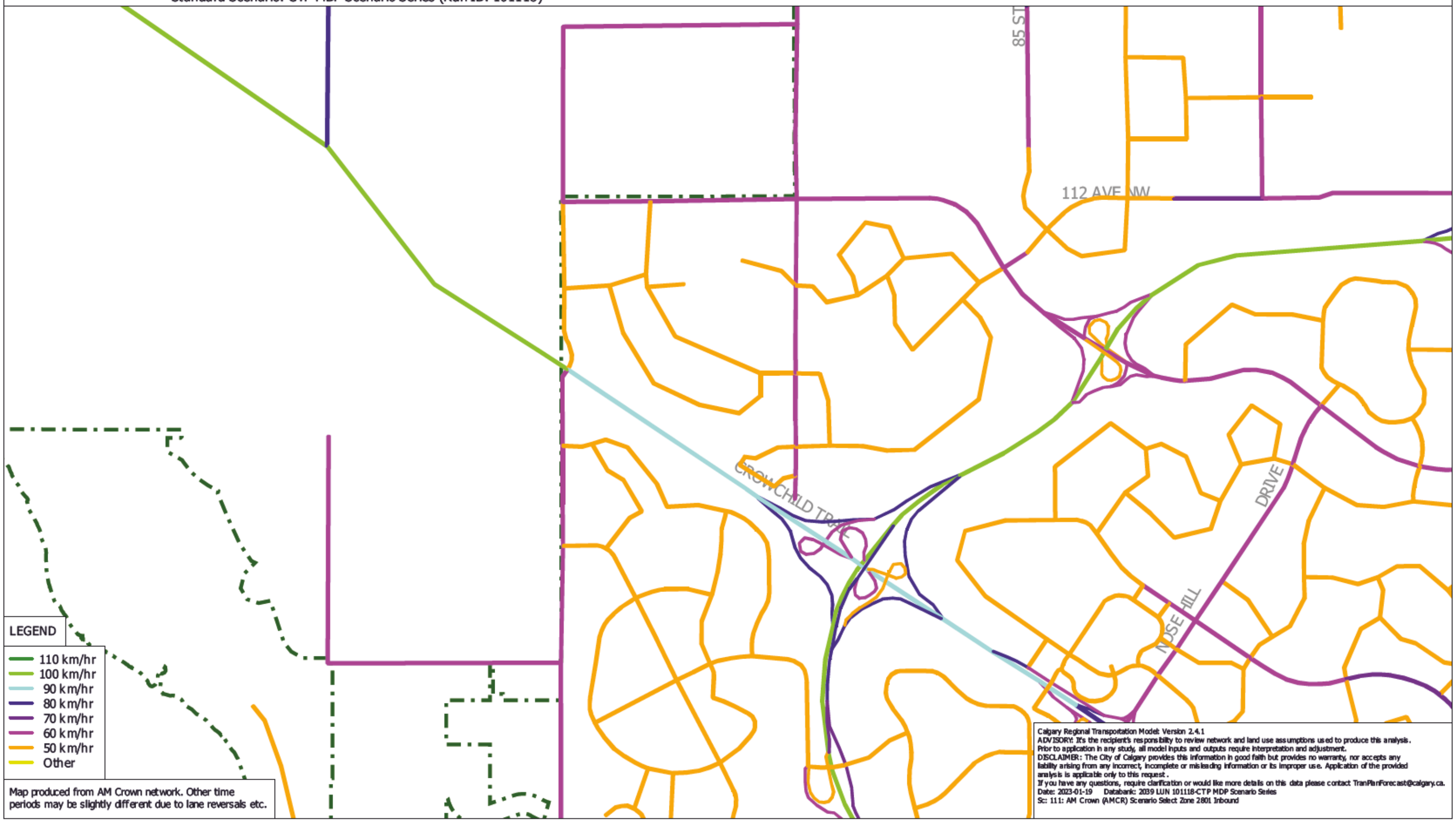
Date: 2023-01-19 Databank: 2039 LUN 101118-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Scenario Assumptions: Speed Limit (km/hr)
2039 LUN

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)



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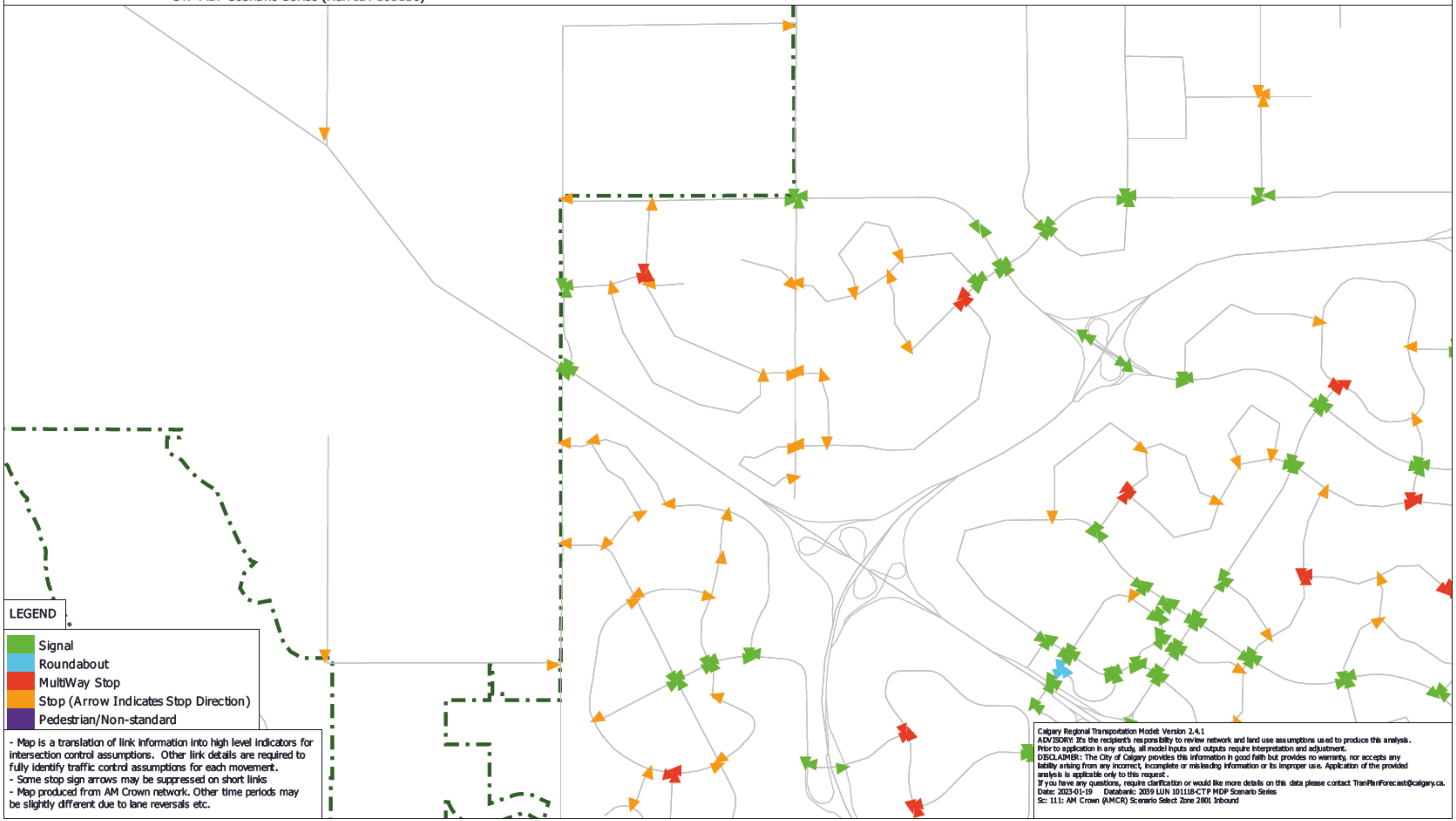
Date: 2023-01-19 Databank: 2039 LUN 101118-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Scenario Assumptions: Traffic Control Devices
2039 LUN

CTP MDP Scenario Series (Run ID: 101118)

N



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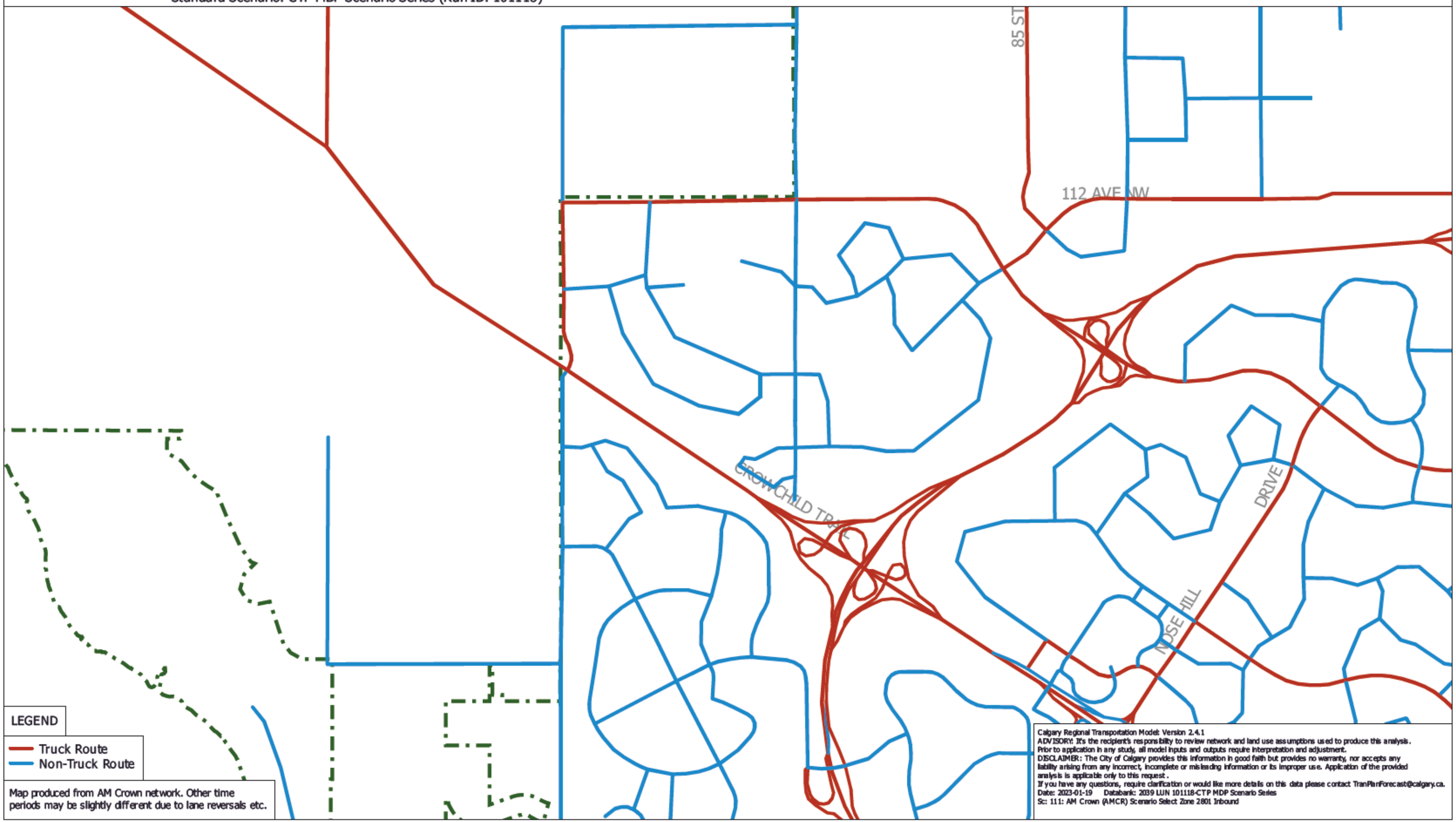
Date: 2023-01-19 Databank: 2039 LUN 101118-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Scenario Assumptions: Truck Routes
2039 LUN

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)



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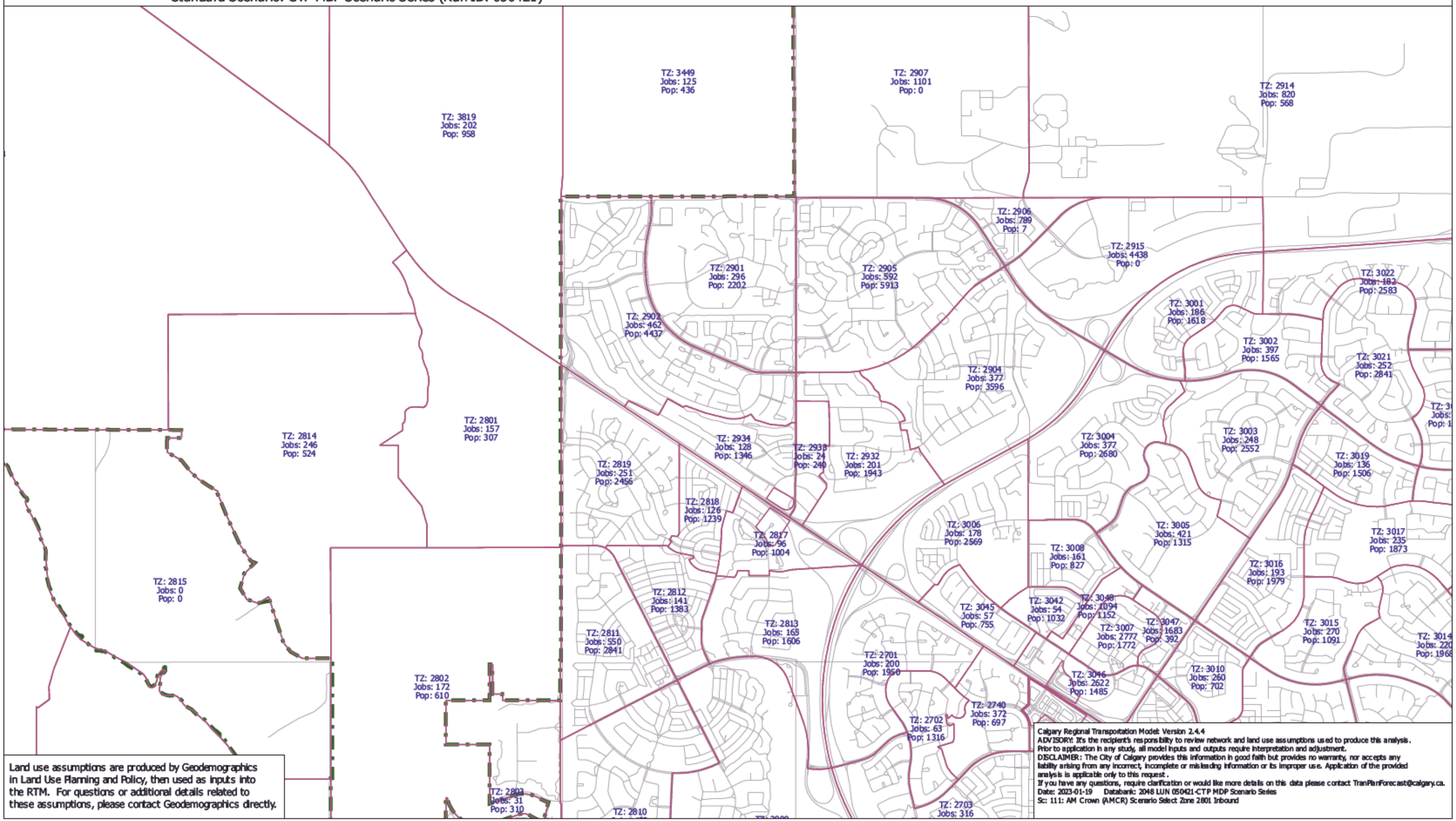
Date: 2023-01-19 Databank: 2039 LUN 101118-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Scenario Assumptions: Total Jobs & Population
2048 LUN

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)

N



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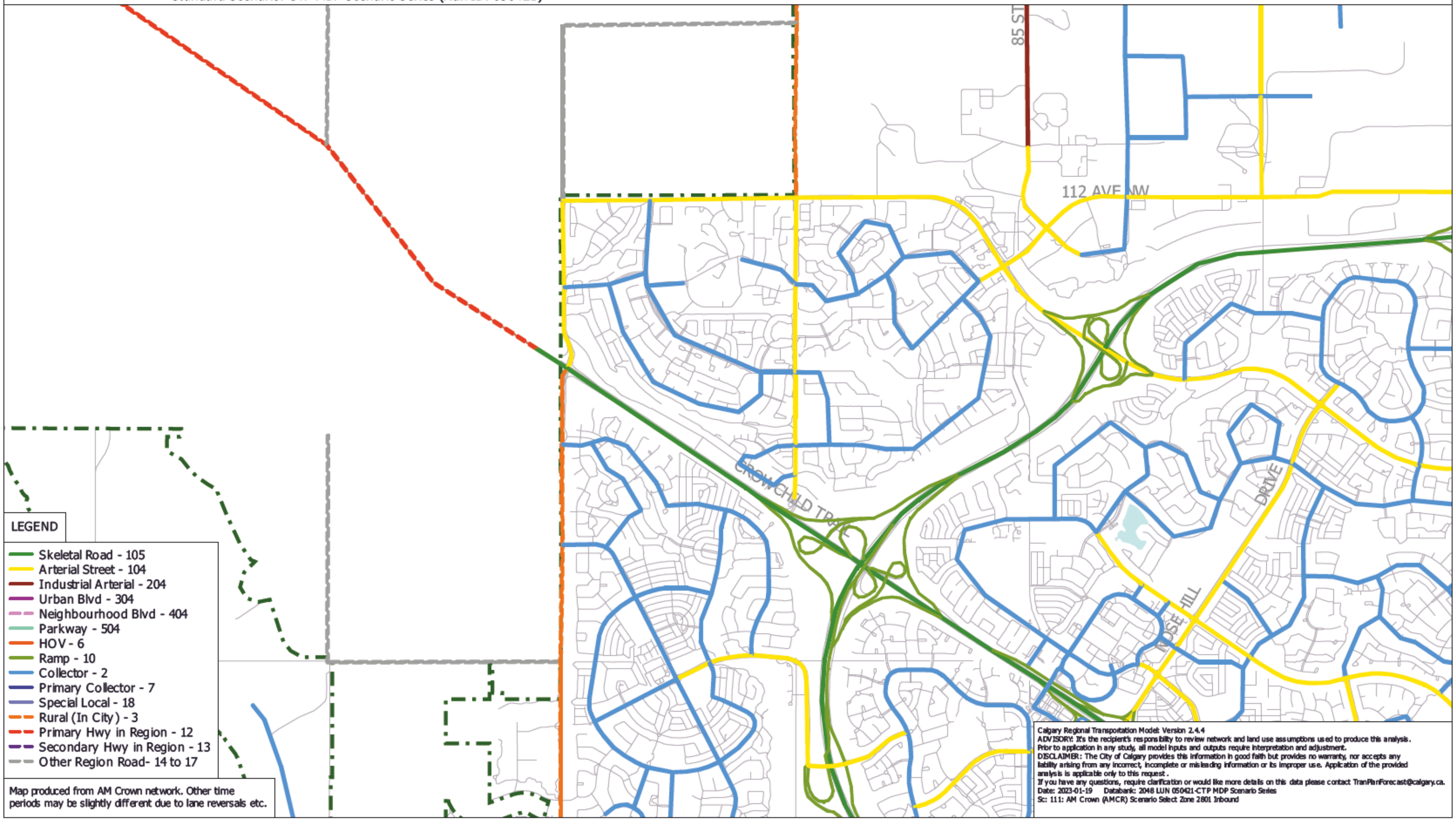
Date: 2023-01-19 Databank: 2048 LUN 050421-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Scenario Assumptions: Link Type Classification
2048 LUN

Note: Only Auto links shown; exclusive Bike, Pedestrian, or Transit links are not shown.

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)

N



Map produced from AM Crown network. Other time periods may be slightly different due to lane reversals etc.

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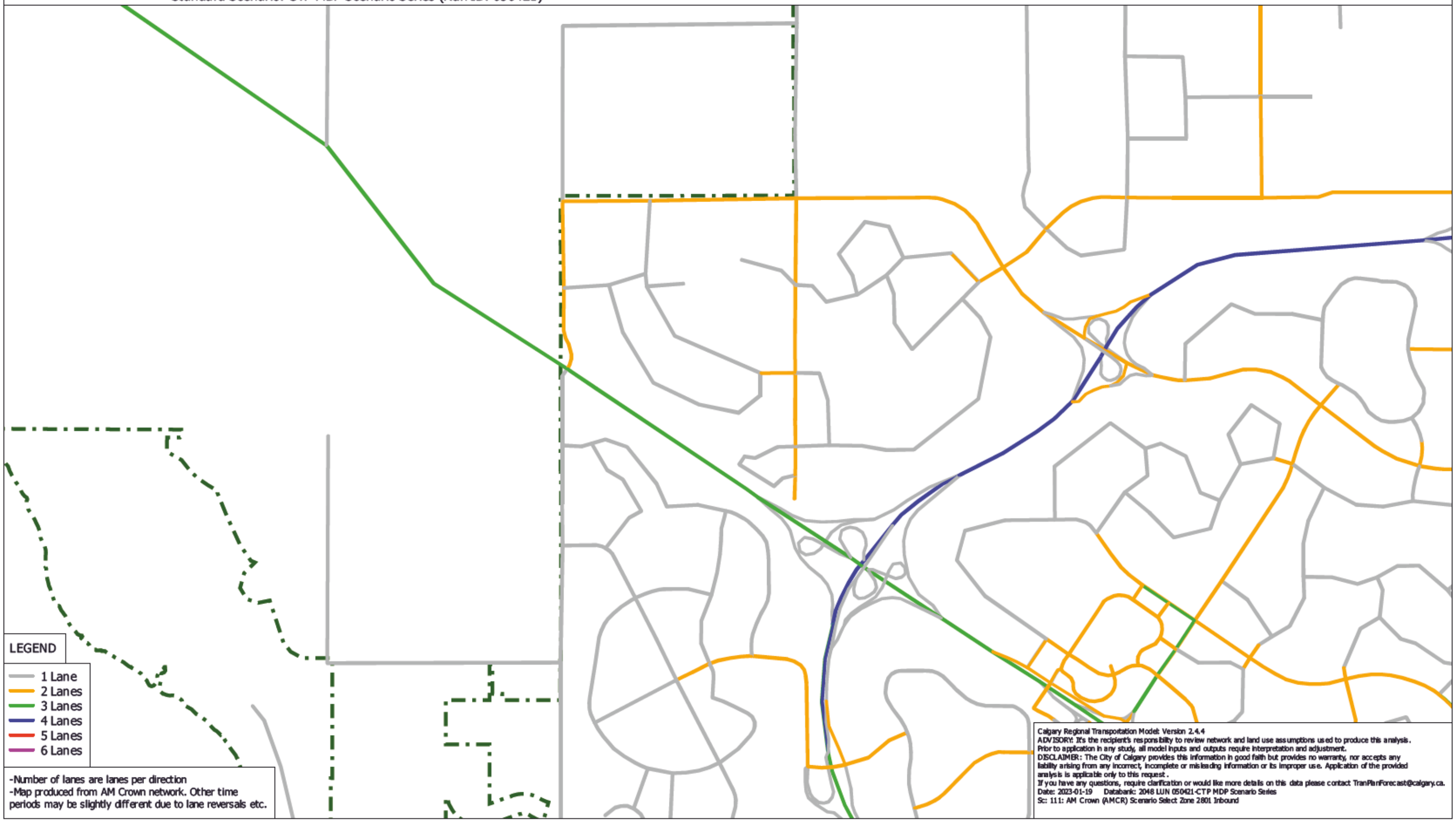
Date: 2023-01-19 Databank: 2048 LUN 050421-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Calgary

Scenario Assumptions: Number of Lanes
2048 LUN

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)

N



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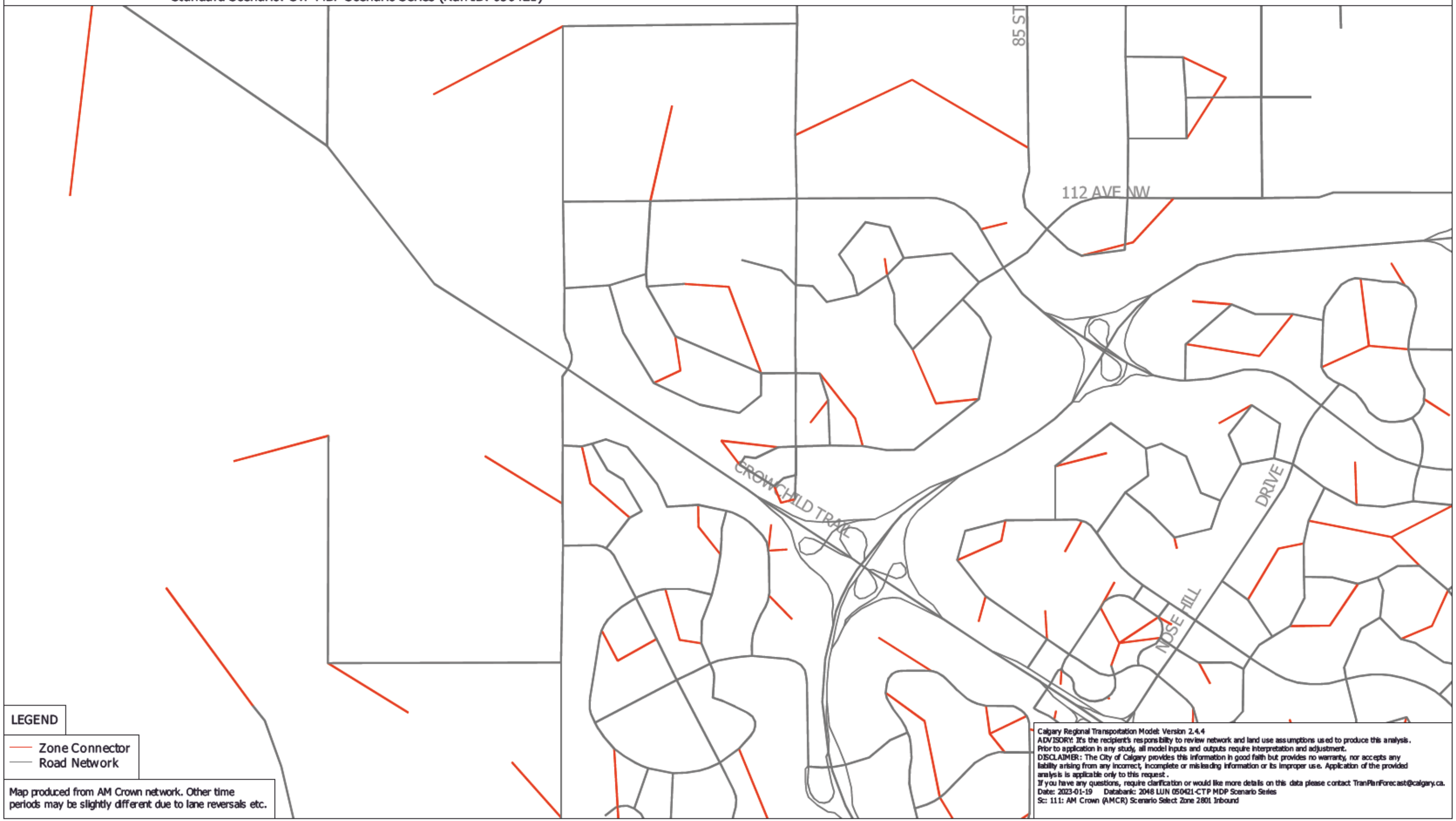
Date: 2023-01-19 Databank: 2048 LUN 050421-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Scenario Assumptions: Zone Connectors
2048 LUN

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)



LEGEND

Zone Connector
Road Network

Map produced from AM Crown network. Other time periods may be slightly different due to lane reversals etc.

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Date: 2023-01-19 Databank: 2048 LUN 050421-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Scenario Assumptions: Speed Limit (km/hr)
2048 LUN

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)

N

85 ST

112 AVE NW

CROWCHILD TRAIL

NOSE HILL DRIVE

LEGEND

- 110 km/hr
- 100 km/hr
- 90 km/hr
- 80 km/hr
- 70 km/hr
- 60 km/hr
- 50 km/hr
- Other

Map produced from AM Crown network. Other time periods may be slightly different due to lane reversals etc.

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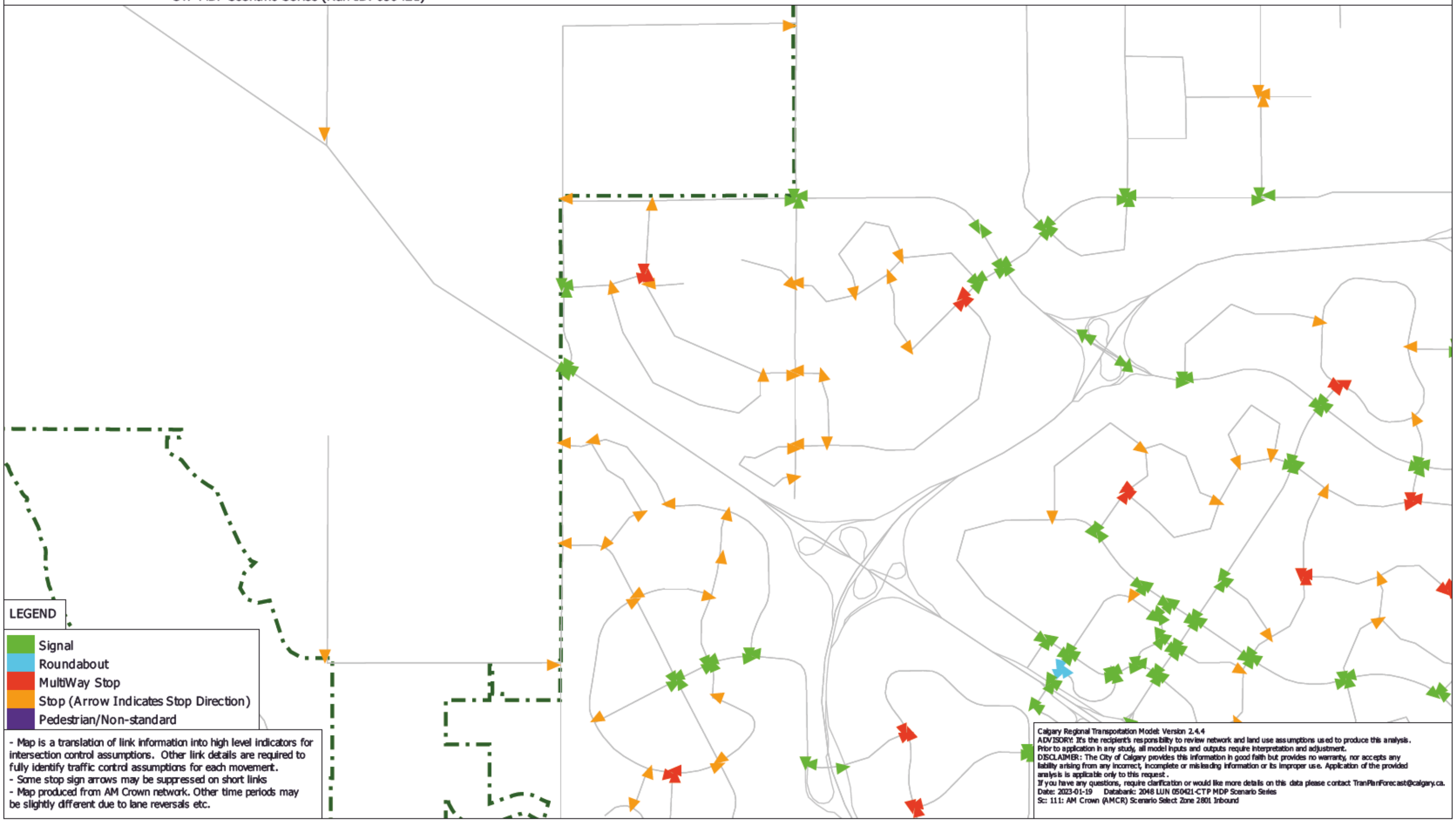
Date: 2023-01-19 Databank: 2048 LUN 050421-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Scenario Assumptions: Traffic Control Devices
2048 LUN

CTP MDP Scenario Series (Run ID: 050421)

N



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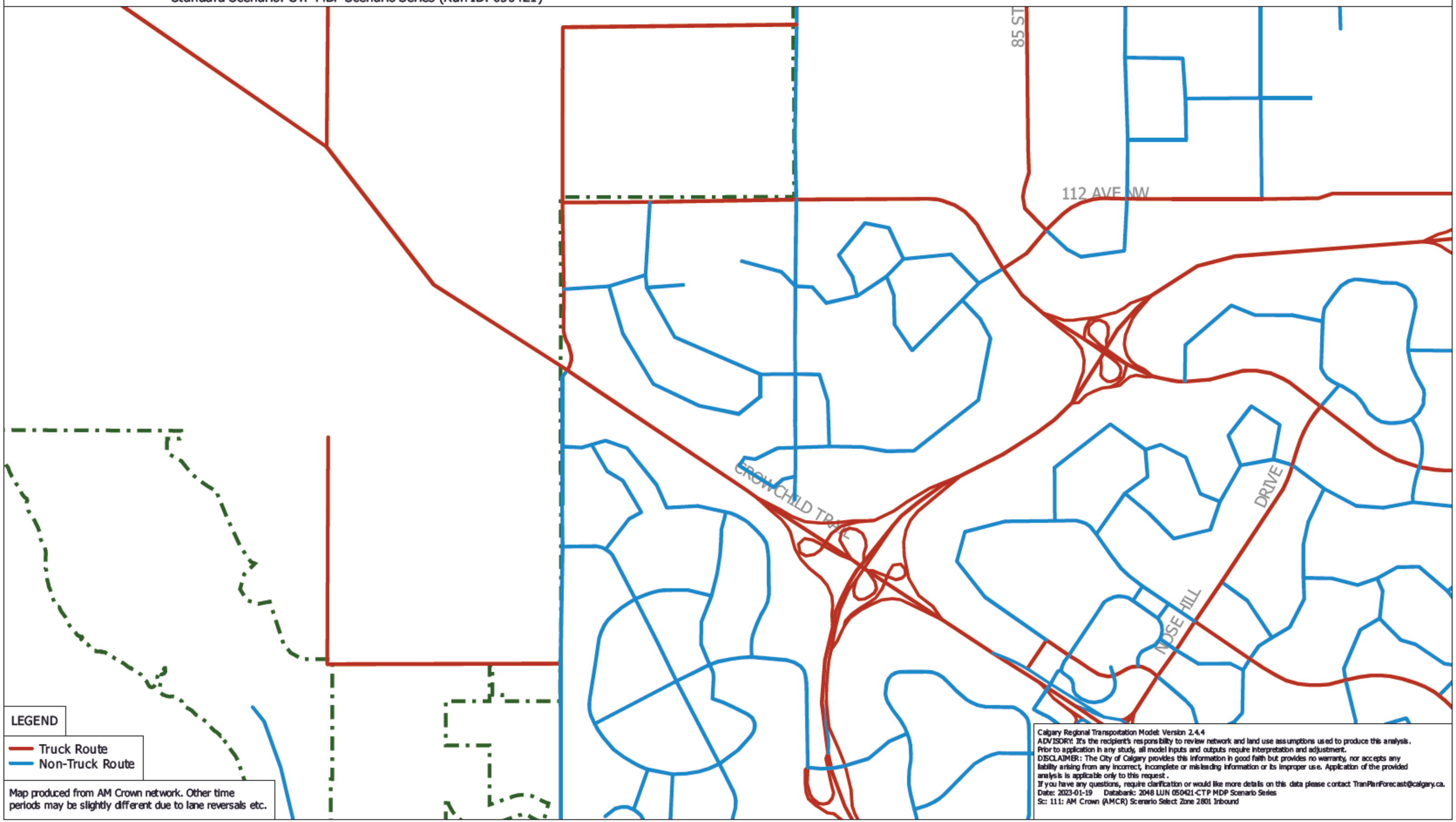
Date: 2023-01-19 Databank: 2048 LUN 050421-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Scenario Assumptions: Truck Routes
2048 LUN

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)



Calgary Regional Transportation Model: Version 2.4.4
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Date: 2023-01-19 Databank: 2048 LUN 050421-CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Select Zone Distribution

R2557 - Ascension TIA Update

Client: Daniel Blischak
Bunt & Associates Engineering Ltd

Prepared By: Xiaolin Qin, P.Eng.
January 31, 2023

Notes:
Databanks: 2039 LUN 101118-CTP MDP Scenario Series,
2048 LUN 050421-CTP MDP Scenario Series

Select Zones: 2801, 2814

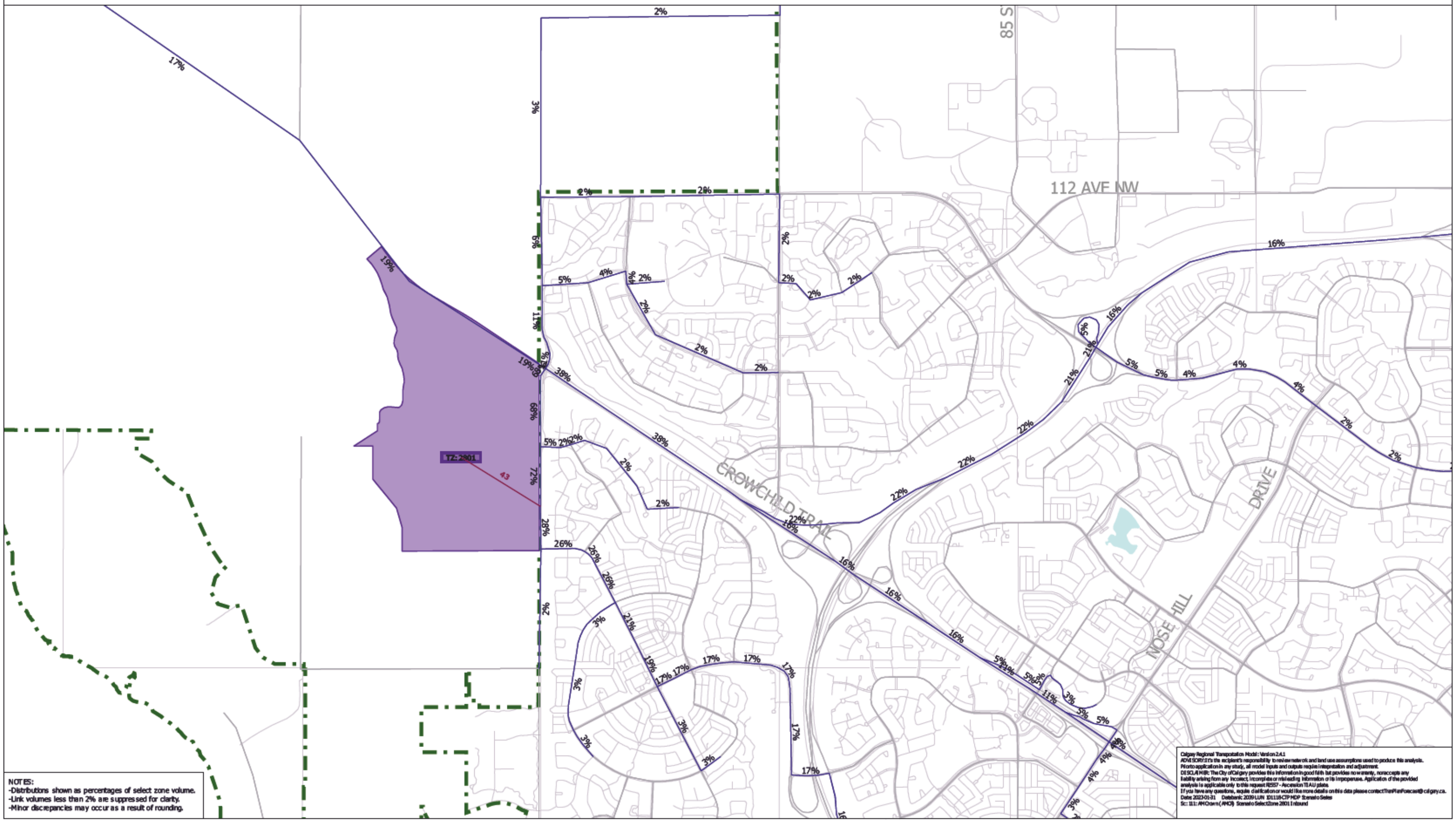
If you have questions or would like additional details please contact TranPlanForecast@calgary.ca.

Inbound Distribution for Zone(s): 2801
2039 LUN - AM Crown

Project: R2557 - Ascension TIA Update
Total Inbound Select Zone Volume = 44 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)

N



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

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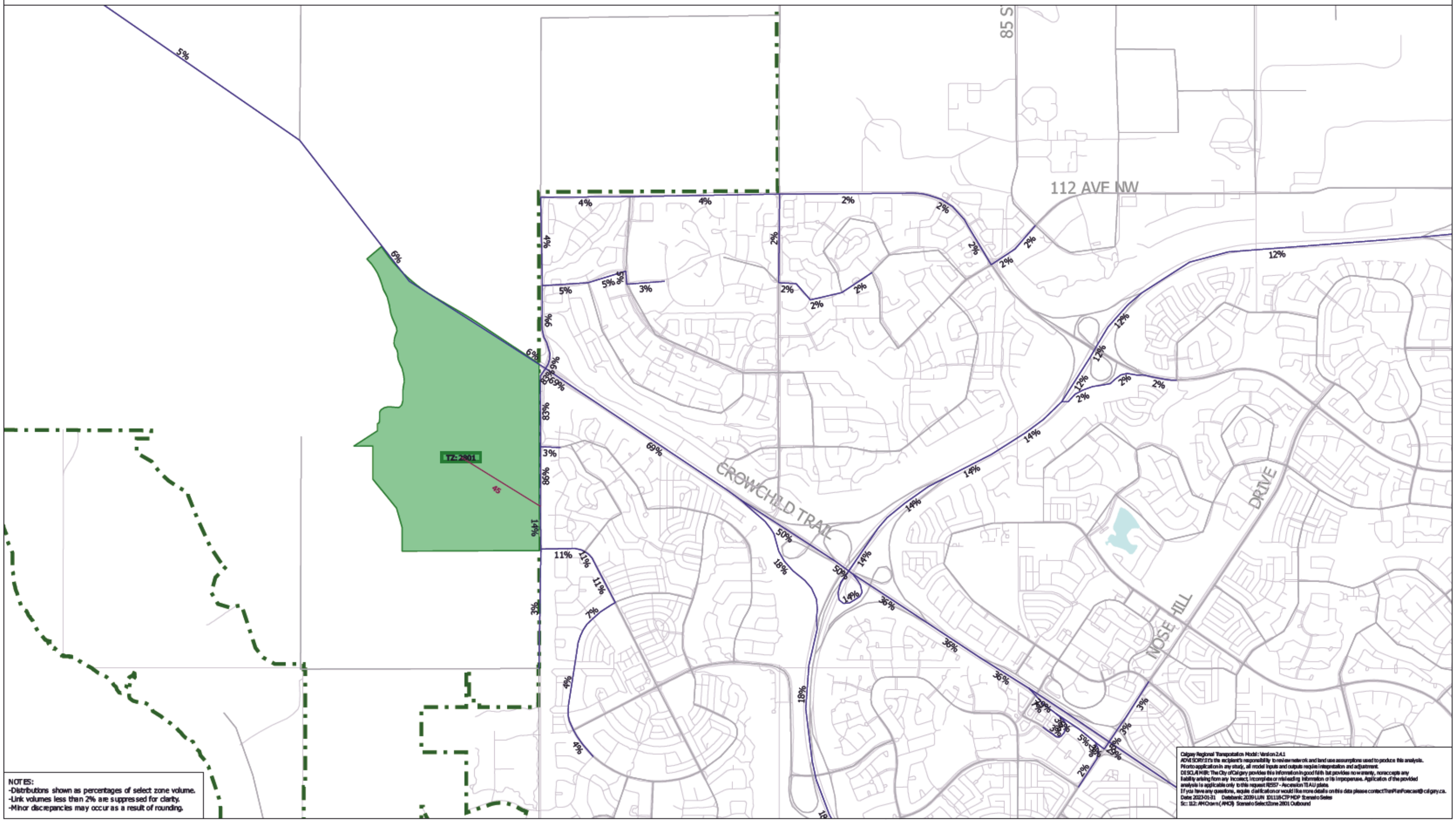
If you have any questions, require clarification or would like more details on this data please contact TransPlanForecast@calgary.ca.
Date: 2023-01-31 Databank: 2039 LUN ID 1118 CTP MDP Scenario Series
Sc: 111: AM Crown (AMCR) Scenario Select Zone 2801 Inbound

Outbound Distribution for Zone(s): 2801
2039 LUN - AM Crown

Project: R2557 - Ascension TIA Update
Total Outbound Select Zone Volume = 46 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)

N



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

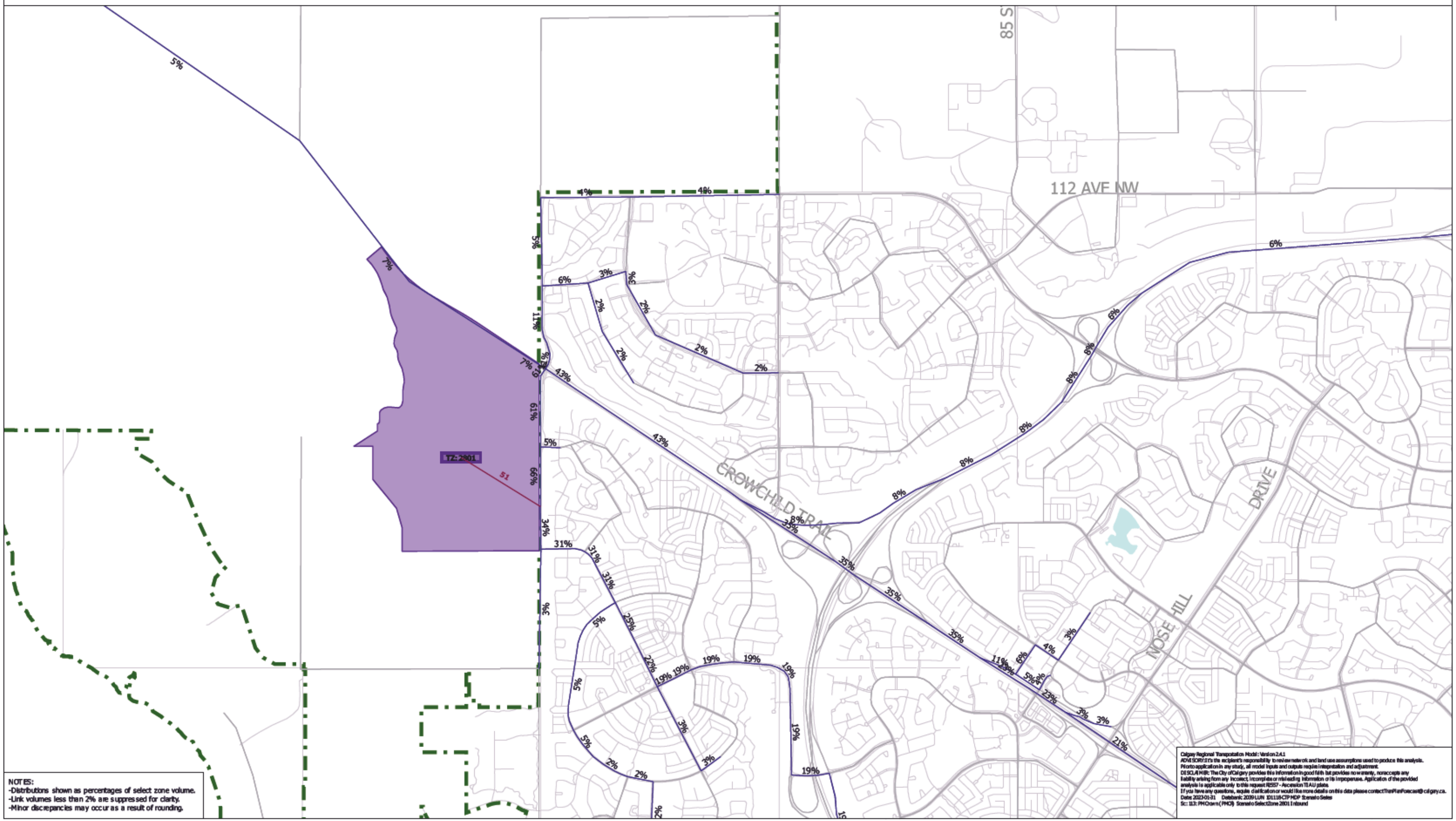
Date: 2023-01-31 Databank: 2039 LUN ID1118 CTP MDP Scenario Series
Sc:: 112: AM Crown (AMO) Scenario Select Zone 2801 Outbound

Inbound Distribution for Zone(s): 2801
2039 LUN - PM Crown

Project: R2557 - Ascension TIA Update
Total Inbound Select Zone Volume = 51 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)

N



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

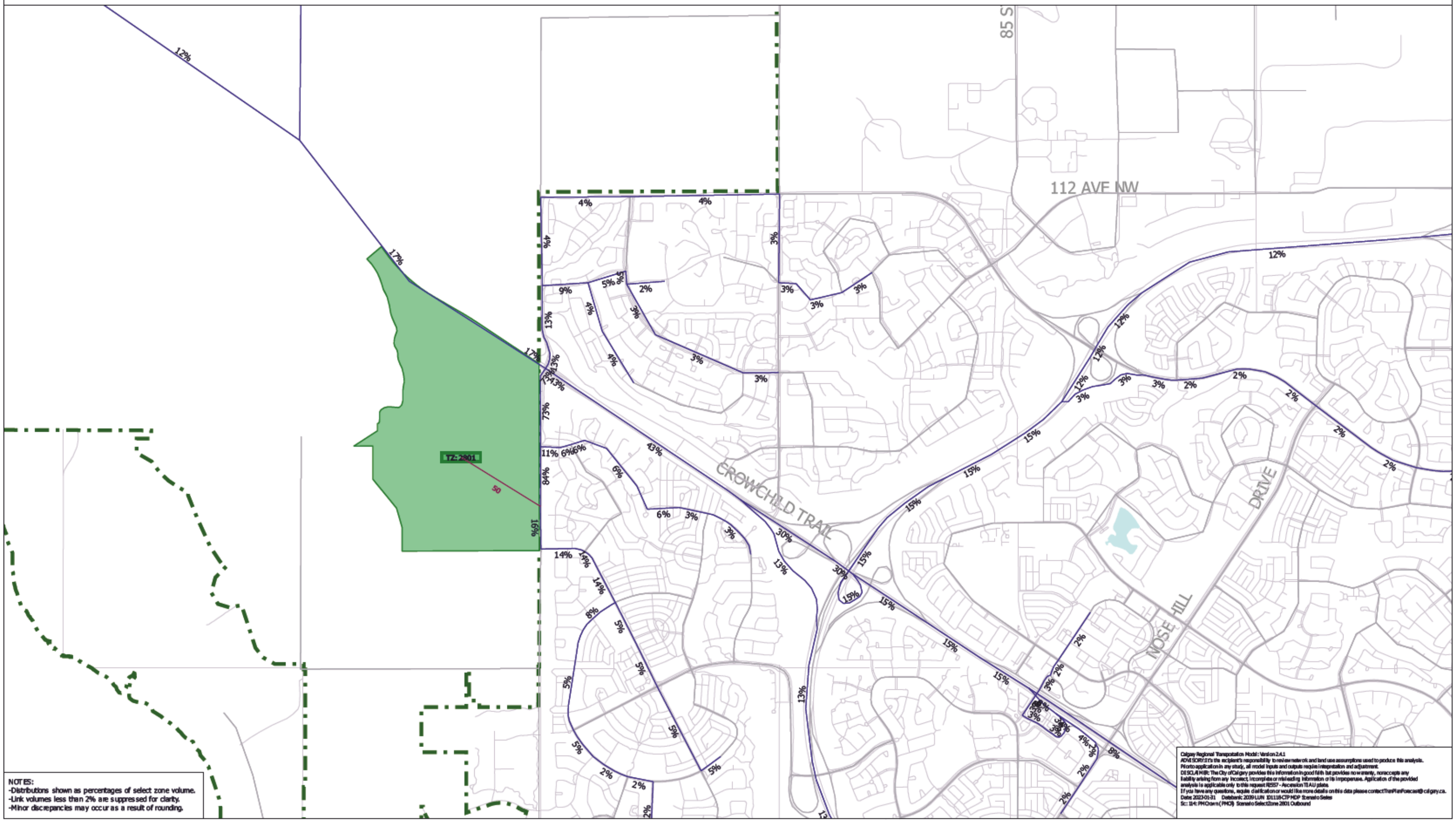
Date: 2023-01-31 Databank: 2039 LUN ID1118-CTP MDP Scenario Series
Sc:: 113: PM Crown (PMO) Scenario Select Zone 2801 Inbound

Outbound Distribution for Zone(s): 2801
2039 LUN - PM Crown

Project: R2557 - Ascension TIA Update
Total Outbound Select Zone Volume = 51 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)

N



NOTES:
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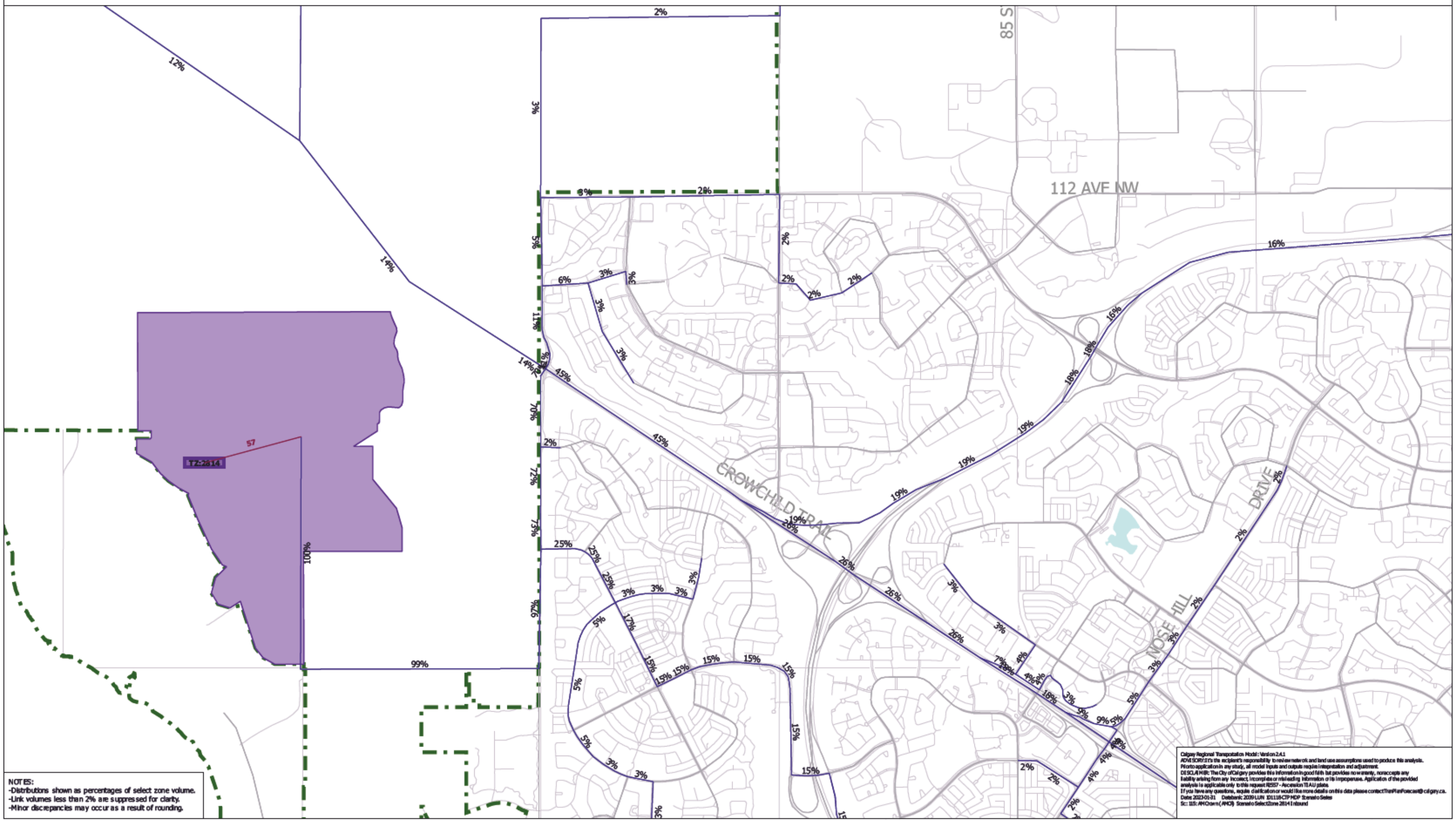
-Link volumes less than 2% are suppressed for clarity.
-Minor discrepancies may occur as a result of rounding.

Date: 2023-01-31 Databank: 2039 LUN ID 11118 CTP MDP Scenario Series
Sc:: 114: PM Crown (PMO) Scenario Select Zone 2801 Outbound

Inbound Distribution for Zone(s): 2814
2039 LUN - AM Crown

Project: R2557 - Ascension TIA Update
Total Inbound Select Zone Volume = 57 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)

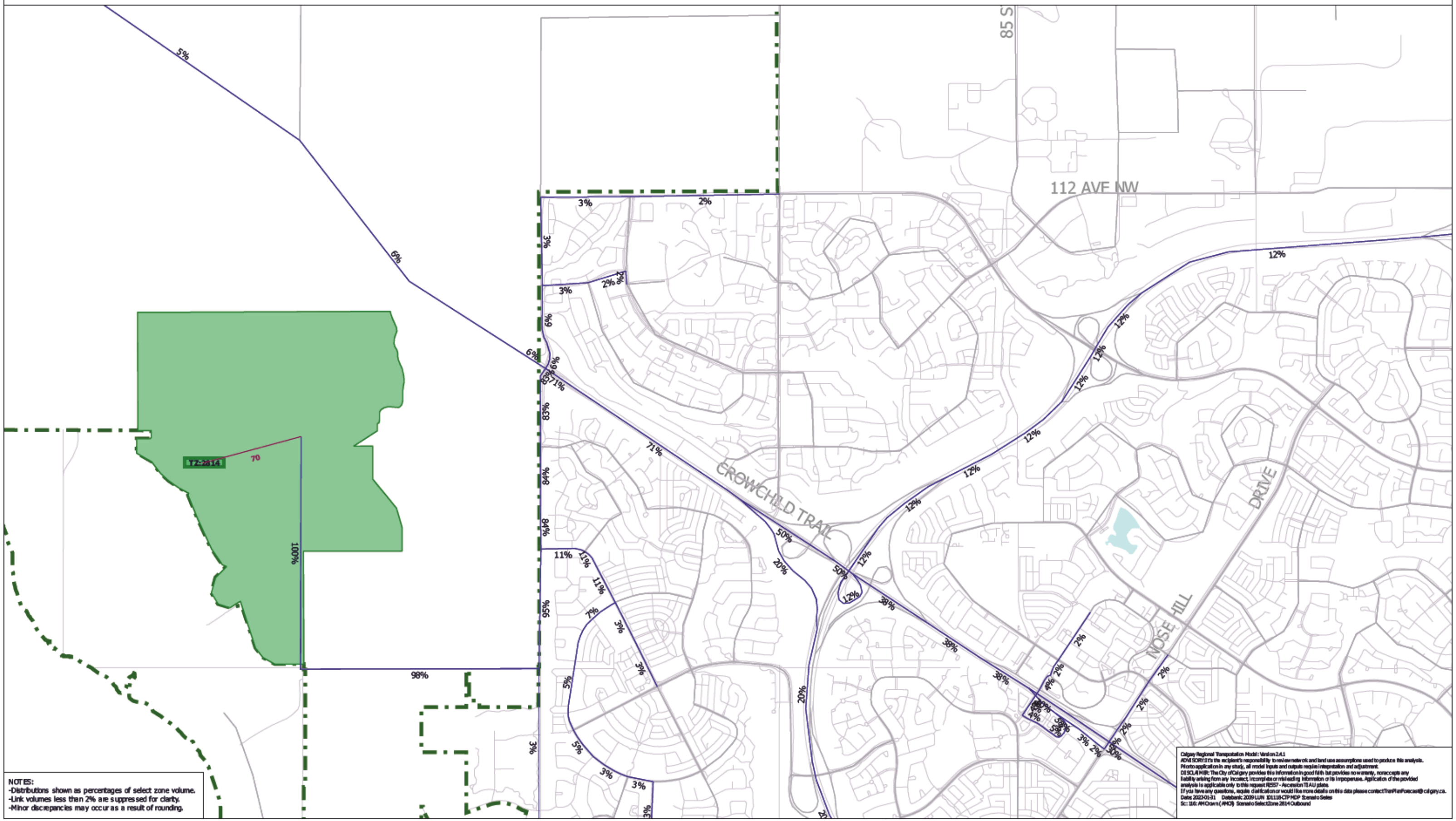


Outbound Distribution for Zone(s): 2814
2039 LUN - AM Crown

Project: R2557 - Ascension TIA Update
Total Outbound Select Zone Volume = 71 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)

N



NOTES:
-Distributions shown as percentages of 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 2.4.1
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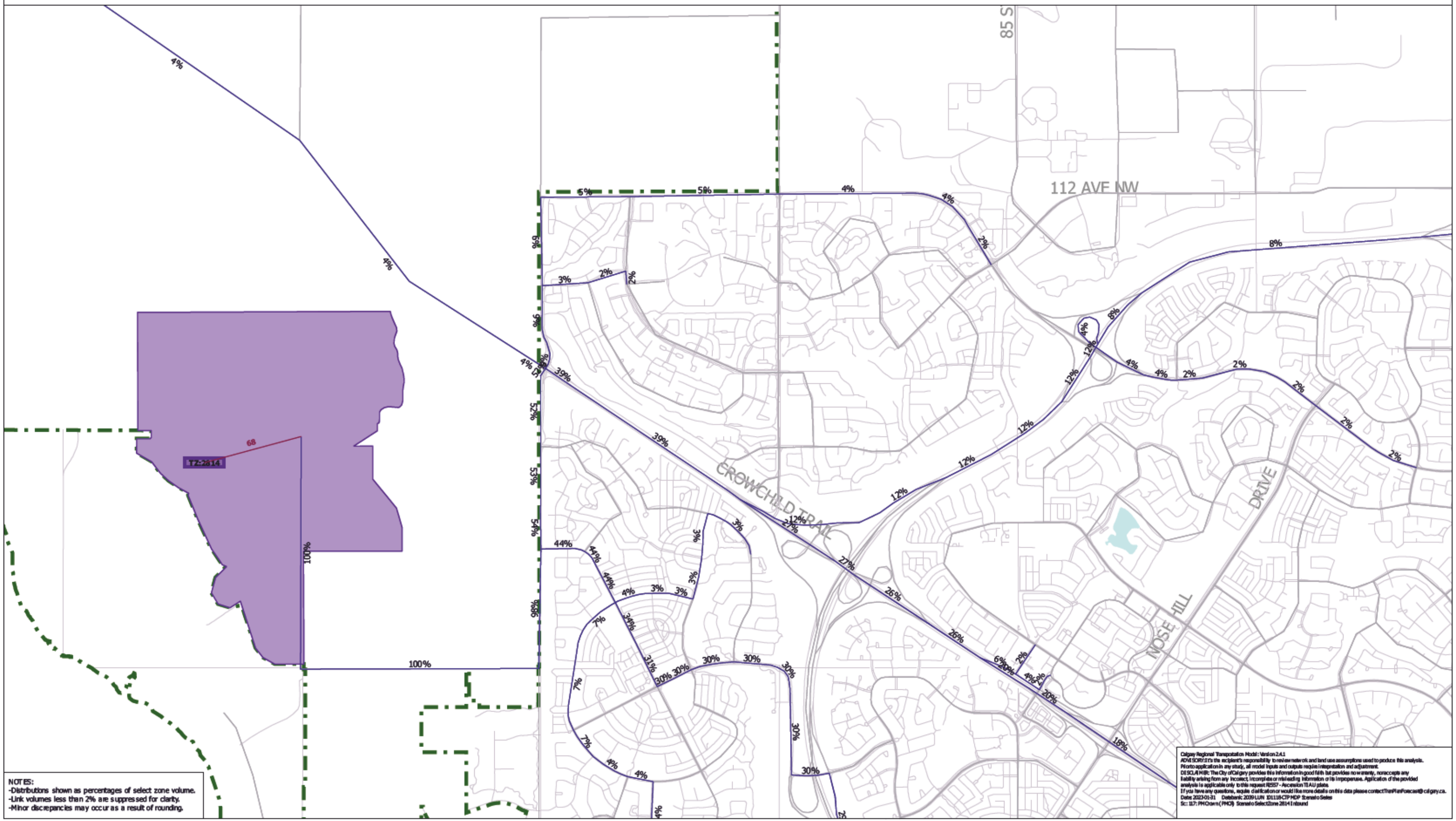
Date: 2023-01-31 Databank: 2039 LUN ID:1118 CTP MDP Scenario Series
Sc:: 116: AM Crown (AMCR) Scenario Select Zone 2814 Outbound

Inbound Distribution for Zone(s): 2814
2039 LUN - PM Crown

Project: R2557 - Ascension TIA Update
Total Inbound Select Zone Volume = 69 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)

N



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

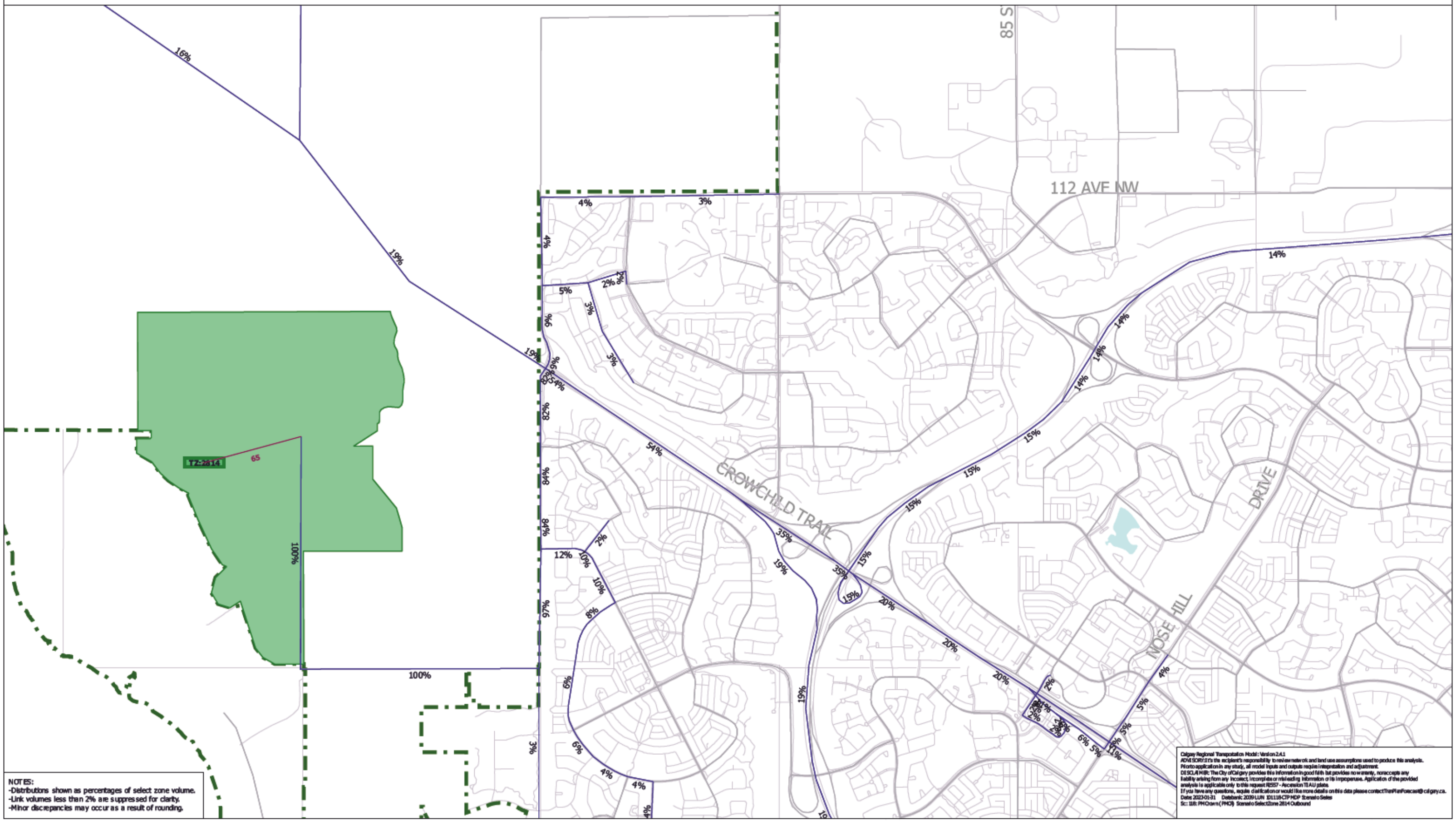
Date: 2023-01-31 Databank: 2039 LUN ID:101118 CTP MDP Scenario Series
Sc:: 117: PM Crown (PMO) Scenario Select Zone 2814 Inbound

Outbound Distribution for Zone(s): 2814
2039 LUN - PM Crown

Project: R2557 - Ascension TIA Update
Total Outbound Select Zone Volume = 66 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 101118)

N



NOTES:
-Distributions shown as percentages of 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 2.4.1
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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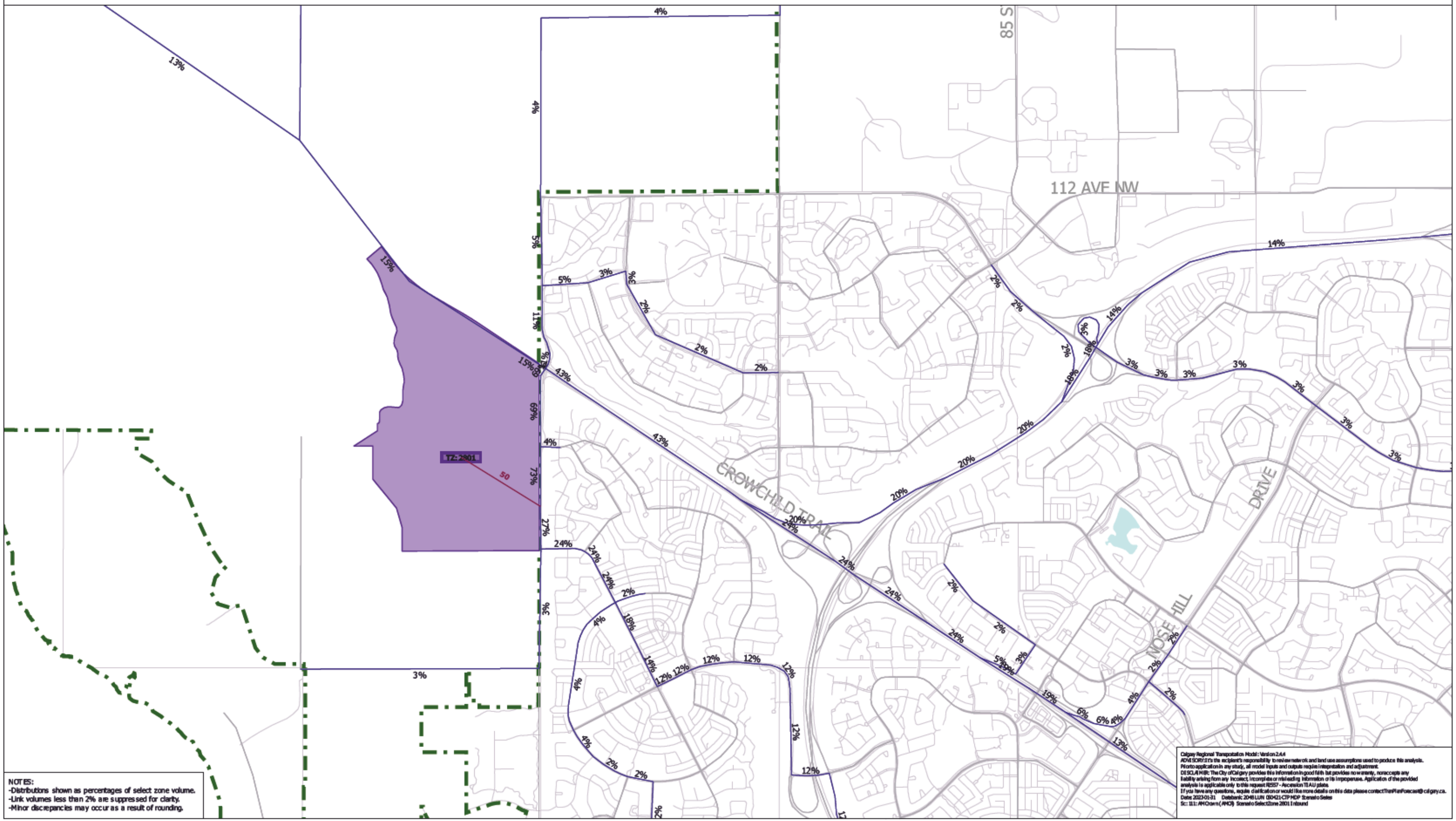
If you have any questions, require clarification or would like more details on this data please contact TimPlanForecast@calgary.ca.
Date: 2023-01-31 Databank: 2039 LUN ID1118 CTP MDP Scenario Series
Sc: 118: PM Crown (PMO) Scenario Select Zone 2814 Outbound

Inbound Distribution for Zone(s): 2801
2048 LUN - AM Crown

Project: R2557 - Ascension TIA Update
Total Inbound Select Zone Volume = 50 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)

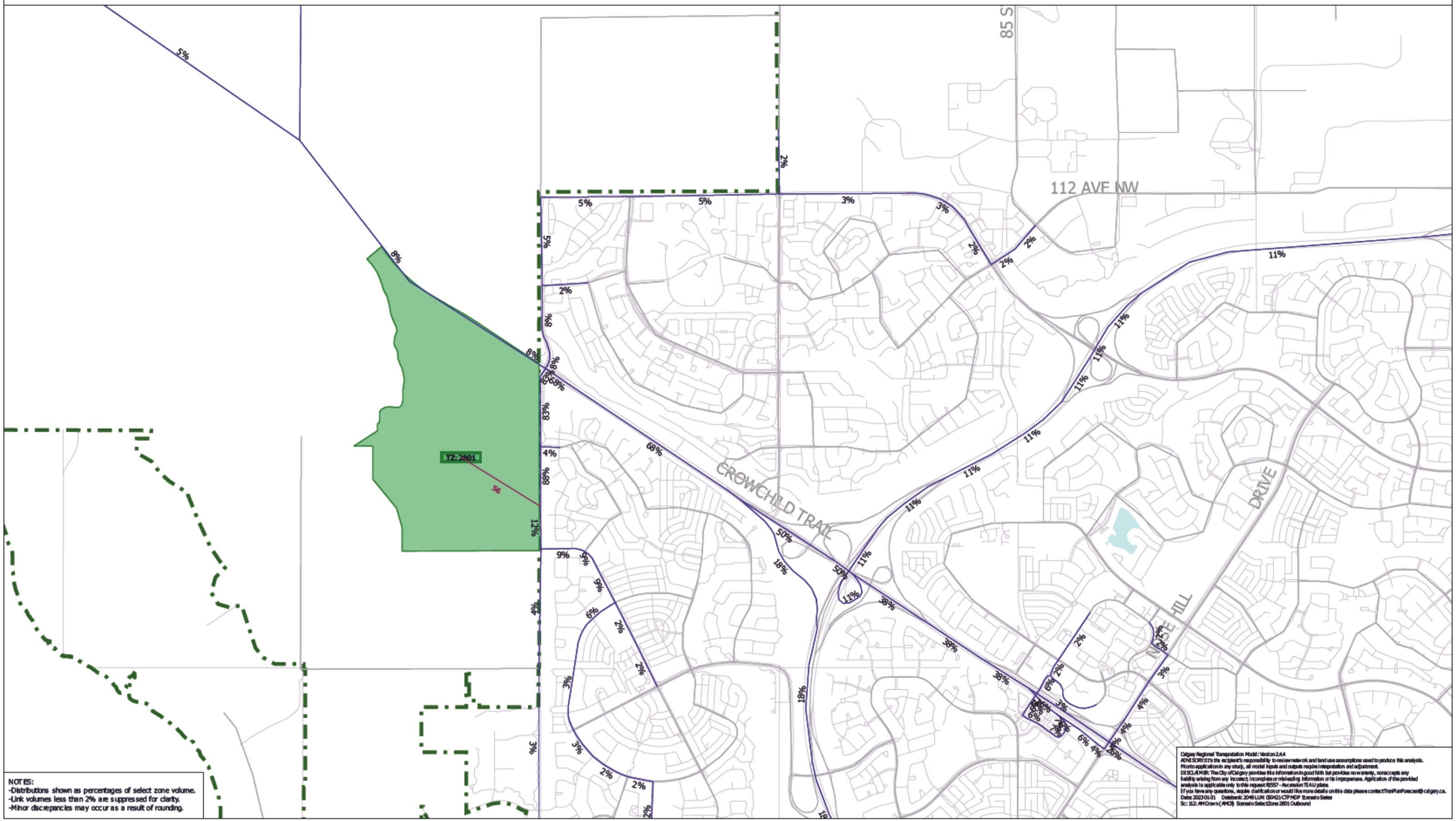


Outbound Distribution for Zone(s): 2801
2048 LUN - AM Crown

Project: R2557 - Ascension TIA Update
Total Outbound Select Zone Volume = 56 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)

N



NOTES:
-Distributions shown as percentages of 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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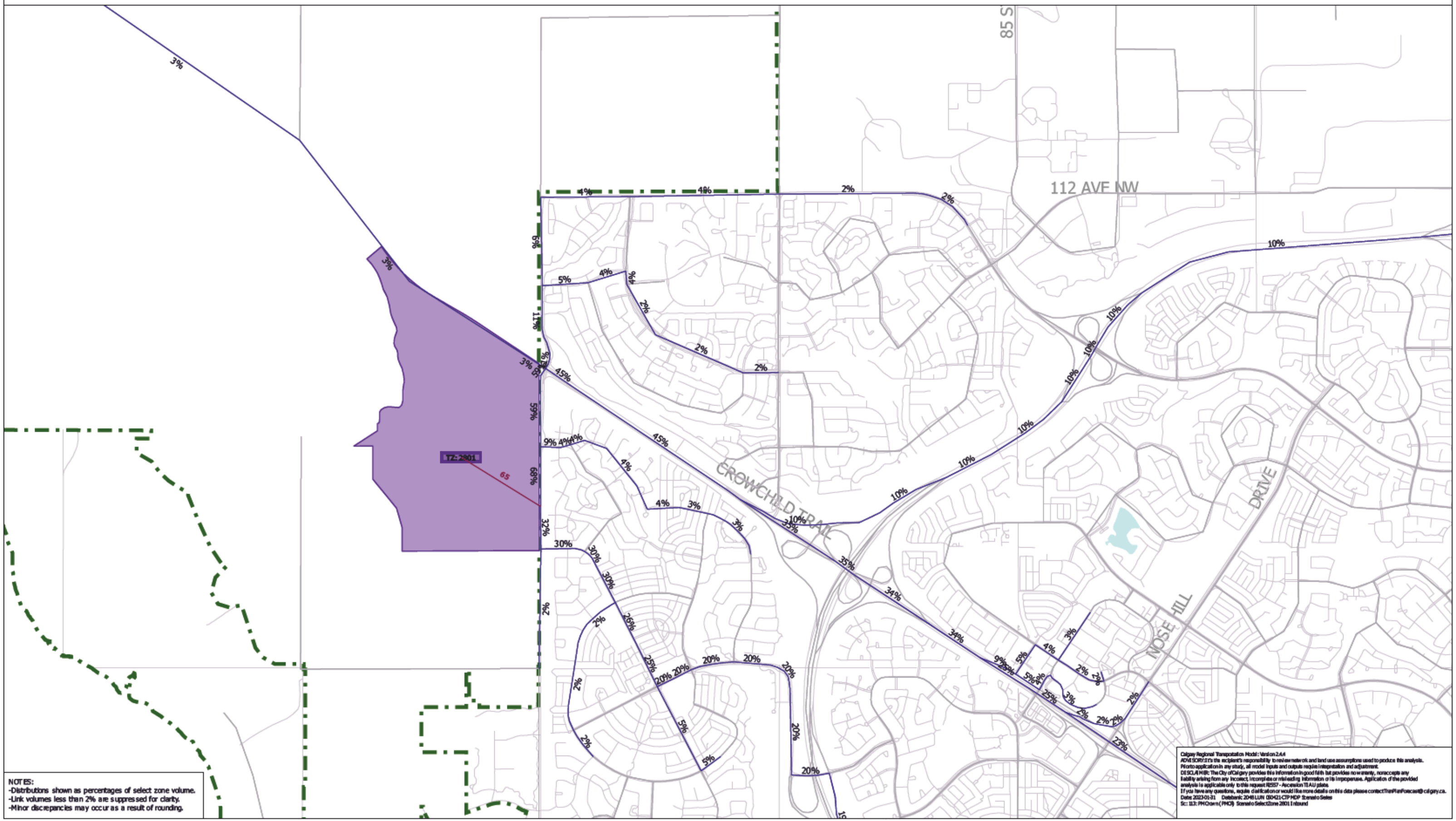
If you have any questions, require clarification or would like more details on this data please contact TimePlanForecast@calgary.ca.
Date: 2023-01-31 Databank: 2048 LUN (050421-CTP MDP Scenario Series
Sc:: 112: AM Crown (AMO) Scenario SelectZone 2801 Outbound

Inbound Distribution for Zone(s): 2801
2048 LUN - PM Crown

Project: R2557 - Ascension TIA Update
Total Inbound Select Zone Volume = 66 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)

N



NOTES:
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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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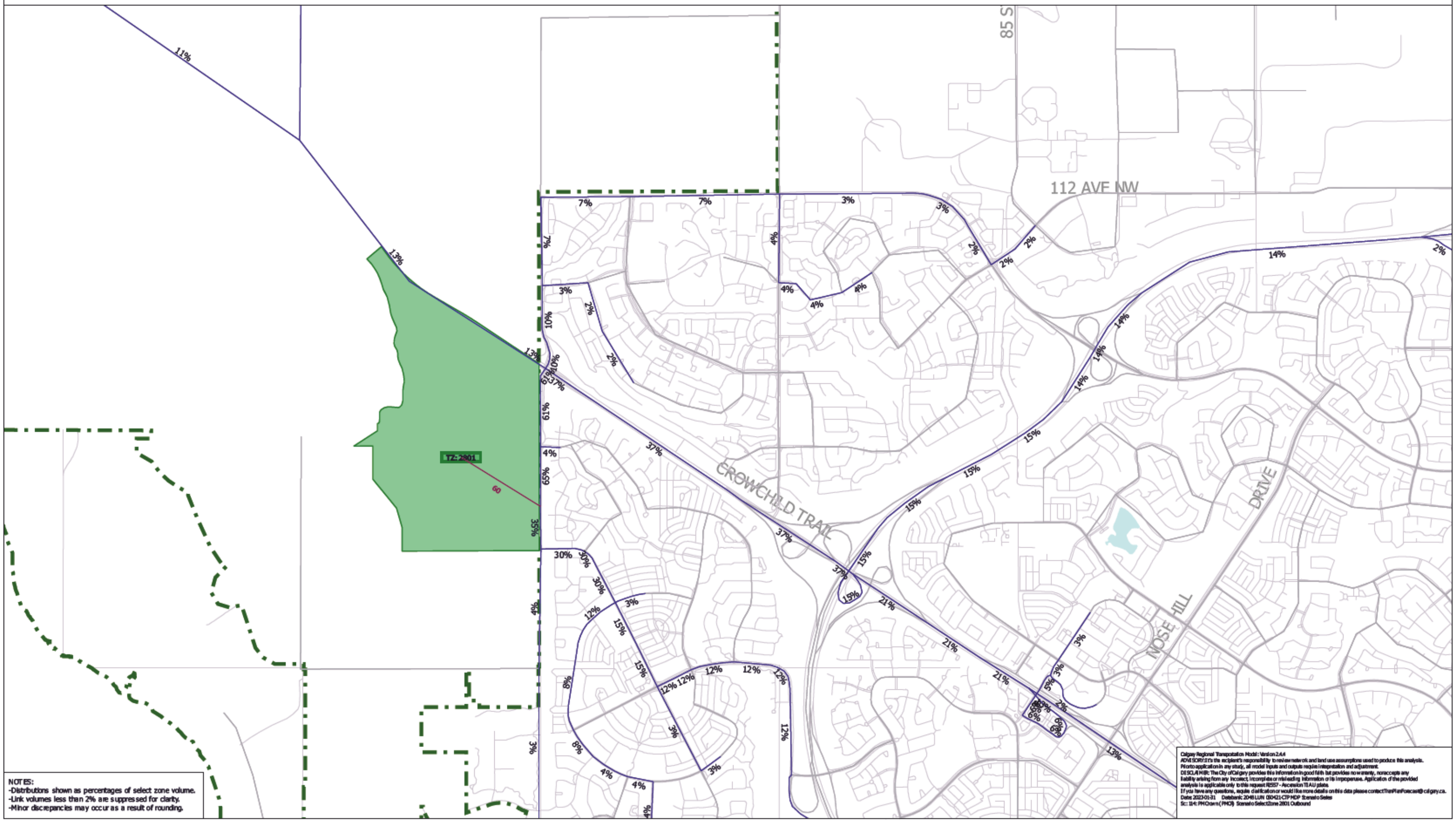
If you have any questions, require clarification or would like more details on this data please contact TranPlanForecast@calgary.ca.
Date: 2023-01-31 Databank: 2048 LUN (2042.1-CTP MDP Scenario Series
Sc.: 113: PM Crown (PMCR) Scenario Select Zone 2801 Inbound

Outbound Distribution for Zone(s): 2801
2048 LUN - PM Crown

Project: R2557 - Ascension TIA Update
Total Outbound Select Zone Volume = 61 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)

N



NOTES:
-Distributions shown as percentages of 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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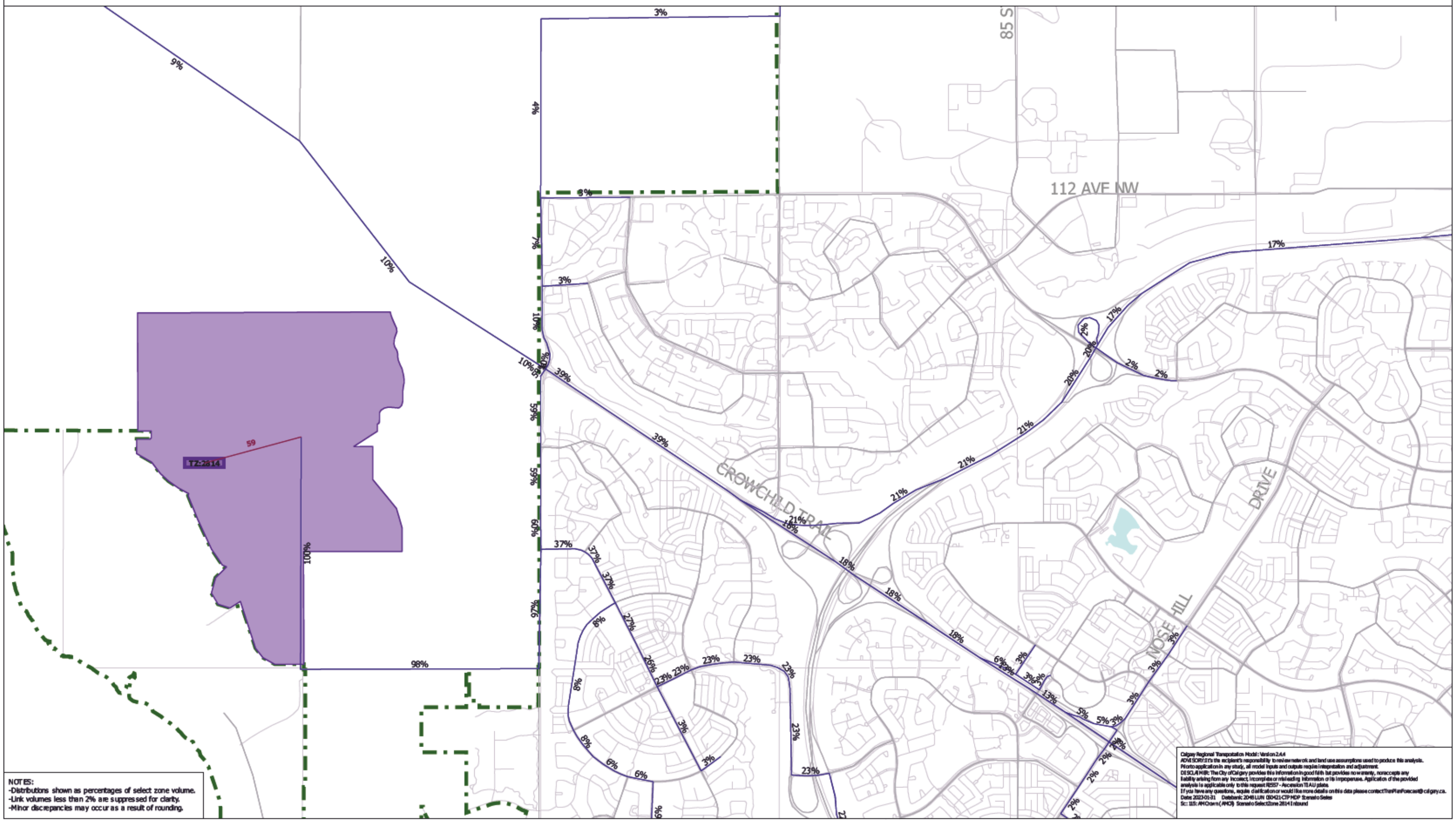
Date: 2023-01-31 Databank: 2048 LUN (050421-CTP MDP Scenario Series
Sc:: 114: PM Crown (PMO) Scenario SelectZone 2801 Outbound

Inbound Distribution for Zone(s): 2814
2048 LUN - AM Crown

Project: R2557 - Ascension TIA Update
Total Inbound Select Zone Volume = 60 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)

N



NOTES:
-Distributions shown as percentages of 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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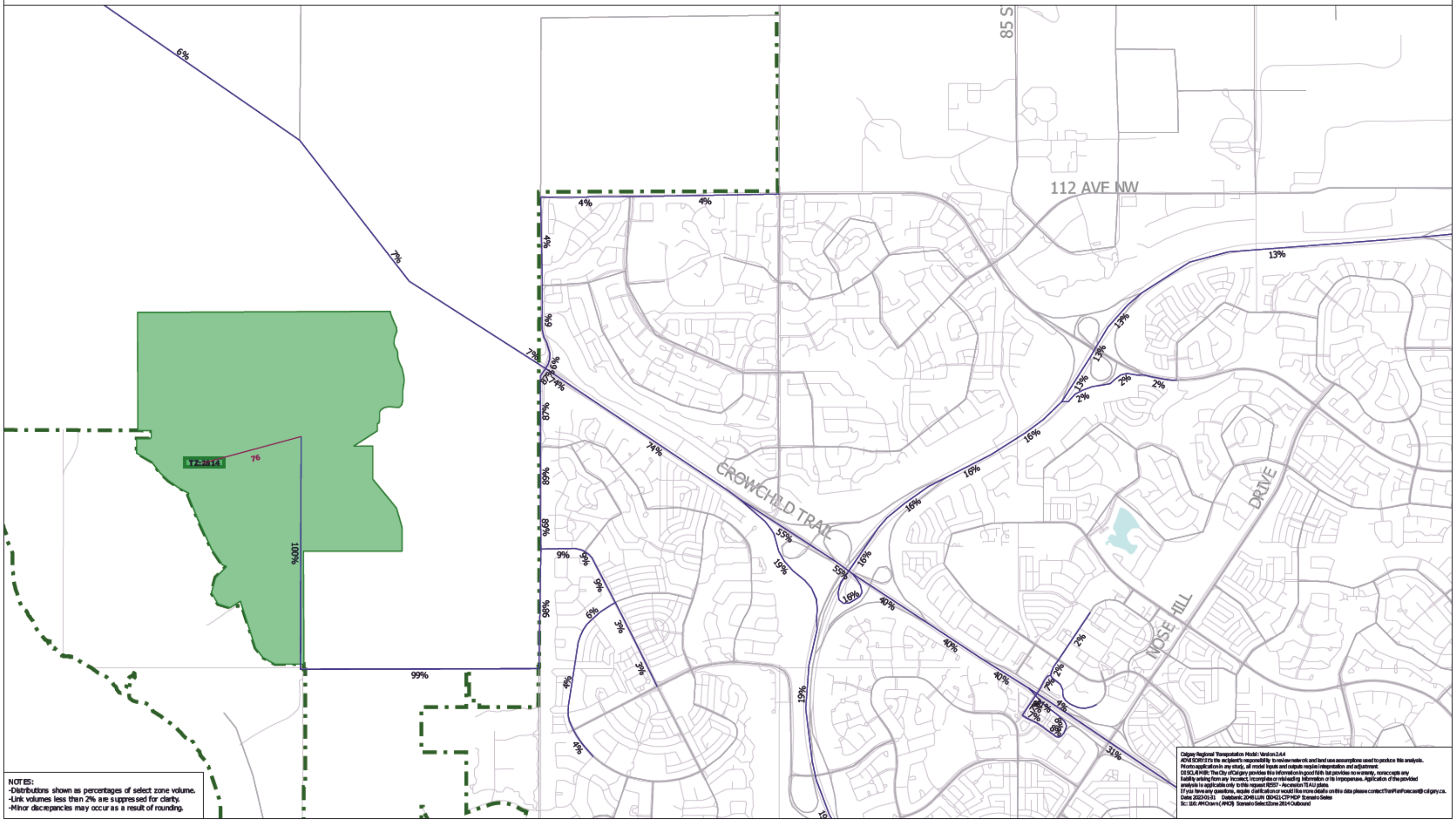
If you have any questions, require clarification or would like more details on this data please contact TransPlanForecast@calgary.ca.
Date: 2023-01-31 Databank: 2048 LUN (SD421-CTP MDP Scenario Series
Sc.: 115: AM Crown (AMCR) Scenario SelectZone 2814 Inbound

Outbound Distribution for Zone(s): 2814
2048 LUN - AM Crown

Project: R2557 - Ascension TIA Update
Total Outbound Select Zone Volume = 76 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)

N



NOTES:
-Distributions shown as percentages of 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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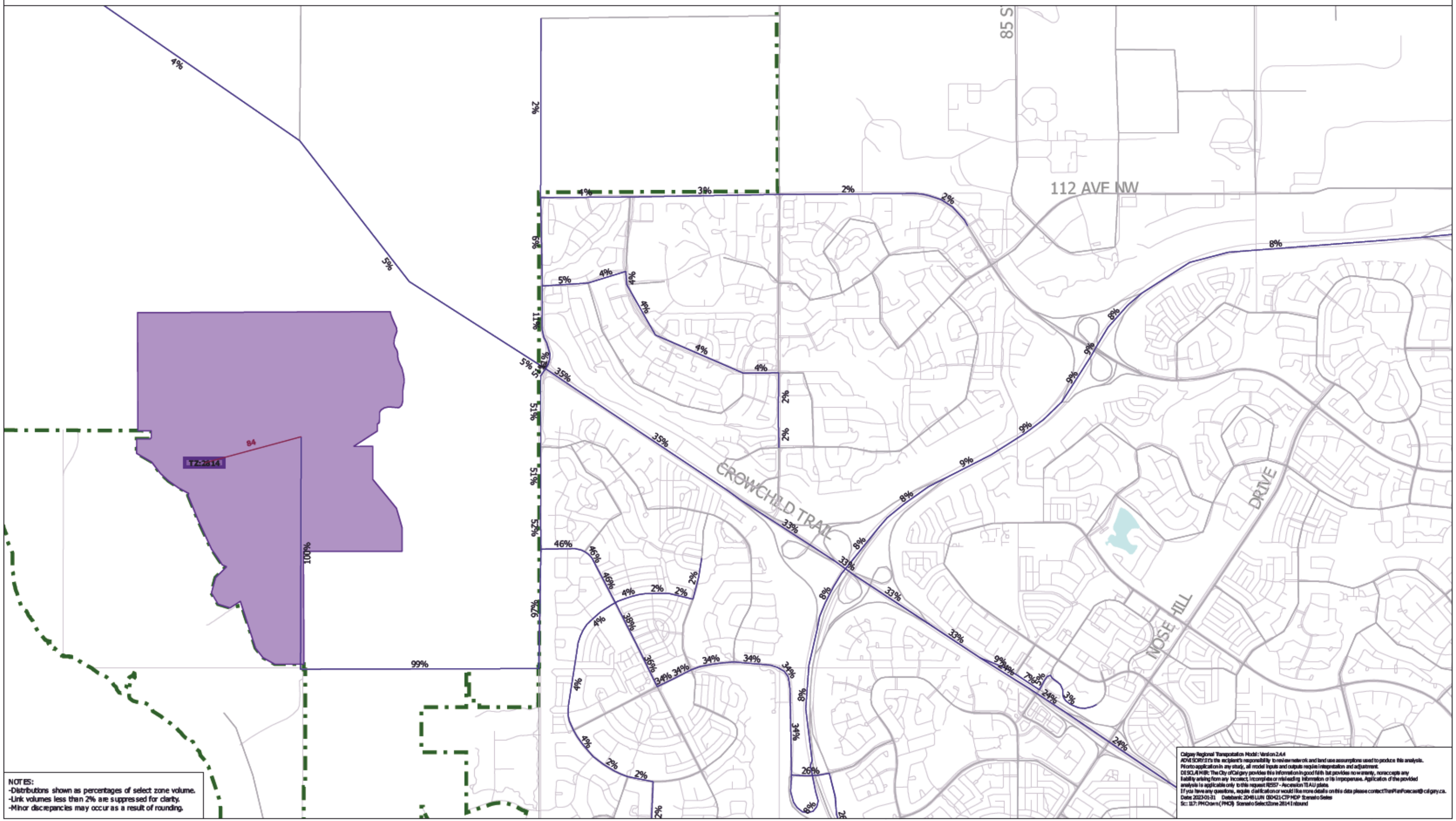
If you have any questions, require clarification or would like more details on this data please contact TransPlanForecast@calgary.ca.
Date: 2023-01-31 Databank: 2048 LUN (050421-CTP MDP Scenario Series
Sc: 116: AM Crown (AMCR) Scenario Select Zone 2814 Outbound

Inbound Distribution for Zone(s): 2814
2048 LUN - PM Crown

Project: R2557 - Ascension TIA Update
Total Inbound Select Zone Volume = 84 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)

N



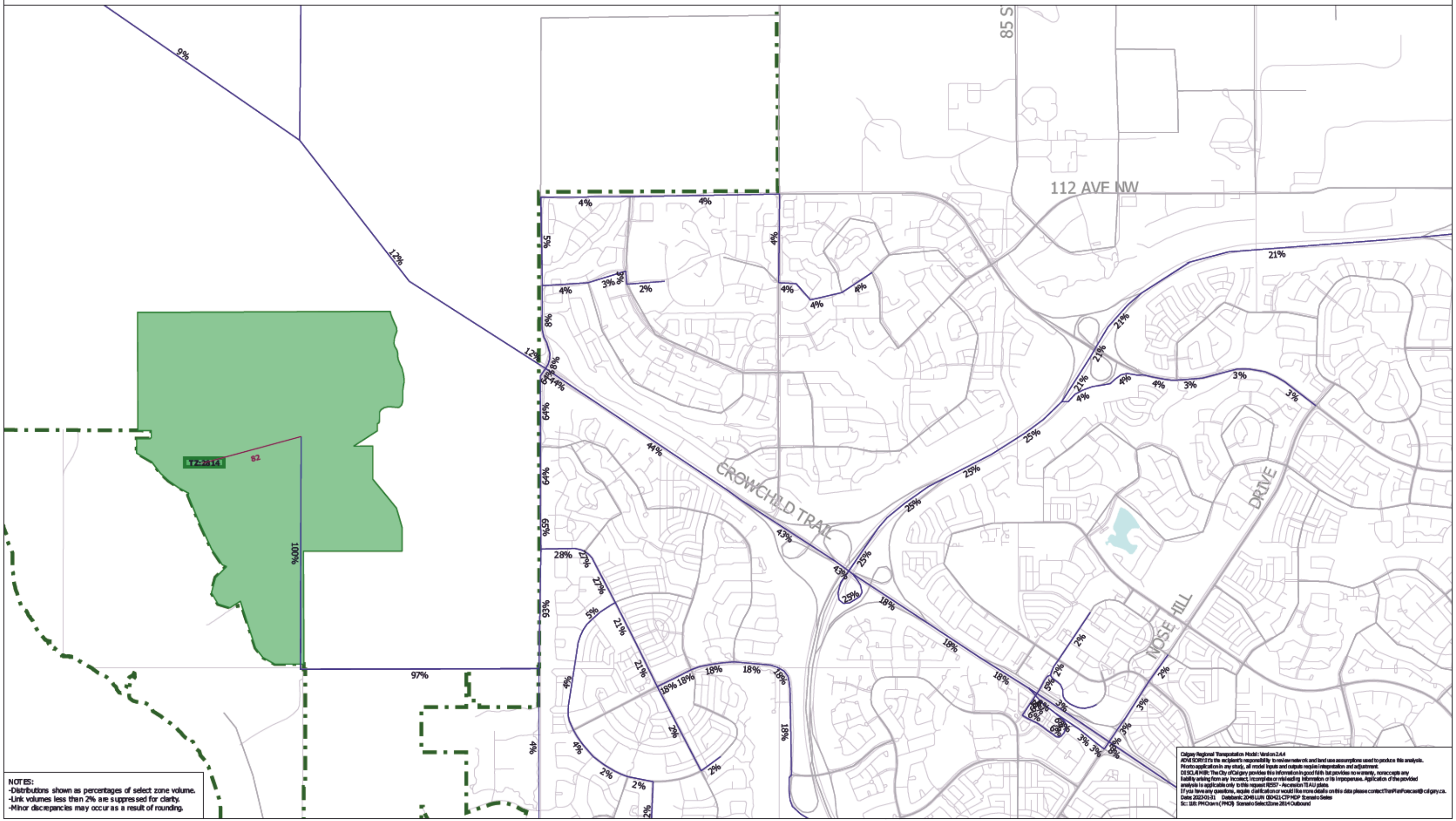
NOTES:
-Distributions shown as percentages of select zone volume.
-Link volumes less than 2% are suppressed for clarity.
-Minor discrepancies may occur as a result of rounding.

Outbound Distribution for Zone(s): 2814
2048 LUN - PM Crown

Project: R2557 - Ascension TIA Update
Total Outbound Select Zone Volume = 82 veh/hr

Standard Scenario: CTP MDP Scenario Series (Run ID: 050421)

N



NOTES:
-Distributions shown as percentages of 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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If you have any questions, require clarification or would like more details on this data please contact TrmPlanForecast@calgary.ca.
Date: 2023-01-31 Databank: 2048 LUN (050421-CTP MDP Scenario Series
Sc: 118: PM Crown (PMCR) Scenario Select Zone 2814 Outbound

R2557 - Ascension TIA Update-TIA
Transportation Forecast
ISC: Unrestricted
1-Feb-23
RTM Database Used:
2015 LUN 092618-CTP MDP Scenario Series
2048 LUN 050421-CTP MDP Scenario Series

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

Twelve Mile Coulee Rd NW

			Trucks	SBI	SBR	SBT	SBL	NBO				
			2%	850	90	140	620	650				
										5%	Trucks	
	WBO	1,170				Signal				1,610	WBI	
	EBL	120								300	WBR	
Crowchild Tr NW	EBT	2,060		Signal				Signal		940	WBT	Crowchild Tr NW
	EBR	160								370	WBL	
	EBI	2,340				Signal				3,300	EBO	
	Trucks	1%										
				670	140	230	620	990	2%			
				SBO	NBL	NBT	NBR	NBI	Trucks			

Twelve Mile Coulee Rd NW

PM Peak Hour Forecast

Twelve Mile Coulee Rd NW

			Trucks	SBI	SBR	SBT	SBL	NBO				
			1%	1,050	340	380	330	1,310				
										1%	Trucks	
	WBO	2,660				Signal				3,750	WBI	
	EBL	170								930	WBR	
Crowchild Tr NW	EBT	1,280		Signal				Signal		2,090	WBT	Crowchild Tr NW
	EBR	230								730	WBL	
	EBI	1,680				Signal				2,050	EBO	
	Trucks	3%										
				1,340	230	210	440	880	2%			
				SBO	NBL	NBT	NBR	NBI	Trucks			

Twelve Mile Coulee Rd NW

Twelve Mile Coulee Rd NW

			Trucks	SBI	SBR	SBT	SBL	NBO				
			2%	670	0	520	150	990				
										1%	Trucks	
	WBO					Freeflow				310	WBI	
	EBL									290	WBR	
Tusslewood Dr NW	EBT			N/A				Stop		0	WBT	Tusslewood Dr NW
	EBR									20	WBL	
	EBI					Freeflow				170	EBO	
	Trucks	0%										
				540	0	700	20	720	1%			
				SBO	NBL	NBT	NBR	NBI	Trucks			

Twelve Mile Coulee Rd NW

Twelve Mile Coulee Rd NW

			Trucks	SBI	SBR	SBT	SBL	NBO				
			1%	1,340	0	910	430	880				
										2%	Trucks	
	WBO					Freeflow				340	WBI	
	EBL									320	WBR	
Tusslewood Dr NW	EBT			N/A				Stop		0	WBT	Tusslewood Dr NW
	EBR									20	WBL	
	EBI					Freeflow				450	EBO	
	Trucks	0%										
				930	0	560	20	580	2%			
				SBO	NBL	NBT	NBR	NBI	Trucks			

Twelve Mile Coulee Rd NW

2039 AM LUN Scenario - Traversal matrix

Gate Name/Number / Origin	Destination	12 Mile Coulee RD S 101	Highway 1A W 102	Bearspaw RD 103	12 Mile Coulee RD N 104	Stoney TR N 105	Highway 1A E 106	Stoney TR S-NB Ramp 107	Stoney TR S 108	Total
12 Mile Coulee RD S	101	0	88	31	134	78	313	0	119	764
Highway 1A W	102	147	0	0	113	344	1,543	0	309	2,456
Bearspaw RD	103	14	0	0	0	0	168	0	80	262
12 Mile Coulee RD N	104	93	70	1	0	0	520	0	177	862
Stoney TR N	105	103	233	6	1	0	557	0	2,632	3,532
Highway 1A E	106	175	275	37	115	489	0	0	434	1,523
Stoney TR S-NB Ramp	107	2	150	42	73	354	754	0	0	1,375
Stoney TR S	108	0	0	0	0	2,194	0	0	0	2,194
	Total	535	816	116	436	3,460	3,854	0	3,752	12,968

2039 PM LUN Scenario - Traversal matrix

Gate Name/Number / Origin	Destination	12 Mile Coulee RD S 101	Highway 1A W 102	Bearspaw RD 103	12 Mile Coulee RD N 104	Stoney TR N 105	Highway 1A E 106	Stoney TR S-NB Ramp 107	Stoney TR S 108	Total
12 Mile Coulee RD S	101	0	229	54	225	65	129	0	76	**778**
Highway 1A W	102	145	0	0	133	229	473	0	298	**1,278**
Bearspaw RD	103	21	0	0	3	1	59	0	58	**142**
12 Mile Coulee RD N	104	218	246	4	0	0	185	0	122	**775**
Stoney TR N	105	91	275	0	0	0	379	0	2,819	**3,564**
Highway 1A E	106	278	1,217	150	490	1,126	0	0	1,317	**4,577**
Stoney TR S-NB Ramp	107	1	201	61	154	323	465	0	0	**1,204**
Stoney TR S	108	0	0	0	0	3,212	0	0	0	**3,212**
	Total	**755**	**2,167**	**269**	**1,004**	**4,956**	**1,690**	**0**	**4,689**	**15,529**

2048 AM LUN Scenario - Traversal matrix

Gate Name/Number / Origin	Destination	12 Mile Coulee RD S 101	Highway 1A W 102	Bearspaw RD 103	12 Mile Coulee RD N 104	Stoney TR N 105	Highway 1A E 106	Stoney TR S-NB Ramp 107	Stoney TR S 108	Total
12 Mile Coulee RD S	101	0	97	34	148	85	296	0	111	**772**
Highway 1A W	102	152	0	0	130	342	1,575	0	322	**2,521**
Bearspaw RD	103	16	0	0	1	0	165	0	57	**239**
12 Mile Coulee RD N	104	95	75	3	0	0	521	0	187	**882**
Stoney TR N	105	103	260	7	27	0	569	0	2,871	**3,837**
Highway 1A E	106	172	323	48	122	595	0	0	474	**1,733**
Stoney TR S-NB Ramp	107	1	156	34	78	378	752	0	0	**1,399**
Stoney TR S	108	0	0	0	0	2,572	0	0	0	**2,572**
	Total	**539**	**911**	**126**	**506**	**3,973**	**3,879**	**0**	**4,022**	**13,956**

2048 PM LUN Scenario - Traversal matrix

Gate Name/Number / Origin	Destination	12 Mile Coulee RD S 101	Highway 1A W 102	Bearspaw RD 103	12 Mile Coulee RD N 104	Stoney TR N 105	Highway 1A E 106	Stoney TR S-NB Ramp 107	Stoney TR S 108	Total
12 Mile Coulee RD S	101	0	254	51	232	92	139	0	29	796
Highway 1A W	102	190	0	0	159	289	494	0	239	1,372
Bearspaw RD	103	30	0	0	5	5	58	0	49	147
12 Mile Coulee RD N	104	265	294	6	0	0	196	0	94	854
Stoney TR N	105	52	311	0	0	0	442	0	3,295	4,100
Highway 1A E	106	284	1,287	149	479	1,193	0	0	1,302	4,695
Stoney TR S-NB Ramp	107	1	208	51	129	337	436	0	0	1,163
Stoney TR S	108	0	0	0	0	3,550	0	0	0	3,550
	Total	822	2,354	256	1,004	5,467	1,765	0	5,007	16,676

APPENDIX B

Synchro Reports

At-Grade Signalized Intersection

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1504	120	370	800	210	127	229	881	600	135	100
Future Volume (vph)	50	1504	120	370	800	210	127	229	881	600	135	100
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor										0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3362	3476	1536	3330	3476	1521	1750	3510	1566	3395	3318	1536
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3362	3476	1536	3330	3476	1521	1750	3510	1566	3348	3318	1536
Satd. Flow (RTOR)			167			167			494			167
Confl. Peds. (#/hr)										20		
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
Heavy Vehicles (%)	3%	5%	4%	4%	5%	5%	2%	4%	2%	2%	10%	4%
Adj. Flow (vph)	53	1600	128	394	851	223	135	244	937	638	144	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	1600	128	394	851	223	135	244	937	638	144	106
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	12.0		7.0	12.0	
Minimum Split (s)	13.5	27.0		13.5	26.5		13.5	54.0		15.0	19.0	
Total Split (s)	13.5	52.5		17.5	56.5		28.0	56.0		24.0	52.0	
Total Split (%)	9.0%	35.0%		11.7%	37.7%		18.7%	37.3%		16.0%	34.7%	
Maximum Green (s)	7.0	46.0		11.0	50.0		21.5	49.5		17.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							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				
Flash Dont Walk (s)								38.0				
Pedestrian Calls (#/hr)								10				
Act Effct Green (s)	7.1	46.7	126.3	11.2	53.8	126.3	14.2	24.2	126.3	17.8	27.7	126.3
Actuated g/C Ratio	0.06	0.37	1.00	0.09	0.43	1.00	0.11	0.19	1.00	0.14	0.22	1.00
v/c Ratio	0.28	1.24	0.08	1.34	0.57	0.15	0.69	0.36	0.60	1.33	0.20	0.07
Control Delay	66.0	151.2	0.1	216.5	33.0	0.2	73.7	44.0	1.7	206.1	40.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.0	151.2	0.1	216.5	33.0	0.2	73.7	44.0	1.7	206.1	40.1	0.1
LOS	E	F	A	F	C	A	E	D	A	F	D	A
Approach Delay		137.8			77.3			16.9			154.6	
Approach LOS		F			E			B			F	
Queue Length 50th (m)	5.8	~218.3	0.0	~55.5	72.2	0.0	29.0	27.5	0.0	~89.8	15.2	0.0
Queue Length 95th (m)	15.1	#376.1	0.0	#116.3	137.2	0.0	59.0	38.7	0.0	#172.8	25.5	0.0

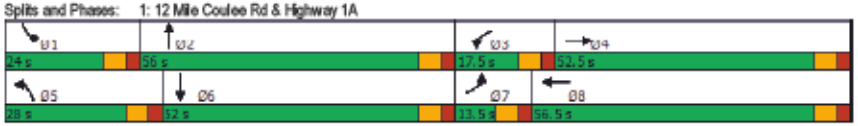
1: 12 Mile Coulee Rd & Highway 1A
02/28/2023

AM Peak Hour
2028 After Development - Existing Config

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		334.5			374.0			201.9			296.0	
Turn Bay Length (m)	135.0		150.0	90.0		35.0	50.0		40.0	75.0		55.0
Base Capacity (vph)	189	1286	1536	294	1481	1521	302	1397	1566	478	1224	1536
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	1.24	0.08	1.34	0.57	0.15	0.45	0.17	0.60	1.33	0.12	0.07

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 126.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.34	
Intersection Signal Delay: 95.1	Intersection LOS: F
Intersection Capacity Utilization 100.9%	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: 1: 12 Mile Coulee Rd & Highway 1A



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Synchro 11
DB

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1072	247	883	1558	740	202	273	628	260	375	220
Future Volume (vph)	200	1072	247	883	1558	740	202	273	628	260	375	220
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor										0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	3476	1601	3471	3476	1601	1789	3318	1601	3471	3579	1601
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3471	3476	1601	3471	3476	1601	1789	3318	1601	3424	3579	1601
Satd. Flow (RTOR)			262			262			587			262
Confl. Peds. (#/hr)										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
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	10%	2%	2%	2%	2%
Adj. Flow (vph)	211	1128	260	929	1640	779	213	287	661	274	395	232
Shared Lane Traffic (%)												
Lane Group Flow (vph)	211	1128	260	929	1640	779	213	287	661	274	395	232
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	12.0		7.0	12.0	
Minimum Split (s)	13.5	27.0		13.5	26.5		13.5	52.0		15.0	20.0	
Total Split (s)	13.5	46.5		33.5	66.5		33.0	52.0		18.0	37.0	
Total Split (%)	9.0%	31.0%		22.3%	44.3%		22.0%	34.7%		12.0%	24.7%	
Maximum Green (s)	7.0	40.0		27.0	60.0		26.5	45.5		11.5	30.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							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				
Flash Dont Walk (s)								36.0				
Pedestrian Calls (#/hr)								10				
Act Effct Green (s)	7.0	40.2	134.5	27.1	60.3	134.5	20.5	29.5	134.5	11.6	20.5	134.5
Actuated g/C Ratio	0.05	0.30	1.00	0.20	0.45	1.00	0.15	0.22	1.00	0.09	0.15	1.00
v/c Ratio	1.17	1.09	0.16	1.33	1.05	0.49	0.78	0.39	0.41	0.92	0.72	0.14
Control Delay	172.6	98.6	0.2	198.4	74.5	1.1	75.4	45.6	0.8	96.5	62.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	172.6	98.6	0.2	198.4	74.5	1.1	75.4	45.6	0.8	96.5	62.7	0.2
LOS	F	F	A	F	E	A	E	D	A	F	E	A
Approach Delay		92.4			91.8			25.6			56.9	
Approach LOS		F			F			C			E	
Queue Length 50th (m)	~34.1	~176.5	0.0	~164.3	~249.7	0.0	54.7	34.3	0.0	37.7	53.3	0.0
Queue Length 95th (m)	#67.3	#254.3	0.0	#233.5	#343.3	0.0	87.5	47.2	0.0	#73.1	73.3	0.0

1: 12 Mile Coulee Rd & Highway 1A
02/28/2023

PM Peak Hour
2028 After Development - Existing Config

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		334.5			374.0			201.9			296.0	
Turn Bay Length (m)	135.0		150.0	90.0		35.0	50.0		40.0	75.0		55.0
Base Capacity (vph)	181	1039	1601	700	1558	1601	354	1127	1601	298	815	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.17	1.09	0.16	1.33	1.05	0.49	0.60	0.25	0.41	0.92	0.48	0.14

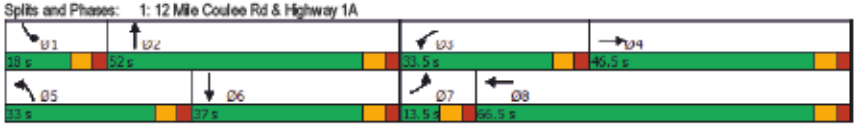
Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 134.5
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.33
Intersection Signal Delay: 76.5 — Intersection LOS: E
Intersection Capacity Utilization 98.0% — 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: 1: 12 Mile Coulee Rd & Highway 1A



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Synchro 11

DB

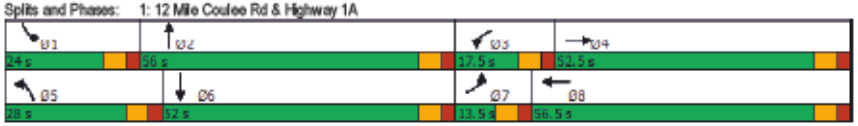
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1504	120	370	800	210	127	229	881	600	135	100
Future Volume (vph)	50	1504	120	370	800	210	127	229	881	600	135	100
Lane Util. Factor	0.97	0.91	1.00	0.94	0.91	1.00	1.00	0.95	1.00	0.94	0.95	1.00
Ped Bike Factor										0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3362	4995	1536	4840	4995	1521	1750	3510	1566	4935	3318	1536
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3362	4995	1536	4840	4995	1521	1750	3510	1566	4866	3318	1536
Satd. Flow (RTOR)			167			167			494			167
Confl. Peds. (#/hr)										20		
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
Heavy Vehicles (%)	3%	5%	4%	4%	5%	5%	2%	4%	2%	2%	10%	4%
Adj. Flow (vph)	53	1600	128	394	851	223	135	244	937	638	144	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	1600	128	394	851	223	135	244	937	638	144	106
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	12.0		7.0	12.0	
Minimum Split (s)	13.5	27.0		13.5	26.5		13.5	54.0		15.0	20.0	
Total Split (s)	13.5	52.5		17.5	56.5		28.0	56.0		24.0	52.0	
Total Split (%)	9.0%	35.0%		11.7%	37.7%		18.7%	37.3%		16.0%	34.7%	
Maximum Green (s)	7.0	46.0		11.0	50.0		21.5	49.5		17.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							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				
Flash Dont Walk (s)								38.0				
Pedestrian Calls (#/hr)								10				
Act Effct Green (s)	7.1	46.7	126.3	11.2	53.8	126.3	14.2	24.2	126.3	17.8	27.7	126.3
Actuated g/C Ratio	0.06	0.37	1.00	0.09	0.43	1.00	0.11	0.19	1.00	0.14	0.22	1.00
v/c Ratio	0.28	0.87	0.08	0.92	0.40	0.15	0.69	0.36	0.60	0.92	0.20	0.07
Control Delay	66.0	44.3	0.1	85.1	28.9	0.2	73.7	44.0	1.7	73.3	40.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.0	44.3	0.1	85.1	28.9	0.2	73.7	44.0	1.7	73.3	40.1	0.1
LOS	E	D	A	F	C	A	E	D	A	E	D	A
Approach Delay		41.7			39.6			16.9			59.2	
Approach LOS		D			D			B			E	
Queue Length 50th (m)	5.8	112.1	0.0	31.0	45.7	0.0	29.0	27.5	0.0	49.3	15.2	0.0
Queue Length 95th (m)	15.1	#209.1	0.0	#67.9	85.3	0.0	59.0	38.7	0.0	#99.2	25.5	0.0

1: 12 Mile Coulee Rd & Highway 1A
02/28/2023
AM Peak Hour
2028 After Development - 6 Lane Triple Lefts

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		334.5			374.0			201.9			296.0	
Turn Bay Length (m)	135.0		150.0	90.0		35.0	50.0		40.0	75.0		55.0
Base Capacity (vph)	189	1848	1536	428	2129	1521	302	1397	1566	694	1224	1536
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.87	0.08	0.92	0.40	0.15	0.45	0.17	0.60	0.92	0.12	0.07

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 126.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 38.0	Intersection LOS: D
Intersection Capacity Utilization 79.2%	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: 1: 12 Mile Coulee Rd & Highway 1A



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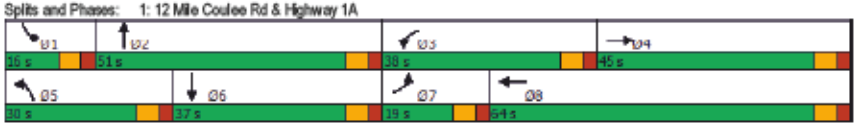
Synchro 11
DB

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1072	247	883	1558	740	202	273	628	260	375	220
Future Volume (vph)	200	1072	247	883	1558	740	202	273	628	260	375	220
Lane Util. Factor	0.97	0.91	1.00	0.94	0.91	1.00	1.00	0.95	1.00	0.94	0.95	1.00
Ped Bike Factor										0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3306	4863	1525	4805	4863	1525	1704	3231	1525	4805	3484	1525
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3306	4863	1525	4805	4863	1525	1704	3231	1525	4739	3484	1525
Satd. Flow (RTOR)			262			262			620			262
Confl. Peds. (#/hr)										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
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	10%	2%	2%	2%	2%
Adj. Flow (vph)	211	1128	260	929	1640	779	213	287	661	274	395	232
Shared Lane Traffic (%)												
Lane Group Flow (vph)	211	1128	260	929	1640	779	213	287	661	274	395	232
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	12.0		7.0	12.0	
Minimum Split (s)	13.5	27.0		13.5	26.5		13.5	51.0		15.0	20.0	
Total Split (s)	19.0	45.0		38.0	64.0		30.0	51.0		16.0	37.0	
Total Split (%)	12.7%	30.0%		25.3%	42.7%		20.0%	34.0%		10.7%	24.7%	
Maximum Green (s)	12.5	38.5		31.5	57.5		23.5	44.5		9.5	30.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							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				
Flash Dont Walk (s)								36.0				
Pedestrian Calls (#/hr)								10				
Act Effct Green (s)	12.1	35.8	134.2	29.9	53.7	134.2	20.8	32.4	134.2	9.6	21.3	134.2
Actuated g/C Ratio	0.09	0.27	1.00	0.22	0.40	1.00	0.15	0.24	1.00	0.07	0.16	1.00
v/c Ratio	0.71	0.87	0.17	0.87	0.84	0.51	0.81	0.37	0.43	0.79	0.72	0.15
Control Delay	75.3	55.9	0.2	60.7	42.0	1.2	79.2	43.7	0.9	80.1	62.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.3	55.9	0.2	60.7	42.0	1.2	79.2	43.7	0.9	80.1	62.2	0.2
LOS	E	E	A	E	D	A	E	D	A	F	E	A
Approach Delay		49.4			37.7			25.8			51.7	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	29.9	109.1	0.0	88.9	147.5	0.0	57.1	34.8	0.0	27.1	56.1	0.0
Queue Length 95th (m)	#49.6	#139.0	0.0	#120.2	185.1	0.0	#100.8	47.8	0.0	#46.7	73.6	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		334.5			374.0			201.9			296.0	
Turn Bay Length (m)	135.0		150.0	90.0		35.0	50.0		40.0	75.0		55.0
Base Capacity (vph)	312	1415	1525	1144	2113	1525	302	1086	1525	345	803	1525
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.80	0.17	0.81	0.78	0.51	0.71	0.26	0.43	0.79	0.49	0.15

Intersection Summary		
Cycle Length: 150		
Actuated Cycle Length: 134.2		
Natural Cycle: 140		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.87		
Intersection Signal Delay: 40.2	Intersection LOS: D	
Intersection Capacity Utilization 82.3%	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: 1: 12 Mile Coulee Rd & Highway 1A



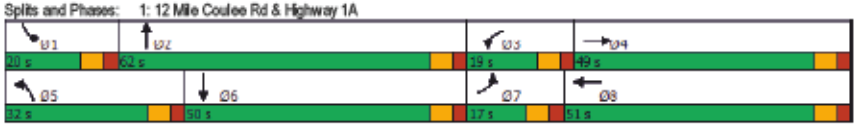
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	2496	185	568	960	250	168	296	1114	620	168	100
Future Volume (vph)	110	2496	185	568	960	250	168	296	1114	620	168	100
Lane Util. Factor	0.97	0.86	1.00	0.94	0.86	1.00	1.00	0.95	1.00	0.94	0.95	1.00
Ped Bike Factor										0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3273	6128	1495	4713	6128	1481	1704	3417	1525	4805	3231	1495
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3273	6128	1495	4713	6128	1481	1704	3417	1525	4753	3231	1495
Satd. Flow (RTOR)			215			215			562			215
Confl. Peds. (#/hr)										20		
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
Heavy Vehicles (%)	3%	5%	4%	4%	5%	5%	2%	4%	2%	2%	10%	4%
Adj. Flow (vph)	117	2655	197	604	1021	266	179	315	1185	660	179	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	2655	197	604	1021	266	179	315	1185	660	179	106
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	12.0		7.0	12.0	
Minimum Split (s)	13.5	27.0		13.5	26.5		13.5	62.0		15.0	20.0	
Total Split (s)	17.0	49.0		19.0	51.0		32.0	62.0		20.0	50.0	
Total Split (%)	11.3%	32.7%		12.7%	34.0%		21.3%	41.3%		13.3%	33.3%	
Maximum Green (s)	10.5	42.5		12.5	44.5		25.5	55.5		13.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							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				
Flash Dont Walk (s)								46.0				
Pedestrian Calls (#/hr)								10				
Act Effct Green (s)	9.2	43.5	124.3	12.8	47.2	124.3	17.2	27.5	124.3	13.8	24.2	124.3
Actuated g/C Ratio	0.07	0.35	1.00	0.10	0.38	1.00	0.14	0.22	1.00	0.11	0.19	1.00
v/c Ratio	0.48	1.24	0.13	1.25	0.44	0.18	0.76	0.42	0.78	1.24	0.29	0.07
Control Delay	65.9	146.0	0.2	171.6	32.5	0.3	74.6	40.9	4.0	166.4	42.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	146.0	0.2	171.6	32.5	0.3	74.6	40.9	4.0	166.4	42.6	0.1
LOS	E	F	A	F	C	A	E	D	A	F	D	A
Approach Delay		133.2			72.4			18.4			124.3	
Approach LOS		F			E			B			F	
Queue Length 50th (m)	12.4	~190.8	0.0	~53.1	43.7	0.0	36.8	34.1	0.0	~57.8	19.3	0.0
Queue Length 95th (m)	28.1	#335.0	0.0	#113.5	85.2	0.0	75.1	46.2	0.0	#121.7	31.3	0.0

1: 12 Mile Coulee Rd & Highway 1A
02/28/2023
AM Peak Hour
2039 After Development - 8 Lane Triple Lefts

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		334.5			374.0			201.9			296.0	
Turn Bay Length (m)	135.0		150.0	90.0		35.0	50.0		40.0	75.0		55.0
Base Capacity (vph)	283	2146	1495	485	2324	1481	358	1563	1525	534	1178	1495
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	1.24	0.13	1.25	0.44	0.18	0.50	0.20	0.78	1.24	0.15	0.07

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 124.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 91.0	Intersection LOS: F
Intersection Capacity Utilization 92.0%	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: 1: 12 Mile Coulee Rd & Highway 1A



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Synchro 11
DB

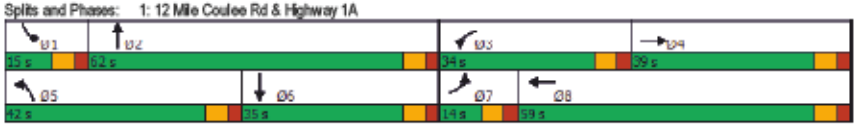
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	1488	292	1282	2389	1000	255	327	773	340	445	280
Future Volume (vph)	190	1488	292	1282	2389	1000	255	327	773	340	445	280
Lane Util. Factor	0.97	0.86	1.00	0.94	0.86	1.00	1.00	0.95	1.00	0.94	0.95	1.00
Ped Bike Factor										0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3306	6128	1525	4805	6128	1525	1704	3231	1525	4805	3484	1525
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3306	6128	1525	4805	6128	1525	1704	3231	1525	4755	3484	1525
Satd. Flow (RTOR)			307			262			676			262
Confl. Peds. (#/hr)										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
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	10%	2%	2%	2%	2%
Adj. Flow (vph)	200	1566	307	1349	2515	1053	268	344	814	358	468	295
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	1566	307	1349	2515	1053	268	344	814	358	468	295
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	12.0		7.0	12.0	
Minimum Split (s)	13.5	27.0		13.5	26.5		13.5	62.0		15.0	20.0	
Total Split (s)	14.0	39.0		34.0	59.0		42.0	62.0		15.0	35.0	
Total Split (%)	9.3%	26.0%		22.7%	39.3%		28.0%	41.3%		10.0%	23.3%	
Maximum Green (s)	7.5	32.5		27.5	52.5		35.5	55.5		8.5	28.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							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				
Flash Dont Walk (s)								46.0				
Pedestrian Calls (#/hr)								10				
Act Effct Green (s)	7.6	32.7	135.7	27.7	52.9	135.7	26.2	40.6	135.7	8.6	23.0	135.7
Actuated g/C Ratio	0.06	0.24	1.00	0.20	0.39	1.00	0.19	0.30	1.00	0.06	0.17	1.00
v/c Ratio	1.09	1.06	0.20	1.38	1.05	0.69	0.82	0.36	0.53	1.18	0.79	0.19
Control Delay	150.5	90.0	0.3	216.3	74.8	2.6	72.6	37.5	1.3	164.0	65.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	150.5	90.0	0.3	216.3	74.8	2.6	72.6	37.5	1.3	164.0	65.4	0.3
LOS	F	F	A	F	E	A	E	D	A	F	E	A
Approach Delay		82.6			98.2			23.5			79.7	
Approach LOS		F			F			C			E	
Queue Length 50th (m)	~31.2	~135.1	0.0	~170.6	~215.9	0.0	69.5	37.8	0.0	~41.0	64.0	0.0
Queue Length 95th (m)	#63.7	#185.2	0.0	#227.5	#278.6	0.0	104.6	50.6	0.0	#70.6	88.8	0.0

1: 12 Mile Coulee Rd & Highway 1A
02/28/2023
PM Peak Hour
2039 After Development - 8 Lane Triple Lefts

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		334.5			374.0			201.9			296.0	
Turn Bay Length (m)	135.0		150.0	90.0		35.0	50.0		40.0	75.0		55.0
Base Capacity (vph)	184	1477	1525	980	2386	1525	448	1330	1525	303	736	1525
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	1.06	0.20	1.38	1.05	0.69	0.60	0.26	0.53	1.18	0.64	0.19

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 135.7	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.38	
Intersection Signal Delay: 81.4	Intersection LOS: F
Intersection Capacity Utilization 96.0%	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: 1: 12 Mile Coulee Rd & Highway 1A



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Synchro 11
DB

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	2563	195	628	1069	300	178	306	1064	620	188	90
Future Volume (vph)	120	2563	195	628	1069	300	178	306	1064	620	188	90
Lane Util. Factor	0.97	0.86	1.00	0.94	0.86	1.00	1.00	0.95	1.00	0.94	0.95	1.00
Ped Bike Factor										0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3273	6128	1495	4713	6128	1481	1704	3417	1525	4805	3231	1495
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3273	6128	1495	4713	6128	1481	1704	3417	1525	4754	3231	1495
Satd. Flow (RTOR)			215			215			562			215
Confl. Peds. (#/hr)										20		
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
Heavy Vehicles (%)	3%	5%	4%	4%	5%	5%	2%	4%	2%	2%	10%	4%
Adj. Flow (vph)	128	2727	207	668	1137	319	189	326	1132	660	200	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	2727	207	668	1137	319	189	326	1132	660	200	96
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	12.0		7.0	12.0	
Minimum Split (s)	13.5	27.0		13.5	26.5		13.5	62.0		15.0	20.0	
Total Split (s)	17.0	49.0		19.0	51.0		32.0	62.0		20.0	50.0	
Total Split (%)	11.3%	32.7%		12.7%	34.0%		21.3%	41.3%		13.3%	33.3%	
Maximum Green (s)	10.5	42.5		12.5	44.5		25.5	55.5		13.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							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				
Flash Dont Walk (s)								46.0				
Pedestrian Calls (#/hr)								10				
Act Effct Green (s)	9.4	43.5	124.6	12.8	46.9	124.6	17.7	27.8	124.6	13.8	23.9	124.6
Actuated g/C Ratio	0.08	0.35	1.00	0.10	0.38	1.00	0.14	0.22	1.00	0.11	0.19	1.00
v/c Ratio	0.52	1.27	0.14	1.38	0.49	0.22	0.78	0.43	0.74	1.24	0.32	0.06
Control Delay	66.7	161.7	0.2	224.8	33.6	0.3	75.9	41.0	3.3	167.8	43.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.7	161.7	0.2	224.8	33.6	0.3	75.9	41.0	3.3	167.8	43.5	0.1
LOS	E	F	A	F	C	A	E	D	A	F	D	A
Approach Delay		146.9			88.7			19.1			124.9	
Approach LOS		F			F			B			F	
Queue Length 50th (m)	13.8	~203.5	0.0	~64.3	51.1	0.0	39.3	35.4	0.0	~58.7	21.8	0.0
Queue Length 95th (m)	30.2	#347.4	0.0	#127.8	96.3	0.0	79.3	47.7	0.0	#121.7	34.7	0.0

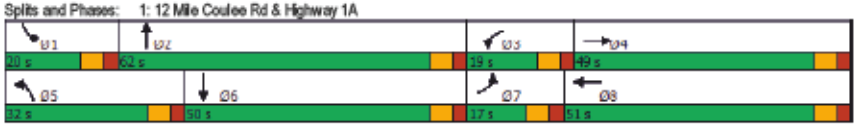
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		334.5			374.0			201.9			296.0	
Turn Bay Length (m)	135.0		150.0	90.0		35.0	50.0		40.0	75.0		55.0
Base Capacity (vph)	282	2140	1495	484	2307	1481	357	1558	1525	533	1171	1495
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	1.27	0.14	1.38	0.49	0.22	0.53	0.21	0.74	1.24	0.17	0.06

Intersection Summary		
Cycle Length: 150		
Actuated Cycle Length: 124.6		
Natural Cycle: 150		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 1.38		
Intersection Signal Delay: 101.3	Intersection LOS: F	
Intersection Capacity Utilization 94.2%	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: 1: 12 Mile Coulee Rd & Highway 1A

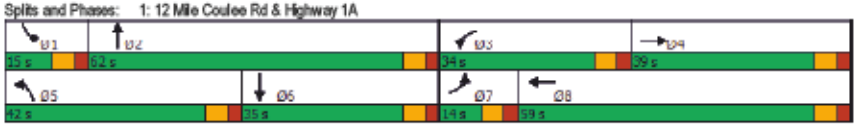


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	1588	282	1332	2681	930	295	297	823	330	485	340
Future Volume (vph)	170	1588	282	1332	2681	930	295	297	823	330	485	340
Lane Util. Factor	0.97	0.86	1.00	0.94	0.86	1.00	1.00	0.95	1.00	0.94	0.95	1.00
Ped Bike Factor										0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3306	6128	1525	4805	6128	1525	1704	3231	1525	4805	3484	1525
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3306	6128	1525	4805	6128	1525	1704	3231	1525	4753	3484	1525
Satd. Flow (RTOR)			297			262			688			263
Confl. Peds. (#/hr)										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
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	10%	2%	2%	2%	2%
Adj. Flow (vph)	179	1672	297	1402	2822	979	311	313	866	347	511	358
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	1672	297	1402	2822	979	311	313	866	347	511	358
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	12.0		7.0	12.0	
Minimum Split (s)	13.5	27.0		13.5	26.5		13.5	62.0		15.0	20.0	
Total Split (s)	14.0	39.0		34.0	59.0		42.0	62.0		15.0	35.0	
Total Split (%)	9.3%	26.0%		22.7%	39.3%		28.0%	41.3%		10.0%	23.3%	
Maximum Green (s)	7.5	32.5		27.5	52.5		35.5	55.5		8.5	28.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							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				
Flash Dont Walk (s)								46.0				
Pedestrian Calls (#/hr)								10				
Act Effct Green (s)	7.5	32.7	140.9	27.6	52.8	140.9	29.7	45.9	140.9	8.5	24.8	140.9
Actuated g/C Ratio	0.05	0.23	1.00	0.20	0.37	1.00	0.21	0.33	1.00	0.06	0.18	1.00
v/c Ratio	1.02	1.18	0.19	1.49	1.23	0.64	0.87	0.30	0.57	1.19	0.84	0.23
Control Delay	136.6	134.0	0.3	264.2	145.7	2.1	77.5	35.5	1.5	169.7	69.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	136.6	134.0	0.3	264.2	145.7	2.1	77.5	35.5	1.5	169.7	69.5	0.4
LOS	F	F	A	F	F	A	E	D	A	F	E	A
Approach Delay		115.7			150.6			24.5			77.7	
Approach LOS		F			F			C			E	
Queue Length 50th (m)	~28.2	~168.3	0.0	~197.5	~292.7	0.0	85.3	34.1	0.0	~42.9	74.3	0.0
Queue Length 95th (m)	#55.7	#204.0	0.0	#239.1	#332.0	0.0	#124.8	46.1	0.0	#67.9	97.5	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		334.5			374.0			201.9			296.0	
Turn Bay Length (m)	135.0		150.0	90.0		35.0	50.0		40.0	75.0		55.0
Base Capacity (vph)	176	1420	1525	942	2294	1525	431	1279	1525	291	708	1525
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	1.18	0.19	1.49	1.23	0.64	0.72	0.24	0.57	1.19	0.72	0.23

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 140.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.49	
Intersection Signal Delay: 115.7	Intersection LOS: F
Intersection Capacity Utilization 101.9%	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: 1: 12 Mile Coulee Rd & Highway 1A



CFI – East Leg Pedestrian Crossing

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	1624	927	0	0	100
Future Volume (vph)	50	1624	927	0	0	100
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	3385	3385	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	3385	3385	0	0	1566
Satd. Flow (RTOR)						404
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	53	1728	986	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	1728	986	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0			
Minimum Split (s)	27.5	26.0	27.5			
Total Split (s)	35.0	120.0	85.0			
Total Split (%)	29.2%	100.0%	70.8%			
Maximum Green (s)	30.0	118.0	78.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	18.0	120.0	92.8			120.0
Actuated g/C Ratio	0.15	1.00	0.77			1.00
v/c Ratio	0.11	0.51	0.38			0.07
Control Delay	44.8	0.6	6.3			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	44.8	0.6	6.3			0.1
LOS	D	A	A			A
Approach Delay		1.9	6.3		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	5.6	0.0	43.3			0.0
Queue Length 95th (m)	11.5	0.0	53.7			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	771	3385	2617			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.07	0.51	0.38			0.07

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 65 (54%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 3.3	Intersection LOS: A
Intersection Capacity Utilization 49.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

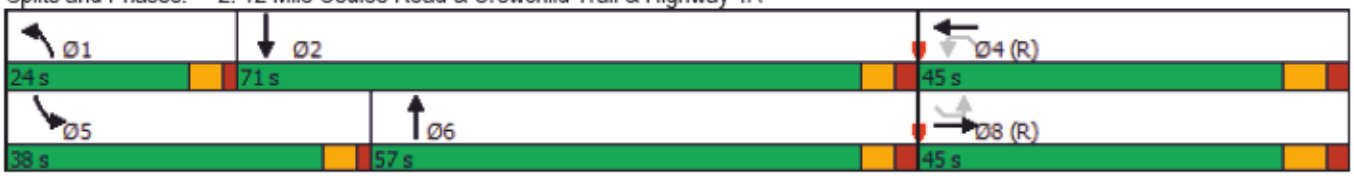
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Future Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3385	1714	3385	1697	3306	3342	1525	3306	3310	1495	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3385	1691	3385	1675	3306	3342	1484	3273	3310	1463	3273	3242
Satd. Flow (RTOR)		156		156			937			156		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	4%	3%	4%
Adj. Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	57.0		12.0	16.0		27.0	27.0
Total Split (s)	45.0		45.0		24.0	57.0		38.0	71.0		45.0	45.0
Total Split (%)	32.1%		32.1%		17.1%	40.7%		27.1%	50.7%		32.1%	32.1%
Maximum Green (s)	38.0		38.0		19.0	51.0		33.0	65.0		38.0	38.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
Lead/Lag					Lead	Lag		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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)						8.0						
Flash Dont Walk (s)						43.0						
Pedestrian Calls (#/hr)						2						
Act Effct Green (s)	67.3	140.0	67.3	140.0	9.0	19.8	140.0	28.9	39.7	140.0	67.3	67.3
Actuated g/C Ratio	0.48	1.00	0.48	1.00	0.06	0.14	1.00	0.21	0.28	1.00	0.48	0.48
v/c Ratio	0.98	0.08	0.52	0.13	0.64	0.52	0.63	0.94	0.15	0.07	0.03	0.25
Control Delay	53.8	0.1	29.7	0.2	77.4	57.6	2.1	76.2	35.6	0.1	25.5	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	0.1	29.7	0.2	77.4	57.6	2.1	76.2	35.6	0.1	25.5	25.6
LOS	D	A	C	A	E	E	A	E	D	A	C	C
Approach Delay	49.8		23.5			20.1			60.5			
Approach LOS	D		C			C			E			
Queue Length 50th (m)	209.8	0.0	78.6	0.0	19.1	35.2	0.0	88.9	16.5	0.0	3.6	30.3

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#394.7	0.0	#166.2	0.0	29.5	35.4	0.0	#117.8	17.3	0.0	11.3	63.6
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	1627	1691	1627	1675	401	1169	1484	732	1512	1463	1573	1558
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.08	0.52	0.13	0.34	0.21	0.63	0.87	0.10	0.07	0.03	0.25

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 37.2 — Intersection LOS: D
Intersection Capacity Utilization 120.8% — 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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	2104	0	370	1010	0	881
Future Volume (vph)	2104	0	370	1010	0	881
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3385	0	3306	3385	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	3385	0	3306	3385	0	1566
Satd. Flow (RTOR)						214
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2238	0	394	1074	0	937
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2238	0	394	1074	0	937
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	27.5		14.5	27.0		
Total Split (s)	95.0		25.0	120.0		
Total Split (%)	79.2%		20.8%	100.0%		
Maximum Green (s)	88.0		20.0	113.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	87.6		16.4	120.0		120.0
Actuated g/C Ratio	0.73		0.14	1.00		1.00
v/c Ratio	0.91		0.87	0.32		0.60
Control Delay	20.2		70.7	0.2		1.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	20.2		70.7	0.2		1.7
LOS	C		E	A		A
Approach Delay	20.2			19.2	1.7	
Approach LOS	C			B	A	
Queue Length 50th (m)	203.5		46.9	0.0		0.0
Queue Length 95th (m)	256.4		#67.7	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2469		495	3385		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.91		0.80	0.32		0.60

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 15 (13%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 83.9%	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: Crowchild Trail

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	200	1318	1760	0	0	220
Future Volume (vph)	200	1318	1760	0	0	220
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3471	3400	3476	0	0	1629
Flt Permitted	0.950					
Satd. Flow (perm)	3471	3400	3476	0	0	1608
Satd. Flow (RTOR)						211
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	213	1402	1872	0	0	234
Shared Lane Traffic (%)						
Lane Group Flow (vph)	213	1402	1872	0	0	234
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	120.0	28.5			
Total Split (s)	26.0	140.0	114.0			
Total Split (%)	18.6%	100.0%	81.4%			
Maximum Green (s)	21.0	133.0	107.0			
Yellow Time (s)	3.5	4.5	4.5			
All-Red Time (s)	1.5	2.5	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	9.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.8	140.0	112.2			140.0
Actuated g/C Ratio	0.08	1.00	0.80			1.00
v/c Ratio	0.73	0.41	0.67			0.15
Control Delay	77.1	0.4	2.9			0.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	77.1	0.4	2.9			0.2
LOS	E	A	A			A
Approach Delay		10.5	2.9		0.2	
Approach LOS		B	A		A	
Queue Length 50th (m)	30.1	0.0	5.7			0.0
Queue Length 95th (m)	42.6	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	471	3400	2786			1608

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.45	0.41	0.67			0.15

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 43 (31%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A & Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Future Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3476	1794	3476	1794	3395	3400	1566	3395	3500	1566	3395	3395
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3476	1771	3476	1771	3395	3400	1524	3364	3500	1532	3395	3395
Satd. Flow (RTOR)		124		256			668			234		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	57.0		12.0	16.0		27.0	27.0
Total Split (s)	59.0		59.0		24.0	57.0		24.0	57.0		59.0	59.0
Total Split (%)	42.1%		42.1%		17.1%	40.7%		17.1%	40.7%		42.1%	42.1%
Maximum Green (s)	52.0		52.0		19.0	51.0		19.0	51.0		52.0	52.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
Lead/Lag					Lead	Lag		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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)						8.0						
Flash Dont Walk (s)						43.0						
Pedestrian Calls (#/hr)						0						
Act Effct Green (s)	84.4	140.0	84.4	140.0	12.1	17.4	140.0	14.2	19.5	140.0	84.4	84.4
Actuated g/C Ratio	0.60	1.00	0.60	1.00	0.09	0.12	1.00	0.10	0.14	1.00	0.60	0.60
v/c Ratio	0.54	0.15	0.79	0.44	0.74	0.69	0.44	0.81	0.82	0.15	0.10	0.46
Control Delay	18.5	0.2	24.9	0.6	77.3	66.9	0.9	79.4	72.3	0.2	0.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	0.2	24.9	0.6	77.3	66.9	0.9	79.4	72.3	0.2	0.2	0.5
LOS	B	A	C	A	E	E	A	E	E	A	A	A
Approach Delay	15.1		17.1			31.2			55.9			
Approach LOS	B		B			C			E			
Queue Length 50th (m)	93.5	0.0	174.6	0.0	30.4	41.2	0.0	39.2	57.3	0.0	0.3	0.2

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	132.4	0.0	243.3	0.0	42.7	53.7	0.0	53.5	72.2	0.0	0.2	0.0
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2096	1771	2096	1771	412	1190	1524	412	1225	1532	2047	2047
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.15	0.79	0.44	0.52	0.24	0.44	0.67	0.33	0.15	0.10	0.46

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 121.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3476	0	3395	3476	0	1629
Flt Permitted			0.950			
Satd. Flow (perm)	3476	0	3395	3476	0	1608
Satd. Flow (RTOR)						475
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	120.0		
Total Split (s)	81.0		59.0	140.0		
Total Split (%)	57.9%		42.1%	100.0%		
Maximum Green (s)	74.0		54.0	133.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Act Effct Green (s)	80.8		43.2	140.0		140.0
Actuated g/C Ratio	0.58		0.31	1.00		1.00
v/c Ratio	0.71		0.90	0.70		0.42
Control Delay	18.2		57.8	1.2		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	18.2		57.8	1.2		0.7
LOS	B		E	A		A
Approach Delay	18.2			16.9	0.7	
Approach LOS	B			B	A	
Queue Length 50th (m)	141.4		127.7	0.0		0.0
Queue Length 95th (m)	197.3		142.2	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2006		1261	3476		1608

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.71		0.74	0.70		0.42

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 17 (12%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

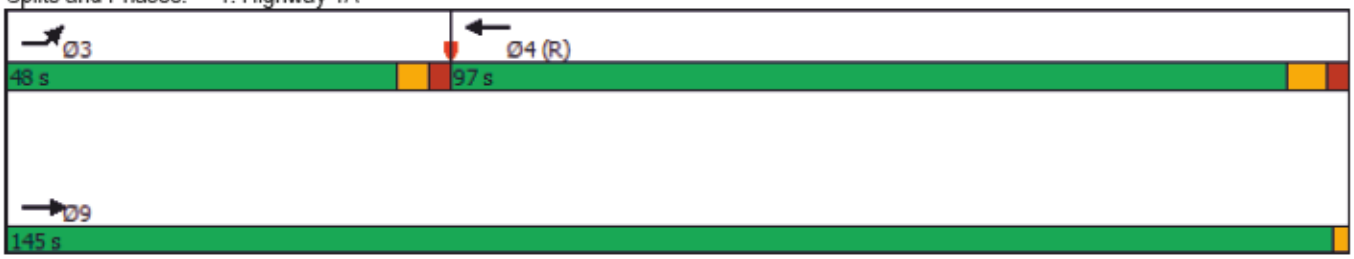
Splits and Phases: 3: Crowchild Trail & Crowchild Traill

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	110	2681	1128	0	0	100
Future Volume (vph)	110	2681	1128	0	0	100
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						401
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	117	2852	1200	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	2852	1200	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	145.0	28.5			
Total Split (s)	48.0	145.0	97.0			
Total Split (%)	33.1%	100.0%	66.9%			
Maximum Green (s)	42.0	143.0	90.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	2.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	8.4	145.0	119.6			145.0
Actuated g/C Ratio	0.06	1.00	0.82			1.00
v/c Ratio	0.61	0.59	0.30			0.07
Control Delay	79.9	0.5	0.2			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	79.9	0.5	0.2			0.1
LOS	E	A	A			A
Approach Delay		3.7	0.2		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	17.2	0.0	0.1			0.0
Queue Length 95th (m)	27.2	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	912	4863	4010			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.13	0.59	0.30			0.07

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 72 (50%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 2.6	Intersection LOS: A
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A



Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Future Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	3306	3310	1495	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1484	3287	3310	1463	3273	3242
Satd. Flow (RTOR)		150		195			1091			150		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	4%	3%	4%
Adj. Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	57.0		12.0	16.0		27.0	27.0
Total Split (s)	53.0		53.0		20.0	57.0		35.0	72.0		53.0	53.0
Total Split (%)	36.6%		36.6%		13.8%	39.3%		24.1%	49.7%		36.6%	36.6%
Maximum Green (s)	46.0		46.0		15.0	51.0		30.0	66.0		46.0	46.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
Lead/Lag					Lead	Lag		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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)						8.0						
Flash Dont Walk (s)						43.0						
Pedestrian Calls (#/hr)						0						
Act Effct Green (s)	75.9	145.0	75.9	145.0	10.7	17.1	145.0	28.0	34.4	145.0	75.9	75.9
Actuated g/C Ratio	0.52	1.00	0.52	1.00	0.07	0.12	1.00	0.19	0.24	1.00	0.52	0.52
v/c Ratio	1.04	0.12	0.40	0.16	0.73	0.80	0.80	1.03	0.23	0.07	0.07	0.36
Control Delay	62.9	0.1	21.9	0.2	83.2	77.2	4.6	100.9	45.1	0.1	0.1	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.9	0.1	21.9	0.2	83.2	77.2	4.6	100.9	45.1	0.1	0.1	0.9
LOS	E	A	C	A	F	E	A	F	D	A	A	A
Approach Delay	58.6		17.4			26.6			79.0			
Approach LOS	E		B			C			E			
Queue Length 50th (m)	~301.5	0.0	63.0	0.0	26.3	47.1	0.0	~104.6	22.1	0.0	0.3	1.4

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#345.0	0.0	80.0	0.0	38.7	61.3	0.0	#142.6	31.8	0.0	0.1	m1.9
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2544	1691	2544	1675	296	1129	1484	638	1460	1463	1712	1696
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.12	0.40	0.16	0.60	0.28	0.80	1.03	0.12	0.07	0.07	0.36

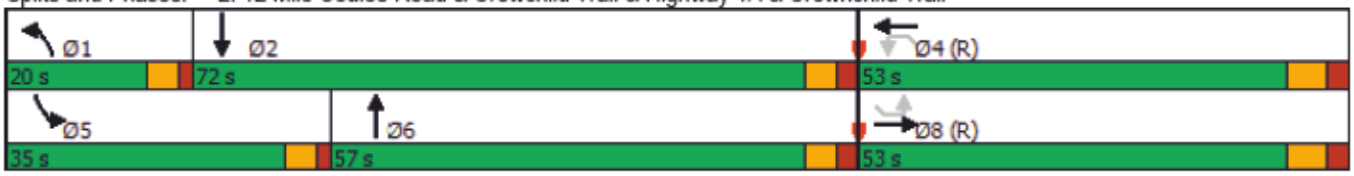
Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 41.3	Intersection LOS: D
Intersection Capacity Utilization 129.9%	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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A & Crowhchild Trail



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	3116	0	568	1210	0	1114
Future Volume (vph)	3116	0	568	1210	0	1114
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						273
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	3315	0	604	1287	0	1185
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3315	0	604	1287	0	1185
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	145.0		
Total Split (s)	106.0		39.0	145.0		
Total Split (%)	73.1%		26.9%	100.0%		
Maximum Green (s)	99.0		33.0	143.0		
Yellow Time (s)	4.5		4.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		8.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	99.5		28.5	145.0		145.0
Actuated g/C Ratio	0.69		0.20	1.00		1.00
v/c Ratio	0.99		0.93	0.26		0.76
Control Delay	17.7		78.5	0.1		2.0
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	17.7		78.5	0.1		2.0
LOS	B		E	A		A
Approach Delay	17.7			25.2	2.0	
Approach LOS	B			C	A	
Queue Length 50th (m)	~337.5		87.7	0.0		0.0
Queue Length 95th (m)	m293.4		#114.0	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3335		706	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.99		0.86	0.26		0.76

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 2 (1%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 92.6%	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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowhchild Trail

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	190	1780	2643	0	0	280
Future Volume (vph)	190	1780	2643	0	0	280
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						160
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	202	1894	2812	0	0	298
Shared Lane Traffic (%)						
Lane Group Flow (vph)	202	1894	2812	0	0	298
Number of Detectors	1	1	1			1
Detector Template	Left	Thru	Thru			Right
Leading Detector (m)	8.0	4.0	4.0			0.0
Trailing Detector (m)	2.0	2.0	2.0			0.0
Detector 1 Position(m)	2.0	2.0	2.0			0.0
Detector 1 Size(m)	6.0	2.0	2.0			0.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	125.0	28.5			
Total Split (s)	24.0	140.0	116.0			
Total Split (%)	17.1%	100.0%	82.9%			
Maximum Green (s)	18.0	138.0	109.0			
Yellow Time (s)	4.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.7	140.0	111.3			140.0
Actuated g/C Ratio	0.08	1.00	0.80			1.00
v/c Ratio	0.73	0.39	0.73			0.19

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Control Delay	77.7	0.2	3.4			0.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	77.7	0.2	3.4			0.3
LOS	E	A	A			A
Approach Delay		7.7	3.4		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	28.6	0.0	22.7			0.0
Queue Length 95th (m)	40.8	0.0	27.1			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	377	4863	3864			1566
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	0.39	0.73			0.19

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 23 (16%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 4.9	Intersection LOS: A
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

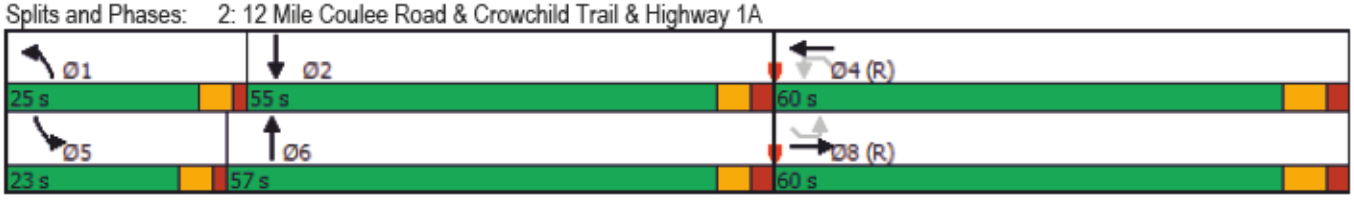
Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Future Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	3306	3408	1525	3120	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1484	3289	3408	1491	3120	3306
Satd. Flow (RTOR)		152		324			822			298		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Number of Detectors	1	0	1	0	1	1	0	1	1	0	1	1
Detector Template	Thru	Right	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Left
Leading Detector (m)	4.0	0.0	4.0	0.0	8.0	4.0	0.0	8.0	4.0	0.0	8.0	8.0
Trailing Detector (m)	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Detector 1 Position(m)	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Detector 1 Size(m)	2.0	6.1	2.0	6.1	6.0	2.0	6.1	6.0	2.0	6.1	6.0	6.0
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	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	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	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	0.0
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	57.0		12.0	16.0		27.0	27.0
Total Split (s)	60.0		60.0		25.0	57.0		23.0	55.0		60.0	60.0
Total Split (%)	42.9%		42.9%		17.9%	40.7%		16.4%	39.3%		42.9%	42.9%
Maximum Green (s)	53.0		53.0		20.0	51.0		18.0	49.0		53.0	53.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)						8.0						
Flash Dont Walk (s)						43.0						

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Pedestrian Calls (#/hr)						0						
Act Effct Green (s)	78.2	140.0	78.2	140.0	14.4	21.8	140.0	16.0	23.4	140.0	78.2	78.2
Actuated g/C Ratio	0.56	1.00	0.56	1.00	0.10	0.16	1.00	0.11	0.17	1.00	0.56	0.56
v/c Ratio	0.58	0.18	0.94	0.62	0.80	0.68	0.55	0.96	0.83	0.20	0.12	0.74
Control Delay	22.1	0.2	36.7	1.6	78.6	61.7	1.5	98.5	69.4	0.3	1.5	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	0.2	36.7	1.6	78.6	61.7	1.5	98.5	69.4	0.3	1.5	9.7
LOS	C	A	D	A	E	E	A	F	E	A	A	A
Approach Delay	18.5		26.3			30.5			60.5			
Approach LOS	B		C			C			E			
Queue Length 50th (m)	100.9	0.0	229.0	0.0	38.3	48.5	0.0	52.2	67.7	0.0	0.6	29.4
Queue Length 95th (m)	134.3	0.0	#308.6	0.0	52.1	60.2	0.0	#82.9	83.1	0.0	0.9	38.6
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2717	1724	2717	1724	425	1158	1484	377	1144	1491	1743	1847
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.18	0.94	0.62	0.64	0.30	0.55	0.96	0.41	0.20	0.12	0.74

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 26.6	Intersection LOS: C
Intersection Capacity Utilization 141.1%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



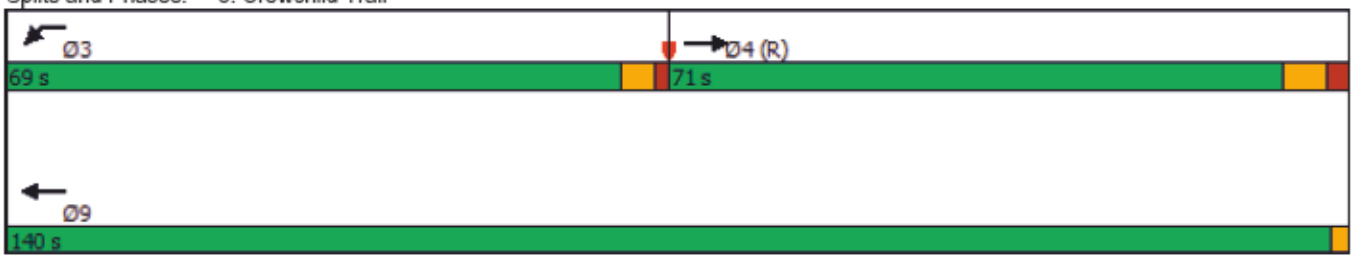
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						552
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Number of Detectors	1		1	1		0
Detector Template	Thru		Left	Thru		Right
Leading Detector (m)	4.0		8.0	4.0		0.0
Trailing Detector (m)	2.0		2.0	2.0		0.0
Detector 1 Position(m)	2.0		2.0	2.0		0.0
Detector 1 Size(m)	2.0		6.0	2.0		2.0
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0		0.0
Detector 1 Queue (s)	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0		0.0	0.0		0.0
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	125.0		
Total Split (s)	71.0		69.0	140.0		
Total Split (%)	50.7%		49.3%	100.0%		
Maximum Green (s)	64.0		64.0	138.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	78.2		45.8	140.0		140.0
Actuated g/C Ratio	0.56		0.33	1.00		1.00
v/c Ratio	0.52		0.87	0.50		0.43

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Control Delay	15.7		53.3	0.4		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	15.7		53.3	0.4		0.7
LOS	B		D	A		A
Approach Delay	15.7			15.1	0.7	
Approach LOS	B			B	A	
Queue Length 50th (m)	102.6		125.5	0.0		0.0
Queue Length 95th (m)	m123.6		137.8	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2716		1464	4863		1566
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	0.52		0.64	0.50		0.43

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 59 (42%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 13.5	Intersection LOS: B
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	120	2758	1247	0	0	90
Future Volume (vph)	120	2758	1247	0	0	90
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						229
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	128	2934	1327	0	0	96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	2934	1327	0	0	96
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	29.0			
Total Split (s)	20.0	150.0	130.0			
Total Split (%)	13.3%	100.0%	86.7%			
Maximum Green (s)	15.0	148.0	123.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	9.1	150.0	124.9			150.0
Actuated g/C Ratio	0.06	1.00	0.83			1.00
v/c Ratio	0.64	0.60	0.33			0.06
Control Delay	83.3	0.6	0.2			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	83.3	0.6	0.2			0.1
LOS	F	A	A			A
Approach Delay		4.0	0.2		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	19.5	0.0	0.2			0.0
Queue Length 95th (m)	30.0	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	286	4863	4050			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.45	0.60	0.33			0.06

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 80 (53%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 2.8	Intersection LOS: A
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Future Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	3306	3310	1495	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1484	3287	3310	1463	3273	3242
Satd. Flow (RTOR)		109		203			1091			109		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	4%	3%	4%
Adj. Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	57.0		12.0	16.0		27.0	27.0
Total Split (s)	60.0		60.0		33.0	57.0		33.0	57.0		60.0	60.0
Total Split (%)	40.0%		40.0%		22.0%	38.0%		22.0%	38.0%		40.0%	40.0%
Maximum Green (s)	53.0		53.0		28.0	51.0		28.0	51.0		53.0	53.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)						8.0						
Flash Dont Walk (s)						43.0						
Pedestrian Calls (#/hr)						0						
Act Effct Green (s)	81.9	150.0	81.9	150.0	11.8	18.1	150.0	26.0	32.3	150.0	81.9	81.9
Actuated g/C Ratio	0.55	1.00	0.55	1.00	0.08	0.12	1.00	0.17	0.22	1.00	0.55	0.55
v/c Ratio	1.03	0.12	0.43	0.19	0.73	0.81	0.76	1.15	0.28	0.07	0.07	0.38
Control Delay	56.7	0.1	21.2	0.2	83.3	79.8	3.8	140.3	50.2	0.1	0.1	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.7	0.1	21.2	0.2	83.3	79.8	3.8	140.3	50.2	0.1	0.1	1.7
LOS	E	A	C	A	F	E	A	F	D	A	A	A
Approach Delay	52.7		16.6			27.9			107.4			
Approach LOS	D		B			C			F			
Queue Length 50th (m)	~316.1	0.0	71.2	0.0	28.8	50.5	0.0	~118.7	26.4	0.0	0.0	2.9

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#359.0	0.0	89.2	0.0	41.0	65.2	0.0	#156.8	37.9	0.0	0.1	m1.9
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2655	1691	2655	1675	573	1091	1484	573	1081	1463	1787	1770
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.12	0.43	0.19	0.33	0.30	0.76	1.15	0.19	0.07	0.07	0.38

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.15
Intersection Signal Delay: 42.2 Intersection LOS: D
Intersection Capacity Utilization 133.2% 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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	3183	0	628	1369	0	1064
Future Volume (vph)	3183	0	628	1369	0	1064
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						254
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	3386	0	668	1456	0	1132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3386	0	668	1456	0	1132
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	145.0		
Total Split (s)	113.0		37.0	150.0		
Total Split (%)	75.3%		24.7%	100.0%		
Maximum Green (s)	106.0		32.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	104.0		30.0	150.0		150.0
Actuated g/C Ratio	0.69		0.20	1.00		1.00
v/c Ratio	1.00		1.01	0.30		0.72
Control Delay	18.9		96.3	0.2		1.8
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	18.9		96.3	0.2		1.8
LOS	B		F	A		A
Approach Delay	18.9			30.4	1.8	
Approach LOS	B			C	A	
Queue Length 50th (m)	~325.6		~105.2	0.0		0.0
Queue Length 95th (m)	m301.7		#145.4	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3371		661	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	1.00		1.01	0.30		0.72

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 19.7	Intersection LOS: B
Intersection Capacity Utilization 94.9%	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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowchild Trail

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	170	1870	2975	0	0	340
Future Volume (vph)	170	1870	2975	0	0	340
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						138
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	181	1989	3165	0	0	362
Shared Lane Traffic (%)						
Lane Group Flow (vph)	181	1989	3165	0	0	362
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	28.5			
Total Split (s)	22.0	150.0	128.0			
Total Split (%)	14.7%	100.0%	85.3%			
Maximum Green (s)	17.0	148.0	121.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.4	150.0	122.6			150.0
Actuated g/C Ratio	0.08	1.00	0.82			1.00
v/c Ratio	0.72	0.41	0.80			0.23
Control Delay	83.8	0.3	7.4			0.3
Queue Delay	0.0	0.0	0.3			0.0
Total Delay	83.8	0.3	7.7			0.3
LOS	F	A	A			A
Approach Delay		7.2	7.7		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	27.6	0.0	36.4			0.0
Queue Length 95th (m)	39.6	0.0	m72.6			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Base Capacity (vph)	330	4863	3974			1566
Starvation Cap Reductn	0	0	277			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.55	0.41	0.86			0.23

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 14 (9%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 7.0	Intersection LOS: A
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Future Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	3306	3408	1525	3306	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1484	3287	3408	1491	3306	3306
Satd. Flow (RTOR)		145		250			876			351		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	57.0		12.0	16.0		27.0	27.0
Total Split (s)	74.0		74.0		28.0	57.0		19.0	48.0		74.0	74.0
Total Split (%)	49.3%		49.3%		18.7%	38.0%		12.7%	32.0%		49.3%	49.3%
Maximum Green (s)	67.0		67.0		23.0	51.0		14.0	42.0		67.0	67.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)						8.0						
Flash Dont Walk (s)						43.0						
Pedestrian Calls (#/hr)						5						
Act Effct Green (s)	81.3	150.0	81.3	150.0	17.1	32.7	150.0	12.0	27.6	150.0	81.3	81.3
Actuated g/C Ratio	0.54	1.00	0.54	1.00	0.11	0.22	1.00	0.08	0.18	1.00	0.54	0.54
v/c Ratio	0.64	0.17	1.08	0.57	0.84	0.44	0.59	1.33	0.82	0.24	0.10	0.79
Control Delay	27.0	0.2	74.9	0.9	83.9	51.1	1.7	222.0	69.8	0.4	7.2	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.0	0.2	74.9	0.9	83.9	51.1	1.7	222.0	69.8	0.4	7.2	5.1
LOS	C	A	E	A	F	D	A	F	E	A	A	A
Approach Delay	23.0		55.9			29.2			92.8			
Approach LOS	C		E			C			F			
Queue Length 50th (m)	123.1	0.0	~342.1	0.0	47.8	43.6	0.0	~69.5	79.6	0.0	29.5	0.1

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	177.4	0.0	#429.2	0.0	62.8	49.8	0.0	#101.6	89.1	0.0	0.0	m#255.7
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2635	1724	2635	1724	462	1081	1484	264	908	1491	1791	1791
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.17	1.08	0.57	0.68	0.29	0.59	1.33	0.57	0.24	0.10	0.79

Intersection Summary

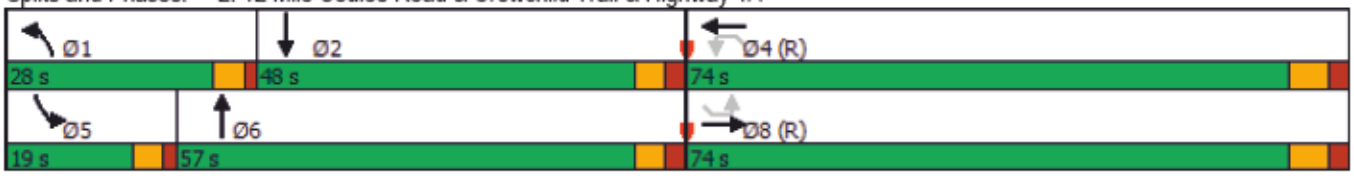
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.33
Intersection Signal Delay: 42.0 — Intersection LOS: D
Intersection Capacity Utilization 147.5% — 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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



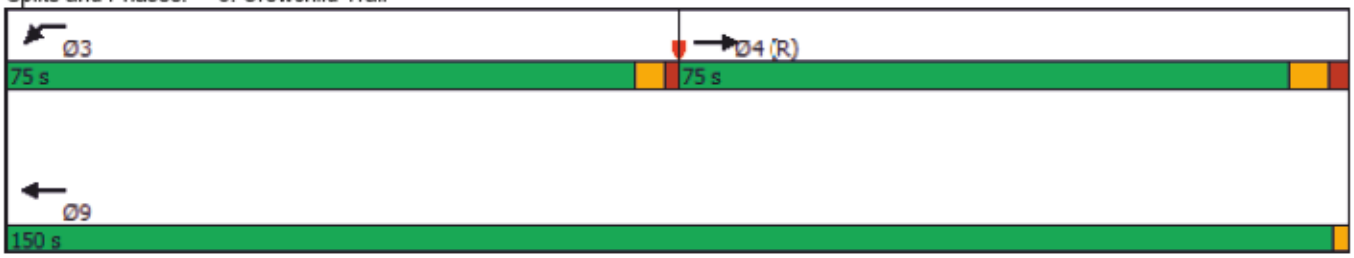
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1918	0	1332	3611	0	823
Future Volume (vph)	1918	0	1332	3611	0	823
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	5006	0	3306	5006	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	5006	0	3306	5006	0	1566
Satd. Flow (RTOR)						554
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	2040	0	1417	3841	0	876
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2040	0	1417	3841	0	876
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	145.0		
Total Split (s)	75.0		75.0	150.0		
Total Split (%)	50.0%		50.0%	100.0%		
Maximum Green (s)	68.0		70.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	67.3		66.7	150.0		150.0
Actuated g/C Ratio	0.45		0.44	1.00		1.00
v/c Ratio	0.91		0.96	0.77		0.56
Control Delay	30.4		56.7	1.2		1.2
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	30.4		56.7	1.2		1.2
LOS	C		E	A		A
Approach Delay	30.4			16.1	1.2	
Approach LOS	C			B	A	
Queue Length 50th (m)	195.5		205.1	0.0		0.0
Queue Length 95th (m)	m197.8		#253.8	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2245		1498	5006		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.91		0.95	0.77		0.56

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 38 (25%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 90.4%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowchild Trail



CFI – West Leg Pedestrian Crossing

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	1624	927	0	0	100
Future Volume (vph)	50	1624	927	0	0	100
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	3385	3385	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	3385	3385	0	0	1566
Satd. Flow (RTOR)						364
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	53	1728	986	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	1728	986	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0			
Minimum Split (s)	27.5	26.0	27.5			
Total Split (s)	31.0	140.0	109.0			
Total Split (%)	22.1%	100.0%	77.9%			
Maximum Green (s)	26.0	138.0	102.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	18.0	140.0	112.8			140.0
Actuated g/C Ratio	0.13	1.00	0.81			1.00
v/c Ratio	0.12	0.51	0.36			0.07
Control Delay	54.9	0.6	0.4			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	54.9	0.6	0.4			0.1
LOS	D	A	A			A
Approach Delay		2.2	0.4		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	6.8	0.0	0.1			0.0
Queue Length 95th (m)	13.4	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	566	3385	2727			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.09	0.51	0.36			0.07

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 80 (57%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 1.5	Intersection LOS: A
Intersection Capacity Utilization 49.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Future Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3385	1714	3385	1697	3306	3342	1525	3306	3310	1495	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3385	1691	3385	1675	3306	3342	1484	3260	3310	1463	3273	3242
Satd. Flow (RTOR)		171		171			937			171		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	4%	3%	4%
Adj. Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	D.Pm
Protected Phases	8		4		1	6		5	2		7	
Permitted Phases		Free		Free			Free			Free		4
Detector Phase	8		4		1	6		5	2		7	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		7.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	57.0		12.0	27.0
Total Split (s)	65.0		65.0		18.0	32.0		43.0	57.0		32.0	65.0
Total Split (%)	46.4%		46.4%		12.9%	22.9%		30.7%	40.7%		22.9%	46.4%
Maximum Green (s)	58.0		58.0		13.0	26.0		38.0	51.0		27.0	58.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		3.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		1.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		7.0	9.0
Lead/Lag					Lead	Lag		Lead	Lag		Lag	
Lead-Lag Optimize?											Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		None	C-Min
Walk Time (s)									8.0			
Flash Dont Walk (s)									43.0			
Pedestrian Calls (#/hr)									0			
Act Effct Green (s)	72.6	140.0	72.6	140.0	8.7	13.4	140.0	30.0	34.6	140.0	74.6	72.6
Actuated g/C Ratio	0.52	1.00	0.52	1.00	0.06	0.10	1.00	0.21	0.25	1.00	0.53	0.52
v/c Ratio	0.91	0.08	0.48	0.13	0.66	0.76	0.63	0.90	0.18	0.07	0.03	0.23
Control Delay	39.6	0.1	24.0	0.2	79.1	77.1	2.1	70.2	40.6	0.1	0.1	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	0.1	24.0	0.2	79.1	77.1	2.1	70.2	40.6	0.1	0.1	1.8
LOS	D	A	C	A	E	E	A	E	D	A	A	A
Approach Delay	36.7		19.1			23.9			57.0			
Approach LOS	D		B			C			E			
Queue Length 50th (m)	207.7	0.0	77.8	0.0	19.1	35.2	0.0	89.3	16.6	0.0	0.0	0.9

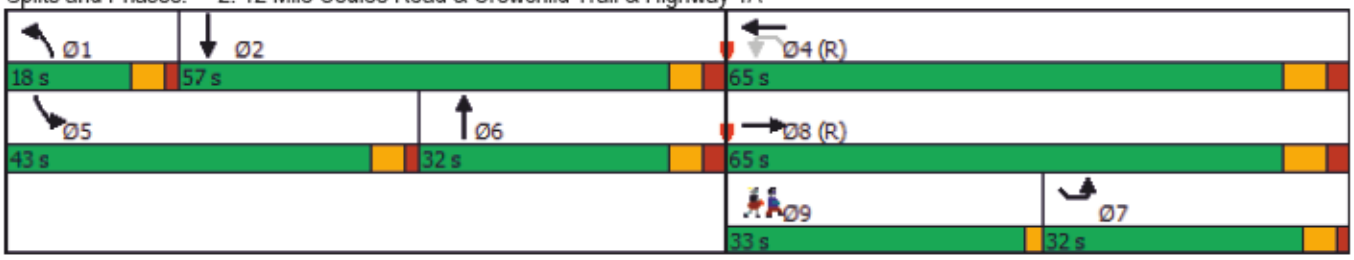
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	24%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#298.3	0.0	110.5	0.0	29.8	48.4	0.0	105.9	23.9	0.0	0.0	0.0
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	1755	1691	1755	1675	259	572	1484	850	1158	1463	1744	1681
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.08	0.48	0.13	0.52	0.43	0.63	0.75	0.12	0.07	0.03	0.23

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBT, Start of Green, Master Intersection	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 111.1%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	Ø9
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	2104	0	370	1010	0	881
Future Volume (vph)	2104	0	370	1010	0	881
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3385	0	3306	3385	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	3385	0	3306	3385	0	1566
Satd. Flow (RTOR)						226
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2238	0	394	1074	0	937
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2238	0	394	1074	0	937
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	27.5		14.5	27.0		
Total Split (s)	110.0		30.0	140.0		
Total Split (%)	78.6%		21.4%	100.0%		
Maximum Green (s)	103.0		25.0	133.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	104.7		19.3	140.0		140.0
Actuated g/C Ratio	0.75		0.14	1.00		1.00
v/c Ratio	0.88		0.86	0.32		0.60
Control Delay	11.0		77.8	0.2		1.3
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	11.0		77.8	0.2		1.3
LOS	B		E	A		A
Approach Delay	11.0			21.1	1.3	
Approach LOS	B			C	A	
Queue Length 50th (m)	40.4		55.6	0.0		0.0
Queue Length 95th (m)	265.3		71.8	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2530		543	3385		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.88		0.73	0.32		0.60

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 16 (11%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 12.2	Intersection LOS: B
Intersection Capacity Utilization 83.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Crowchild Trail

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	200	1318	1760	0	0	220
Future Volume (vph)	200	1318	1760	0	0	220
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3471	3400	3476	0	0	1629
Flt Permitted	0.950					
Satd. Flow (perm)	3471	3400	3476	0	0	1608
Satd. Flow (RTOR)						196
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	213	1402	1872	0	0	234
Shared Lane Traffic (%)						
Lane Group Flow (vph)	213	1402	1872	0	0	234
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	120.0	28.5			
Total Split (s)	24.0	140.0	116.0			
Total Split (%)	17.1%	100.0%	82.9%			
Maximum Green (s)	19.0	133.0	109.0			
Yellow Time (s)	3.5	4.5	4.5			
All-Red Time (s)	1.5	2.5	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	9.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.8	140.0	112.2			140.0
Actuated g/C Ratio	0.08	1.00	0.80			1.00
v/c Ratio	0.73	0.41	0.67			0.15
Control Delay	77.2	0.4	2.3			0.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	77.2	0.4	2.3			0.2
LOS	E	A	A			A
Approach Delay		10.5	2.3		0.2	
Approach LOS		B	A		A	
Queue Length 50th (m)	30.1	0.0	24.4			0.0
Queue Length 95th (m)	42.6	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	421	3400	2786			1608

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.41	0.67			0.15

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 40 (29%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 5.7	Intersection LOS: A
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A & Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Future Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.97		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3476	1794	3476	1794	3395	3400	1566	3395	3500	1566	3395	3395
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3476	1771	3476	1771	3395	3400	1524	3307	3500	1532	3395	3395
Satd. Flow (RTOR)		132		256			668			234		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	D.Pm
Protected Phases	8		4		1	6		5	2		7	
Permitted Phases		Free		Free			Free			Free		4
Detector Phase	8		4		1	6		5	2		7	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		7.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	57.0		12.0	27.0
Total Split (s)	61.0		61.0		22.0	54.0		25.0	57.0		28.0	61.0
Total Split (%)	43.6%		43.6%		15.7%	38.6%		17.9%	40.7%		20.0%	43.6%
Maximum Green (s)	54.0		54.0		17.0	48.0		20.0	51.0		23.0	54.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		3.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		1.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		7.0	9.0
Lead/Lag					Lead	Lag		Lead	Lag		Lag	
Lead-Lag Optimize?											Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		None	C-Min
Walk Time (s)									8.0			
Flash Dont Walk (s)									43.0			
Pedestrian Calls (#/hr)									0			
Act Effct Green (s)	84.6	140.0	84.6	140.0	11.9	17.0	140.0	14.4	19.5	140.0	86.6	84.6
Actuated g/C Ratio	0.60	1.00	0.60	1.00	0.08	0.12	1.00	0.10	0.14	1.00	0.62	0.60
v/c Ratio	0.54	0.15	0.79	0.44	0.75	0.70	0.44	0.80	0.82	0.15	0.10	0.46
Control Delay	18.3	0.2	24.7	0.6	78.5	68.2	0.9	78.0	72.3	0.2	0.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	0.2	24.7	0.6	78.5	68.2	0.9	78.0	72.3	0.2	0.2	0.5
LOS	B	A	C	A	E	E	A	E	E	A	A	A
Approach Delay	14.9		16.9			31.8			55.5			
Approach LOS	B		B			C			E			
Queue Length 50th (m)	93.5	0.0	174.6	0.0	30.4	41.2	0.0	39.2	57.3	0.0	0.3	0.2

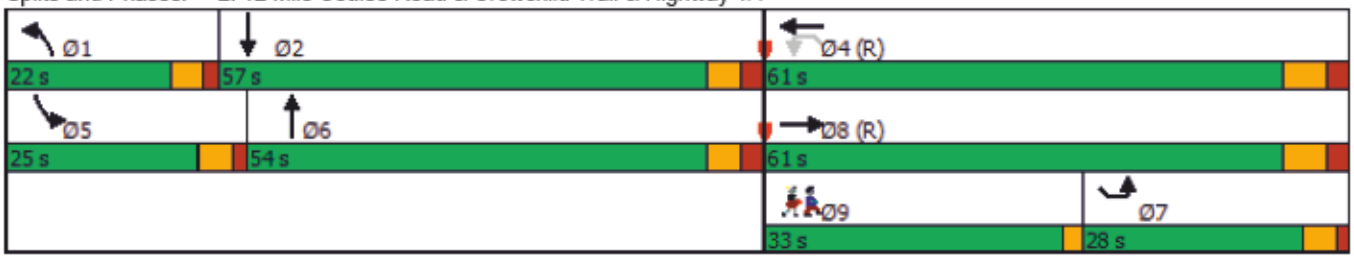
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	24%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	130.4	0.0	239.5	0.0	43.0	54.6	0.0	53.0	72.2	0.0	0.2	0.0
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2100	1771	2100	1771	363	1117	1524	436	1225	1532	2100	2051
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.15	0.79	0.44	0.59	0.26	0.44	0.64	0.33	0.15	0.10	0.46

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBT, Start of Green, Master Intersection
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 21.3 — Intersection LOS: C
Intersection Capacity Utilization 112.0% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	Ø9
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

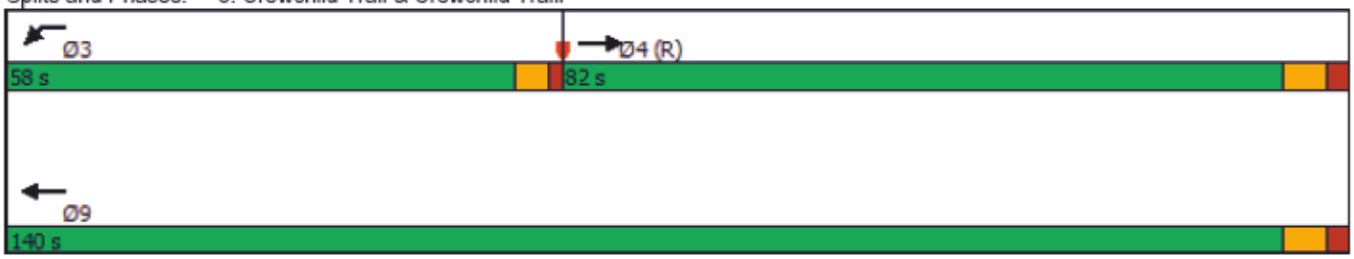
Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3476	0	3395	3476	0	1629
Flt Permitted			0.950			
Satd. Flow (perm)	3476	0	3395	3476	0	1608
Satd. Flow (RTOR)						468
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	120.0		
Total Split (s)	82.0		58.0	140.0		
Total Split (%)	58.6%		41.4%	100.0%		
Maximum Green (s)	75.0		53.0	133.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Act Effct Green (s)	81.0		43.0	140.0		140.0
Actuated g/C Ratio	0.58		0.31	1.00		1.00
v/c Ratio	0.70		0.90	0.70		0.42
Control Delay	18.2		58.3	1.2		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	18.2		58.3	1.2		0.7
LOS	B		E	A		A
Approach Delay	18.2			17.0	0.7	
Approach LOS	B			B	A	
Queue Length 50th (m)	141.0		128.0	0.0		0.0
Queue Length 95th (m)	196.7		142.7	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2010		1236	3476		1608

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.70		0.76	0.70		0.42

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 18 (13%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Crowchild Trail & Crowchild Traill



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	110	2681	1128	0	0	100
Future Volume (vph)	110	2681	1128	0	0	100
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						246
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	117	2852	1200	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	2852	1200	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	145.0	28.5			
Total Split (s)	19.0	150.0	131.0			
Total Split (%)	12.7%	100.0%	87.3%			
Maximum Green (s)	13.0	148.0	124.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	2.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	8.6	150.0	124.4			150.0
Actuated g/C Ratio	0.06	1.00	0.83			1.00
v/c Ratio	0.62	0.59	0.30			0.07
Control Delay	83.2	0.5	0.2			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	83.2	0.5	0.2			0.1
LOS	F	A	A			A
Approach Delay		3.8	0.2		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	17.8	0.0	0.0			0.0
Queue Length 95th (m)	28.0	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	245	4863	4038			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.48	0.59	0.30			0.07

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 96 (64%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 2.7	Intersection LOS: A
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

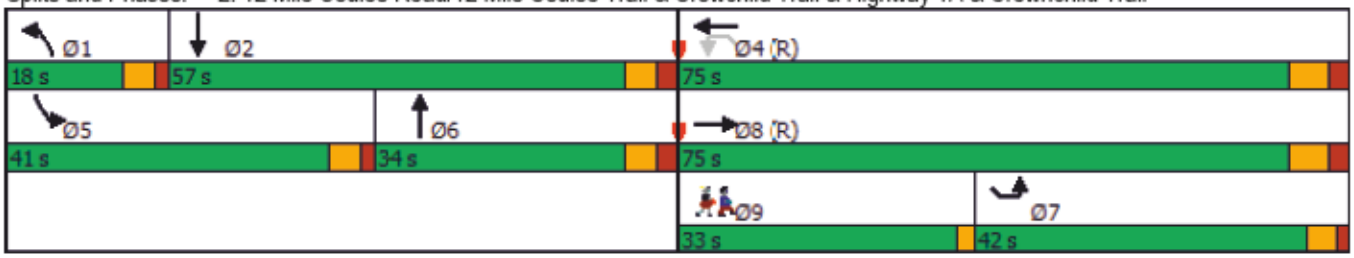
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Future Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	3306	3310	1525	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1484	3277	3310	1491	3273	3242
Satd. Flow (RTOR)		160		188			1091			160		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	2%	3%	4%
Adj. Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	D.Pm
Protected Phases	8		4		1	6		5	2		7	
Permitted Phases		Free		Free			Free			Free		4
Detector Phase	8		4		1	6		5	2		7	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		7.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	57.0		12.0	27.0
Total Split (s)	75.0		75.0		18.0	34.0		41.0	57.0		42.0	75.0
Total Split (%)	50.0%		50.0%		12.0%	22.7%		27.3%	38.0%		28.0%	50.0%
Maximum Green (s)	68.0		68.0		13.0	28.0		36.0	51.0		37.0	68.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		3.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		1.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		7.0	9.0
Lead/Lag					Lead	Lag		Lead	Lag		Lag	
Lead-Lag Optimize?											Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		None	C-Min
Walk Time (s)									8.0			
Flash Dont Walk (s)									43.0			
Pedestrian Calls (#/hr)									0			
Act Effct Green (s)	76.9	150.0	76.9	150.0	10.2	17.3	150.0	31.8	38.9	150.0	78.9	76.9
Actuated g/C Ratio	0.51	1.00	0.51	1.00	0.07	0.12	1.00	0.21	0.26	1.00	0.53	0.51
v/c Ratio	1.07	0.12	0.41	0.16	0.80	0.82	0.80	0.94	0.21	0.07	0.07	0.36
Control Delay	72.3	0.1	23.9	0.2	93.9	81.7	4.6	80.3	43.1	0.1	0.1	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.3	0.1	23.9	0.2	93.9	81.7	4.6	80.3	43.1	0.1	0.1	1.5
LOS	E	A	C	A	F	F	A	F	D	A	A	A
Approach Delay	67.3		19.0			28.6			64.3			
Approach LOS	E		B			C			E			
Queue Length 50th (m)	~324.7	0.0	68.9	0.0	27.4	49.0	0.0	99.0	21.8	0.0	0.0	1.7

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	22%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#368.5	0.0	86.5	0.0	#43.4	63.6	0.0	#128.8	30.7	0.0	0.3	m0.0
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2492	1691	2492	1675	242	579	1484	749	1081	1491	1721	1662
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.07	0.12	0.41	0.16	0.74	0.54	0.80	0.88	0.17	0.07	0.07	0.36

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBT, Start of Green, Master Intersection	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 43.6	Intersection LOS: D
Intersection Capacity Utilization 120.3%	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.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 2: 12 Mile Coulee Road/12 Mile Coulee Trail & Crowchild Trail & Highway 1A & Crowhchild Trail



Lane Group	Ø9
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

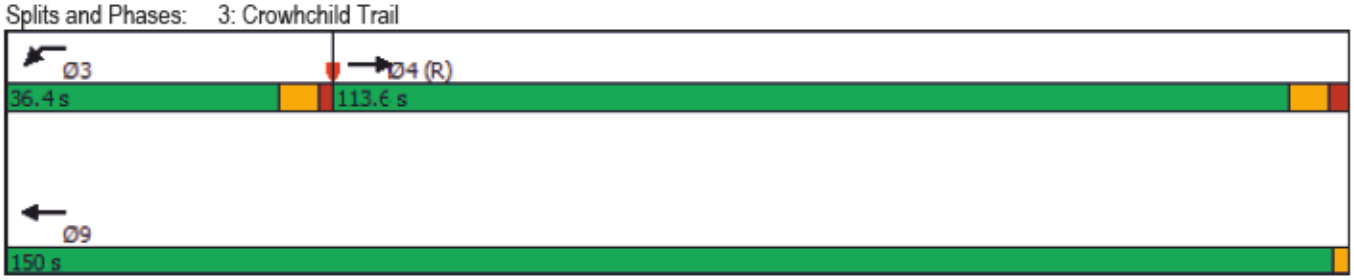
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑↑		↰↑↑	↑↑↑		↱
Traffic Volume (vph)	3116	0	568	1210	0	1114
Future Volume (vph)	3116	0	568	1210	0	1114
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						243
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	3315	0	604	1287	0	1185
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3315	0	604	1287	0	1185
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	145.0		
Total Split (s)	113.6		36.4	150.0		
Total Split (%)	75.7%		24.3%	100.0%		
Maximum Green (s)	106.6		30.4	148.0		
Yellow Time (s)	4.5		4.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		8.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	104.9		28.1	150.0		150.0
Actuated g/C Ratio	0.70		0.19	1.00		1.00
v/c Ratio	0.97		0.98	0.26		0.76
Control Delay	14.0		90.8	0.1		2.0
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	14.0		90.8	0.1		2.0
LOS	B		F	A		A
Approach Delay	14.0			29.1	2.0	
Approach LOS	B			C	A	
Queue Length 50th (m)	340.1		92.9	0.0		0.0
Queue Length 95th (m)	m330.2		#130.0	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3401		625	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.97		0.97	0.26		0.76

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 6 (4%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 92.6%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowhchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	190	1780	2643	0	0	280
Future Volume (vph)	190	1780	2643	0	0	280
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						173
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	202	1894	2812	0	0	298
Shared Lane Traffic (%)						
Lane Group Flow (vph)	202	1894	2812	0	0	298
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	125.0	28.5			
Total Split (s)	24.0	130.0	106.0			
Total Split (%)	18.5%	100.0%	81.5%			
Maximum Green (s)	18.0	128.0	99.0			
Yellow Time (s)	4.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.1	130.0	101.9			130.0
Actuated g/C Ratio	0.09	1.00	0.78			1.00
v/c Ratio	0.72	0.39	0.74			0.19
Control Delay	72.0	0.2	4.1			0.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	72.0	0.2	4.1			0.3
LOS	E	A	A			A
Approach Delay		7.1	4.1		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	26.4	0.0	27.3			0.0
Queue Length 95th (m)	38.2	0.0	27.5			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	406	4863	3811			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.50	0.39	0.74			0.19

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 5 (4%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 5.1	Intersection LOS: A
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Future Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	3306	3408	1525	3120	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1484	3266	3408	1491	3120	3306
Satd. Flow (RTOR)		185		349			822			298		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	D.Pm
Protected Phases	8		4		1	6		5	2		7	
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		7	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		7.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	57.0		12.0	27.0
Total Split (s)	52.0		52.0		21.0	51.0		27.0	57.0		19.0	52.0
Total Split (%)	40.0%		40.0%		16.2%	39.2%		20.8%	43.8%		14.6%	40.0%
Maximum Green (s)	45.0		45.0		16.0	45.0		22.0	51.0		14.0	45.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		3.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		1.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		7.0	9.0
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		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		None	C-Min
Walk Time (s)									8.0			
Flash Dont Walk (s)									43.0			
Pedestrian Calls (#/hr)									0			
Act Effct Green (s)	71.3	130.0	71.3	130.0	12.8	17.9	130.0	16.9	21.9	130.0	73.3	71.3
Actuated g/C Ratio	0.55	1.00	0.55	1.00	0.10	0.14	1.00	0.13	0.17	1.00	0.56	0.55
v/c Ratio	0.59	0.18	0.95	0.62	0.83	0.76	0.55	0.85	0.82	0.20	0.11	0.75
Control Delay	21.6	0.2	37.9	1.6	78.7	65.3	1.5	73.2	64.3	0.3	5.2	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	0.2	37.9	1.6	78.7	65.3	1.5	73.2	64.3	0.3	5.2	10.1
LOS	C	A	D	A	E	E	A	E	E	A	A	B
Approach Delay	18.1		27.2			31.4			50.3			
Approach LOS	B		C			C			D			
Queue Length 50th (m)	97.5	0.0	221.1	0.0	35.3	45.6	0.0	47.2	62.4	0.0	28.1	28.5

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	25%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	125.4	0.0	#289.6	0.0	#53.5	60.1	0.0	62.6	76.7	0.0	0.8	37.1
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2665	1724	2665	1724	356	1094	1484	508	1284	1491	1758	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.18	0.95	0.62	0.76	0.32	0.55	0.71	0.37	0.20	0.11	0.75

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 25.9 Intersection LOS: C
Intersection Capacity Utilization 132.6% 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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A

Lane Group	Ø9
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

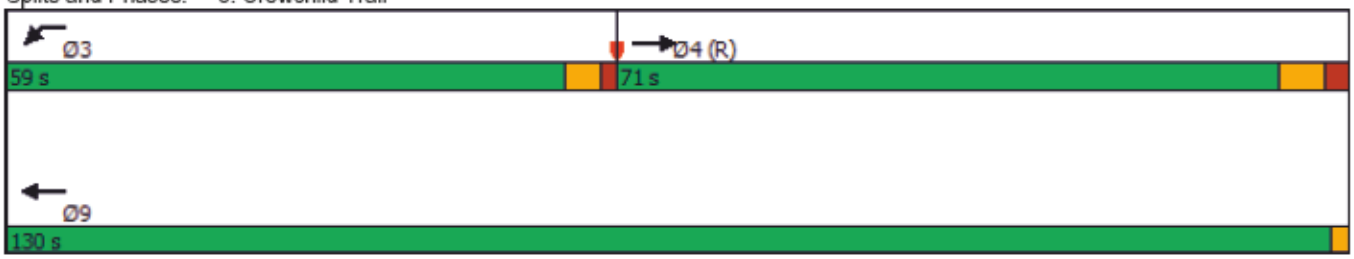
Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						510
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	125.0		
Total Split (s)	71.0		59.0	130.0		
Total Split (%)	54.6%		45.4%	100.0%		
Maximum Green (s)	64.0		54.0	128.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	72.2		41.8	130.0		130.0
Actuated g/C Ratio	0.56		0.32	1.00		1.00
v/c Ratio	0.52		0.89	0.50		0.43
Control Delay	15.1		52.2	0.4		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	15.1		52.2	0.4		0.7
LOS	B		D	A		A
Approach Delay	15.1			14.7	0.7	
Approach LOS	B			B	A	
Queue Length 50th (m)	99.1		117.0	0.0		0.0
Queue Length 95th (m)	118.4		130.4	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2702		1322	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.52		0.71	0.50		0.43

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 48 (37%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 13.1	Intersection LOS: B
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	120	2758	1247	0	0	90
Future Volume (vph)	120	2758	1247	0	0	90
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						229
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	128	2934	1327	0	0	96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	2934	1327	0	0	96
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	29.0			
Total Split (s)	20.0	150.0	130.0			
Total Split (%)	13.3%	100.0%	86.7%			
Maximum Green (s)	15.0	148.0	123.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	9.1	150.0	124.9			150.0
Actuated g/C Ratio	0.06	1.00	0.83			1.00
v/c Ratio	0.64	0.60	0.33			0.06
Control Delay	83.3	0.6	0.2			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	83.3	0.6	0.2			0.1
LOS	F	A	A			A
Approach Delay		4.0	0.2		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	19.5	0.0	0.0			0.0
Queue Length 95th (m)	30.0	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	286	4863	4050			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.45	0.60	0.33			0.06

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 88 (59%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 2.8	Intersection LOS: A
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Future Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	3306	3310	1495	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1484	3278	3310	1463	3273	3242
Satd. Flow (RTOR)		160		203			1091			160		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	4%	3%	4%
Adj. Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	D.Pm
Protected Phases	8		4		1	6		5	2		7	
Permitted Phases		Free		Free			Free			Free		4
Detector Phase	8		4		1	6		5	2		7	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		7.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	57.0		12.0	27.0
Total Split (s)	68.0		68.0		25.0	41.0		41.0	57.0		35.0	68.0
Total Split (%)	45.3%		45.3%		16.7%	27.3%		27.3%	38.0%		23.3%	45.3%
Maximum Green (s)	61.0		61.0		20.0	35.0		36.0	51.0		30.0	61.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		3.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		1.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		7.0	9.0
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		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		None	C-Min
Walk Time (s)									8.0			
Flash Dont Walk (s)									43.0			
Pedestrian Calls (#/hr)									0			
Act Effct Green (s)	76.3	150.0	76.3	150.0	11.8	17.9	150.0	31.8	37.9	150.0	78.3	76.3
Actuated g/C Ratio	0.51	1.00	0.51	1.00	0.08	0.12	1.00	0.21	0.25	1.00	0.52	0.51
v/c Ratio	1.10	0.12	0.46	0.19	0.73	0.82	0.76	0.94	0.24	0.07	0.07	0.40
Control Delay	86.6	0.1	25.1	0.2	83.7	81.1	3.8	80.3	44.7	0.1	0.1	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.6	0.1	25.1	0.2	83.7	81.1	3.8	80.3	44.7	0.1	0.1	1.9
LOS	F	A	C	A	F	F	A	F	D	A	A	A
Approach Delay	80.5		19.7			28.2			64.8			
Approach LOS	F		B			C			E			
Queue Length 50th (m)	~343.1	0.0	79.7	0.0	28.8	50.6	0.0	99.0	24.6	0.0	0.0	2.9

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	22%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#386.9	0.0	99.3	0.0	41.0	65.5	0.0	#128.8	35.3	0.0	0.1	m0.0
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2475	1691	2475	1675	396	735	1484	749	1081	1463	1709	1650
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.12	0.46	0.19	0.48	0.44	0.76	0.88	0.19	0.07	0.07	0.40

Intersection Summary

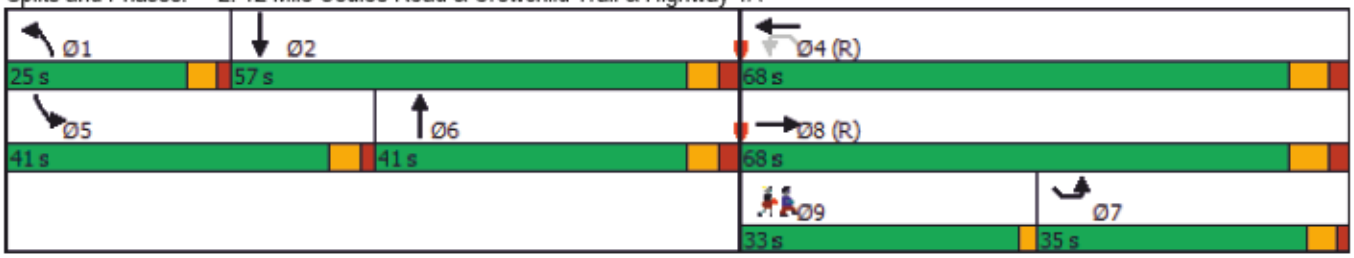
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBT, Start of Green, Master Intersection
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 48.1 Intersection LOS: D
Intersection Capacity Utilization 123.6% 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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	Ø9
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	3183	0	628	1369	0	1064
Future Volume (vph)	3183	0	628	1369	0	1064
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						254
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	3386	0	668	1456	0	1132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3386	0	668	1456	0	1132
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	145.0		
Total Split (s)	113.0		37.0	150.0		
Total Split (%)	75.3%		24.7%	100.0%		
Maximum Green (s)	106.0		32.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	104.0		30.0	150.0		150.0
Actuated g/C Ratio	0.69		0.20	1.00		1.00
v/c Ratio	1.00		1.01	0.30		0.72
Control Delay	19.0		96.3	0.2		1.8
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	19.0		96.3	0.2		1.8
LOS	B		F	A		A
Approach Delay	19.0			30.4	1.8	
Approach LOS	B			C	A	
Queue Length 50th (m)	~354.6		~105.2	0.0		0.0
Queue Length 95th (m)	m328.1		#145.4	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3371		661	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	1.00		1.01	0.30		0.72

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 19.7	Intersection LOS: B
Intersection Capacity Utilization 94.9%	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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowchild Trail

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	170	1870	2975	0	0	340
Future Volume (vph)	170	1870	2975	0	0	340
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						138
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	181	1989	3165	0	0	362
Shared Lane Traffic (%)						
Lane Group Flow (vph)	181	1989	3165	0	0	362
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	28.5			
Total Split (s)	22.0	150.0	128.0			
Total Split (%)	14.7%	100.0%	85.3%			
Maximum Green (s)	17.0	148.0	121.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.4	150.0	122.6			150.0
Actuated g/C Ratio	0.08	1.00	0.82			1.00
v/c Ratio	0.72	0.41	0.80			0.23
Control Delay	83.8	0.3	7.1			0.3
Queue Delay	0.0	0.0	0.2			0.0
Total Delay	83.8	0.3	7.3			0.3
LOS	F	A	A			A
Approach Delay		7.2	7.3		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	27.6	0.0	38.5			0.0
Queue Length 95th (m)	39.6	0.0	m102.8			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Base Capacity (vph)	330	4863	3974			1566
Starvation Cap Reductn	0	0	212			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.55	0.41	0.84			0.23

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 9 (6%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 6.8	Intersection LOS: A
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Future Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	3306	3310	1525	3306	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1484	3264	3310	1491	3306	3306
Satd. Flow (RTOR)		160		250			876			351		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	5%	2%	2%	2%
Adj. Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	D.Pm
Protected Phases	8		4		1	6		5	2		7	
Permitted Phases		Free		Free			Free			Free		4
Detector Phase	8		4		1	6		5	2		7	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		7.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	57.0		12.0	27.0
Total Split (s)	72.0		72.0		21.0	48.0		30.0	57.0		39.0	72.0
Total Split (%)	48.0%		48.0%		14.0%	32.0%		20.0%	38.0%		26.0%	48.0%
Maximum Green (s)	65.0		65.0		16.0	42.0		25.0	51.0		34.0	65.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		3.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		1.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		7.0	9.0
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		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		None	C-Min
Walk Time (s)									8.0			
Flash Dont Walk (s)									43.0			
Pedestrian Calls (#/hr)									2			
Act Effct Green (s)	81.9	150.0	81.9	150.0	14.0	25.4	150.0	18.8	30.1	150.0	83.9	81.9
Actuated g/C Ratio	0.55	1.00	0.55	1.00	0.09	0.17	1.00	0.13	0.20	1.00	0.56	0.55
v/c Ratio	0.64	0.17	1.08	0.57	1.02	0.57	0.59	0.85	0.78	0.24	0.10	0.79
Control Delay	26.6	0.2	71.4	0.8	121.7	60.5	1.7	83.1	64.3	0.4	8.2	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	0.2	71.4	0.8	121.7	60.5	1.7	83.1	64.3	0.4	8.2	4.8
LOS	C	A	E	A	F	E	A	F	E	A	A	A
Approach Delay	22.6		53.3			39.1			50.9			
Approach LOS	C		D			D			D			
Queue Length 50th (m)	118.2	0.0	~333.3	0.0	~50.7	47.3	0.0	53.4	79.3	0.0	29.5	0.1

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	22%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	181.9	0.0	#436.5	0.0	#81.5	54.5	0.0	68.9	81.9	0.0	0.0	m#256.0
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2653	1724	2653	1724	308	882	1484	506	1081	1491	1848	1804
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.17	1.08	0.57	1.02	0.36	0.59	0.69	0.48	0.24	0.10	0.79

Intersection Summary

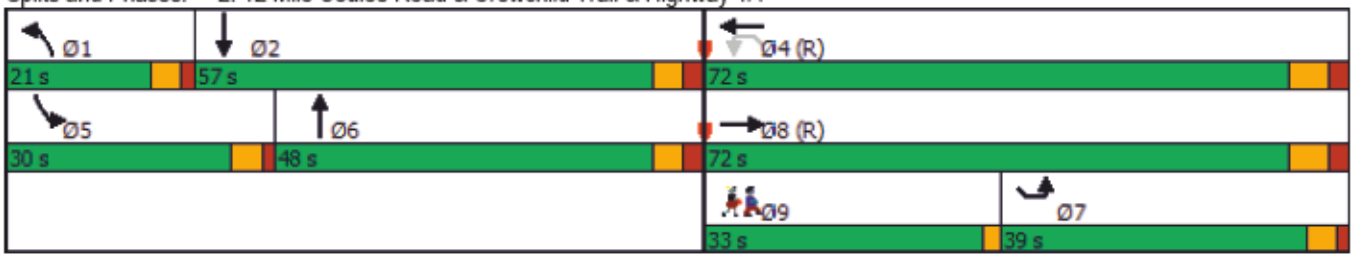
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBT, Start of Green, Master Intersection
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 37.3 — Intersection LOS: D
Intersection Capacity Utilization 142.1% — 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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	Ø9
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

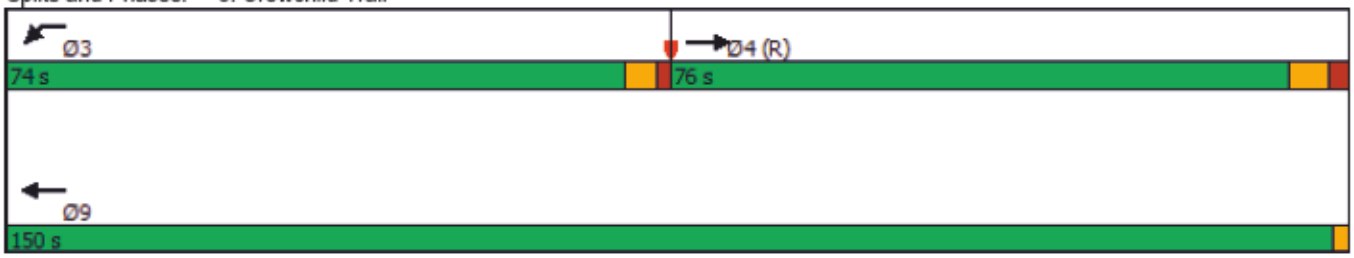
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1918	0	1332	3611	0	823
Future Volume (vph)	1918	0	1332	3611	0	823
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						546
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2040	0	1417	3841	0	876
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2040	0	1417	3841	0	876
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	145.0		
Total Split (s)	76.0		74.0	150.0		
Total Split (%)	50.7%		49.3%	100.0%		
Maximum Green (s)	69.0		69.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	67.8		66.2	150.0		150.0
Actuated g/C Ratio	0.45		0.44	1.00		1.00
v/c Ratio	0.93		0.97	0.79		0.56
Control Delay	37.7		58.5	1.4		1.2
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	37.7		58.5	1.4		1.2
LOS	D		E	A		A
Approach Delay	37.7			16.8	1.2	
Approach LOS	D			B	A	
Queue Length 50th (m)	196.8		207.7	0.0		0.0
Queue Length 95th (m)	223.4		#257.3	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Base Capacity (vph)	2200		1477	4863		1566
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	0.93		0.96	0.79		0.56

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 39 (26%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 20.3	Intersection LOS: C
Intersection Capacity Utilization 90.4%	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: Crowchild Trail



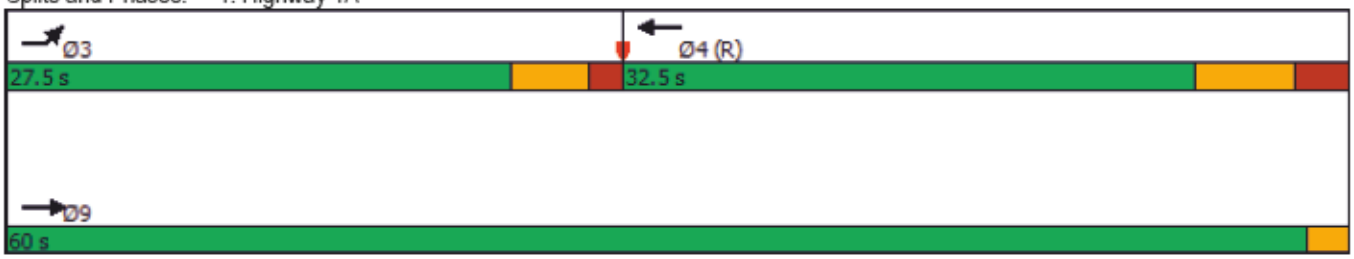
CFI – East Leg Pedestrian Crossing and Split Phasing

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	1624	927	0	0	100
Future Volume (vph)	50	1624	927	0	0	100
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	3385	3385	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	3385	3385	0	0	1566
Satd. Flow (RTOR)						531
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	53	1728	986	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	1728	986	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0			
Minimum Split (s)	27.5	26.0	27.5			
Total Split (s)	27.5	60.0	32.5			
Total Split (%)	45.8%	100.0%	54.2%			
Maximum Green (s)	22.5	58.0	25.5			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	18.0	60.0	46.4			60.0
Actuated g/C Ratio	0.30	1.00	0.77			1.00
v/c Ratio	0.05	0.51	0.38			0.07
Control Delay	15.2	0.6	7.8			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	15.2	0.6	7.8			0.1
LOS	B	A	A			A
Approach Delay		1.0	7.8		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	2.1	0.0	0.0			0.0
Queue Length 95th (m)	5.3	0.0	61.4			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	1129	3385	2617			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.05	0.51	0.38			0.07

Intersection Summary			
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 4:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 3.3		Intersection LOS: A	
Intersection Capacity Utilization 49.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Highway 1A



Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Future Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3385	1714	3385	1697	3306	3342	1525	3306	3310	1525	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3385	1691	3385	1675	3306	3342	1484	3256	3310	1491	3273	3242
Satd. Flow (RTOR)		134		152			937			134		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	2%	3%	4%
Adj. Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Turn Type	NA	Free	NA	Free	Split	NA	Free	Split	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		2	2		1	1			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		2	2		1	1		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		10.0	10.0		10.0	10.0		20.0	20.0
Minimum Split (s)	58.0		27.0		16.0	16.0		16.0	16.0		58.0	27.0
Total Split (s)	60.0		60.0		31.0	31.0		39.0	39.0		60.0	60.0
Total Split (%)	46.2%		46.2%		23.8%	23.8%		30.0%	30.0%		46.2%	46.2%
Maximum Green (s)	53.0		53.0		25.0	25.0		33.0	33.0		53.0	53.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		8.0	8.0		8.0	8.0		9.0	9.0
Lead/Lag					Lag	Lag		Lead	Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)	8.0										8.0	
Flash Dont Walk (s)	43.0										43.0	
Pedestrian Calls (#/hr)	0										0	
Act Effct Green (s)	64.6	130.0	64.6	130.0	12.7	12.7	130.0	27.7	27.7	130.0	64.6	64.6
Actuated g/C Ratio	0.50	1.00	0.50	1.00	0.10	0.10	1.00	0.21	0.21	1.00	0.50	0.50
v/c Ratio	0.95	0.08	0.51	0.13	0.42	0.75	0.63	0.91	0.20	0.07	0.03	0.24
Control Delay	45.3	0.1	24.3	0.2	58.5	71.2	2.1	67.2	42.0	0.1	19.0	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	0.1	24.3	0.2	58.5	71.2	2.1	67.2	42.0	0.1	19.0	1.6
LOS	D	A	C	A	E	E	A	E	D	A	B	A
Approach Delay	41.9		19.3			20.7			55.1			
Approach LOS	D		B			C			E			
Queue Length 50th (m)	204.7	0.0	76.6	0.0	17.0	32.5	0.0	81.7	15.8	0.0	3.5	0.7

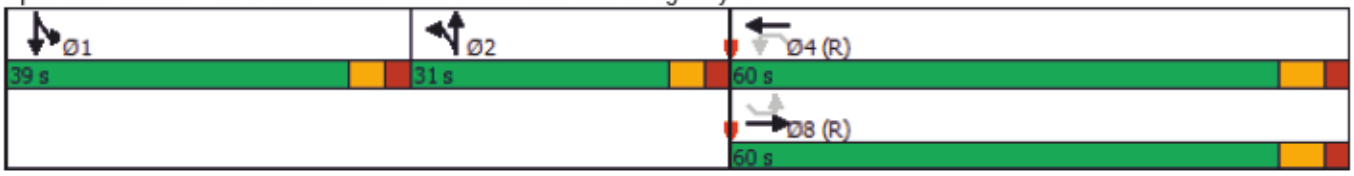
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#281.5	0.0	104.3	0.0	26.4	45.2	0.0	101.8	24.7	0.0	7.7	m1.1
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	1682	1691	1682	1675	584	591	1484	788	789	1491	1626	1611
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.08	0.51	0.13	0.23	0.41	0.63	0.81	0.18	0.07	0.03	0.24

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 31.3	Intersection LOS: C
Intersection Capacity Utilization 112.0%	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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



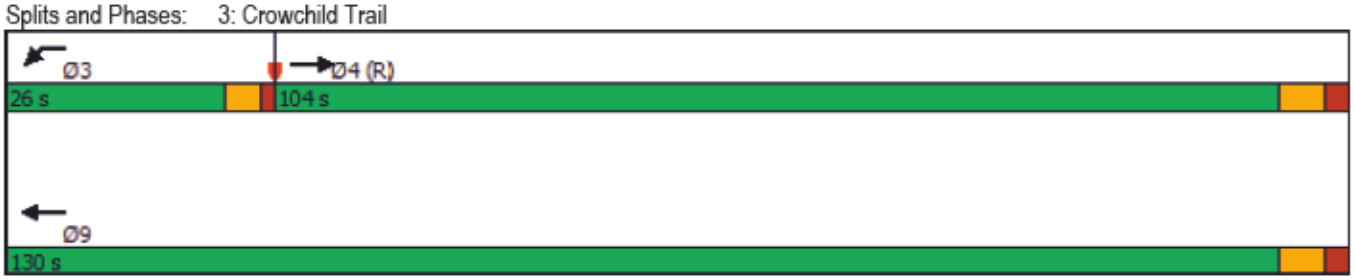
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	2104	0	370	1010	0	881
Future Volume (vph)	2104	0	370	1010	0	881
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3385	0	3306	3385	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	3385	0	3306	3385	0	1566
Satd. Flow (RTOR)						208
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2238	0	394	1074	0	937
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2238	0	394	1074	0	937
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	27.5		14.5	27.0		
Total Split (s)	104.0		26.0	130.0		
Total Split (%)	80.0%		20.0%	100.0%		
Maximum Green (s)	97.0		21.0	123.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	96.5		17.5	130.0		130.0
Actuated g/C Ratio	0.74		0.13	1.00		1.00
v/c Ratio	0.89		0.88	0.32		0.60
Control Delay	9.2		76.8	0.2		1.3
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	9.2		76.8	0.2		1.3
LOS	A		E	A		A
Approach Delay	9.2			20.8	1.3	
Approach LOS	A			C	A	
Queue Length 50th (m)	27.4		51.1	0.0		0.0
Queue Length 95th (m)	m244.3		#73.3	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2511		483	3385		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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		0.82	0.32		0.60

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 14 (11%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 83.9%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	200	1318	1760	0	0	220
Future Volume (vph)	200	1318	1760	0	0	220
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3471	3400	3476	0	0	1629
Flt Permitted	0.950					
Satd. Flow (perm)	3471	3400	3476	0	0	1608
Satd. Flow (RTOR)						227
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	213	1402	1872	0	0	234
Shared Lane Traffic (%)						
Lane Group Flow (vph)	213	1402	1872	0	0	234
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	120.0	28.5			
Total Split (s)	30.0	150.0	120.0			
Total Split (%)	20.0%	100.0%	80.0%			
Maximum Green (s)	25.0	148.0	113.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	12.4	150.0	121.6			150.0
Actuated g/C Ratio	0.08	1.00	0.81			1.00
v/c Ratio	0.74	0.41	0.66			0.15
Control Delay	82.9	0.4	3.4			0.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	82.9	0.4	3.4			0.2
LOS	F	A	A			A
Approach Delay		11.3	3.4		0.2	
Approach LOS		B	A		A	
Queue Length 50th (m)	32.4	0.0	0.1			0.0
Queue Length 95th (m)	45.3	0.0	55.5			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	532	3400	2817			1608

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.40	0.41	0.66			0.15

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 72 (48%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 6.6	Intersection LOS: A
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A & Highway 1A

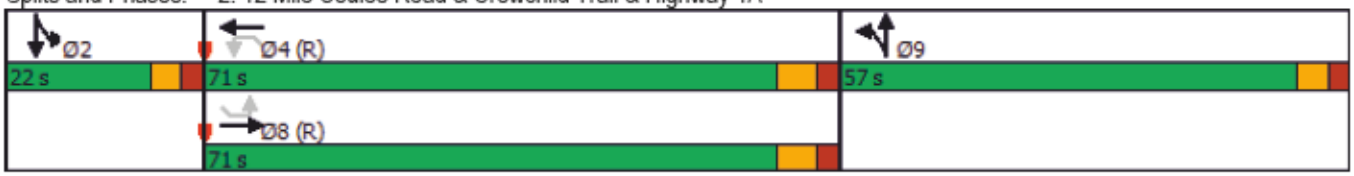
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Future Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3476	1794	3476	1794	3395	3400	1566	3395	3400	1566	3395	3395
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3476	1771	3476	1771	3395	3400	1524	3362	3400	1532	3395	3395
Satd. Flow (RTOR)		116		239			668			234		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	5%	2%	2%	2%
Adj. Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Turn Type	NA	Free	NA	Free	Split	NA	Free	Split	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		9	9		2	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		9	9		2	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		10.0	10.0		10.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		57.0	57.0		16.0	16.0		27.0	27.0
Total Split (s)	71.0		71.0		57.0	57.0		22.0	22.0		71.0	71.0
Total Split (%)	47.3%		47.3%		38.0%	38.0%		14.7%	14.7%		47.3%	47.3%
Maximum Green (s)	64.0		64.0		51.0	51.0		16.0	16.0		64.0	64.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		8.0	8.0		8.0	8.0		9.0	9.0
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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)					8.0	8.0						
Flash Dont Walk (s)					43.0	43.0						
Pedestrian Calls (#/hr)					2	2						
Act Effct Green (s)	77.7	150.0	77.7	150.0	21.8	21.8	150.0	25.5	25.5	150.0	77.7	77.7
Actuated g/C Ratio	0.52	1.00	0.52	1.00	0.15	0.15	1.00	0.17	0.17	1.00	0.52	0.52
v/c Ratio	0.63	0.15	0.92	0.44	0.44	0.59	0.44	0.48	0.69	0.15	0.12	0.53
Control Delay	29.0	0.2	40.2	0.6	59.2	63.2	0.9	60.4	65.1	0.2	0.3	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	0.2	40.2	0.6	59.2	63.2	0.9	60.4	65.1	0.2	0.3	19.3
LOS	C	A	D	A	E	E	A	E	E	A	A	B
Approach Delay	23.6		27.4			27.0			47.0			
Approach LOS	C		C			C			D			
Queue Length 50th (m)	114.3	0.0	213.3	0.0	31.9	45.0	0.0	38.9	59.5	0.0	0.4	152.6

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	182.5	0.0	#346.8	0.0	34.0	45.7	0.0	#67.2	#112.1	0.0	0.2	174.3
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	1800	1771	1800	1771	1109	1110	1524	577	578	1532	1758	1758
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.15	0.92	0.44	0.19	0.26	0.44	0.48	0.69	0.15	0.12	0.53

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 27.2	Intersection LOS: C
Intersection Capacity Utilization 122.9%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3476	0	3395	3476	0	1629
Flt Permitted			0.950			
Satd. Flow (perm)	3476	0	3395	3476	0	1608
Satd. Flow (RTOR)						560
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	120.0		
Total Split (s)	75.0		75.0	150.0		
Total Split (%)	50.0%		50.0%	100.0%		
Maximum Green (s)	68.0		70.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Act Effct Green (s)	86.0		48.0	150.0		150.0
Actuated g/C Ratio	0.57		0.32	1.00		1.00
v/c Ratio	0.71		0.86	0.70		0.42
Control Delay	10.0		56.7	1.2		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	10.0		56.7	1.2		0.7
LOS	B		E	A		A
Approach Delay	10.0			16.6	0.7	
Approach LOS	B			B	A	
Queue Length 50th (m)	180.2		135.3	0.0		0.0
Queue Length 95th (m)	50.5		146.8	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	1992		1539	3476		1608

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.71		0.61	0.70		0.42

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 15 (10%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Crowchild Trail & Crowchild Traill

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	110	2681	1128	0	0	100
Future Volume (vph)	110	2681	1128	0	0	100
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						348
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	117	2852	1200	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	2852	1200	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	120.0	28.5			
Total Split (s)	40.0	150.0	110.0			
Total Split (%)	26.7%	100.0%	73.3%			
Maximum Green (s)	34.0	148.0	103.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	2.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	8.6	150.0	124.4			150.0
Actuated g/C Ratio	0.06	1.00	0.83			1.00
v/c Ratio	0.62	0.59	0.30			0.07
Control Delay	82.9	0.5	0.6			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	82.9	0.5	0.6			0.1
LOS	F	A	A			A
Approach Delay		3.8	0.6		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	17.8	0.0	0.1			0.0
Queue Length 95th (m)	28.0	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	705	4863	4033			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.17	0.59	0.30			0.07

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 87 (58%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 2.8	Intersection LOS: A
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Future Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.94	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	4805	3310	1495	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1484	4759	3310	1463	3273	3242
Satd. Flow (RTOR)		109		188			1091			109		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	4%	3%	4%
Adj. Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Turn Type	NA	Free	NA	Free	Split	NA	Free	Split	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	1		2	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	1		2	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	7.0		10.0	10.0		20.0	20.0
Minimum Split (s)	58.0		27.0		56.0	56.0		16.0	16.0		58.0	27.0
Total Split (s)	58.0		58.0		59.0	59.0		33.0	33.0		58.0	58.0
Total Split (%)	38.7%		38.7%		39.3%	39.3%		22.0%	22.0%		38.7%	38.7%
Maximum Green (s)	51.0		51.0		54.0	54.0		27.0	27.0		51.0	51.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	1.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	7.0		8.0	8.0		9.0	9.0
Lead/Lag					Lead	Lead		Lag	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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)					8.0	8.0						
Flash Dont Walk (s)					43.0	43.0						
Pedestrian Calls (#/hr)					0	0						
Act Effct Green (s)	83.9	150.0	83.9	150.0	17.6	17.6	150.0	24.5	24.5	150.0	83.9	83.9
Actuated g/C Ratio	0.56	1.00	0.56	1.00	0.12	0.12	1.00	0.16	0.16	1.00	0.56	0.56
v/c Ratio	0.98	0.12	0.38	0.16	0.46	0.80	0.80	0.84	0.33	0.07	0.06	0.33
Control Delay	43.3	0.1	19.8	0.2	65.0	79.9	4.6	71.1	56.4	0.1	0.1	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	0.1	19.8	0.2	65.0	79.9	4.6	71.1	56.4	0.1	0.1	15.6
LOS	D	A	B	A	E	E	A	E	E	A	A	B
Approach Delay	40.3		15.8			25.2			60.4			
Approach LOS	D		B			C			E			
Queue Length 50th (m)	272.3	0.0	60.1	0.0	26.0	48.8	0.0	68.4	25.1	0.0	0.0	98.6

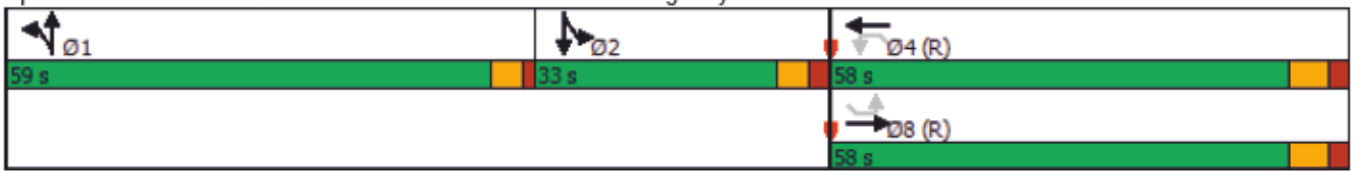
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#355.7	0.0	82.4	0.0	36.9	63.2	0.0	79.5	35.4	0.0	0.1	m102.3
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2719	1691	2719	1675	1146	1158	1484	841	579	1463	1830	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.12	0.38	0.16	0.16	0.27	0.80	0.78	0.31	0.07	0.06	0.33

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 32.6	Intersection LOS: C
Intersection Capacity Utilization 123.9%	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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



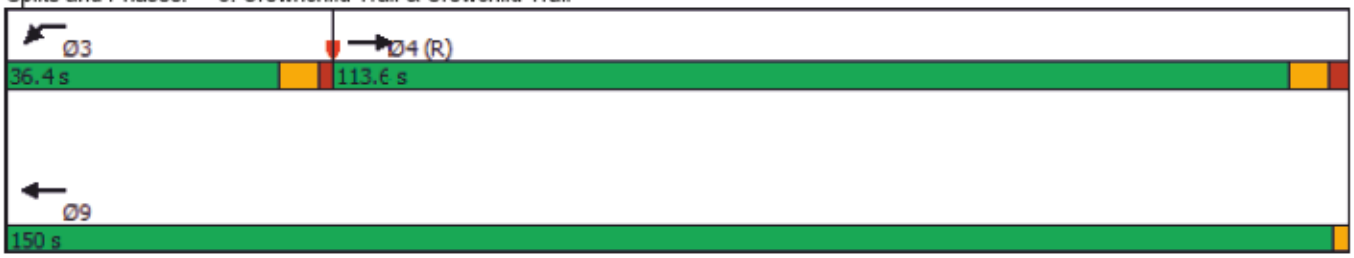
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	3116	0	568	1210	0	1114
Future Volume (vph)	3116	0	568	1210	0	1114
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						243
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	3315	0	604	1287	0	1185
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3315	0	604	1287	0	1185
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	120.0		
Total Split (s)	113.6		36.4	150.0		
Total Split (%)	75.7%		24.3%	100.0%		
Maximum Green (s)	106.6		30.4	148.0		
Yellow Time (s)	4.5		4.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		8.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	104.9		28.1	150.0		150.0
Actuated g/C Ratio	0.70		0.19	1.00		1.00
v/c Ratio	0.97		0.98	0.26		0.76
Control Delay	12.4		90.8	0.1		2.0
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	12.4		90.8	0.1		2.0
LOS	B		F	A		A
Approach Delay	12.4			29.1	2.0	
Approach LOS	B			C	A	
Queue Length 50th (m)	76.5		92.9	0.0		0.0
Queue Length 95th (m)	m#117.6		#130.0	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3401		625	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.97		0.97	0.26		0.76

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 113 (75%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 92.6%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowhchild Trail & Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	190	1780	2643	0	0	280
Future Volume (vph)	190	1780	2643	0	0	280
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						165
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	202	1894	2812	0	0	298
Shared Lane Traffic (%)						
Lane Group Flow (vph)	202	1894	2812	0	0	298
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	125.0	28.5			
Total Split (s)	26.0	150.0	124.0			
Total Split (%)	17.3%	100.0%	82.7%			
Maximum Green (s)	20.0	148.0	117.0			
Yellow Time (s)	4.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	12.4	150.0	120.6			150.0
Actuated g/C Ratio	0.08	1.00	0.80			1.00
v/c Ratio	0.74	0.39	0.72			0.19
Control Delay	83.5	0.2	5.1			0.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	83.5	0.2	5.1			0.3
LOS	F	A	A			A
Approach Delay		8.3	5.1		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	30.8	0.0	0.1			0.0
Queue Length 95th (m)	43.3	0.0	m116.8			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	396	4863	3910			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.39	0.72			0.19

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 48 (32%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 6.1	Intersection LOS: A
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 1: Highway 1A

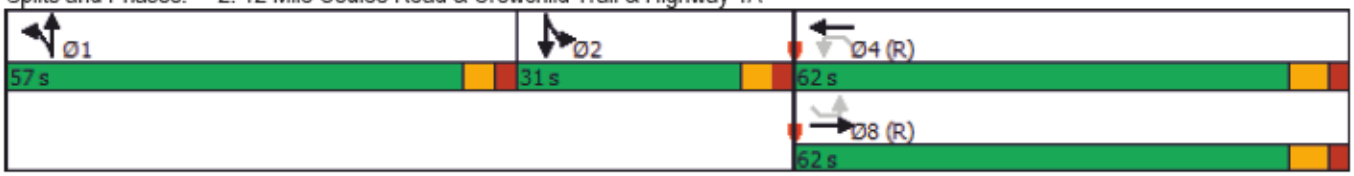
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Future Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.94	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	4805	3408	1525	3120	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1484	4761	3408	1491	3120	3306
Satd. Flow (RTOR)		142		302			822			298		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Turn Type	NA	Free	NA	Free	Split	NA	Free	Split	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	1		2	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	1		2	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		10.0	10.0		10.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		57.0	57.0		16.0	16.0		27.0	27.0
Total Split (s)	62.0		62.0		57.0	57.0		31.0	31.0		62.0	62.0
Total Split (%)	41.3%		41.3%		38.0%	38.0%		20.7%	20.7%		41.3%	41.3%
Maximum Green (s)	55.0		55.0		51.0	51.0		25.0	25.0		55.0	55.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		8.0	8.0		8.0	8.0		9.0	9.0
Lead/Lag					Lead	Lead		Lag	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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)					8.0	8.0						
Flash Dont Walk (s)					43.0	43.0						
Pedestrian Calls (#/hr)					2	2						
Act Effct Green (s)	77.1	150.0	77.1	150.0	24.1	24.1	150.0	23.8	23.8	150.0	77.1	77.1
Actuated g/C Ratio	0.51	1.00	0.51	1.00	0.16	0.16	1.00	0.16	0.16	1.00	0.51	0.51
v/c Ratio	0.63	0.18	1.02	0.62	0.51	0.66	0.55	0.48	0.88	0.20	0.13	0.80
Control Delay	29.8	0.2	57.1	1.6	59.3	63.7	1.5	59.5	79.0	0.3	0.5	30.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	0.2	57.1	1.6	59.3	63.7	1.5	59.5	79.0	0.3	0.5	30.1
LOS	C	A	E	A	E	E	A	E	E	A	A	C
Approach Delay	24.9		40.8			27.4			52.1			
Approach LOS	C		D			C			D			
Queue Length 50th (m)	116.4	0.0	264.3	0.0	40.1	53.9	0.0	34.6	72.0	0.0	0.7	210.0

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	186.3	0.0	#404.9	0.0	42.2	54.7	0.0	46.5	#104.4	0.0	1.0	#295.8
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2500	1724	2500	1724	1079	1081	1484	786	557	1491	1604	1699
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.18	1.02	0.62	0.25	0.32	0.55	0.46	0.85	0.20	0.13	0.80

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 34.6	Intersection LOS: C
Intersection Capacity Utilization 140.3%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A

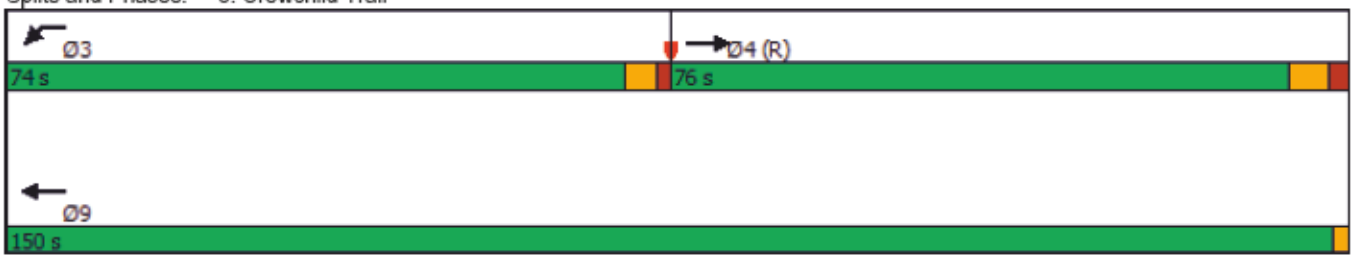


Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						553
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	125.0		
Total Split (s)	76.0		74.0	150.0		
Total Split (%)	50.7%		49.3%	100.0%		
Maximum Green (s)	69.0		69.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	85.0		49.0	150.0		150.0
Actuated g/C Ratio	0.57		0.33	1.00		1.00
v/c Ratio	0.51		0.87	0.50		0.43
Control Delay	7.2		56.7	0.4		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	7.2		56.7	0.4		0.7
LOS	A		E	A		A
Approach Delay	7.2			16.0	0.7	
Approach LOS	A			B	A	
Queue Length 50th (m)	46.9		135.2	0.0		0.0
Queue Length 95th (m)	33.4		147.1	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2757		1476	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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		0.64	0.50		0.43

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 47 (31%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 11.9	Intersection LOS: B
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	120	2758	1247	0	0	90
Future Volume (vph)	120	2758	1247	0	0	90
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						221
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	128	2934	1327	0	0	96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	2934	1327	0	0	96
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	29.0			
Total Split (s)	18.0	145.0	127.0			
Total Split (%)	12.4%	100.0%	87.6%			
Maximum Green (s)	13.0	143.0	120.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	8.9	145.0	120.1			145.0
Actuated g/C Ratio	0.06	1.00	0.83			1.00
v/c Ratio	0.63	0.60	0.33			0.06
Control Delay	80.3	0.6	3.3			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	80.3	0.6	3.3			0.1
LOS	F	A	A			A
Approach Delay		3.9	3.3		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	18.8	0.0	26.7			0.0
Queue Length 95th (m)	29.2	0.0	35.5			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	254	4863	4035			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.50	0.60	0.33			0.06

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 87 (60%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 3.6	Intersection LOS: A
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

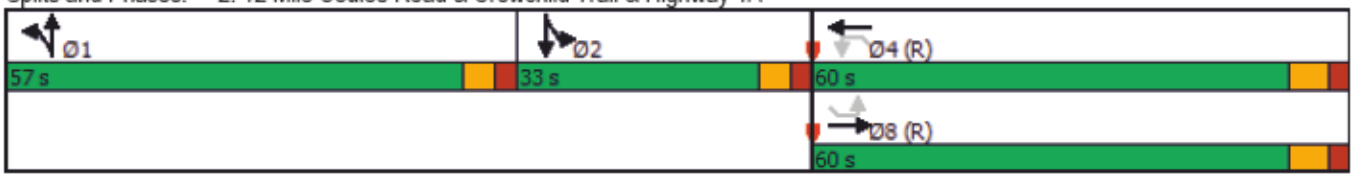
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Future Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.94	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	4805	3310	1495	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1484	4760	3310	1463	3273	3242
Satd. Flow (RTOR)		116		203			1091			116		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	4%	3%	4%
Adj. Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Turn Type	NA	Free	NA	Free	Split	NA	Free	Split	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	1		2	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	1		2	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		10.0	10.0		10.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		57.0	57.0		16.0	16.0		27.0	27.0
Total Split (s)	60.0		60.0		57.0	57.0		33.0	33.0		60.0	60.0
Total Split (%)	40.0%		40.0%		38.0%	38.0%		22.0%	22.0%		40.0%	40.0%
Maximum Green (s)	53.0		53.0		51.0	51.0		27.0	27.0		53.0	53.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		8.0	8.0		8.0	8.0		9.0	9.0
Lead/Lag					Lead	Lead		Lag	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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)					8.0	8.0						
Flash Dont Walk (s)					43.0	43.0						
Pedestrian Calls (#/hr)					0	0						
Act Effct Green (s)	82.4	150.0	82.4	150.0	18.1	18.1	150.0	24.5	24.5	150.0	82.4	82.4
Actuated g/C Ratio	0.55	1.00	0.55	1.00	0.12	0.12	1.00	0.16	0.16	1.00	0.55	0.55
v/c Ratio	1.02	0.12	0.43	0.19	0.47	0.81	0.76	0.84	0.37	0.07	0.07	0.38
Control Delay	56.3	0.1	21.4	0.3	64.8	79.8	3.8	71.1	57.1	0.1	17.5	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	0.1	21.4	0.3	64.8	79.8	3.8	71.1	57.1	0.1	17.5	21.0
LOS	E	A	C	A	E	E	A	E	E	A	B	C
Approach Delay	52.3		16.8			25.8			61.1			
Approach LOS	D		B			C			E			
Queue Length 50th (m)	~314.6	0.0	70.8	0.0	27.4	50.5	0.0	68.4	28.2	0.0	8.9	56.5

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#377.0	0.0	95.7	0.0	38.6	65.2	0.0	79.5	39.2	0.0	16.4	81.8
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2671	1691	2671	1675	1079	1091	1484	841	579	1463	1797	1780
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.12	0.43	0.19	0.18	0.30	0.76	0.78	0.35	0.07	0.07	0.38

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 37.9 Intersection LOS: D
Intersection Capacity Utilization 128.0% 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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	3183	0	628	1369	0	1064
Future Volume (vph)	3183	0	628	1369	0	1064
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						259
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	3386	0	668	1456	0	1132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3386	0	668	1456	0	1132
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	145.0		
Total Split (s)	108.5		36.5	145.0		
Total Split (%)	74.8%		25.2%	100.0%		
Maximum Green (s)	101.5		31.5	143.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	99.5		29.5	145.0		145.0
Actuated g/C Ratio	0.69		0.20	1.00		1.00
v/c Ratio	1.01		0.99	0.30		0.72
Control Delay	42.2		90.4	0.2		2.9
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	42.2		90.4	0.2		2.9
LOS	D		F	A		A
Approach Delay	42.2			28.5	2.9	
Approach LOS	D			C	A	
Queue Length 50th (m)	~374.6		99.7	0.0		0.0
Queue Length 95th (m)	#394.5		#139.8	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3337		672	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	1.01		0.99	0.30		0.72

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 11 (8%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 31.2	Intersection LOS: C
Intersection Capacity Utilization 94.9%	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: Crowchild Trail

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	170	1870	2975	0	0	340
Future Volume (vph)	170	1870	2975	0	0	340
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						138
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	181	1989	3165	0	0	362
Shared Lane Traffic (%)						
Lane Group Flow (vph)	181	1989	3165	0	0	362
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	28.5			
Total Split (s)	22.0	150.0	128.0			
Total Split (%)	14.7%	100.0%	85.3%			
Maximum Green (s)	17.0	148.0	121.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.4	150.0	122.6			150.0
Actuated g/C Ratio	0.08	1.00	0.82			1.00
v/c Ratio	0.72	0.41	0.80			0.23
Control Delay	83.8	0.3	7.8			0.3
Queue Delay	0.0	0.0	0.3			0.0
Total Delay	83.8	0.3	8.1			0.3
LOS	F	A	A			A
Approach Delay		7.2	8.1		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	27.6	0.0	43.8			0.0
Queue Length 95th (m)	39.6	0.0	m50.1			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Base Capacity (vph)	330	4863	3974			1566
Starvation Cap Reductn	0	0	277			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.55	0.41	0.86			0.23

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 147 (98%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 7.3	Intersection LOS: A
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Future Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	3306	3408	1525	3306	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1484	3287	3408	1491	3306	3306
Satd. Flow (RTOR)		128		250			876			351		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Turn Type	NA	Free	NA	Free	Split	NA	Free	Split	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	1		2	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	1		2	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		10.0	10.0		10.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		57.0	57.0		16.0	16.0		27.0	27.0
Total Split (s)	57.0		57.0		57.0	57.0		36.0	36.0		57.0	57.0
Total Split (%)	38.0%		38.0%		38.0%	38.0%		24.0%	24.0%		38.0%	38.0%
Maximum Green (s)	50.0		50.0		51.0	51.0		30.0	30.0		50.0	50.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		8.0	8.0		8.0	8.0		9.0	9.0
Lead/Lag					Lead	Lead		Lag	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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)					8.0	8.0						
Flash Dont Walk (s)					43.0	43.0						
Pedestrian Calls (#/hr)					0	0						
Act Effct Green (s)	80.4	150.0	80.4	150.0	17.9	17.9	150.0	26.6	26.6	150.0	80.4	80.4
Actuated g/C Ratio	0.54	1.00	0.54	1.00	0.12	0.12	1.00	0.18	0.18	1.00	0.54	0.54
v/c Ratio	0.65	0.17	1.09	0.57	0.80	0.80	0.59	0.60	0.85	0.24	0.10	0.80
Control Delay	27.4	0.2	79.9	0.8	79.0	79.3	1.7	60.6	73.6	0.4	8.6	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	0.2	79.9	0.8	79.0	79.3	1.7	60.6	73.6	0.4	8.6	21.9
LOS	C	A	E	A	E	E	A	E	E	A	A	C
Approach Delay	23.3		59.6			34.1			48.3			
Approach LOS	C		E			C			D			
Queue Length 50th (m)	127.0	0.0	~349.4	0.0	47.6	49.0	0.0	50.1	79.1	0.0	29.5	231.2

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	170.4	0.0	#417.9	0.0	61.4	63.0	0.0	63.2	95.1	0.0	0.0	m241.3
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2607	1724	2607	1724	1079	1081	1484	645	665	1491	1772	1772
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.17	1.09	0.57	0.29	0.29	0.59	0.54	0.78	0.24	0.10	0.80

Intersection Summary

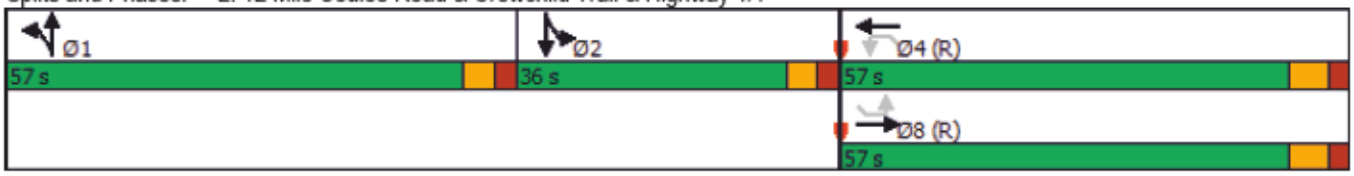
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 41.2 Intersection LOS: D
Intersection Capacity Utilization 148.3% 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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



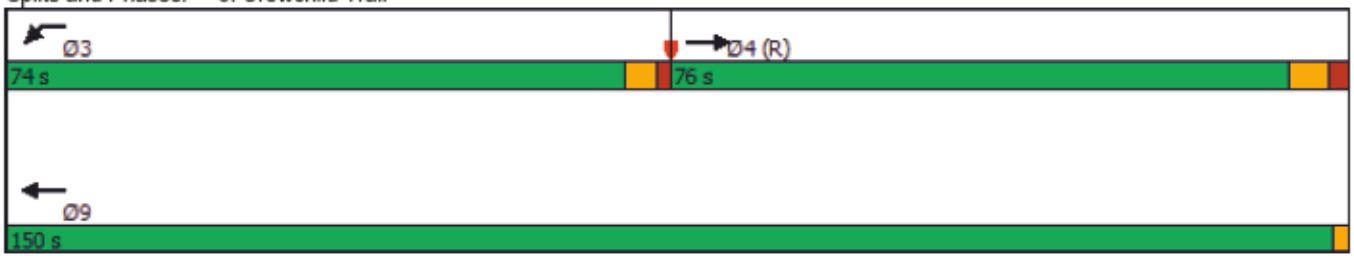
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1918	0	1332	3611	0	823
Future Volume (vph)	1918	0	1332	3611	0	823
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						546
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2040	0	1417	3841	0	876
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2040	0	1417	3841	0	876
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	145.0		
Total Split (s)	76.0		74.0	150.0		
Total Split (%)	50.7%		49.3%	100.0%		
Maximum Green (s)	69.0		69.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	67.8		66.2	150.0		150.0
Actuated g/C Ratio	0.45		0.44	1.00		1.00
v/c Ratio	0.93		0.97	0.79		0.56
Control Delay	29.4		58.5	1.4		1.2
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	29.4		58.5	1.4		1.2
LOS	C		E	A		A
Approach Delay	29.4			16.8	1.2	
Approach LOS	C			B	A	
Queue Length 50th (m)	216.5		207.7	0.0		0.0
Queue Length 95th (m)	237.4		#257.3	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Base Capacity (vph)	2200		1477	4863		1566
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	0.93		0.96	0.79		0.56

Intersection Summary			
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 149 (99%), Referenced to phase 4:EBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 18.3		Intersection LOS: B	
Intersection Capacity Utilization 90.4%		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: Crowchild Trail



CFI – Staged East Leg Pedestrian Crossing

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	1624	927	0	0	100
Future Volume (vph)	50	1624	927	0	0	100
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	3385	3385	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	3385	3385	0	0	1566
Satd. Flow (RTOR)						367
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	53	1728	986	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	1728	986	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0			
Minimum Split (s)	27.5	26.0	27.5			
Total Split (s)	31.0	135.0	104.0			
Total Split (%)	23.0%	100.0%	77.0%			
Maximum Green (s)	26.0	133.0	97.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	18.0	135.0	107.8			135.0
Actuated g/C Ratio	0.13	1.00	0.80			1.00
v/c Ratio	0.12	0.51	0.36			0.07
Control Delay	52.4	0.6	0.6			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	52.4	0.6	0.6			0.1
LOS	D	A	A			A
Approach Delay		2.1	0.6		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	6.4	0.0	0.2			0.0
Queue Length 95th (m)	12.9	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	587	3385	2703			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.09	0.51	0.36			0.07

Intersection Summary	
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 75 (56%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 1.5	Intersection LOS: A
Intersection Capacity Utilization 49.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

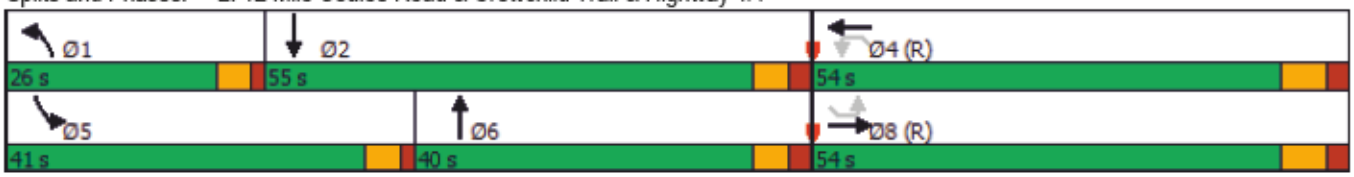
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Future Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3385	1714	3385	1697	3306	3342	1525	3306	3310	1495	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3385	1691	3385	1675	3306	3342	1484	3259	3310	1463	3273	3242
Satd. Flow (RTOR)		162		162			937			162		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	4%	3%	4%
Adj. Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	40.0		12.0	16.0		27.0	27.0
Total Split (s)	54.0		54.0		26.0	40.0		41.0	55.0		54.0	54.0
Total Split (%)	40.0%		40.0%		19.3%	29.6%		30.4%	40.7%		40.0%	40.0%
Maximum Green (s)	47.0		47.0		21.0	34.0		36.0	49.0		47.0	47.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
Lead/Lag					Lead	Lag		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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)						8.0						
Flash Dont Walk (s)						26.0						
Pedestrian Calls (#/hr)						2						
Act Effct Green (s)	66.1	135.0	66.1	135.0	8.8	16.1	135.0	28.8	36.1	135.0	66.1	66.1
Actuated g/C Ratio	0.49	1.00	0.49	1.00	0.07	0.12	1.00	0.21	0.27	1.00	0.49	0.49
v/c Ratio	0.97	0.08	0.51	0.13	0.63	0.61	0.63	0.90	0.16	0.07	0.03	0.25
Control Delay	47.6	0.1	27.2	0.2	74.3	62.1	2.1	68.8	36.3	0.1	0.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	0.1	27.2	0.2	74.3	62.1	2.1	68.8	36.3	0.1	0.5	0.6
LOS	D	A	C	A	E	E	A	E	D	A	A	A
Approach Delay	44.1		21.6			20.6			55.3			
Approach LOS	D		C			C			E			
Queue Length 50th (m)	203.4	0.0	76.1	0.0	18.4	33.8	0.0	85.8	16.0	0.0	0.2	0.7

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#344.1	0.0	130.5	0.0	28.7	40.6	0.0	103.4	19.6	0.0	0.0	m1.1
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	1658	1691	1658	1675	465	792	1484	832	1187	1463	1603	1588
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.08	0.51	0.13	0.29	0.31	0.63	0.77	0.12	0.07	0.03	0.25

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 32.2 Intersection LOS: C
Intersection Capacity Utilization 116.8% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



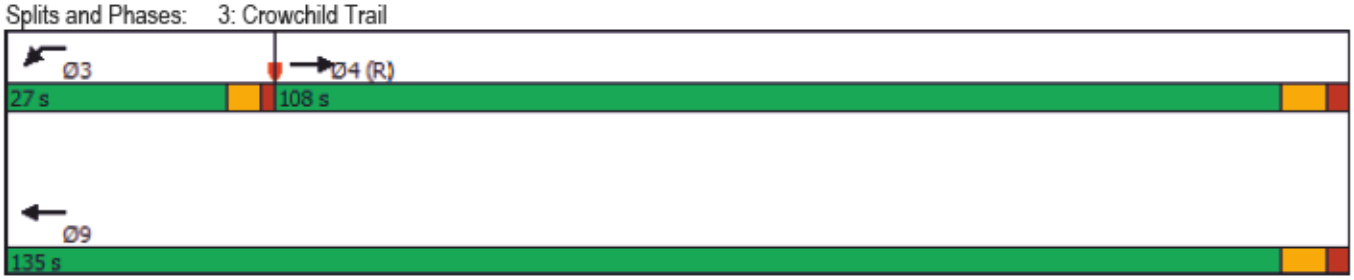
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	2104	0	370	1010	0	881
Future Volume (vph)	2104	0	370	1010	0	881
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3385	0	3306	3385	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	3385	0	3306	3385	0	1566
Satd. Flow (RTOR)						209
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2238	0	394	1074	0	937
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2238	0	394	1074	0	937
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	27.5		14.5	27.0		
Total Split (s)	108.0		27.0	135.0		
Total Split (%)	80.0%		20.0%	100.0%		
Maximum Green (s)	101.0		22.0	128.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	100.8		18.2	135.0		135.0
Actuated g/C Ratio	0.75		0.13	1.00		1.00
v/c Ratio	0.89		0.88	0.32		0.60
Control Delay	12.5		78.9	0.2		1.3
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	12.5		78.9	0.2		1.3
LOS	B		E	A		A
Approach Delay	12.5			21.4	1.3	
Approach LOS	B			C	A	
Queue Length 50th (m)	3.1		53.3	0.0		0.0
Queue Length 95th (m)	m180.8		#74.7	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2527		489	3385		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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		0.81	0.32		0.60

Intersection Summary	
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 15 (11%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 83.9%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	200	1318	1760	0	0	220
Future Volume (vph)	200	1318	1760	0	0	220
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3471	3400	3476	0	0	1629
Flt Permitted	0.950					
Satd. Flow (perm)	3471	3400	3476	0	0	1608
Satd. Flow (RTOR)						196
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	213	1402	1872	0	0	234
Shared Lane Traffic (%)						
Lane Group Flow (vph)	213	1402	1872	0	0	234
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	120.0	28.5			
Total Split (s)	22.0	125.0	103.0			
Total Split (%)	17.6%	100.0%	82.4%			
Maximum Green (s)	17.0	118.0	96.0			
Yellow Time (s)	3.5	4.5	4.5			
All-Red Time (s)	1.5	2.5	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	9.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	10.9	125.0	98.1			125.0
Actuated g/C Ratio	0.09	1.00	0.78			1.00
v/c Ratio	0.71	0.41	0.69			0.15
Control Delay	68.3	0.4	3.2			0.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	68.3	0.4	3.2			0.2
LOS	E	A	A			A
Approach Delay		9.3	3.2		0.2	
Approach LOS		A	A		A	
Queue Length 50th (m)	26.7	0.0	30.0			0.0
Queue Length 95th (m)	38.4	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	416	3400	2729			1608

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.41	0.69			0.15

Intersection Summary	
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 34 (27%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 5.7	Intersection LOS: A
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A & Highway 1A

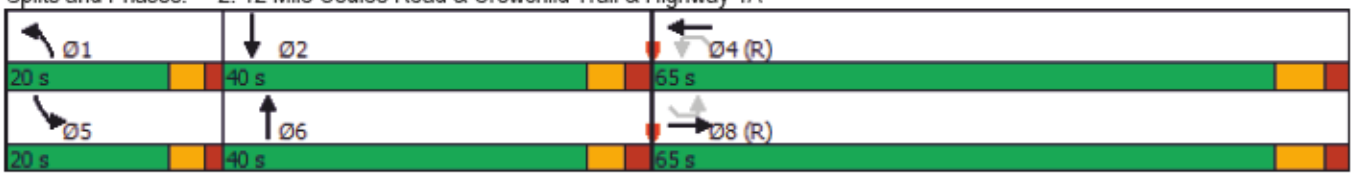
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Future Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3476	1794	3476	1794	3395	3400	1566	3395	3500	1566	3395	3395
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3476	1771	3476	1771	3395	3400	1524	3353	3500	1532	3395	3395
Satd. Flow (RTOR)		139		287			668			234		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	40.0		12.0	16.0		27.0	27.0
Total Split (s)	65.0		65.0		20.0	40.0		20.0	40.0		65.0	65.0
Total Split (%)	52.0%		52.0%		16.0%	32.0%		16.0%	32.0%		52.0%	52.0%
Maximum Green (s)	58.0		58.0		15.0	34.0		15.0	34.0		58.0	58.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
Lead/Lag					Lead	Lag		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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)						8.0						
Flash Dont Walk (s)						26.0						
Pedestrian Calls (#/hr)						0						
Act Effct Green (s)	72.7	125.0	72.7	125.0	10.8	16.2	125.0	12.1	17.5	125.0	72.7	72.7
Actuated g/C Ratio	0.58	1.00	0.58	1.00	0.09	0.13	1.00	0.10	0.14	1.00	0.58	0.58
v/c Ratio	0.56	0.15	0.82	0.44	0.74	0.66	0.44	0.84	0.81	0.15	0.11	0.48
Control Delay	18.4	0.2	25.2	0.6	70.8	58.7	0.9	77.9	65.6	0.2	1.3	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	0.2	25.2	0.6	70.8	58.7	0.9	77.9	65.6	0.2	1.3	0.5
LOS	B	A	C	A	E	E	A	E	E	A	A	A
Approach Delay	15.0		17.2			28.0			52.5			
Approach LOS	B		B			C			D			
Queue Length 50th (m)	87.8	0.0	164.1	0.0	26.9	36.4	0.0	34.7	50.7	0.0	0.1	0.2

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	122.4	0.0	225.2	0.0	39.3	48.1	0.0	#54.1	65.3	0.0	0.2	0.0
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2022	1771	2022	1771	353	870	1524	353	896	1532	1975	1975
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.15	0.82	0.44	0.61	0.33	0.44	0.78	0.45	0.15	0.11	0.48

Intersection Summary	
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 20.4	Intersection LOS: C
Intersection Capacity Utilization 117.2%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3476	0	3395	3476	0	1629
Flt Permitted			0.950			
Satd. Flow (perm)	3476	0	3395	3476	0	1608
Satd. Flow (RTOR)						471
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	120.0		
Total Split (s)	72.7		52.3	125.0		
Total Split (%)	58.2%		41.8%	100.0%		
Maximum Green (s)	65.7		47.3	118.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Act Effct Green (s)	70.4		38.6	125.0		125.0
Actuated g/C Ratio	0.56		0.31	1.00		1.00
v/c Ratio	0.72		0.90	0.70		0.42
Control Delay	16.9		52.9	1.2		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	16.9		52.9	1.2		0.7
LOS	B		D	A		A
Approach Delay	16.9			15.5	0.7	
Approach LOS	B			B	A	
Queue Length 50th (m)	130.3		112.9	0.0		0.0
Queue Length 95th (m)	178.2		128.6	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	1958		1230	3476		1608

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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		0.76	0.70		0.42

Intersection Summary	
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 30 (24%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Crowchild Trail & Crowchild Traill

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	110	2681	1128	0	0	100
Future Volume (vph)	110	2681	1128	0	0	100
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						246
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	117	2852	1200	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	2852	1200	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	145.0	28.5			
Total Split (s)	19.0	150.0	131.0			
Total Split (%)	12.7%	100.0%	87.3%			
Maximum Green (s)	13.0	148.0	124.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	2.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	8.6	150.0	124.4			150.0
Actuated g/C Ratio	0.06	1.00	0.83			1.00
v/c Ratio	0.62	0.59	0.30			0.07
Control Delay	83.2	0.5	0.2			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	83.2	0.5	0.2			0.1
LOS	F	A	A			A
Approach Delay		3.8	0.2		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	17.8	0.0	0.0			0.0
Queue Length 95th (m)	28.0	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	245	4863	4038			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.48	0.59	0.30			0.07

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 87 (58%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 2.7	Intersection LOS: A
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Future Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1697	4863	1697	3306	3342	1525	3306	3310	1525	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1675	4863	1675	3306	3342	1484	3277	3310	1491	3273	3242
Satd. Flow (RTOR)		145		188			1091			145		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	5%	5%	5%	2%	4%	2%	2%	5%	2%	3%	4%
Adj. Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	40.0		12.0	16.0		27.0	27.0
Total Split (s)	74.0		74.0		20.0	40.0		36.0	56.0		74.0	74.0
Total Split (%)	49.3%		49.3%		13.3%	26.7%		24.0%	37.3%		49.3%	49.3%
Maximum Green (s)	67.0		67.0		15.0	34.0		31.0	50.0		67.0	67.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
Lead/Lag					Lead	Lag		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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)						8.0						
Flash Dont Walk (s)						26.0						
Pedestrian Calls (#/hr)						0						
Act Effct Green (s)	79.6	150.0	79.6	150.0	10.9	17.4	150.0	29.0	35.5	150.0	79.6	79.6
Actuated g/C Ratio	0.53	1.00	0.53	1.00	0.07	0.12	1.00	0.19	0.24	1.00	0.53	0.53
v/c Ratio	1.03	0.12	0.40	0.16	0.75	0.82	0.80	1.03	0.23	0.07	0.07	0.35
Control Delay	58.5	0.1	21.8	0.2	86.9	81.4	4.6	102.2	46.8	0.1	0.2	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	0.1	21.8	0.2	86.9	81.4	4.6	102.2	46.8	0.1	0.2	15.1
LOS	E	A	C	A	F	F	A	F	D	A	A	B
Approach Delay	54.4		17.4			27.8			80.3			
Approach LOS	D		B			C			F			
Queue Length 50th (m)	~308.2	0.0	64.3	0.0	27.3	48.8	0.0	~108.1	22.8	0.0	0.0	98.7

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#350.5	0.0	80.8	0.0	39.8	63.5	0.0	#146.3	32.8	0.0	0.0	117.9
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2581	1675	2581	1675	286	712	1484	639	1059	1491	1737	1721
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.12	0.40	0.16	0.63	0.44	0.80	1.03	0.17	0.07	0.07	0.35

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 41.3 Intersection LOS: D
Intersection Capacity Utilization 125.9% 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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A

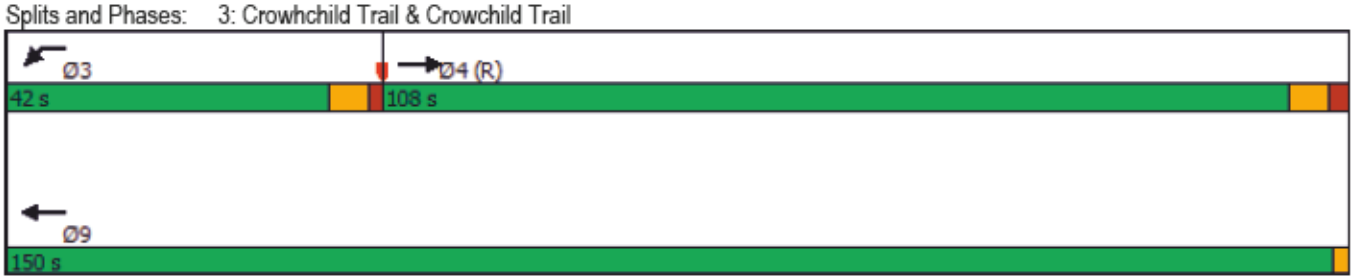
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	3116	0	568	1210	0	1114
Future Volume (vph)	3116	0	568	1210	0	1114
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	5006	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	5006	0	1566
Satd. Flow (RTOR)						287
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	2%	2%	2%
Adj. Flow (vph)	3315	0	604	1287	0	1185
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3315	0	604	1287	0	1185
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	145.0		
Total Split (s)	108.0		42.0	150.0		
Total Split (%)	72.0%		28.0%	100.0%		
Maximum Green (s)	101.0		36.0	148.0		
Yellow Time (s)	4.5		4.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		8.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	103.2		29.8	150.0		150.0
Actuated g/C Ratio	0.69		0.20	1.00		1.00
v/c Ratio	0.99		0.92	0.26		0.76
Control Delay	13.8		78.7	0.1		2.0
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	13.8		78.7	0.1		2.0
LOS	B		E	A		A
Approach Delay	13.8			25.2	2.0	
Approach LOS	B			C	A	
Queue Length 50th (m)	76.5		91.3	0.0		0.0
Queue Length 95th (m)	m#83.8		110.5	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3344		749	5006		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.99		0.81	0.26		0.76

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 137 (91%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 92.6%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowhchild Trail & Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	190	1780	2643	0	0	280
Future Volume (vph)	190	1780	2643	0	0	280
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						160
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	202	1894	2812	0	0	298
Shared Lane Traffic (%)						
Lane Group Flow (vph)	202	1894	2812	0	0	298
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	125.0	28.5			
Total Split (s)	24.0	140.0	116.0			
Total Split (%)	17.1%	100.0%	82.9%			
Maximum Green (s)	18.0	138.0	109.0			
Yellow Time (s)	4.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.7	140.0	111.3			140.0
Actuated g/C Ratio	0.08	1.00	0.80			1.00
v/c Ratio	0.73	0.39	0.73			0.19
Control Delay	77.7	0.2	8.4			0.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	77.7	0.2	8.4			0.3
LOS	E	A	A			A
Approach Delay		7.7	8.4		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	28.6	0.0	96.6			0.0
Queue Length 95th (m)	40.8	0.0	44.6			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	377	4863	3864			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.39	0.73			0.19

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 7.6	Intersection LOS: A
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

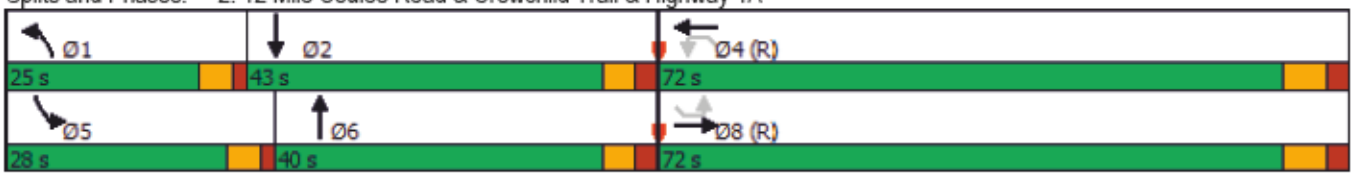
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Future Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	3306	3408	1525	3120	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1484	3280	3408	1491	3120	3306
Satd. Flow (RTOR)		152		324			822			298		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	40.0		12.0	16.0		27.0	27.0
Total Split (s)	72.0		72.0		25.0	40.0		28.0	43.0		72.0	72.0
Total Split (%)	51.4%		51.4%		17.9%	28.6%		20.0%	30.7%		51.4%	51.4%
Maximum Green (s)	65.0		65.0		20.0	34.0		23.0	37.0		65.0	65.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)						8.0						
Flash Dont Walk (s)						26.0						
Pedestrian Calls (#/hr)						0						
Act Effct Green (s)	78.9	140.0	78.9	140.0	14.4	19.2	140.0	17.9	22.7	140.0	78.9	78.9
Actuated g/C Ratio	0.56	1.00	0.56	1.00	0.10	0.14	1.00	0.13	0.16	1.00	0.56	0.56
v/c Ratio	0.58	0.18	0.93	0.62	0.80	0.77	0.55	0.86	0.86	0.20	0.11	0.73
Control Delay	21.7	0.2	35.5	1.6	78.6	69.6	1.5	79.2	72.4	0.3	28.2	53.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	0.2	35.5	1.6	78.6	69.6	1.5	79.2	72.4	0.3	28.2	53.4
LOS	C	A	D	A	E	E	A	E	E	A	C	D
Approach Delay	18.2		25.5			32.4			55.6			
Approach LOS	B		C			C			E			
Queue Length 50th (m)	100.3	0.0	227.6	0.0	38.3	49.7	0.0	51.1	67.9	0.0	30.9	193.5

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	133.1	0.0	#306.4	0.0	52.1	63.4	0.0	67.2	83.6	0.0	44.0	222.2
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2741	1724	2741	1724	425	756	1484	495	852	1491	1758	1863
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.18	0.93	0.62	0.64	0.46	0.55	0.73	0.56	0.20	0.11	0.73

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 32.6	Intersection LOS: C
Intersection Capacity Utilization 137.1%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A

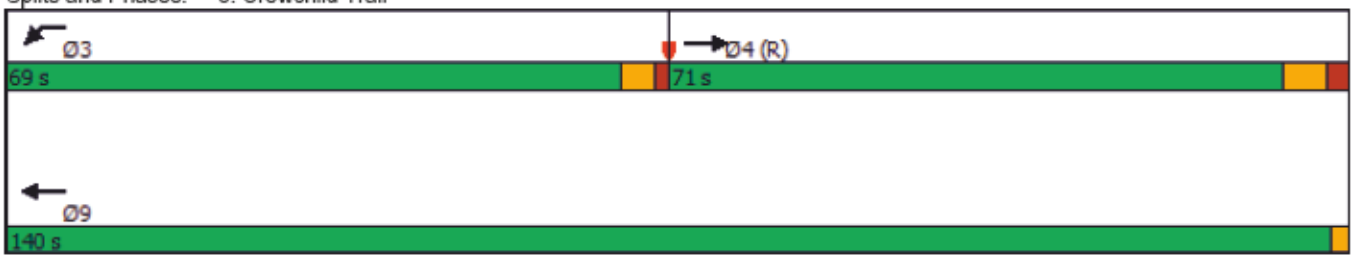


Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						552
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	125.0		
Total Split (s)	71.0		69.0	140.0		
Total Split (%)	50.7%		49.3%	100.0%		
Maximum Green (s)	64.0		64.0	138.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	78.2		45.8	140.0		140.0
Actuated g/C Ratio	0.56		0.33	1.00		1.00
v/c Ratio	0.52		0.87	0.50		0.43
Control Delay	20.7		53.3	0.4		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	20.7		53.3	0.4		0.7
LOS	C		D	A		A
Approach Delay	20.7			15.1	0.7	
Approach LOS	C			B	A	
Queue Length 50th (m)	83.8		125.5	0.0		0.0
Queue Length 95th (m)	94.9		137.8	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2716		1464	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.52		0.64	0.50		0.43

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 14.8	Intersection LOS: B
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	120	2758	1247	0	0	90
Future Volume (vph)	120	2758	1247	0	0	90
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						219
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	128	2934	1327	0	0	96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	2934	1327	0	0	96
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	29.0			
Total Split (s)	18.0	150.0	132.0			
Total Split (%)	12.0%	100.0%	88.0%			
Maximum Green (s)	13.0	148.0	125.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	9.0	150.0	125.0			150.0
Actuated g/C Ratio	0.06	1.00	0.83			1.00
v/c Ratio	0.64	0.60	0.33			0.06
Control Delay	83.5	0.6	0.2			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	83.5	0.6	0.2			0.1
LOS	F	A	A			A
Approach Delay		4.0	0.2		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	19.5	0.0	0.0			0.0
Queue Length 95th (m)	30.0	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	247	4863	4059			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.52	0.60	0.33			0.06

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 89 (59%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 2.8	Intersection LOS: A
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Future Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	3306	3310	1525	3306	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1484	3278	3310	1491	3306	3306
Satd. Flow (RTOR)		145		203			1091			145		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	2%	2%	2%
Adj. Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	40.0		12.0	16.0		27.0	27.0
Total Split (s)	74.0		74.0		21.0	40.0		36.0	55.0		74.0	74.0
Total Split (%)	49.3%		49.3%		14.0%	26.7%		24.0%	36.7%		49.3%	49.3%
Maximum Green (s)	67.0		67.0		16.0	34.0		31.0	49.0		67.0	67.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)						8.0						
Flash Dont Walk (s)						26.0						
Pedestrian Calls (#/hr)						0						
Act Effct Green (s)	79.1	150.0	79.1	150.0	11.4	17.9	150.0	29.0	35.4	150.0	79.1	79.1
Actuated g/C Ratio	0.53	1.00	0.53	1.00	0.08	0.12	1.00	0.19	0.24	1.00	0.53	0.53
v/c Ratio	1.06	0.12	0.44	0.19	0.75	0.82	0.76	1.03	0.26	0.06	0.07	0.38
Control Delay	70.3	0.1	22.9	0.2	86.1	81.1	3.8	102.2	47.3	0.1	0.1	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.3	0.1	22.9	0.2	86.1	81.1	3.8	102.2	47.3	0.1	0.1	1.4
LOS	E	A	C	A	F	F	A	F	D	A	A	A
Approach Delay	65.4		18.0			28.5			80.5			
Approach LOS	E		B			C			F			
Queue Length 50th (m)	~326.3	0.0	74.5	0.0	28.8	50.6	0.0	~108.1	25.7	0.0	0.3	1.1

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#368.6	0.0	92.7	0.0	41.5	65.5	0.0	#146.3	36.4	0.0	0.0	m0.2
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2565	1691	2565	1675	308	712	1484	639	1037	1491	1744	1744
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.12	0.44	0.19	0.61	0.46	0.76	1.03	0.19	0.06	0.07	0.38

Intersection Summary

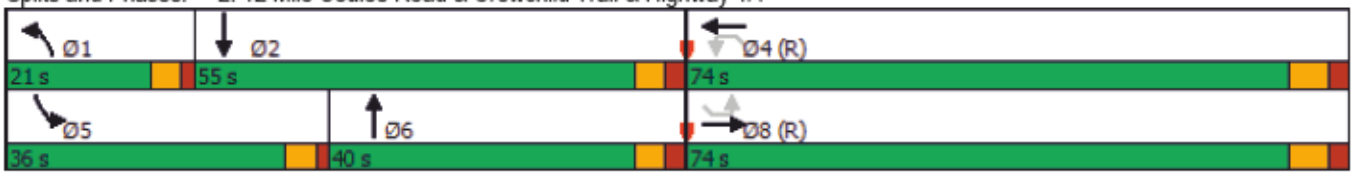
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 44.0 Intersection LOS: D
Intersection Capacity Utilization 129.2% 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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	3183	0	628	1369	0	1064
Future Volume (vph)	3183	0	628	1369	0	1064
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						254
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	3386	0	668	1456	0	1132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3386	0	668	1456	0	1132
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	145.0		
Total Split (s)	113.0		37.0	150.0		
Total Split (%)	75.3%		24.7%	100.0%		
Maximum Green (s)	106.0		32.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	104.0		30.0	150.0		150.0
Actuated g/C Ratio	0.69		0.20	1.00		1.00
v/c Ratio	1.00		1.01	0.30		0.72
Control Delay	20.0		96.3	0.2		1.8
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	20.0		96.3	0.2		1.8
LOS	C		F	A		A
Approach Delay	20.0			30.4	1.8	
Approach LOS	C			C	A	
Queue Length 50th (m)	~350.0		~105.2	0.0		0.0
Queue Length 95th (m)	m299.6		#145.4	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3371		661	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	1.00		1.01	0.30		0.72

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 17 (11%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 20.2	Intersection LOS: C
Intersection Capacity Utilization 94.9%	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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowchild Trail

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	170	1870	2975	0	0	340
Future Volume (vph)	170	1870	2975	0	0	340
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						138
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	181	1989	3165	0	0	362
Shared Lane Traffic (%)						
Lane Group Flow (vph)	181	1989	3165	0	0	362
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	28.5			
Total Split (s)	22.0	150.0	128.0			
Total Split (%)	14.7%	100.0%	85.3%			
Maximum Green (s)	17.0	148.0	121.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.4	150.0	122.6			150.0
Actuated g/C Ratio	0.08	1.00	0.82			1.00
v/c Ratio	0.72	0.41	0.80			0.23
Control Delay	83.8	0.3	6.3			0.3
Queue Delay	0.0	0.0	0.2			0.0
Total Delay	83.8	0.3	6.4			0.3
LOS	F	A	A			A
Approach Delay		7.2	6.4		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	27.6	0.0	67.5			0.0
Queue Length 95th (m)	39.6	0.0	m24.6			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Base Capacity (vph)	330	4863	3974			1566
Starvation Cap Reductn	0	0	158			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.55	0.41	0.83			0.23

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 17 (11%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 6.3	Intersection LOS: A
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

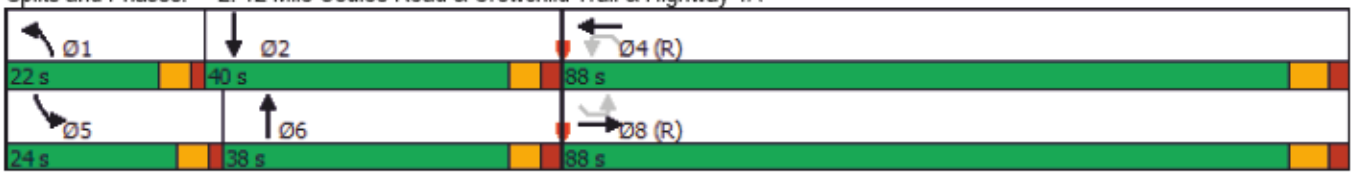
Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Future Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	3306	3408	1525	3306	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1484	3277	3408	1491	3306	3306
Satd. Flow (RTOR)		128		250			876			351		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	40.0		12.0	16.0		27.0	27.0
Total Split (s)	88.0		88.0		22.0	38.0		24.0	40.0		88.0	88.0
Total Split (%)	58.7%		58.7%		14.7%	25.3%		16.0%	26.7%		58.7%	58.7%
Maximum Green (s)	81.0		81.0		17.0	32.0		19.0	34.0		81.0	81.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)						8.0						
Flash Dont Walk (s)						26.0						
Pedestrian Calls (#/hr)						0						
Act Effct Green (s)	85.3	150.0	85.3	150.0	15.0	24.0	150.0	16.8	25.8	150.0	85.3	85.3
Actuated g/C Ratio	0.57	1.00	0.57	1.00	0.10	0.16	1.00	0.11	0.17	1.00	0.57	0.57
v/c Ratio	0.61	0.17	1.03	0.57	0.95	0.60	0.59	0.95	0.88	0.24	0.10	0.75
Control Delay	23.1	0.2	54.3	0.8	105.1	62.9	1.7	101.3	77.6	0.4	13.5	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.1	0.2	54.3	0.8	105.1	62.9	1.7	101.3	77.6	0.4	13.5	2.8
LOS	C	A	D	A	F	E	A	F	E	A	B	A
Approach Delay	19.6		40.5			36.1			61.6			
Approach LOS	B		D			D			E			
Queue Length 50th (m)	117.6	0.0	~332.2	0.0	48.7	46.6	0.0	54.2	79.8	0.0	29.5	0.1

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	145.5	0.0	#377.2	0.0	#78.0	59.8	0.0	#84.1	96.2	0.0	0.0	m0.3
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2764	1724	2764	1724	330	662	1484	374	727	1491	1878	1878
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.17	1.03	0.57	0.95	0.48	0.59	0.94	0.71	0.24	0.10	0.75

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 32.6	Intersection LOS: C
Intersection Capacity Utilization 143.5%	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.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



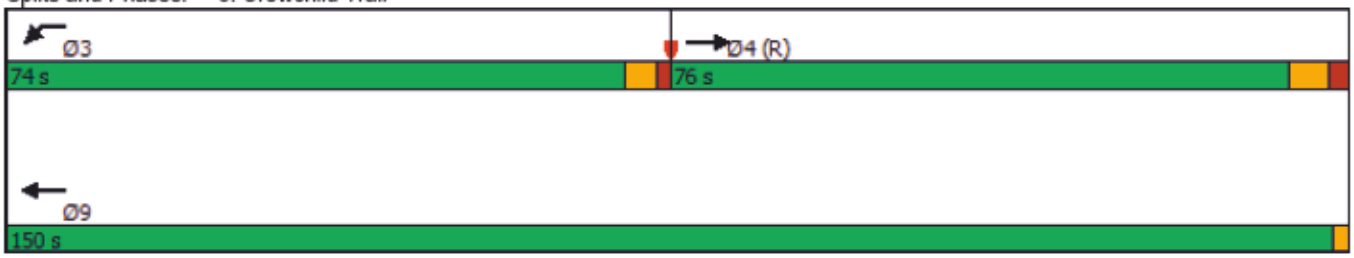
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1918	0	1332	3611	0	823
Future Volume (vph)	1918	0	1332	3611	0	823
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						546
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2040	0	1417	3841	0	876
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2040	0	1417	3841	0	876
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	145.0		
Total Split (s)	76.0		74.0	150.0		
Total Split (%)	50.7%		49.3%	100.0%		
Maximum Green (s)	69.0		69.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	67.8		66.2	150.0		150.0
Actuated g/C Ratio	0.45		0.44	1.00		1.00
v/c Ratio	0.93		0.97	0.79		0.56
Control Delay	38.9		58.5	1.4		1.2
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	38.9		58.5	1.4		1.2
LOS	D		E	A		A
Approach Delay	38.9			16.8	1.2	
Approach LOS	D			B	A	
Queue Length 50th (m)	196.3		207.7	0.0		0.0
Queue Length 95th (m)	210.9		#257.3	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Base Capacity (vph)	2200		1477	4863		1566
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	0.93		0.96	0.79		0.56

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 55 (37%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 20.6	Intersection LOS: C
Intersection Capacity Utilization 90.4%	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: Crowchild Trail



CFI – Staged West Leg Pedestrian Crossing

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	1624	927	0	0	100
Future Volume (vph)	50	1624	927	0	0	100
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	3385	3385	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	3385	3385	0	0	1566
Satd. Flow (RTOR)						387
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	53	1728	986	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	1728	986	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0			
Minimum Split (s)	27.5	26.0	27.5			
Total Split (s)	33.0	125.0	92.0			
Total Split (%)	26.4%	100.0%	73.6%			
Maximum Green (s)	28.0	123.0	85.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	18.0	125.0	97.8			125.0
Actuated g/C Ratio	0.14	1.00	0.78			1.00
v/c Ratio	0.11	0.51	0.37			0.07
Control Delay	47.3	0.6	19.0			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	47.3	0.6	19.0			0.1
LOS	D	A	B			A
Approach Delay		1.9	19.0		0.1	
Approach LOS		A	B		A	
Queue Length 50th (m)	5.9	0.0	109.0			0.0
Queue Length 95th (m)	11.9	0.0	112.5			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	687	3385	2648			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.08	0.51	0.37			0.07

Intersection Summary	
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 7.7	Intersection LOS: A
Intersection Capacity Utilization 49.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Future Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.98		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3385	1714	3385	1697	3306	3342	1525	3306	3310	1525	3306	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3385	1691	3385	1675	3306	3342	1484	3251	3310	1491	3306	3306
Satd. Flow (RTOR)		192		192			937			192		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	2%	2%	2%
Adj. Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	D.Pm
Protected Phases	8		4		1	6		5	2		7	
Permitted Phases		Free		Free			Free			Free		4
Detector Phase	8		4		1	6		5	2		7	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		6.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	40.0		12.0	27.0
Total Split (s)	70.0		70.0		15.0	21.0		34.0	40.0		37.0	70.0
Total Split (%)	56.0%		56.0%		12.0%	16.8%		27.2%	32.0%		29.6%	56.0%
Maximum Green (s)	63.0		63.0		10.0	15.0		29.0	34.0		31.0	63.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		3.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		8.0	9.0
Lead/Lag					Lead	Lag		Lead	Lag		Lag	
Lead-Lag Optimize?											Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		None	C-Min
Walk Time (s)									8.0			
Flash Dont Walk (s)									26.0			
Pedestrian Calls (#/hr)									2			
Act Effct Green (s)	63.9	125.0	63.9	125.0	7.3	11.5	125.0	25.7	29.8	125.0	64.9	63.9
Actuated g/C Ratio	0.51	1.00	0.51	1.00	0.06	0.09	1.00	0.21	0.24	1.00	0.52	0.51
v/c Ratio	0.93	0.08	0.49	0.13	0.70	0.80	0.63	0.94	0.18	0.07	0.03	0.23
Control Delay	38.3	0.1	21.7	0.2	76.8	74.5	2.1	71.6	37.9	0.1	8.6	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	0.1	21.7	0.2	76.8	74.5	2.1	71.6	37.9	0.1	8.6	7.5
LOS	D	A	C	A	E	E	A	E	D	A	A	A
Approach Delay	35.5		17.2			23.2			57.6			
Approach LOS	D		B			C			E			
Queue Length 50th (m)	193.3	0.0	72.3	0.0	17.0	31.2	0.0	79.1	14.6	0.0	0.5	52.6

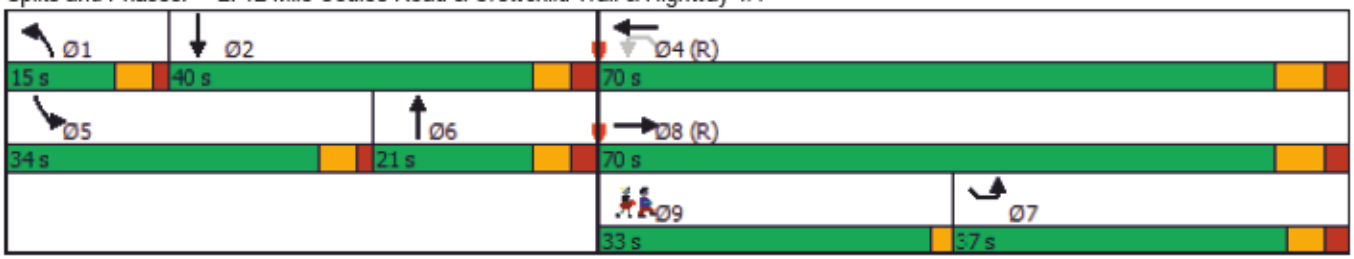
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	26%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#250.7	0.0	91.2	0.0	#27.9	45.1	0.0	#110.1	23.3	0.0	3.6	m0.2
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	1729	1691	1729	1675	211	347	1484	714	847	1491	1715	1688
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.08	0.49	0.13	0.64	0.70	0.63	0.89	0.17	0.07	0.03	0.23

Intersection Summary

Cycle Length: 125
Actuated Cycle Length: 125
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBT, Start of Green, Master Intersection
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 30.2 — Intersection LOS: C
Intersection Capacity Utilization 111.1% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	Ø9
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	2104	0	370	1010	0	881
Future Volume (vph)	2104	0	370	1010	0	881
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3385	0	3306	3385	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	3385	0	3306	3385	0	1566
Satd. Flow (RTOR)						209
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2238	0	394	1074	0	937
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2238	0	394	1074	0	937
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	27.5		14.5	27.0		
Total Split (s)	99.7		25.3	125.0		
Total Split (%)	79.8%		20.2%	100.0%		
Maximum Green (s)	92.7		20.3	118.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	92.1		16.9	125.0		125.0
Actuated g/C Ratio	0.74		0.14	1.00		1.00
v/c Ratio	0.90		0.88	0.32		0.60
Control Delay	12.5		74.4	0.2		1.3
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	12.5		74.4	0.2		1.3
LOS	B		E	A		A
Approach Delay	12.5			20.1	1.3	
Approach LOS	B			C	A	
Queue Length 50th (m)	88.6		48.9	0.0		0.0
Queue Length 95th (m)	323.2		#71.1	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2494		484	3385		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.90		0.81	0.32		0.60

Intersection Summary	
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 12.6	Intersection LOS: B
Intersection Capacity Utilization 83.9%	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: Crowchild Trail

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	200	1318	1760	0	0	220
Future Volume (vph)	200	1318	1760	0	0	220
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3471	3400	3476	0	0	1629
Flt Permitted	0.950					
Satd. Flow (perm)	3471	3400	3476	0	0	1608
Satd. Flow (RTOR)						245
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	213	1402	1872	0	0	234
Shared Lane Traffic (%)						
Lane Group Flow (vph)	213	1402	1872	0	0	234
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	110.0	28.5			
Total Split (s)	25.0	110.0	85.0			
Total Split (%)	22.7%	100.0%	77.3%			
Maximum Green (s)	20.0	103.0	78.0			
Yellow Time (s)	3.5	4.5	4.5			
All-Red Time (s)	1.5	2.5	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	9.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	10.0	110.0	84.0			110.0
Actuated g/C Ratio	0.09	1.00	0.76			1.00
v/c Ratio	0.68	0.41	0.71			0.15
Control Delay	59.3	0.4	3.4			0.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	59.3	0.4	3.4			0.2
LOS	E	A	A			A
Approach Delay		8.1	3.4		0.2	
Approach LOS		A	A		A	
Queue Length 50th (m)	23.1	0.0	26.3			0.0
Queue Length 95th (m)	34.1	0.0	7.4			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	567	3400	2655			1608

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.38	0.41	0.71			0.15

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 24 (22%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 5.3	Intersection LOS: A
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A & Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Future Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.97		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3476	1794	3476	1794	3395	3400	1566	3395	3500	1566	3395	3395
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3476	1771	3476	1771	3395	3400	1524	3306	3500	1532	3395	3395
Satd. Flow (RTOR)		169		326			668			234		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	D.Pm
Protected Phases	8		4		1	6		5	2		7	
Permitted Phases		Free		Free			Free			Free		4
Detector Phase	8		4		1	6		5	2		7	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		6.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	40.0		13.0	27.0
Total Split (s)	54.0		54.0		16.0	35.0		21.0	40.0		21.0	54.0
Total Split (%)	49.1%		49.1%		14.5%	31.8%		19.1%	36.4%		19.1%	49.1%
Maximum Green (s)	47.0		47.0		11.0	29.0		16.0	34.0		14.0	47.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		3.0	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		4.0	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
Lead/Lag					Lead	Lag		Lead	Lag		Lag	
Lead-Lag Optimize?											Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		None	C-Min
Walk Time (s)									8.0			
Flash Dont Walk (s)									26.0			
Pedestrian Calls (#/hr)									0			
Act Effct Green (s)	61.1	110.0	61.1	110.0	8.6	13.2	110.0	11.7	16.3	110.0	61.1	61.1
Actuated g/C Ratio	0.56	1.00	0.56	1.00	0.08	0.12	1.00	0.11	0.15	1.00	0.56	0.56
v/c Ratio	0.59	0.15	0.86	0.44	0.81	0.71	0.44	0.77	0.77	0.15	0.11	0.50
Control Delay	18.4	0.2	26.0	0.6	73.1	56.4	0.9	61.9	55.1	0.2	0.8	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	0.2	26.0	0.6	73.1	56.4	0.9	61.9	55.1	0.2	0.8	1.1
LOS	B	A	C	A	E	E	A	E	E	A	A	A
Approach Delay	15.0		17.8			27.9			43.1			
Approach LOS	B		B			C			D			
Queue Length 50th (m)	80.7	0.0	150.6	0.0	23.7	32.1	0.0	30.1	44.1	0.0	0.0	0.2

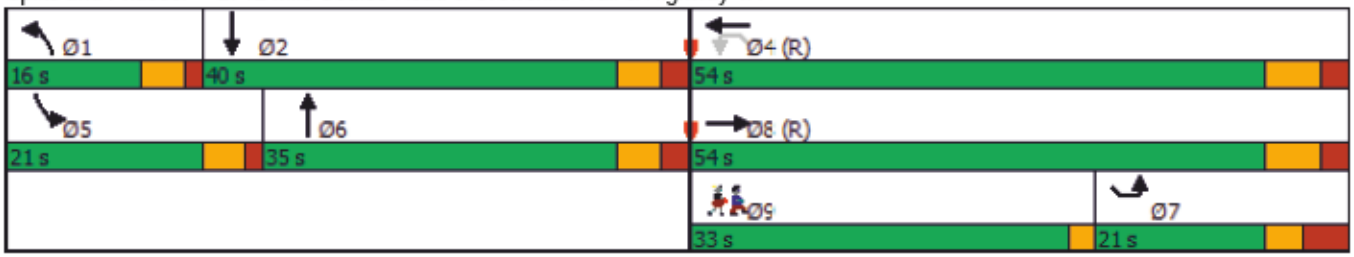
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	30%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	113.9	0.0	#226.4	0.0	#41.3	44.6	0.0	43.2	56.9	0.0	0.1	m0.0
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	1929	1771	1929	1771	277	834	1524	432	1018	1532	1885	1885
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.15	0.86	0.44	0.78	0.35	0.44	0.64	0.39	0.15	0.11	0.50

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBT, Start of Green, Master Intersection
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 19.4 Intersection LOS: B
Intersection Capacity Utilization 112.0% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	Ø9
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

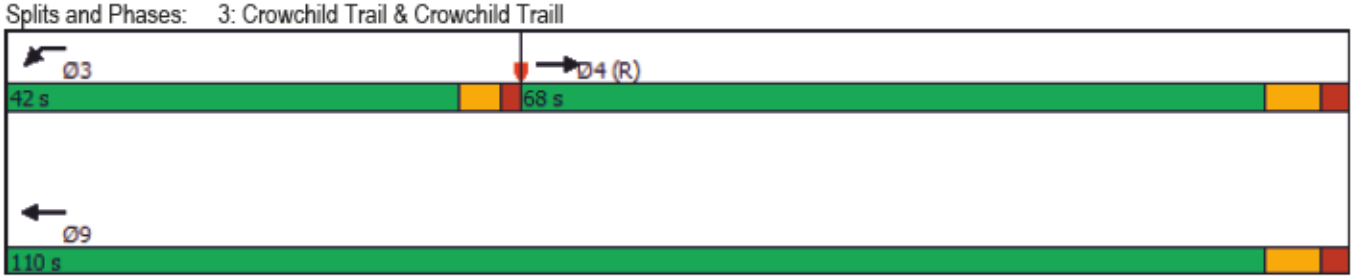
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3476	0	3395	3476	0	1629
Flt Permitted			0.950			
Satd. Flow (perm)	3476	0	3395	3476	0	1608
Satd. Flow (RTOR)						431
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	110.0		
Total Split (s)	68.0		42.0	110.0		
Total Split (%)	61.8%		38.2%	100.0%		
Maximum Green (s)	61.0		37.0	103.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Act Effct Green (s)	61.3		32.7	110.0		110.0
Actuated g/C Ratio	0.56		0.30	1.00		1.00
v/c Ratio	0.73		0.93	0.70		0.42
Control Delay	14.8		53.4	1.2		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	14.8		53.4	1.2		0.7
LOS	B		D	A		A
Approach Delay	14.8			15.7	0.7	
Approach LOS	B			B	A	
Queue Length 50th (m)	134.4		98.1	0.0		0.0
Queue Length 95th (m)	48.6		#130.1	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	1936		1080	3476		1608

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.73		0.87	0.70		0.42

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 4 (4%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 75.3%	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: 3: Crowchild Trail & Crowchild Traill



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	110	2681	1128	0	0	100
Future Volume (vph)	110	2681	1128	0	0	100
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						250
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	117	2852	1200	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	2852	1200	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	150.0	28.5			
Total Split (s)	20.0	150.0	130.0			
Total Split (%)	13.3%	100.0%	86.7%			
Maximum Green (s)	14.0	148.0	123.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	2.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	8.6	150.0	124.4			150.0
Actuated g/C Ratio	0.06	1.00	0.83			1.00
v/c Ratio	0.62	0.59	0.30			0.07
Control Delay	83.2	0.5	0.2			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	83.2	0.5	0.2			0.1
LOS	F	A	A			A
Approach Delay		3.8	0.2		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	17.8	0.0	0.1			0.0
Queue Length 95th (m)	28.0	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	264	4863	4034			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.44	0.59	0.30			0.07

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 104 (69%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 2.7	Intersection LOS: A
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Future Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	3306	3310	1525	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1484	3276	3310	1491	3273	3242
Satd. Flow (RTOR)		160		188			1091			160		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	2%	3%	4%
Adj. Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	D.Pm
Protected Phases	8		4		1	6		5	2		7	
Permitted Phases		Free		Free			Free			Free		4
Detector Phase	8		4		1	6		5	2		7	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		7.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	40.0		12.0	27.0
Total Split (s)	88.0		88.0		19.0	23.0		39.0	43.0		55.0	88.0
Total Split (%)	58.7%		58.7%		12.7%	15.3%		26.0%	28.7%		36.7%	58.7%
Maximum Green (s)	81.0		81.0		14.0	17.0		34.0	37.0		50.0	81.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		3.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		1.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		7.0	9.0
Lead/Lag					Lead	Lag		Lead	Lag		Lag	
Lead-Lag Optimize?											Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		None	C-Min
Walk Time (s)									8.0			
Flash Dont Walk (s)									26.0			
Pedestrian Calls (#/hr)									0			
Act Effct Green (s)	79.9	150.0	79.9	150.0	10.5	14.9	150.0	31.1	35.5	150.0	81.9	79.9
Actuated g/C Ratio	0.53	1.00	0.53	1.00	0.07	0.10	1.00	0.21	0.24	1.00	0.55	0.53
v/c Ratio	1.02	0.12	0.39	0.16	0.77	0.95	0.80	0.96	0.23	0.07	0.07	0.35
Control Delay	57.3	0.1	21.4	0.2	90.2	103.8	4.6	84.6	47.2	0.1	0.1	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.3	0.1	21.4	0.2	90.2	103.8	4.6	84.6	47.2	0.1	0.1	14.6
LOS	E	A	C	A	F	F	A	F	D	A	A	B
Approach Delay	53.3		17.0			32.3			68.0			
Approach LOS	D		B			C			E			
Queue Length 50th (m)	~310.4	0.0	64.9	0.0	27.3	49.8	0.0	100.5	22.7	0.0	0.0	98.7

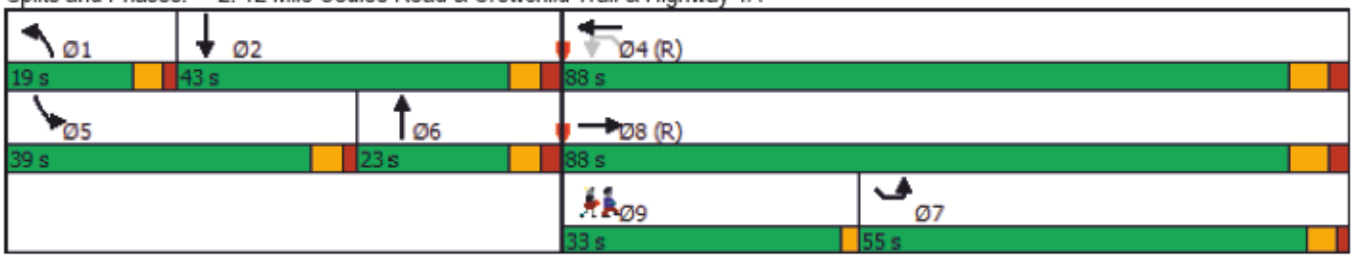
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	22%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#334.8	0.0	75.8	0.0	40.2	#79.4	0.0	#135.8	33.8	0.0	0.3	117.9
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2591	1691	2591	1675	264	334	1484	705	785	1491	1787	1727
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.12	0.39	0.16	0.68	0.94	0.80	0.94	0.23	0.07	0.07	0.35

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBT, Start of Green, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 40.3 Intersection LOS: D
Intersection Capacity Utilization 120.3% 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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	Ø9
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

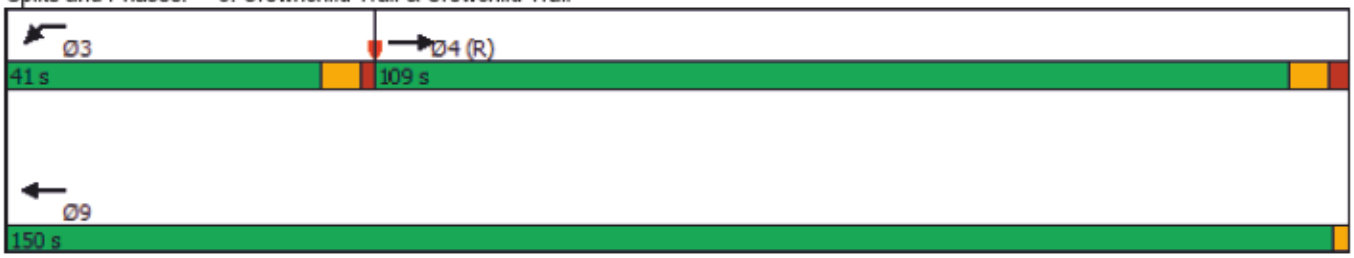
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	3116	0	568	1210	0	1114
Future Volume (vph)	3116	0	568	1210	0	1114
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						279
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	3315	0	604	1287	0	1185
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3315	0	604	1287	0	1185
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	150.0		
Total Split (s)	109.0		41.0	150.0		
Total Split (%)	72.7%		27.3%	100.0%		
Maximum Green (s)	102.0		35.0	148.0		
Yellow Time (s)	4.5		4.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		8.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	103.3		29.7	150.0		150.0
Actuated g/C Ratio	0.69		0.20	1.00		1.00
v/c Ratio	0.99		0.92	0.26		0.76
Control Delay	13.3		79.2	0.1		2.0
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	13.3		79.2	0.1		2.0
LOS	B		E	A		A
Approach Delay	13.3			25.4	2.0	
Approach LOS	B			C	A	
Queue Length 50th (m)	76.9		91.1	0.0		0.0
Queue Length 95th (m)	m#378.1		111.5	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3347		727	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.99		0.83	0.26		0.76

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 14.8	Intersection LOS: B
Intersection Capacity Utilization 92.6%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowhchild Trail & Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	190	1780	2643	0	0	280
Future Volume (vph)	190	1780	2643	0	0	280
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						160
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	202	1894	2812	0	0	298
Shared Lane Traffic (%)						
Lane Group Flow (vph)	202	1894	2812	0	0	298
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	125.0	28.5			
Total Split (s)	24.0	140.0	116.0			
Total Split (%)	17.1%	100.0%	82.9%			
Maximum Green (s)	18.0	138.0	109.0			
Yellow Time (s)	4.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.7	140.0	111.3			140.0
Actuated g/C Ratio	0.08	1.00	0.80			1.00
v/c Ratio	0.73	0.39	0.73			0.19
Control Delay	77.7	0.2	3.3			0.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	77.7	0.2	3.3			0.3
LOS	E	A	A			A
Approach Delay		7.7	3.3		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	28.6	0.0	22.7			0.0
Queue Length 95th (m)	40.8	0.0	286.5			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	377	4863	3864			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.39	0.73			0.19

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 35 (25%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 4.9	Intersection LOS: A
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Future Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	3306	3408	1525	3120	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1484	3265	3408	1491	3120	3306
Satd. Flow (RTOR)		152		324			822			298		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	D.Pm
Protected Phases	8		4		1	6		5	2		7	
Permitted Phases		Free		Free			Free			Free		4
Detector Phase	8		4		1	6		5	2		7	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		7.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	40.0		12.0	27.0
Total Split (s)	72.0		72.0		25.0	40.0		28.0	43.0		42.0	72.0
Total Split (%)	51.4%		51.4%		17.9%	28.6%		20.0%	30.7%		30.0%	51.4%
Maximum Green (s)	65.0		65.0		20.0	34.0		23.0	37.0		37.0	65.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		3.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		1.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		7.0	9.0
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		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		None	C-Min
Walk Time (s)									8.0			
Flash Dont Walk (s)									26.0			
Pedestrian Calls (#/hr)									0			
Act Effct Green (s)	78.9	140.0	78.9	140.0	14.4	19.2	140.0	17.9	22.7	140.0	80.9	78.9
Actuated g/C Ratio	0.56	1.00	0.56	1.00	0.10	0.14	1.00	0.13	0.16	1.00	0.58	0.56
v/c Ratio	0.58	0.18	0.93	0.62	0.80	0.77	0.55	0.86	0.86	0.20	0.11	0.73
Control Delay	21.7	0.2	35.5	1.6	78.6	69.6	1.5	79.2	72.4	0.3	1.3	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	0.2	35.5	1.6	78.6	69.6	1.5	79.2	72.4	0.3	1.3	9.4
LOS	C	A	D	A	E	E	A	E	E	A	A	A
Approach Delay	18.2		25.5			32.4			55.6			
Approach LOS	B		C			C			E			
Queue Length 50th (m)	100.3	0.0	227.6	0.0	38.3	49.7	0.0	51.1	67.9	0.0	0.6	29.3

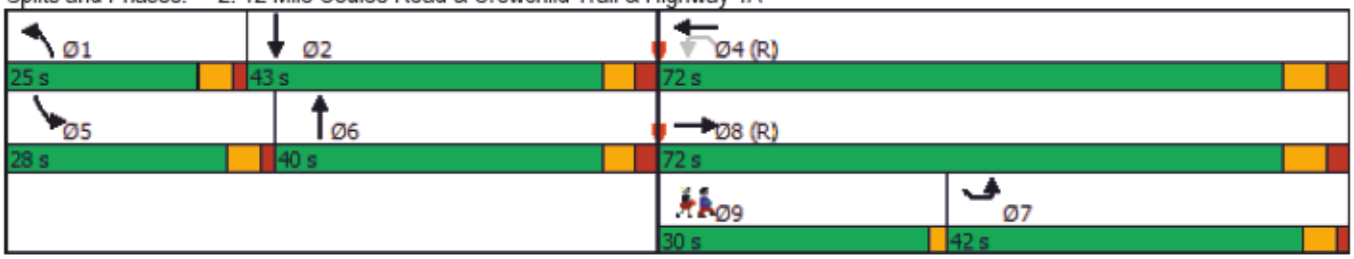
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	33.0
Total Split (s)	30.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	133.1	0.0	#306.4	0.0	52.1	63.4	0.0	67.2	83.6	0.0	0.9	38.2
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2741	1724	2741	1724	425	756	1484	495	852	1491	1803	1863
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.18	0.93	0.62	0.64	0.46	0.55	0.73	0.56	0.20	0.11	0.73

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBT, Start of Green, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 132.6%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	Ø9
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

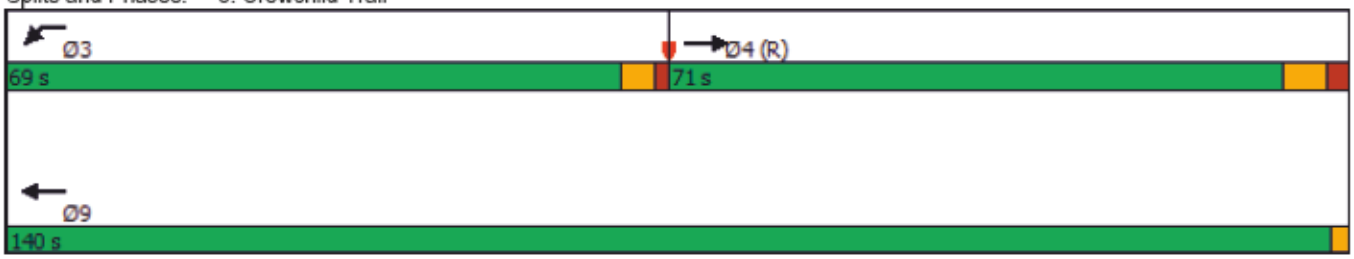
Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						552
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	125.0		
Total Split (s)	71.0		69.0	140.0		
Total Split (%)	50.7%		49.3%	100.0%		
Maximum Green (s)	64.0		64.0	138.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	78.2		45.8	140.0		140.0
Actuated g/C Ratio	0.56		0.33	1.00		1.00
v/c Ratio	0.52		0.87	0.50		0.43
Control Delay	16.3		53.3	0.4		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	16.3		53.3	0.4		0.7
LOS	B		D	A		A
Approach Delay	16.3			15.1	0.7	
Approach LOS	B			B	A	
Queue Length 50th (m)	102.6		125.5	0.0		0.0
Queue Length 95th (m)	125.4		137.8	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2716		1464	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.52		0.64	0.50		0.43

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 71 (51%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	120	2758	1247	0	0	90
Future Volume (vph)	120	2758	1247	0	0	90
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						229
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	128	2934	1327	0	0	96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	2934	1327	0	0	96
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	29.0			
Total Split (s)	20.0	150.0	130.0			
Total Split (%)	13.3%	100.0%	86.7%			
Maximum Green (s)	15.0	148.0	123.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	9.1	150.0	124.9			150.0
Actuated g/C Ratio	0.06	1.00	0.83			1.00
v/c Ratio	0.64	0.60	0.33			0.06
Control Delay	83.3	0.6	0.2			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	83.3	0.6	0.2			0.1
LOS	F	A	A			A
Approach Delay		4.0	0.2		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	19.5	0.0	0.1			0.0
Queue Length 95th (m)	30.0	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	286	4863	4050			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.45	0.60	0.33			0.06

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 104 (69%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 2.8	Intersection LOS: A
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Future Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	3306	3310	1525	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1484	3274	3310	1491	3273	3242
Satd. Flow (RTOR)		160		203			1091			160		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	2%	3%	4%
Adj. Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	D.Pm
Protected Phases	8		4		1	6		5	2		7	
Permitted Phases		Free		Free			Free			Free		4
Detector Phase	8		4		1	6		5	2		7	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		7.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	40.0		12.0	27.0
Total Split (s)	91.0		91.0		18.0	22.0		37.0	41.0		58.0	91.0
Total Split (%)	60.7%		60.7%		12.0%	14.7%		24.7%	27.3%		38.7%	60.7%
Maximum Green (s)	84.0		84.0		13.0	16.0		32.0	35.0		53.0	84.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		3.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		1.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		7.0	9.0
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		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		None	C-Min
Walk Time (s)									8.0			
Flash Dont Walk (s)									26.0			
Pedestrian Calls (#/hr)									0			
Act Effct Green (s)	82.0	150.0	82.0	150.0	10.4	14.0	150.0	30.0	33.6	150.0	84.0	82.0
Actuated g/C Ratio	0.55	1.00	0.55	1.00	0.07	0.09	1.00	0.20	0.22	1.00	0.56	0.55
v/c Ratio	1.03	0.12	0.43	0.19	0.83	1.05	0.76	1.00	0.27	0.06	0.07	0.38
Control Delay	56.3	0.1	20.7	0.2	96.4	127.7	3.8	93.8	49.4	0.1	0.1	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	0.1	20.7	0.2	96.4	127.7	3.8	93.8	49.4	0.1	0.1	14.2
LOS	E	A	C	A	F	F	A	F	D	A	A	B
Approach Delay	52.3		16.2			38.9			75.1			
Approach LOS	D		B			D			E			
Queue Length 50th (m)	~315.7	0.0	71.1	0.0	29.0	~55.2	0.0	102.3	26.2	0.0	0.0	109.1

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	22%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#339.6	0.0	82.2	0.0	#47.3	#87.3	0.0	#142.8	38.1	0.0	0.1	m107.9
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2658	1691	2658	1675	242	311	1484	661	742	1491	1832	1772
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.12	0.43	0.19	0.78	1.05	0.76	1.00	0.27	0.06	0.07	0.38

Intersection Summary

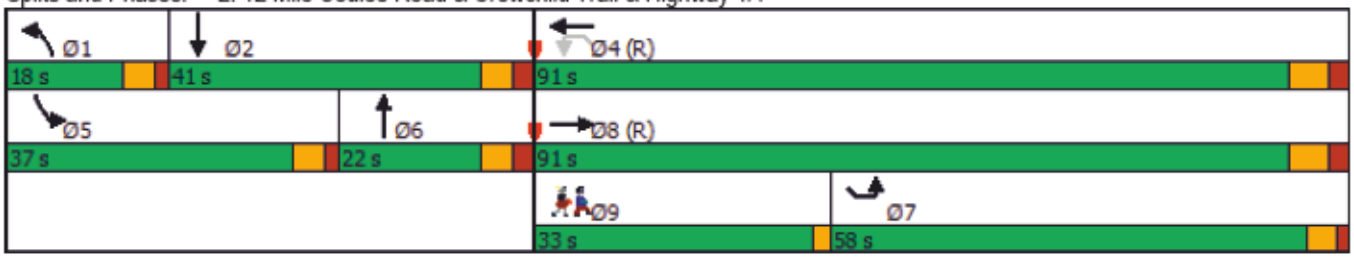
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBT, Start of Green, Master Intersection
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 41.4 — Intersection LOS: D
Intersection Capacity Utilization 123.6% — 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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	Ø9
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	3183	0	628	1369	0	1064
Future Volume (vph)	3183	0	628	1369	0	1064
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						254
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	3386	0	668	1456	0	1132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3386	0	668	1456	0	1132
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	145.0		
Total Split (s)	113.0		37.0	150.0		
Total Split (%)	75.3%		24.7%	100.0%		
Maximum Green (s)	106.0		32.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	104.0		30.0	150.0		150.0
Actuated g/C Ratio	0.69		0.20	1.00		1.00
v/c Ratio	1.00		1.01	0.30		0.72
Control Delay	14.8		96.3	0.2		1.8
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	14.8		96.3	0.2		1.8
LOS	B		F	A		A
Approach Delay	14.8			30.4	1.8	
Approach LOS	B			C	A	
Queue Length 50th (m)	~78.4		~105.2	0.0		0.0
Queue Length 95th (m)	m75.0		#145.4	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3371		661	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	1.00		1.01	0.30		0.72

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 148 (99%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 17.6	Intersection LOS: B
Intersection Capacity Utilization 94.9%	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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowchild Trail

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	170	1870	2975	0	0	340
Future Volume (vph)	170	1870	2975	0	0	340
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						138
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	181	1989	3165	0	0	362
Shared Lane Traffic (%)						
Lane Group Flow (vph)	181	1989	3165	0	0	362
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	28.5			
Total Split (s)	22.0	150.0	128.0			
Total Split (%)	14.7%	100.0%	85.3%			
Maximum Green (s)	17.0	148.0	121.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.4	150.0	122.6			150.0
Actuated g/C Ratio	0.08	1.00	0.82			1.00
v/c Ratio	0.72	0.41	0.80			0.23
Control Delay	83.8	0.3	6.3			0.3
Queue Delay	0.0	0.0	0.2			0.0
Total Delay	83.8	0.3	6.5			0.3
LOS	F	A	A			A
Approach Delay		7.2	6.5		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	27.6	0.0	67.5			0.0
Queue Length 95th (m)	39.6	0.0	m25.7			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Base Capacity (vph)	330	4863	3974			1566
Starvation Cap Reductn	0	0	158			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.55	0.41	0.83			0.23

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 17 (11%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 6.4	Intersection LOS: A
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Future Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	3306	3408	1525	3306	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1484	3264	3408	1491	3306	3306
Satd. Flow (RTOR)		160		250			876			351		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	D.Pm
Protected Phases	8		4		1	6		5	2		7	
Permitted Phases		Free		Free			Free			Free		4
Detector Phase	8		4		1	6		5	2		7	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		7.0	20.0
Minimum Split (s)	27.0		38.0		12.0	16.0		12.0	40.0		12.0	38.0
Total Split (s)	88.0		88.0		22.0	32.0		30.0	40.0		55.0	88.0
Total Split (%)	58.7%		58.7%		14.7%	21.3%		20.0%	26.7%		36.7%	58.7%
Maximum Green (s)	81.0		81.0		17.0	26.0		25.0	34.0		50.0	81.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		3.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		1.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		7.0	9.0
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		3.0	3.0
Recall Mode	C-Min		C-Min		None	None		None	None		None	C-Min
Walk Time (s)			8.0						8.0			8.0
Flash Dont Walk (s)			23.0						26.0			23.0
Pedestrian Calls (#/hr)			2						2			2
Act Effct Green (s)	85.2	150.0	85.2	150.0	15.0	22.0	150.0	18.8	25.8	150.0	80.6	85.2
Actuated g/C Ratio	0.57	1.00	0.57	1.00	0.10	0.15	1.00	0.13	0.17	1.00	0.54	0.57
v/c Ratio	0.61	0.17	1.03	0.57	0.95	0.65	0.59	0.85	0.88	0.24	0.10	0.75
Control Delay	23.1	0.2	54.5	0.8	105.1	67.1	1.7	83.1	77.4	0.4	17.1	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.1	0.2	54.5	0.8	105.1	67.1	1.7	83.1	77.4	0.4	17.1	2.6
LOS	C	A	D	A	F	E	A	F	E	A	B	A
Approach Delay	19.7		40.6			37.0			56.3			
Approach LOS	B		D			D			E			
Queue Length 50th (m)	117.6	0.0	~332.2	0.0	48.7	47.4	0.0	53.4	79.8	0.0	29.5	0.1

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	22%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	23.0
Pedestrian Calls (#/hr)	2
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	146.0	0.0	#377.9	0.0	#78.0	62.9	0.0	68.9	96.0	0.0	42.5	m0.3
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2763	1724	2763	1724	330	529	1484	506	727	1491	1776	1878
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.17	1.03	0.57	0.95	0.60	0.59	0.69	0.71	0.24	0.10	0.75

Intersection Summary

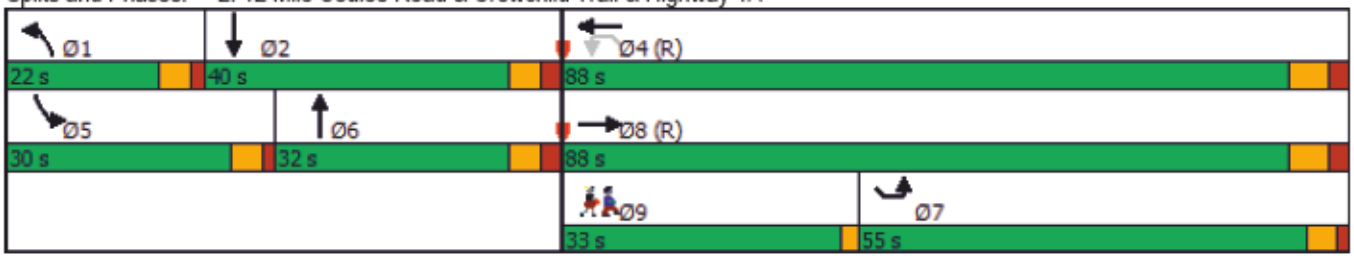
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBT, Start of Green, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 32.2 Intersection LOS: C
Intersection Capacity Utilization 142.1% 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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	Ø9
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

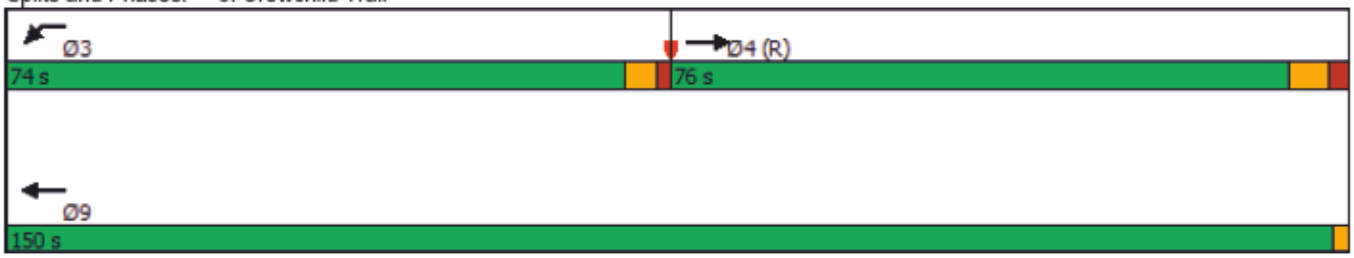
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1918	0	1332	3611	0	823
Future Volume (vph)	1918	0	1332	3611	0	823
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						546
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2040	0	1417	3841	0	876
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2040	0	1417	3841	0	876
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	145.0		
Total Split (s)	76.0		74.0	150.0		
Total Split (%)	50.7%		49.3%	100.0%		
Maximum Green (s)	69.0		69.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	67.8		66.2	150.0		150.0
Actuated g/C Ratio	0.45		0.44	1.00		1.00
v/c Ratio	0.93		0.97	0.79		0.56
Control Delay	40.4		58.5	1.4		1.2
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	40.4		58.5	1.4		1.2
LOS	D		E	A		A
Approach Delay	40.4			16.8	1.2	
Approach LOS	D			B	A	
Queue Length 50th (m)	198.7		207.7	0.0		0.0
Queue Length 95th (m)	223.6		#257.3	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Base Capacity (vph)	2200		1477	4863		1566
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	0.93		0.96	0.79		0.56

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 54 (36%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 21.0	Intersection LOS: C
Intersection Capacity Utilization 90.4%	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: Crowchild Trail



CFI – Staged East Leg Pedestrian Crossing with Split Phasing

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	1624	927	0	0	100
Future Volume (vph)	50	1624	927	0	0	100
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	3385	3385	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	3385	3385	0	0	1566
Satd. Flow (RTOR)						360
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	53	1728	986	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	1728	986	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0			
Minimum Split (s)	27.5	26.0	27.5			
Total Split (s)	31.0	145.0	114.0			
Total Split (%)	21.4%	100.0%	78.6%			
Maximum Green (s)	26.0	143.0	107.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	18.0	145.0	117.8			145.0
Actuated g/C Ratio	0.12	1.00	0.81			1.00
v/c Ratio	0.13	0.51	0.36			0.07
Control Delay	57.5	0.6	0.8			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	57.5	0.6	0.8			0.1
LOS	E	A	A			A
Approach Delay		2.2	0.8		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	7.1	0.0	0.2			0.0
Queue Length 95th (m)	13.8	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	547	3385	2750			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.10	0.51	0.36			0.07

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 92 (63%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 1.7	Intersection LOS: A
Intersection Capacity Utilization 49.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Future Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.98		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3385	1714	3385	1697	3306	3342	1525	3306	3310	1525	3306	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3385	1691	3385	1675	3306	3342	1484	3255	3310	1491	3306	3306
Satd. Flow (RTOR)		120		136			937			120		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	2%	2%	2%
Adj. Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Turn Type	NA	Free	NA	Free	Split	NA	Free	Split	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	1		2	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	1		2	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		10.0	10.0		10.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		40.0	40.0		16.0	16.0		27.0	27.0
Total Split (s)	65.0		65.0		40.0	40.0		40.0	40.0		65.0	65.0
Total Split (%)	44.8%		44.8%		27.6%	27.6%		27.6%	27.6%		44.8%	44.8%
Maximum Green (s)	58.0		58.0		34.0	34.0		34.0	34.0		58.0	58.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		8.0	8.0		8.0	8.0		9.0	9.0
Lead/Lag					Lead	Lead		Lag	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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)					8.0	8.0						
Flash Dont Walk (s)					26.0	26.0						
Pedestrian Calls (#/hr)					2	2						
Act Effct Green (s)	72.8	145.0	72.8	145.0	16.6	16.6	145.0	30.6	30.6	145.0	72.8	72.8
Actuated g/C Ratio	0.50	1.00	0.50	1.00	0.11	0.11	1.00	0.21	0.21	1.00	0.50	0.50
v/c Ratio	0.94	0.08	0.50	0.13	0.36	0.64	0.63	0.92	0.21	0.07	0.03	0.24
Control Delay	45.3	0.1	27.1	0.2	60.0	67.9	2.1	74.2	47.3	0.1	0.1	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	0.1	27.1	0.2	60.0	67.9	2.1	74.2	47.3	0.1	0.1	16.8
LOS	D	A	C	A	E	E	A	E	D	A	A	B
Approach Delay	41.9		21.5			20.2			61.0			
Approach LOS	D		C			C			E			
Queue Length 50th (m)	219.6	0.0	82.2	0.0	19.1	36.6	0.0	91.8	17.8	0.0	0.2	62.3

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#338.9	0.0	127.4	0.0	25.7	44.2	0.0	#121.6	27.7	0.0	0.0	79.0
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	1699	1691	1699	1675	729	737	1484	744	745	1491	1659	1659
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.08	0.50	0.13	0.19	0.33	0.63	0.86	0.19	0.07	0.03	0.24

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 33.6	Intersection LOS: C
Intersection Capacity Utilization 117.6%	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.

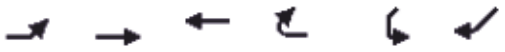
Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	2104	0	370	1010	0	881
Future Volume (vph)	2104	0	370	1010	0	881
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3385	0	3306	3385	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	3385	0	3306	3385	0	1566
Satd. Flow (RTOR)						256
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2238	0	394	1074	0	937
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2238	0	394	1074	0	937
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	27.5		14.5	27.0		
Total Split (s)	110.0		35.0	145.0		
Total Split (%)	75.9%		24.1%	100.0%		
Maximum Green (s)	103.0		30.0	138.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	108.6		20.4	145.0		145.0
Actuated g/C Ratio	0.75		0.14	1.00		1.00
v/c Ratio	0.88		0.85	0.32		0.60
Control Delay	9.3		77.6	0.2		1.3
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	9.3		77.6	0.2		1.3
LOS	A		E	A		A
Approach Delay	9.3			21.0	1.3	
Approach LOS	A			C	A	
Queue Length 50th (m)	102.2		57.7	0.0		0.0
Queue Length 95th (m)	108.6		72.6	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2535		638	3385		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.88		0.62	0.32		0.60

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 136 (94%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 11.4	Intersection LOS: B
Intersection Capacity Utilization 83.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	200	1318	1760	0	0	220
Future Volume (vph)	200	1318	1760	0	0	220
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3471	3400	3476	0	0	1629
Flt Permitted	0.950					
Satd. Flow (perm)	3471	3400	3476	0	0	1608
Satd. Flow (RTOR)						196
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	213	1402	1872	0	0	234
Shared Lane Traffic (%)						
Lane Group Flow (vph)	213	1402	1872	0	0	234
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	120.0	28.5			
Total Split (s)	22.0	125.0	103.0			
Total Split (%)	17.6%	100.0%	82.4%			
Maximum Green (s)	17.0	118.0	96.0			
Yellow Time (s)	3.5	4.5	4.5			
All-Red Time (s)	1.5	2.5	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	9.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	10.9	125.0	98.1			125.0
Actuated g/C Ratio	0.09	1.00	0.78			1.00
v/c Ratio	0.71	0.41	0.69			0.15
Control Delay	68.3	0.4	3.0			0.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	68.3	0.4	3.0			0.2
LOS	E	A	A			A
Approach Delay		9.3	3.0		0.2	
Approach LOS		A	A		A	
Queue Length 50th (m)	26.7	0.0	9.1			0.0
Queue Length 95th (m)	38.4	0.0	249.5			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	416	3400	2729			1608

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.41	0.69			0.15

Intersection Summary	
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 47 (38%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 5.6	Intersection LOS: A
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A & Highway 1A

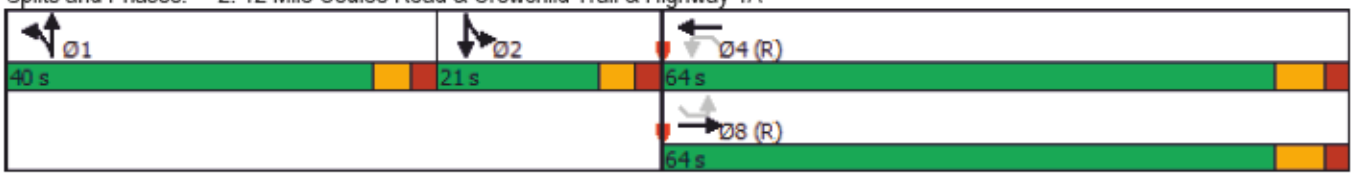
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Future Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3476	1794	3476	1794	3395	3400	1566	3395	3500	1566	3395	3395
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3476	1771	3476	1771	3395	3400	1524	3353	3500	1532	3395	3395
Satd. Flow (RTOR)		140		287			668			234		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Turn Type	NA	Free	NA	Free	Split	NA	Free	Split	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	1		2	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	1		2	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		10.0	10.0		10.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		40.0	40.0		16.0	16.0		27.0	27.0
Total Split (s)	64.0		64.0		40.0	40.0		21.0	21.0		64.0	64.0
Total Split (%)	51.2%		51.2%		32.0%	32.0%		16.8%	16.8%		51.2%	51.2%
Maximum Green (s)	57.0		57.0		34.0	34.0		15.0	15.0		57.0	57.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		8.0	8.0		8.0	8.0		9.0	9.0
Lead/Lag					Lead	Lead		Lag	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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)					8.0	8.0						
Flash Dont Walk (s)					26.0	26.0						
Pedestrian Calls (#/hr)					0	0						
Act Effct Green (s)	64.7	125.0	64.7	125.0	13.9	13.9	125.0	21.4	21.4	125.0	64.7	64.7
Actuated g/C Ratio	0.52	1.00	0.52	1.00	0.11	0.11	1.00	0.17	0.17	1.00	0.52	0.52
v/c Ratio	0.63	0.15	0.92	0.44	0.57	0.77	0.44	0.48	0.67	0.15	0.12	0.53
Control Delay	24.1	0.2	35.6	0.6	58.3	67.3	0.9	49.8	54.5	0.2	0.7	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	0.2	35.6	0.6	58.3	67.3	0.9	49.8	54.5	0.2	0.7	7.3
LOS	C	A	D	A	E	E	A	D	D	A	A	A
Approach Delay	19.6		24.3			27.8			39.1			
Approach LOS	B		C			C			D			
Queue Length 50th (m)	100.2	0.0	187.3	0.0	26.2	37.0	0.0	32.4	49.3	0.0	0.1	0.0

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	137.1	0.0	#266.5	0.0	37.4	50.2	0.0	45.1	65.1	0.0	0.2	148.1
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	1798	1771	1798	1771	869	870	1524	581	599	1532	1756	1756
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.15	0.92	0.44	0.25	0.33	0.44	0.48	0.67	0.15	0.12	0.53

Intersection Summary	
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 22.9	Intersection LOS: C
Intersection Capacity Utilization 118.9%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3476	0	3395	3476	0	1629
Flt Permitted			0.950			
Satd. Flow (perm)	3476	0	3395	3476	0	1608
Satd. Flow (RTOR)						471
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	120.0		
Total Split (s)	72.7		52.3	125.0		
Total Split (%)	58.2%		41.8%	100.0%		
Maximum Green (s)	65.7		47.3	118.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Act Effct Green (s)	70.4		38.6	125.0		125.0
Actuated g/C Ratio	0.56		0.31	1.00		1.00
v/c Ratio	0.72		0.90	0.70		0.42
Control Delay	10.0		52.9	1.2		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	10.0		52.9	1.2		0.7
LOS	A		D	A		A
Approach Delay	10.0			15.5	0.7	
Approach LOS	A			B	A	
Queue Length 50th (m)	150.7		112.9	0.0		0.0
Queue Length 95th (m)	95.7		128.6	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	1958		1230	3476		1608

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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		0.76	0.70		0.42

Intersection Summary	
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 10 (8%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 12.3	Intersection LOS: B
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

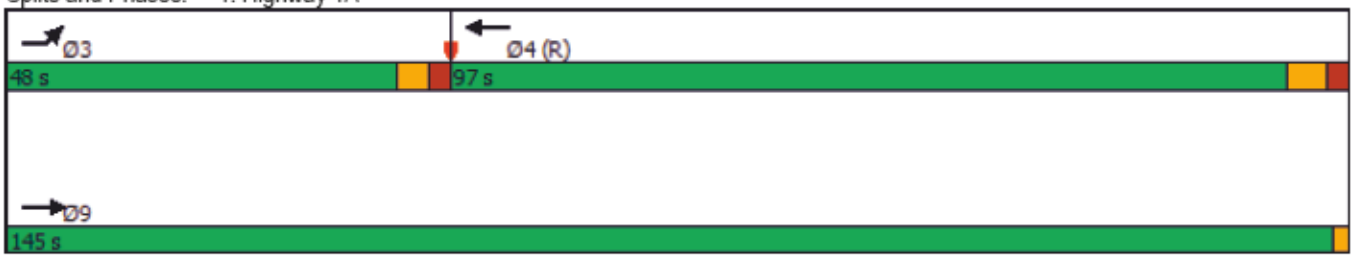
Splits and Phases: 3: Crowchild Trail & Crowchild Traill

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	110	2681	1128	0	0	100
Future Volume (vph)	110	2681	1128	0	0	100
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	5006	5006	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	5006	5006	0	0	1566
Satd. Flow (RTOR)						401
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	117	2852	1200	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	2852	1200	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	145.0	28.5			
Total Split (s)	48.0	145.0	97.0			
Total Split (%)	33.1%	100.0%	66.9%			
Maximum Green (s)	42.0	143.0	90.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	2.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	8.4	145.0	119.6			145.0
Actuated g/C Ratio	0.06	1.00	0.82			1.00
v/c Ratio	0.61	0.57	0.29			0.07
Control Delay	79.9	0.5	0.3			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	79.9	0.5	0.3			0.1
LOS	E	A	A			A
Approach Delay		3.6	0.3		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	17.2	0.0	0.0			0.0
Queue Length 95th (m)	27.2	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	912	5006	4128			1566
Starvation Cap Reductn	0	0	0			0

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.13	0.57	0.29			0.07

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 95 (66%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 2.6	Intersection LOS: A
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A



Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Future Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.94	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	4805	3310	1495	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1484	4739	3310	1463	3273	3242
Satd. Flow (RTOR)		120		195			1091			120		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	4%	3%	4%
Adj. Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Turn Type	NA	Free	NA	Free	Split	NA	Free	Split	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	1		2	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	1		2	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		10.0	10.0		10.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		40.0	40.0		16.0	16.0		27.0	27.0
Total Split (s)	70.0		70.0		40.0	40.0		35.0	35.0		70.0	70.0
Total Split (%)	48.3%		48.3%		27.6%	27.6%		24.1%	24.1%		48.3%	48.3%
Maximum Green (s)	63.0		63.0		34.0	34.0		29.0	29.0		63.0	63.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		8.0	8.0		8.0	8.0		9.0	9.0
Lead/Lag					Lead	Lead		Lag	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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)					8.0	8.0						
Flash Dont Walk (s)					26.0	26.0						
Pedestrian Calls (#/hr)					0	0						
Act Effct Green (s)	79.3	145.0	79.3	145.0	16.9	16.9	145.0	23.8	23.8	145.0	79.3	79.3
Actuated g/C Ratio	0.55	1.00	0.55	1.00	0.12	0.12	1.00	0.16	0.16	1.00	0.55	0.55
v/c Ratio	1.00	0.12	0.38	0.16	0.46	0.81	0.80	0.84	0.33	0.07	0.07	0.34
Control Delay	48.1	0.1	20.3	0.2	63.1	78.5	4.6	68.8	54.5	0.1	0.1	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	0.1	20.3	0.2	63.1	78.5	4.6	68.8	54.5	0.1	0.1	13.1
LOS	D	A	C	A	E	E	A	E	D	A	A	B
Approach Delay	44.8		16.1			24.7			58.4			
Approach LOS	D		B			C			E			
Queue Length 50th (m)	270.0	0.0	59.6	0.0	25.1	47.2	0.0	65.9	24.2	0.0	0.3	95.3

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#352.0	0.0	82.1	0.0	36.0	61.5	0.0	76.9	34.4	0.0	0.1	114.4
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2660	1691	2660	1675	729	737	1484	909	626	1463	1790	1774
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.12	0.38	0.16	0.25	0.43	0.80	0.73	0.29	0.07	0.07	0.34

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 33.8	Intersection LOS: C
Intersection Capacity Utilization 120.7%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A

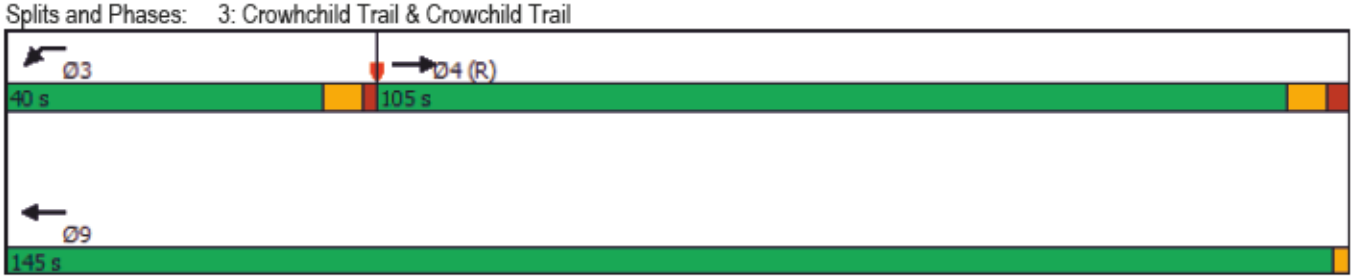
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	3116	0	568	1210	0	1114
Future Volume (vph)	3116	0	568	1210	0	1114
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	5006	0	3306	5006	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	5006	0	3306	5006	0	1566
Satd. Flow (RTOR)						282
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	3315	0	604	1287	0	1185
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3315	0	604	1287	0	1185
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	145.0		
Total Split (s)	105.0		40.0	145.0		
Total Split (%)	72.4%		27.6%	100.0%		
Maximum Green (s)	98.0		34.0	143.0		
Yellow Time (s)	4.5		4.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		8.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	99.2		28.8	145.0		145.0
Actuated g/C Ratio	0.68		0.20	1.00		1.00
v/c Ratio	0.97		0.92	0.26		0.76
Control Delay	10.6		77.0	0.1		2.0
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	10.6		77.0	0.1		2.0
LOS	B		E	A		A
Approach Delay	10.6			24.7	2.0	
Approach LOS	B			C	A	
Queue Length 50th (m)	74.0		87.8	0.0		0.0
Queue Length 95th (m)	m#107.8		108.1	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3424		729	5006		1566
Starvation Cap Reductn	0		0	0		0

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Spillback Cap Reductn	0		0	0		0
Storage Cap Reductn	0		0	0		0
Reduced v/c Ratio	0.97		0.83	0.26		0.76

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 129 (89%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 92.6%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowhchild Trail & Crowchild Trail

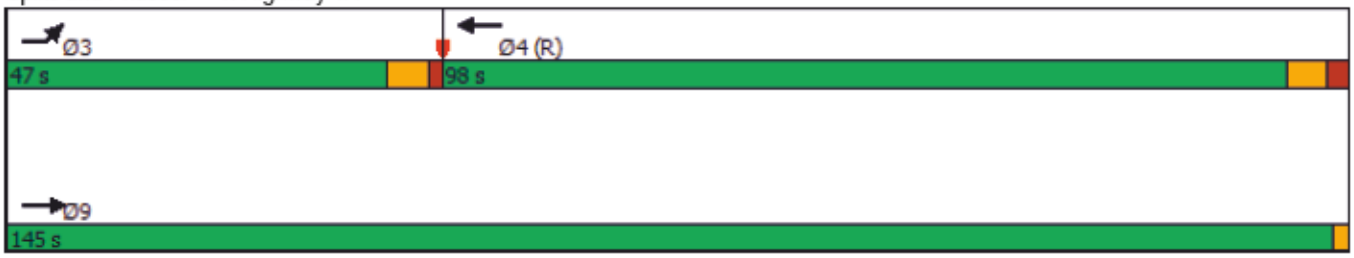


Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	190	1780	2643	0	0	280
Future Volume (vph)	190	1780	2643	0	0	280
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						340
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	202	1894	2812	0	0	298
Shared Lane Traffic (%)						
Lane Group Flow (vph)	202	1894	2812	0	0	298
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	125.0	28.5			
Total Split (s)	47.0	145.0	98.0			
Total Split (%)	32.4%	100.0%	67.6%			
Maximum Green (s)	41.0	143.0	91.0			
Yellow Time (s)	4.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	12.2	145.0	115.8			145.0
Actuated g/C Ratio	0.08	1.00	0.80			1.00
v/c Ratio	0.73	0.39	0.72			0.19
Control Delay	80.0	0.2	3.8			0.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	80.0	0.2	3.8			0.3
LOS	E	A	A			A
Approach Delay		7.9	3.8		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	29.6	0.0	0.7			0.0
Queue Length 95th (m)	41.8	0.0	m47.1			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	889	4863	3885			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.23	0.39	0.72			0.19

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 45 (31%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 5.3	Intersection LOS: A
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 1: Highway 1A



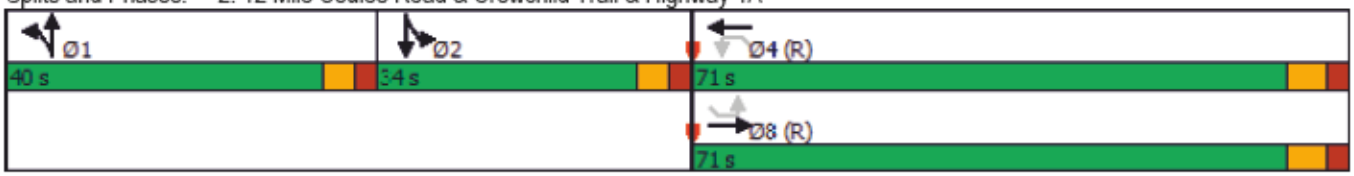
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Future Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.94	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	4805	3408	1525	3120	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1484	4742	3408	1491	3120	3306
Satd. Flow (RTOR)		147		313			822			298		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Turn Type	NA	Free	NA	Free	Split	NA	Free	Split	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	1		2	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	1		2	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		10.0	10.0		10.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		40.0	40.0		16.0	16.0		27.0	27.0
Total Split (s)	71.0		71.0		40.0	40.0		34.0	34.0		71.0	71.0
Total Split (%)	49.0%		49.0%		27.6%	27.6%		23.4%	23.4%		49.0%	49.0%
Maximum Green (s)	64.0		64.0		34.0	34.0		28.0	28.0		64.0	64.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		8.0	8.0		8.0	8.0		9.0	9.0
Lead/Lag					Lead	Lead		Lag	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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)					8.0	8.0						
Flash Dont Walk (s)					26.0	26.0						
Pedestrian Calls (#/hr)					0	0						
Act Effct Green (s)	77.6	145.0	77.6	145.0	18.6	18.6	145.0	23.8	23.8	145.0	77.6	77.6
Actuated g/C Ratio	0.54	1.00	0.54	1.00	0.13	0.13	1.00	0.16	0.16	1.00	0.54	0.54
v/c Ratio	0.61	0.18	0.98	0.62	0.64	0.82	0.55	0.46	0.85	0.20	0.12	0.77
Control Delay	25.7	0.2	45.6	1.6	66.5	77.0	1.5	56.1	73.1	0.3	0.5	26.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	0.2	45.6	1.6	66.5	77.0	1.5	56.1	73.1	0.3	0.5	26.8
LOS	C	A	D	A	E	E	A	E	E	A	A	C
Approach Delay	21.5		32.6			32.0			48.5			
Approach LOS	C		C			C			D			
Queue Length 50th (m)	111.5	0.0	253.1	0.0	38.7	52.0	0.0	33.6	70.2	0.0	0.6	202.6

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	151.6	0.0	#341.5	0.0	51.1	66.4	0.0	42.0	85.5	0.0	0.8	#236.7
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2602	1724	2602	1724	729	730	1484	892	633	1491	1669	1769
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.18	0.98	0.62	0.37	0.48	0.55	0.41	0.75	0.20	0.12	0.77

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 30.7	Intersection LOS: C
Intersection Capacity Utilization 136.3%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A

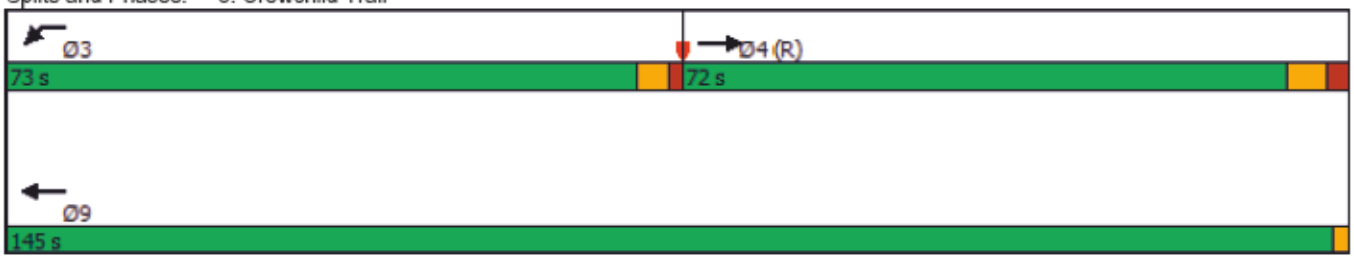


Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						564
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	125.0		
Total Split (s)	72.0		73.0	145.0		
Total Split (%)	49.7%		50.3%	100.0%		
Maximum Green (s)	65.0		68.0	143.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	81.4		47.6	145.0		145.0
Actuated g/C Ratio	0.56		0.33	1.00		1.00
v/c Ratio	0.52		0.87	0.50		0.43
Control Delay	8.7		54.4	0.4		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	8.7		54.4	0.4		0.7
LOS	A		D	A		A
Approach Delay	8.7			15.4	0.7	
Approach LOS	A			B	A	
Queue Length 50th (m)	29.5		130.1	0.0		0.0
Queue Length 95th (m)	104.5		141.6	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2729		1504	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.52		0.62	0.50		0.43

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 53 (37%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	120	2758	1247	0	0	90
Future Volume (vph)	120	2758	1247	0	0	90
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						229
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	128	2934	1327	0	0	96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	2934	1327	0	0	96
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	29.0			
Total Split (s)	20.0	150.0	130.0			
Total Split (%)	13.3%	100.0%	86.7%			
Maximum Green (s)	15.0	148.0	123.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	9.1	150.0	124.9			150.0
Actuated g/C Ratio	0.06	1.00	0.83			1.00
v/c Ratio	0.64	0.60	0.33			0.06
Control Delay	83.3	0.6	0.2			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	83.3	0.6	0.2			0.1
LOS	F	A	A			A
Approach Delay		4.0	0.2		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	19.5	0.0	0.0			0.0
Queue Length 95th (m)	30.0	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	286	4863	4050			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.45	0.60	0.33			0.06

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 103 (69%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 2.8	Intersection LOS: A
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Future Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.94	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	4805	3310	1414	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1484	4738	3310	1383	3273	3242
Satd. Flow (RTOR)		116		203			1091			116		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	10%	3%	4%
Adj. Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Turn Type	NA	Free	NA	Free	Split	NA	Free	Split	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	1		2	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	1		2	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		10.0	10.0		10.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		16.0	16.0		40.0	40.0		27.0	27.0
Total Split (s)	81.0		81.0		29.0	29.0		40.0	40.0		81.0	81.0
Total Split (%)	54.0%		54.0%		19.3%	19.3%		26.7%	26.7%		54.0%	54.0%
Maximum Green (s)	74.0		74.0		23.0	23.0		34.0	34.0		74.0	74.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		8.0	8.0		8.0	8.0		9.0	9.0
Lead/Lag					Lead	Lead		Lag	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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)								8.0	8.0			
Flash Dont Walk (s)								26.0	26.0			
Pedestrian Calls (#/hr)								0	0			
Act Effct Green (s)	83.1	150.0	83.1	150.0	17.4	17.4	150.0	24.6	24.6	150.0	83.1	83.1
Actuated g/C Ratio	0.55	1.00	0.55	1.00	0.12	0.12	1.00	0.16	0.16	1.00	0.55	0.55
v/c Ratio	1.01	0.12	0.42	0.19	0.49	0.84	0.76	0.84	0.37	0.07	0.07	0.37
Control Delay	51.9	0.1	20.9	0.2	66.2	84.3	3.8	70.9	57.0	0.1	0.1	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	0.1	20.9	0.2	66.2	84.3	3.8	70.9	57.0	0.1	0.1	15.3
LOS	D	A	C	A	E	F	A	E	E	A	A	B
Approach Delay	48.3		16.4			26.9			60.9			
Approach LOS	D		B			C			E			
Queue Length 50th (m)	~313.1	0.0	70.3	0.0	27.5	50.7	0.0	68.4	28.2	0.0	0.0	109.1

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	#369.7	0.0	93.1	0.0	39.3	66.5	0.0	79.3	39.1	0.0	0.1	m107.9
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2692	1691	2692	1675	462	467	1484	1025	706	1383	1812	1795
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.12	0.42	0.19	0.41	0.70	0.76	0.64	0.28	0.07	0.07	0.37

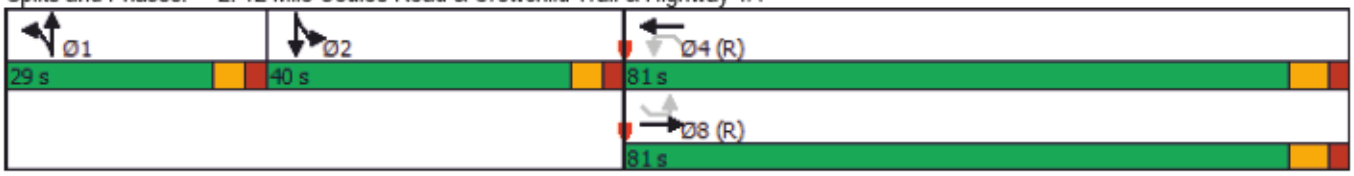
Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 35.7	Intersection LOS: D
Intersection Capacity Utilization 118.4%	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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑↑		↰↑↑	↑↑↑		↱
Traffic Volume (vph)	3183	0	628	1369	0	1064
Future Volume (vph)	3183	0	628	1369	0	1064
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						254
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	3386	0	668	1456	0	1132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3386	0	668	1456	0	1132
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	145.0		
Total Split (s)	113.0		37.0	150.0		
Total Split (%)	75.3%		24.7%	100.0%		
Maximum Green (s)	106.0		32.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	104.0		30.0	150.0		150.0
Actuated g/C Ratio	0.69		0.20	1.00		1.00
v/c Ratio	1.00		1.01	0.30		0.72
Control Delay	18.8		96.3	0.2		1.8
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	18.8		96.3	0.2		1.8
LOS	B		F	A		A
Approach Delay	18.8			30.4	1.8	
Approach LOS	B			C	A	
Queue Length 50th (m)	~78.3		~105.2	0.0		0.0
Queue Length 95th (m)	m110.2		#145.4	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3371		661	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	1.00		1.01	0.30		0.72

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 137 (91%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 19.6	Intersection LOS: B
Intersection Capacity Utilization 94.9%	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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowchild Trail

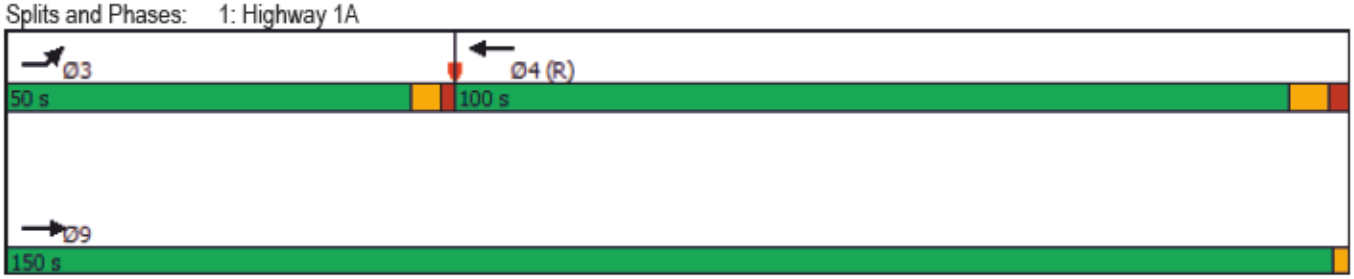
Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	170	1870	2975	0	0	340
Future Volume (vph)	170	1870	2975	0	0	340
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						356
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	181	1989	3165	0	0	362
Shared Lane Traffic (%)						
Lane Group Flow (vph)	181	1989	3165	0	0	362
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	28.5			
Total Split (s)	50.0	150.0	100.0			
Total Split (%)	33.3%	100.0%	66.7%			
Maximum Green (s)	45.0	148.0	93.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.5	150.0	122.5			150.0
Actuated g/C Ratio	0.08	1.00	0.82			1.00
v/c Ratio	0.72	0.41	0.80			0.23
Control Delay	83.0	0.3	6.7			0.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	83.0	0.3	6.7			0.3
LOS	F	A	A			A
Approach Delay		7.2	6.7		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	27.6	0.0	29.1			0.0
Queue Length 95th (m)	39.4	0.0	m48.6			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Base Capacity (vph)	947	4863	3970			1566
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	0.19	0.41	0.80			0.23

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 24 (16%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 6.4	Intersection LOS: A
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Highway 1A

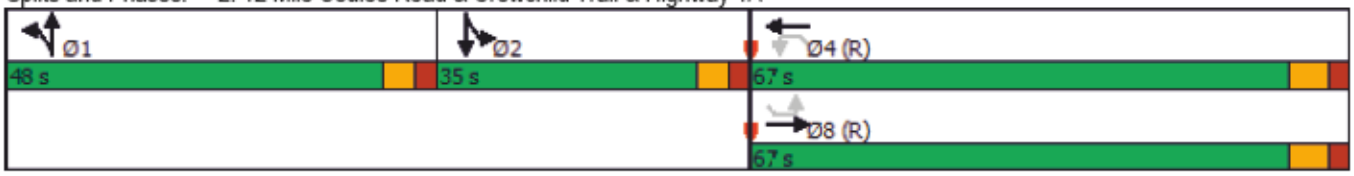


Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Future Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.94	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.97	0.99		0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	4805	3408	1525	3306	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1484	4737	3408	1491	3306	3306
Satd. Flow (RTOR)		128		250			876			351		
Confl. Peds. (#/hr)							10	10				
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Turn Type	NA	Free	NA	Free	Split	NA	Free	Split	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	1		2	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	1		2	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		10.0	10.0		10.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		40.0	40.0		16.0	16.0		27.0	27.0
Total Split (s)	67.0		67.0		48.0	48.0		35.0	35.0		67.0	67.0
Total Split (%)	44.7%		44.7%		32.0%	32.0%		23.3%	23.3%		44.7%	44.7%
Maximum Green (s)	60.0		60.0		42.0	42.0		29.0	29.0		60.0	60.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		8.0	8.0		8.0	8.0		9.0	9.0
Lead/Lag					Lead	Lead		Lag	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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Walk Time (s)					8.0	8.0						
Flash Dont Walk (s)					26.0	26.0						
Pedestrian Calls (#/hr)					0	0						
Act Effct Green (s)	80.4	150.0	80.4	150.0	17.8	17.8	150.0	26.8	26.8	150.0	80.4	80.4
Actuated g/C Ratio	0.54	1.00	0.54	1.00	0.12	0.12	1.00	0.18	0.18	1.00	0.54	0.54
v/c Ratio	0.65	0.17	1.09	0.57	0.80	0.80	0.59	0.41	0.85	0.24	0.10	0.80
Control Delay	27.4	0.2	80.4	0.8	79.5	79.9	1.7	55.3	72.9	0.4	0.1	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	0.2	80.4	0.8	79.5	79.9	1.7	55.3	72.9	0.4	0.1	22.0
LOS	C	A	F	A	E	E	A	E	E	A	A	C
Approach Delay	23.3		59.9			34.3			46.5			
Approach LOS	C		E			C			D			
Queue Length 50th (m)	127.3	0.0	~350.1	0.0	47.6	49.0	0.0	33.1	79.0	0.0	0.1	231.2

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Queue Length 95th (m)	169.8	0.0	#416.8	0.0	61.5	63.1	0.0	41.4	95.1	0.0	0.0	m241.3
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2605	1724	2605	1724	881	882	1484	918	651	1491	1771	1771
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.17	1.09	0.57	0.36	0.36	0.59	0.38	0.79	0.24	0.10	0.80

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 41.0	Intersection LOS: D
Intersection Capacity Utilization 143.0%	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.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



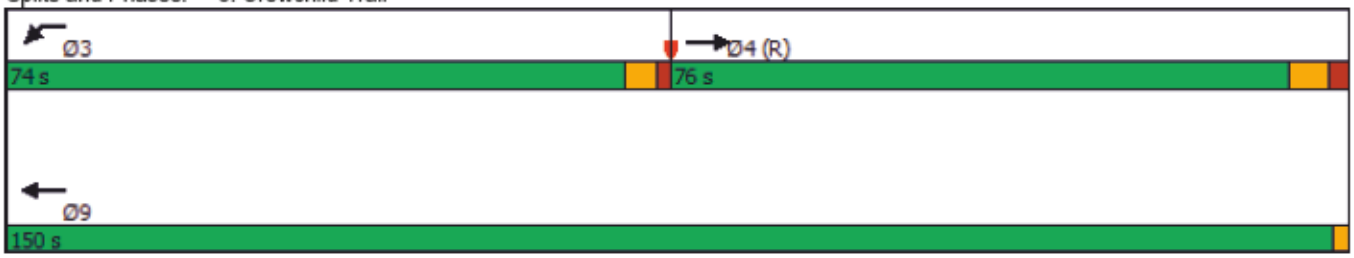
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1918	0	1332	3611	0	823
Future Volume (vph)	1918	0	1332	3611	0	823
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						546
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2040	0	1417	3841	0	876
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2040	0	1417	3841	0	876
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	145.0		
Total Split (s)	76.0		74.0	150.0		
Total Split (%)	50.7%		49.3%	100.0%		
Maximum Green (s)	69.0		69.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	67.8		66.2	150.0		150.0
Actuated g/C Ratio	0.45		0.44	1.00		1.00
v/c Ratio	0.93		0.97	0.79		0.56
Control Delay	30.0		58.5	1.4		1.2
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	30.0		58.5	1.4		1.2
LOS	C		E	A		A
Approach Delay	30.0			16.8	1.2	
Approach LOS	C			B	A	
Queue Length 50th (m)	216.4		207.7	0.0		0.0
Queue Length 95th (m)	237.3		#257.3	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Base Capacity (vph)	2200		1477	4863		1566
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	0.93		0.96	0.79		0.56

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 9 (6%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 90.4%	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: Crowchild Trail



CFI – No Pedestrian Crossing

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	1624	927	0	0	100
Future Volume (vph)	50	1624	927	0	0	100
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	3385	3385	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	3385	3385	0	0	1566
Satd. Flow (RTOR)						393
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	53	1728	986	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	1728	986	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0			
Minimum Split (s)	27.5	26.0	27.5			
Total Split (s)	33.0	120.0	87.0			
Total Split (%)	27.5%	100.0%	72.5%			
Maximum Green (s)	28.0	118.0	80.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	18.0	120.0	92.8			120.0
Actuated g/C Ratio	0.15	1.00	0.77			1.00
v/c Ratio	0.11	0.51	0.38			0.07
Control Delay	44.8	0.6	4.5			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	44.8	0.6	4.5			0.1
LOS	D	A	A			A
Approach Delay		1.9	4.5		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	5.6	0.0	33.2			0.0
Queue Length 95th (m)	11.5	0.0	31.9			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	716	3385	2617			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.07	0.51	0.38			0.07

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 43 (36%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 2.7	Intersection LOS: A
Intersection Capacity Utilization 49.4%	ICU Level of Service A
Analysis Period (min) 15	

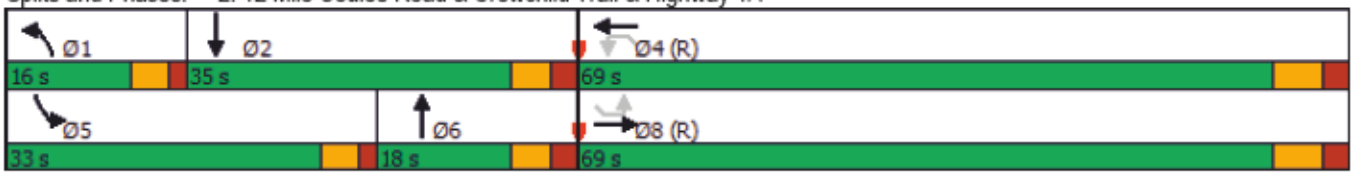
Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Future Volume (vph)	1504	120	800	210	127	229	881	600	135	100	50	370
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.98			0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3385	1714	3385	1697	3306	3342	1525	3306	3310	1525	3273	3242
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3385	1691	3385	1675	3306	3342	1491	3306	3310	1491	3273	3242
Satd. Flow (RTOR)		182		182			937			182		
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	2%	3%	4%
Adj. Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1600	128	851	223	135	244	937	638	144	106	53	394
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	16.0		27.0	27.0
Total Split (s)	69.0		69.0		16.0	18.0		33.0	35.0		69.0	69.0
Total Split (%)	57.5%		57.5%		13.3%	15.0%		27.5%	29.2%		57.5%	57.5%
Maximum Green (s)	62.0		62.0		11.0	12.0		28.0	29.0		62.0	62.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
Lead/Lag					Lead	Lag		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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Act Effct Green (s)	61.2	120.0	61.2	120.0	7.7	10.1	120.0	24.7	27.2	120.0	61.2	61.2
Actuated g/C Ratio	0.51	1.00	0.51	1.00	0.06	0.08	1.00	0.21	0.23	1.00	0.51	0.51
v/c Ratio	0.93	0.08	0.49	0.13	0.64	0.87	0.63	0.94	0.19	0.07	0.03	0.24
Control Delay	37.3	0.1	20.7	0.2	68.7	83.2	2.0	69.1	38.3	0.1	19.9	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	0.1	20.7	0.2	68.7	83.2	2.0	69.1	38.3	0.1	19.9	0.5
LOS	D	A	C	A	E	F	A	E	D	A	B	A
Approach Delay	34.5		16.4			23.9			55.9			
Approach LOS	C		B			C			E			
Queue Length 50th (m)	182.1	0.0	68.2	0.0	16.2	30.4	0.0	75.7	14.4	0.0	6.9	0.7
Queue Length 95th (m)	#236.6	0.0	85.5	0.0	26.3	#53.5	0.0	#106.2	23.5	0.0	13.8	m0.9
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	1725	1691	1725	1675	247	286	1491	716	760	1491	1668	1653

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.08	0.49	0.13	0.55	0.85	0.63	0.89	0.19	0.07	0.03	0.24

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 111.1%	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.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	2104	0	370	1010	0	881
Future Volume (vph)	2104	0	370	1010	0	881
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3385	0	3306	3385	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	3385	0	3306	3385	0	1566
Satd. Flow (RTOR)						214
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2238	0	394	1074	0	937
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2238	0	394	1074	0	937
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	27.5		14.5	27.0		
Total Split (s)	95.0		25.0	120.0		
Total Split (%)	79.2%		20.8%	100.0%		
Maximum Green (s)	88.0		20.0	113.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	87.6		16.4	120.0		120.0
Actuated g/C Ratio	0.73		0.14	1.00		1.00
v/c Ratio	0.91		0.87	0.32		0.60
Control Delay	10.3		70.7	0.2		1.3
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	10.3		70.7	0.2		1.3
LOS	B		E	A		A
Approach Delay	10.3			19.2	1.3	
Approach LOS	B			B	A	
Queue Length 50th (m)	9.5		46.9	0.0		0.0
Queue Length 95th (m)	229.1		#67.7	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2469		495	3385		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.91		0.80	0.32		0.60

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 27 (23%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 83.9%	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: Crowchild Trail

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	200	1318	1760	0	0	220
Future Volume (vph)	200	1318	1760	0	0	220
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3471	3400	3476	0	0	1629
Flt Permitted	0.950					
Satd. Flow (perm)	3471	3400	3476	0	0	1608
Satd. Flow (RTOR)						194
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	213	1402	1872	0	0	234
Shared Lane Traffic (%)						
Lane Group Flow (vph)	213	1402	1872	0	0	234
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	120.0	28.5			
Total Split (s)	21.0	120.0	99.0			
Total Split (%)	17.5%	100.0%	82.5%			
Maximum Green (s)	16.0	113.0	92.0			
Yellow Time (s)	3.5	4.5	4.5			
All-Red Time (s)	1.5	2.5	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	9.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	10.6	120.0	93.4			120.0
Actuated g/C Ratio	0.09	1.00	0.78			1.00
v/c Ratio	0.70	0.41	0.69			0.15
Control Delay	65.3	0.4	4.1			0.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	65.3	0.4	4.1			0.2
LOS	E	A	A			A
Approach Delay		8.9	4.1		0.2	
Approach LOS		A	A		A	
Queue Length 50th (m)	25.5	0.0	62.8			0.0
Queue Length 95th (m)	37.0	0.0	31.2			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	404	3400	2706			1608

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.53	0.41	0.69			0.15

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 24 (20%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 5.9	Intersection LOS: A
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

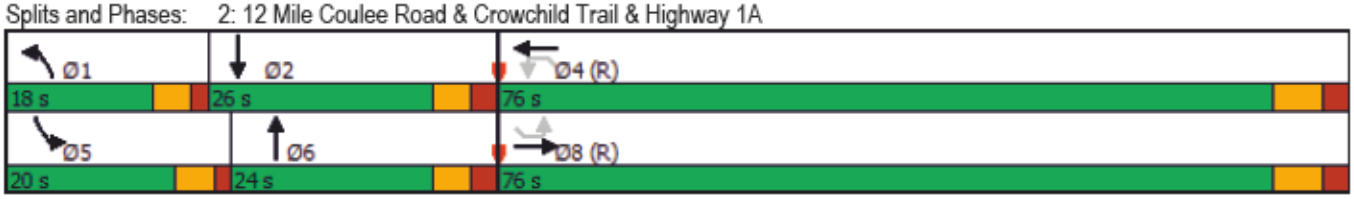
Splits and Phases: 1: Highway 1A & Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Future Volume (vph)	1072	247	1558	740	202	273	628	260	375	220	200	883
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.98			0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	3476	1794	3476	1794	3395	3400	1566	3395	3500	1566	3395	3395
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	3476	1771	3476	1771	3395	3400	1532	3395	3500	1532	3395	3395
Satd. Flow (RTOR)		145		299			668			234		
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1140	263	1657	787	215	290	668	277	399	234	213	939
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	16.0		27.0	27.0
Total Split (s)	76.0		76.0		18.0	24.0		20.0	26.0		76.0	76.0
Total Split (%)	63.3%		63.3%		15.0%	20.0%		16.7%	21.7%		63.3%	63.3%
Maximum Green (s)	69.0		69.0		13.0	18.0		15.0	20.0		69.0	69.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
Lead/Lag					Lead	Lag		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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Act Effct Green (s)	70.1	120.0	70.1	120.0	9.9	14.0	120.0	11.9	16.0	120.0	70.1	70.1
Actuated g/C Ratio	0.58	1.00	0.58	1.00	0.08	0.12	1.00	0.10	0.13	1.00	0.58	0.58
v/c Ratio	0.56	0.15	0.82	0.44	0.77	0.73	0.44	0.82	0.86	0.15	0.11	0.47
Control Delay	17.2	0.2	23.7	0.6	72.1	62.5	0.9	72.7	68.7	0.2	8.8	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	0.2	23.7	0.6	72.1	62.5	0.9	72.7	68.7	0.2	8.8	1.5
LOS	B	A	C	A	E	E	A	E	E	A	A	A
Approach Delay	14.0		16.2			29.2			52.3			
Approach LOS	B		B			C			D			
Queue Length 50th (m)	85.9	0.0	160.6	0.0	25.7	35.0	0.0	33.0	48.6	0.0	27.8	0.1
Queue Length 95th (m)	108.4	0.0	199.8	0.0	#38.6	49.2	0.0	#50.5	65.3	0.0	0.2	0.0
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2030	1771	2030	1771	311	453	1532	368	525	1532	1983	1983

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.15	0.82	0.44	0.69	0.64	0.44	0.75	0.76	0.15	0.11	0.47

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection		
Natural Cycle: 80		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.86		
Intersection Signal Delay: 20.4	Intersection LOS: C	
Intersection Capacity Utilization 112.0%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A

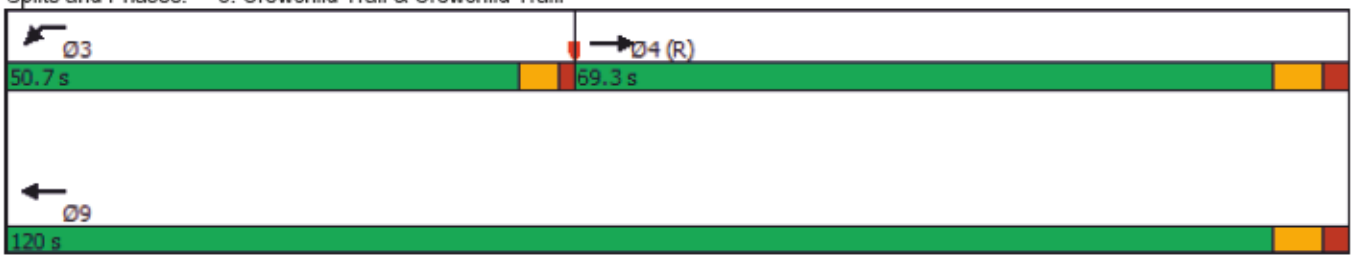


Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	3476	0	3395	3476	0	1629
Flt Permitted			0.950			
Satd. Flow (perm)	3476	0	3395	3476	0	1608
Satd. Flow (RTOR)						475
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	120.0		
Total Split (s)	69.3		50.7	120.0		
Total Split (%)	57.8%		42.3%	100.0%		
Maximum Green (s)	62.3		45.7	113.0		
Yellow Time (s)	4.5		3.5	4.5		
All-Red Time (s)	2.5		1.5	2.5		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	9.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Act Effct Green (s)	66.9		37.1	120.0		120.0
Actuated g/C Ratio	0.56		0.31	1.00		1.00
v/c Ratio	0.73		0.89	0.70		0.42
Control Delay	22.7		50.9	1.2		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	22.7		50.9	1.2		0.7
LOS	C		D	A		A
Approach Delay	22.7			15.0	0.7	
Approach LOS	C			B	A	
Queue Length 50th (m)	127.2		108.0	0.0		0.0
Queue Length 95th (m)	182.3		123.5	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	1937		1236	3476		1608

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.73		0.76	0.70		0.42

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 42 (35%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 15.2	Intersection LOS: B
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Crowchild Trail & Crowchild Traill



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	110	2681	1128	0	0	100
Future Volume (vph)	110	2681	1128	0	0	100
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						250
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	117	2852	1200	0	0	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	2852	1200	0	0	106
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	150.0	28.5			
Total Split (s)	20.0	150.0	130.0			
Total Split (%)	13.3%	100.0%	86.7%			
Maximum Green (s)	14.0	148.0	123.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	2.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	8.6	150.0	124.4			150.0
Actuated g/C Ratio	0.06	1.00	0.83			1.00
v/c Ratio	0.62	0.59	0.30			0.07
Control Delay	83.2	0.5	0.2			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	83.2	0.5	0.2			0.1
LOS	F	A	A			A
Approach Delay		3.8	0.2		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	17.8	0.0	0.0			0.0
Queue Length 95th (m)	28.0	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	264	4863	4034			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.44	0.59	0.30			0.07

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 104 (69%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 2.7	Intersection LOS: A
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations	↑↑↑	↱	↑↑↑	↱	↰↰	↑↑	↱	↰↰	↑↑	↱	↰↰	↰↰
Traffic Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Future Volume (vph)	2496	185	960	250	168	296	1114	620	168	100	110	568
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.98			0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	3306	3310	1525	3306	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1491	3306	3310	1491	3306	3306
Satd. Flow (RTOR)		145		188			1091			145		
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	2%	2%	2%
Adj. Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2655	197	1021	266	179	315	1185	660	179	106	117	604
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	16.0		27.0	27.0
Total Split (s)	90.0		90.0		20.0	22.0		38.0	40.0		90.0	90.0
Total Split (%)	60.0%		60.0%		13.3%	14.7%		25.3%	26.7%		60.0%	60.0%
Maximum Green (s)	83.0		83.0		15.0	16.0		33.0	34.0		83.0	83.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
Lead/Lag					Lead	Lag		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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Act Effct Green (s)	81.0	150.0	81.0	150.0	10.9	14.4	150.0	30.6	34.1	150.0	81.0	81.0
Actuated g/C Ratio	0.54	1.00	0.54	1.00	0.07	0.10	1.00	0.20	0.23	1.00	0.54	0.54
v/c Ratio	1.01	0.12	0.39	0.16	0.75	0.99	0.79	0.98	0.24	0.07	0.07	0.34
Control Delay	52.8	0.1	20.6	0.2	86.9	113.6	4.5	88.3	48.9	0.1	0.1	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.8	0.1	20.6	0.2	86.9	113.6	4.5	88.3	48.9	0.1	0.1	15.0
LOS	D	A	C	A	F	F	A	F	D	A	A	B
Approach Delay	49.1		16.4			33.7			71.0			
Approach LOS	D		B			C			E			
Queue Length 50th (m)	~291.9	0.0	62.9	0.0	27.3	~50.7	0.0	101.3	23.2	0.0	0.3	98.7
Queue Length 95th (m)	#327.5	0.0	73.4	0.0	39.8	#83.1	0.0	#139.3	34.8	0.0	0.0	117.9
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2626	1691	2626	1675	286	319	1491	683	752	1491	1785	1785

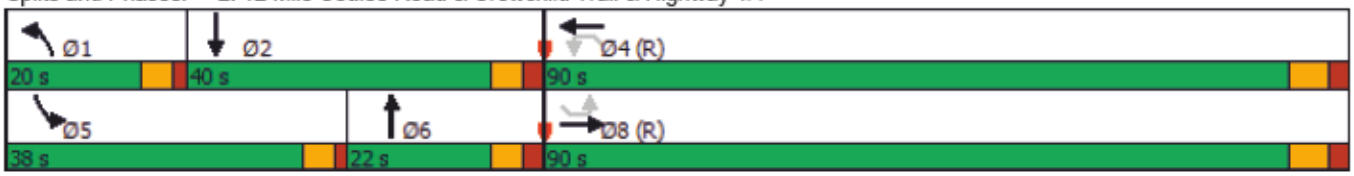
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.12	0.39	0.16	0.63	0.99	0.79	0.97	0.24	0.07	0.07	0.34

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 39.3	Intersection LOS: D
Intersection Capacity Utilization 120.3%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



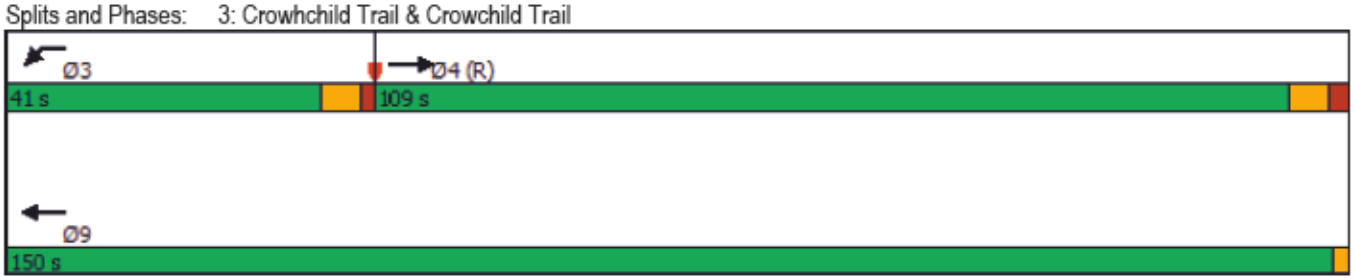
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	3116	0	568	1210	0	1114
Future Volume (vph)	3116	0	568	1210	0	1114
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						279
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	3315	0	604	1287	0	1185
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3315	0	604	1287	0	1185
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	145.0		
Total Split (s)	109.0		41.0	150.0		
Total Split (%)	72.7%		27.3%	100.0%		
Maximum Green (s)	102.0		35.0	148.0		
Yellow Time (s)	4.5		4.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		8.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	103.3		29.7	150.0		150.0
Actuated g/C Ratio	0.69		0.20	1.00		1.00
v/c Ratio	0.99		0.92	0.26		0.76
Control Delay	12.5		79.2	0.1		2.0
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	12.5		79.2	0.1		2.0
LOS	B		E	A		A
Approach Delay	12.5			25.4	2.0	
Approach LOS	B			C	A	
Queue Length 50th (m)	76.9		91.1	0.0		0.0
Queue Length 95th (m)	m#378.7		111.5	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3347		727	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.99		0.83	0.26		0.76

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 92.6%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowhchild Trail & Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	190	1780	2643	0	0	280
Future Volume (vph)	190	1780	2643	0	0	280
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						160
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	202	1894	2812	0	0	298
Shared Lane Traffic (%)						
Lane Group Flow (vph)	202	1894	2812	0	0	298
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	15.5	125.0	28.5			
Total Split (s)	24.0	140.0	116.0			
Total Split (%)	17.1%	100.0%	82.9%			
Maximum Green (s)	18.0	138.0	109.0			
Yellow Time (s)	4.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	8.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.7	140.0	111.3			140.0
Actuated g/C Ratio	0.08	1.00	0.80			1.00
v/c Ratio	0.73	0.39	0.73			0.19
Control Delay	77.7	0.2	8.4			0.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	77.7	0.2	8.4			0.3
LOS	E	A	A			A
Approach Delay		7.7	8.4		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	28.6	0.0	96.6			0.0
Queue Length 95th (m)	40.8	0.0	44.6			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	377	4863	3864			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.39	0.73			0.19

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 7.6	Intersection LOS: A
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Highway 1A

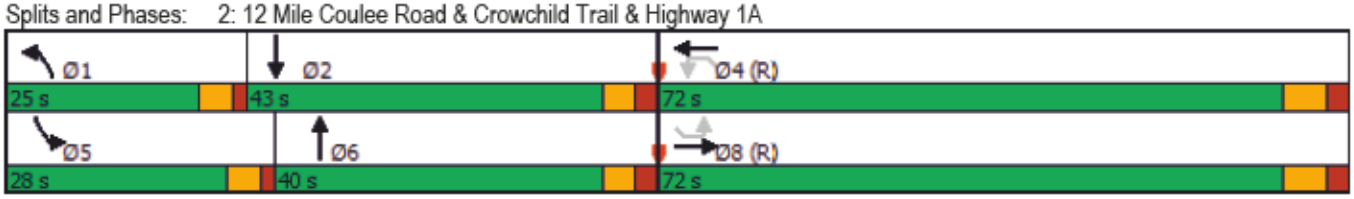
Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations	↑↑↑	↱	↑↑↑	↱	↰↰	↑↑	↱	↰↰	↑↑	↱	↰↰	↰↰
Traffic Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Future Volume (vph)	1488	292	2389	1000	255	327	773	340	445	280	190	1282
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.98			0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	3306	3408	1525	3120	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1491	3306	3408	1491	3120	3306
Satd. Flow (RTOR)		152		324			822			298		
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1583	311	2541	1064	271	348	822	362	473	298	202	1364
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	16.0		27.0	27.0
Total Split (s)	72.0		72.0		25.0	40.0		28.0	43.0		72.0	72.0
Total Split (%)	51.4%		51.4%		17.9%	28.6%		20.0%	30.7%		51.4%	51.4%
Maximum Green (s)	65.0		65.0		20.0	34.0		23.0	37.0		65.0	65.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Act Effct Green (s)	78.9	140.0	78.9	140.0	14.4	19.2	140.0	17.9	22.7	140.0	78.9	78.9
Actuated g/C Ratio	0.56	1.00	0.56	1.00	0.10	0.14	1.00	0.13	0.16	1.00	0.56	0.56
v/c Ratio	0.58	0.18	0.93	0.62	0.80	0.77	0.55	0.86	0.86	0.20	0.11	0.73
Control Delay	21.7	0.2	35.5	1.6	78.6	69.6	1.5	79.2	72.4	0.3	28.2	53.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	0.2	35.5	1.6	78.6	69.6	1.5	79.2	72.4	0.3	28.2	53.4
LOS	C	A	D	A	E	E	A	E	E	A	C	D
Approach Delay	18.2		25.5			32.4			55.6			
Approach LOS	B		C			C			E			
Queue Length 50th (m)	100.3	0.0	227.6	0.0	38.3	49.7	0.0	51.1	67.9	0.0	30.9	193.5
Queue Length 95th (m)	133.1	0.0	#306.4	0.0	52.1	63.4	0.0	67.2	83.6	0.0	44.0	222.2
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2741	1724	2741	1724	425	756	1491	495	852	1491	1758	1863

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.18	0.93	0.62	0.64	0.46	0.55	0.73	0.56	0.20	0.11	0.73

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 32.6	Intersection LOS: C
Intersection Capacity Utilization 132.6%	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: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A

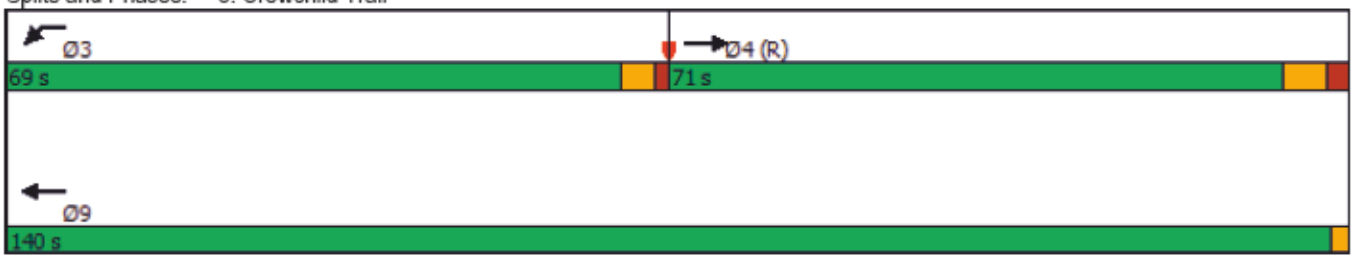


Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1332	0	883	2298	0	628
Future Volume (vph)	1332	0	883	2298	0	628
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						552
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1417	0	939	2445	0	668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	0	939	2445	0	668
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	125.0		
Total Split (s)	71.0		69.0	140.0		
Total Split (%)	50.7%		49.3%	100.0%		
Maximum Green (s)	64.0		64.0	138.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	78.2		45.8	140.0		140.0
Actuated g/C Ratio	0.56		0.33	1.00		1.00
v/c Ratio	0.52		0.87	0.50		0.43
Control Delay	20.7		53.3	0.4		0.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	20.7		53.3	0.4		0.7
LOS	C		D	A		A
Approach Delay	20.7			15.1	0.7	
Approach LOS	C			B	A	
Queue Length 50th (m)	83.8		125.5	0.0		0.0
Queue Length 95th (m)	94.9		137.8	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2716		1464	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	0.52		0.64	0.50		0.43

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 14.8	Intersection LOS: B
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Crowchild Trail



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	120	2758	1247	0	0	90
Future Volume (vph)	120	2758	1247	0	0	90
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						229
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	128	2934	1327	0	0	96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	2934	1327	0	0	96
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	29.0			
Total Split (s)	20.0	150.0	130.0			
Total Split (%)	13.3%	100.0%	86.7%			
Maximum Green (s)	15.0	148.0	123.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	9.1	150.0	124.9			150.0
Actuated g/C Ratio	0.06	1.00	0.83			1.00
v/c Ratio	0.64	0.60	0.33			0.06
Control Delay	83.3	0.6	0.2			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	83.3	0.6	0.2			0.1
LOS	F	A	A			A
Approach Delay		4.0	0.2		0.1	
Approach LOS		A	A		A	
Queue Length 50th (m)	19.5	0.0	0.1			0.0
Queue Length 95th (m)	30.0	0.0	0.0			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	286	4863	4050			1566

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
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	0.45	0.60	0.33			0.06

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 103 (69%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 2.8	Intersection LOS: A
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

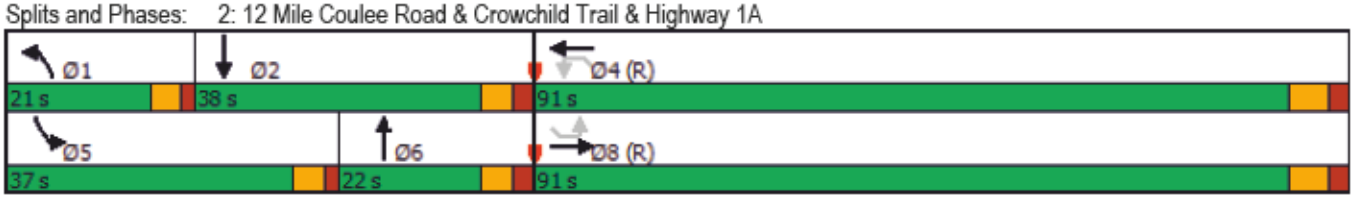
Splits and Phases: 1: Highway 1A

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations	↑↑↑	↱	↑↑↑	↱	↰↰	↑↑	↱	↰↰	↑↑	↱	↰↰	↰↰
Traffic Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Future Volume (vph)	2563	195	1069	300	178	306	1064	620	188	90	120	628
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.98			0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1714	4863	1697	3306	3342	1525	3306	3310	1495	3306	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1691	4863	1675	3306	3342	1491	3306	3310	1463	3306	3306
Satd. Flow (RTOR)		145		203			1091			145		
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	4%	5%	5%	2%	4%	2%	2%	5%	4%	2%	2%
Adj. Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2727	207	1137	319	189	326	1132	660	200	96	128	668
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	16.0		27.0	27.0
Total Split (s)	91.0		91.0		21.0	22.0		37.0	38.0		91.0	91.0
Total Split (%)	60.7%		60.7%		14.0%	14.7%		24.7%	25.3%		60.7%	60.7%
Maximum Green (s)	84.0		84.0		16.0	16.0		32.0	32.0		84.0	84.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Act Effct Green (s)	82.0	150.0	82.0	150.0	11.4	14.0	150.0	30.0	32.6	150.0	82.0	82.0
Actuated g/C Ratio	0.55	1.00	0.55	1.00	0.08	0.09	1.00	0.20	0.22	1.00	0.55	0.55
v/c Ratio	1.03	0.12	0.43	0.19	0.75	1.05	0.76	1.00	0.28	0.07	0.07	0.37
Control Delay	56.3	0.1	20.7	0.2	86.1	127.7	3.7	93.8	50.8	0.1	0.1	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	0.1	20.7	0.2	86.1	127.7	3.7	93.8	50.8	0.1	0.1	15.1
LOS	E	A	C	A	F	F	A	F	D	A	A	B
Approach Delay	52.3		16.2			37.7			75.4			
Approach LOS	D		B			D			E			
Queue Length 50th (m)	~315.7	0.0	71.1	0.0	28.8	~55.2	0.0	102.3	26.4	0.0	0.3	109.1
Queue Length 95th (m)	#339.6	0.0	82.2	0.0	41.5	#87.3	0.0	#142.8	39.2	0.0	0.0	m125.9
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2658	1691	2658	1675	308	311	1491	661	718	1463	1807	1807

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.12	0.43	0.19	0.61	1.05	0.76	1.00	0.28	0.07	0.07	0.37

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 41.3	Intersection LOS: D
Intersection Capacity Utilization 123.6%	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.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑↑		↰↰	↑↑↑		↱
Traffic Volume (vph)	3183	0	628	1369	0	1064
Future Volume (vph)	3183	0	628	1369	0	1064
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						293
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	3386	0	668	1456	0	1132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3386	0	668	1456	0	1132
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		14.5	145.0		
Total Split (s)	108.0		42.0	150.0		
Total Split (%)	72.0%		28.0%	100.0%		
Maximum Green (s)	101.0		37.0	148.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	101.7		32.3	150.0		150.0
Actuated g/C Ratio	0.68		0.22	1.00		1.00
v/c Ratio	1.03		0.94	0.30		0.72
Control Delay	24.2		79.1	0.2		1.9
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	24.2		79.1	0.2		1.9
LOS	C		E	A		A
Approach Delay	24.2			25.0	1.9	
Approach LOS	C			C	A	
Queue Length 50th (m)	~393.7		100.4	0.0		0.0
Queue Length 95th (m)	m#382.8		#127.8	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	3296		771	4863		1566

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
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	1.03		0.87	0.30		0.72

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 1 (1%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 94.9%	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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Crowchild Trail

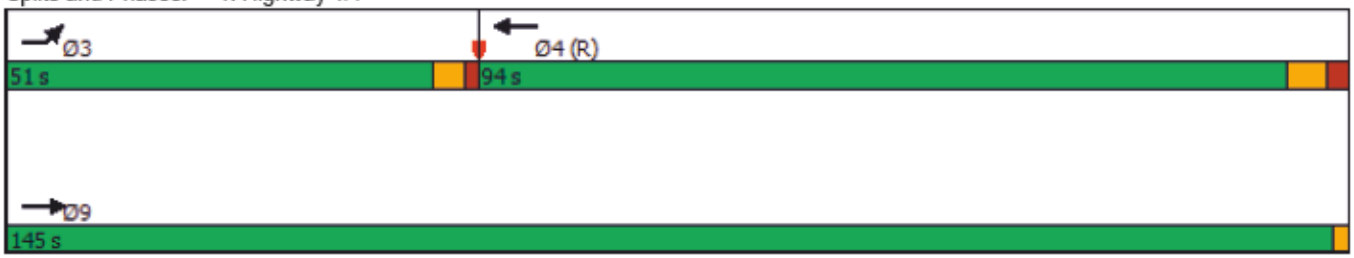
Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	170	1870	2975	0	0	340
Future Volume (vph)	170	1870	2975	0	0	340
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected	0.950					
Satd. Flow (prot)	3306	4863	4863	0	0	1586
Flt Permitted	0.950					
Satd. Flow (perm)	3306	4863	4863	0	0	1566
Satd. Flow (RTOR)						378
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	5%	2%	2%	2%
Adj. Flow (vph)	181	1989	3165	0	0	362
Shared Lane Traffic (%)						
Lane Group Flow (vph)	181	1989	3165	0	0	362
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.0	7.0		0.0	
Link Offset(m)		0.0	0.0		15.2	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.05	1.02	1.02	1.02	1.02	1.02
Turning Speed (k/h)	24			14	24	14
Turn Type	Prot	NA	NA			Free
Protected Phases	3	9	4			
Permitted Phases						Free
Detector Phase	3	9	4			
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0			
Minimum Split (s)	14.5	145.0	28.5			
Total Split (s)	51.0	145.0	94.0			
Total Split (%)	35.2%	100.0%	64.8%			
Maximum Green (s)	46.0	143.0	87.0			
Yellow Time (s)	3.5	2.0	4.5			
All-Red Time (s)	1.5	0.0	2.5			
Lost Time Adjust (s)	2.0	2.0	2.0			
Total Lost Time (s)	7.0	4.0	9.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	None	C-Min			
Act Effct Green (s)	11.3	145.0	117.7			145.0
Actuated g/C Ratio	0.08	1.00	0.81			1.00
v/c Ratio	0.71	0.41	0.80			0.23
Control Delay	79.9	0.3	1.7			0.3
Queue Delay	0.0	0.0	0.0			0.0

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Total Delay	79.9	0.3	1.7			0.3
LOS	E	A	A			A
Approach Delay		6.9	1.7		0.3	
Approach LOS		A	A		A	
Queue Length 50th (m)	26.6	0.0	0.1			0.0
Queue Length 95th (m)	38.3	0.0	m0.2			0.0
Internal Link Dist (m)		260.3	364.3		20.6	
Turn Bay Length (m)	250.0					
Base Capacity (vph)	1003	4863	3948			1566
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	0.18	0.41	0.80			0.23

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 44 (30%), Referenced to phase 4:WBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 3.6	Intersection LOS: A
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Highway 1A



Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Lane Configurations												
Traffic Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Future Volume (vph)	1588	282	2681	930	295	297	823	330	485	340	170	1332
Lane Util. Factor	0.91	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.97
Ped Bike Factor		0.99		0.99			0.98			0.98		
Frt		0.850		0.850			0.850			0.850		
Flt Protected					0.950			0.950			0.950	0.950
Satd. Flow (prot)	4863	1747	4863	1747	3306	3310	1525	3306	3408	1525	3306	3306
Flt Permitted					0.950			0.950			0.950	0.950
Satd. Flow (perm)	4863	1724	4863	1724	3306	3310	1491	3306	3408	1491	3306	3306
Satd. Flow (RTOR)		133		259			876			362		
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)		5		5			5			5		
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
Heavy Vehicles (%)	5%	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1689	300	2852	989	314	316	876	351	516	362	181	1417
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)	7.3		7.3			7.0			7.0			
Link Offset(m)	0.0		0.0			0.0			0.0			
Crosswalk Width(m)	4.9		4.9			4.9			4.9			
Two way Left Turn Lane												
Headway Factor	1.02	0.88	1.02	0.88	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
Turning Speed (k/h)		14		14	24		14	24		14	24	24
Turn Type	NA	Free	NA	Free	Prot	NA	Free	Prot	NA	Free	D.Pm	D.Pm
Protected Phases	8		4		1	6		5	2			
Permitted Phases		Free		Free			Free			Free	8	4
Detector Phase	8		4		1	6		5	2		8	4
Switch Phase												
Minimum Initial (s)	20.0		20.0		7.0	10.0		7.0	10.0		20.0	20.0
Minimum Split (s)	27.0		27.0		12.0	16.0		12.0	16.0		27.0	27.0
Total Split (s)	95.0		95.0		21.0	25.0		25.0	29.0		95.0	95.0
Total Split (%)	65.5%		65.5%		14.5%	17.2%		17.2%	20.0%		65.5%	65.5%
Maximum Green (s)	88.0		88.0		16.0	19.0		20.0	23.0		88.0	88.0
Yellow Time (s)	4.5		4.5		3.5	3.5		3.5	3.5		4.5	4.5
All-Red Time (s)	2.5		2.5		1.5	2.5		1.5	2.5		2.5	2.5
Lost Time Adjust (s)	2.0		2.0		2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	9.0		9.0		7.0	8.0		7.0	8.0		9.0	9.0
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	C-Min		C-Min		None	None		None	None		C-Min	C-Min
Act Effct Green (s)	86.0	145.0	86.0	145.0	14.0	18.0	145.0	17.0	21.0	145.0	86.0	86.0
Actuated g/C Ratio	0.59	1.00	0.59	1.00	0.10	0.12	1.00	0.12	0.14	1.00	0.59	0.59
v/c Ratio	0.59	0.17	0.99	0.57	0.98	0.77	0.59	0.90	1.05	0.24	0.09	0.72
Control Delay	19.4	0.2	39.5	0.8	111.0	75.0	1.7	89.8	111.8	0.4	0.1	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBT	EBR2	WBT	WBR2	NBL2	NBT	NBR2	SBL2	SBT	SBR2	SEL2	NWL2
Total Delay	19.4	0.2	39.5	0.8	111.0	75.0	1.7	89.8	111.8	0.4	0.1	3.1
LOS	B	A	D	A	F	E	A	F	F	A	A	A
Approach Delay	16.5		29.6			39.9			72.7			
Approach LOS	B		C			D			E			
Queue Length 50th (m)	106.0	0.0	282.8	0.0	47.2	47.3	0.0	51.7	~84.3	0.0	0.3	0.1
Queue Length 95th (m)	119.4	0.0	#331.3	0.0	#77.7	#69.5	0.0	#76.7	#120.7	0.0	0.0	m1.1
Internal Link Dist (m)	364.3		381.2			154.7			151.5			
Turn Bay Length (m)		76.2		76.2	125.0			125.0				
Base Capacity (vph)	2884	1724	2884	1724	319	410	1491	410	493	1491	1960	1960
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.17	0.99	0.57	0.98	0.77	0.59	0.86	1.05	0.24	0.09	0.72

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 0 (0%), Referenced to phase 4:NWWB and 8:EBSE, Start of Green, Master Intersection
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 29.5 Intersection LOS: C
Intersection Capacity Utilization 142.1% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: 12 Mile Coulee Road & Crowchild Trail & Highway 1A

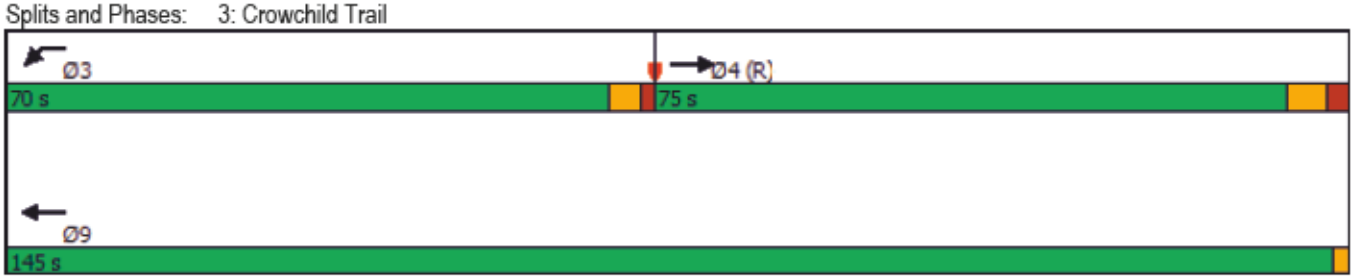
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1918	0	1332	3611	0	823
Future Volume (vph)	1918	0	1332	3611	0	823
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Ped Bike Factor						0.99
Frt						0.865
Flt Protected			0.950			
Satd. Flow (prot)	4863	0	3306	4863	0	1586
Flt Permitted			0.950			
Satd. Flow (perm)	4863	0	3306	4863	0	1566
Satd. Flow (RTOR)						534
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	2%	5%	2%	2%
Adj. Flow (vph)	2040	0	1417	3841	0	876
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2040	0	1417	3841	0	876
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			7.0	0.0	
Link Offset(m)	0.0			0.0	15.2	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	1.05	1.02	1.02	1.02
Turning Speed (k/h)		14	24		24	14
Turn Type	NA		Prot	NA		Free
Protected Phases	4		3	9		
Permitted Phases						Free
Detector Phase	4		3	9		
Switch Phase						
Minimum Initial (s)	20.0		7.0	20.0		
Minimum Split (s)	28.5		15.5	145.0		
Total Split (s)	75.0		70.0	145.0		
Total Split (%)	51.7%		48.3%	100.0%		
Maximum Green (s)	68.0		65.0	143.0		
Yellow Time (s)	4.5		3.5	2.0		
All-Red Time (s)	2.5		1.5	0.0		
Lost Time Adjust (s)	2.0		2.0	2.0		
Total Lost Time (s)	9.0		7.0	4.0		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Min		None	None		
Act Effct Green (s)	65.8		63.2	145.0		145.0
Actuated g/C Ratio	0.45		0.44	1.00		1.00
v/c Ratio	0.92		0.98	0.79		0.56
Control Delay	40.4		60.3	1.4		1.2
Queue Delay	0.0		0.0	0.0		0.0

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Total Delay	40.4		60.3	1.4		1.2
LOS	D		E	A		A
Approach Delay	40.4			17.2	1.2	
Approach LOS	D			B	A	
Queue Length 50th (m)	190.8		205.1	0.0		0.0
Queue Length 95th (m)	208.7		#256.2	0.0		0.0
Internal Link Dist (m)	381.2			269.1	13.3	
Turn Bay Length (m)			250.0			
Base Capacity (vph)	2216		1443	4863		1566
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	0.92		0.98	0.79		0.56

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 62 (43%), Referenced to phase 4:EBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 90.4%	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: Crowchild Trail



APPENDIX C

Vissim Reports

2028 After Development AM - Existing Configuration

Intersection	Movement	Assigned Vol.	Vehicles / hr	GEH	Movement	Average Delay	95% Queue	LOS
	SB Peds	10	10	0.0	1-1@429.3-1@477.5	47.6	32	D
	NBL	127	128	0.1	1-10@63.8-13@6.2	68.5	125	E
	EBL	50	45	0.7	1-18@94.9-25@0.6	62.4	30	E
	EBR	120	112	0.7	1-19@133.7-19@143.1	0.4	0	A
	WBR	210	214	0.3	1-20@195.3-20@201.4	0.3	0	A
12 Mile Coulee	NBT	229	234	0.3	1-22@470.3-25@0.6	40.0	57	D
Road &	SBL	600	587	0.5	1-23@111.1-10010@56.	100.1	441	F
Highway	SBT	135	132	0.3	1-24@403.4-21@1.2	35.5	40	D
1A/Crowchild	SBR	100	94	0.6	1-27@39.6-27@45.7	0.3	0	A
Trail	WBL	370	335	1.9	1-29@98.4-21@1.2	226.5	411	F
	NBR	881	852	1.0	1-30@27.1-30@30.1	0.9	94	A
	NB Peds	10	11	0.3	1-43@477.1-43@524.8	41.4	31	D
	WBT	800	796	0.1	1-95@101.1-13@6.2	38.6	403	D
	EBT	1504	1458	1.2	1-98@106.1-10029@42.	46.2	290	D
	Intersection Avg	5146	5008	1.9	1	52.0	424	D

2028 After Development PM - Existing Configuration

Intersection	Movement	Assigned Vol.	Vehicles / hr	GEH	Movement	Average Delay	95% Queue	LOS
	SB Peds	10	9	0.3	1-1@429.3-1@477.5	50.2	24	D
	NBL	202	195	0.5	1-10@63.8-13@6.2	68.3	122	E
	EBL	200	206	0.4	1-18@94.9-25@0.6	177.8	171	F
	EBR	247	247	0.0	1-19@133.7-19@143.1	0.6	39	A
	WBR	740	662	2.9	1-20@195.3-20@201.4	1.8	86	A
12 Mile Coulee	NBT	273	268	0.3	1-22@470.3-25@0.6	41.9	62	D
Road &	SBL	260	271	0.7	1-23@111.1-10010@56.	79.6	91	E
Highway	SBT	375	358	0.9	1-24@403.4-21@1.2	46.5	74	D
1A/Crowchild	SBR	220	221	0.1	1-27@39.6-27@45.7	0.4	0	A
Trail	WBL	883	784	3.4	1-29@98.4-21@1.2	109.9	510	F
	NBR	628	622	0.2	1-30@27.1-30@30.1	0.7	68	A
	NB Peds	10	8	0.7	1-43@477.1-43@524.8	59.7	22	E
	WBT	1558	1398	4.2	1-95@101.1-13@6.2	36.8	510	D
	EBT	1072	1084	0.4	1-98@106.1-10029@42.	49.4	209	D
	Intersection Avg	6678	6333	4.3	1	46.4	510	D

2028 After Development AM - 6 Lanes & Triple WBL/SBL

Intersection	Movement	Assigned Vol.	Vehicles / hr	GEH	Movement	Average Delay	95% Queue	LOS
	SB Peds	10	10	0.0	1-1@429.3-1@477.5	46.6	32	D
	NBL	127	126	0.1	1-10@42.4-13@6.2	65.1	114	E
	EBL	50	45	0.7	1-18@94.9-25@0.6	64.8	28	E
	EBR	120	111	0.8	1-19@133.7-19@143.1	0.2	0	A
	WBR	210	214	0.3	1-20@194.3-20@200.4	0.3	8	A
12 Mile Coulee	NBT	229	234	0.3	1-22@469.9-25@0.6	38.1	51	D
Road &	SBL	600	591	0.4	1-23@110.6-10010@55.	62.1	93	E
Highway	SBT	135	131	0.3	1-24@403.2-21@1.0	31.7	34	C
1A/Crowchild	SBR	100	94	0.6	1-27@39.6-27@45.7	0.3	0	A
Trail (CFI)	WBL	370	360	0.5	1-29@96.4-21@1.0	69.3	77	E
	NBR	881	853	1.0	1-30@27.1-30@30.1	0.9	91	A
	NB Peds	10	10	0.0	1-43@477.1-43@524.8	42.1	31	D
	WBT	800	805	0.2	1-95@100.4-13@6.2	36.4	92	D
	EBT	1504	1481	0.6	1-98@104.6-10029@41.	46.5	175	D
	Intersection Avg	5146	5065	1.1	1	36.7	175	D

2028 After Development PM - 6 Lanes & Triple WBL/SBL

Intersection	Movement	Assigned Vol.	Vehicles / hr	GEH	Movement	Average Delay	95% Queue	LOS
	SB Peds	10	9	0.3	1-1@429.3-1@477.5	70.8	23	E
	NBL	202	194	0.6	1-10@42.4-13@6.2	67.5	110	E
	EBL	200	206	0.4	1-18@94.9-25@0.6	64.7	51	E
	EBR	247	247	0.0	1-19@133.7-19@143.1	0.5	28	A
	WBR	740	738	0.1	1-20@194.3-20@200.4	1.9	71	A
12 Mile Coulee	NBT	273	270	0.2	1-22@469.9-25@0.6	39.4	54	D
Road &	SBL	260	269	0.6	1-23@110.6-10010@55.	69.0	53	E
Highway	SBT	375	360	0.8	1-24@403.2-21@1.0	45.4	82	D
1A/Crowchild	SBR	220	221	0.1	1-27@39.6-27@45.7	0.4	0	A
Trail (CFI)	WBL	883	915	1.1	1-29@96.4-21@1.0	54.5	123	D
	NBR	628	623	0.2	1-30@27.1-30@30.1	0.8	80	A
	NB Peds	10	8	0.7	1-43@477.1-43@524.8	72.3	22	E
	WBT	1558	1563	0.1	1-95@100.4-13@6.2	38.8	149	D
	EBT	1072	1093	0.6	1-98@104.6-10029@41.	48.7	123	D
	Intersection Avg	6678	6717	0.5	1	35.6	149	D

2039 After Development AM - 8 Lanes & Triple WBL/SBL

Intersection	Movement	Assigned Vol.	Vehicles / hr	GEH	Movement	Average Delay	95% Queue	LOS
	SB Peds	10	10	0.0	1-1@429.3-1@478.3	66.2	34	E
	NBL	168	165	0.2	1-10@42.0-13@5.2	72.9	210	E
	EBL	110	108	0.2	1-18@94.9-25@0.6	72.1	37	E
	EBR	185	179	0.4	1-19@133.6-19@142.1	0.4	0	A
	WBR	250	247	0.2	1-20@192.5-20@198.7	0.4	8	A
12 Mile Coulee	NBT	296	296	0.0	1-22@469.3-25@0.6	36.3	222	D
Road &	SBL	620	596	1.0	1-23@110.6-10010@53.	142.1	462	F
Highway	SBT	168	164	0.3	1-24@403.2-21@1.2	38.0	48	D
1A/Crowchild	SBR	100	93	0.7	1-27@39.6-27@45.7	0.4	0	A
Trail	WBL	568	540	1.2	1-29@96.4-21@1.2	168.2	233	F
	NBR	1114	1082	1.0	1-30@27.0-30@30.1	1.5	142	A
	NB Peds	10	11	0.3	1-43@476.2-43@524.8	69.8	30	E
	WBT	960	965	0.2	1-95@100.5-13@5.2	39.0	73	D
	EBT	2496	2482	0.3	1-98@104.8-10029@41.	46.1	209	D
	Intersection Avg	7055	6939	1.4	1	53.1	435	D

2039 After Development PM - 8 Lanes & Triple WBL/SBL

Intersection	Movement	Assigned Vol.	Vehicles / hr	GEH	Movement	Average Delay	95% Queue	LOS
	SB Peds	10	9	0.3	1-1@429.3-1@478.3	67.5	24	E
	NBL	255	250	0.3	1-10@42.0-13@5.2	62.9	122	E
	EBL	190	195	0.4	1-18@94.9-25@0.6	94.2	74	F
	EBR	292	286	0.4	1-19@133.6-19@142.1	0.8	16	A
	WBR	1000	975	0.8	1-20@192.5-20@198.7	3.8	158	A
12 Mile Coulee	NBT	327	325	0.1	1-22@469.3-25@0.6	33.1	64	C
Road &	SBL	340	350	0.5	1-23@110.6-10010@53.	100.0	88	F
Highway	SBT	445	431	0.7	1-24@403.2-21@1.2	46.6	84	D
1A/Crowchild	SBR	280	284	0.2	1-27@39.6-27@45.7	0.5	0	A
Trail	WBL	1282	1110	5.0	1-29@96.4-21@1.2	96.4	510	F
	NBR	773	775	0.1	1-30@27.0-30@30.1	0.9	68	A
	NB Peds	10	8	0.7	1-43@476.2-43@524.8	69.9	22	E
	WBT	2389	2328	1.3	1-95@100.5-13@5.2	40.4	510	D
	EBT	1488	1505	0.4	1-98@104.8-10029@41.	53.7	129	D
	Intersection Avg	9081	8831	2.6	1	43.9	510	D

2048 After Development AM - 8 Lanes & Triple WBL/SBL

Intersection	Movement	Assigned Vol.	Vehicles / hr	GEH	Movement	Average Delay	95% Queue	LOS
	SB Peds	10	9	0.3	1-1@429.3-1@478.3	58.5	24	E
	NBL	178	171	0.5	1-10@42.0-13@5.2	71.4	103	E
	EBL	120	123	0.3	1-18@94.9-25@0.6	73.8	42	E
	EBR	195	193	0.1	1-19@133.6-19@142.1	0.5	11	A
	WBR	300	309	0.5	1-20@192.5-20@198.7	0.4	16	A
12 Mile Coulee	NBT	306	311	0.3	1-22@469.3-25@0.6	36.8	101	D
Road &	SBL	620	611	0.4	1-23@110.6-10010@53.	167.8	414	F
Highway	SBT	188	188	0.0	1-24@403.2-21@1.2	38.1	55	D
1A/Crowchild	SBR	90	91	0.1	1-27@39.6-27@45.7	0.3	0	A
Trail	WBL	628	553	3.1	1-29@96.4-21@1.2	243.6	563	F
	NBR	1064	1058	0.2	1-30@27.0-30@30.1	1.4	133	A
	NB Peds	10	8	0.7	1-43@476.2-43@524.8	68.4	22	E
	WBT	1069	1078	0.3	1-95@100.5-13@5.2	38.4	83	D
	EBT	2563	2617	1.1	1-98@104.8-10029@41.	45.6	237	D
	Intersection Avg	7341	7318	0.3	1	60.2	563	E

2048 After Development PM - 8 Lanes & Triple WBL/SBL

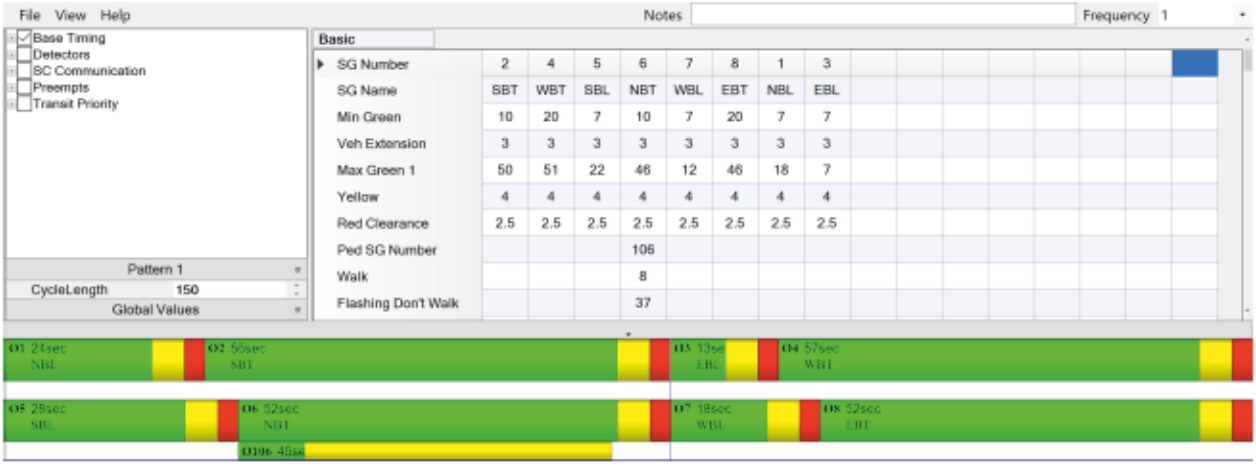
Intersection	Movement	Assigned Vol.	Vehicles / hr	GEH	Movement	Average Delay	95% Queue	LOS
	SB Peds	10	9	0.3	1-1@429.3-1@478.3	68.7	24	E
	NBL	295	290	0.3	1-10@42.0-13@5.2	64.2	149	E
	EBL	170	173	0.2	1-18@94.9-25@0.6	78.7	67	E
	EBR	282	280	0.1	1-19@133.6-19@142.1	1.2	68	A
	WBR	930	860	2.3	1-20@192.5-20@198.7	2.7	156	A
12 Mile Coulee	NBT	297	294	0.2	1-22@469.3-25@0.6	33.5	73	C
Road &	SBL	330	336	0.3	1-23@110.6-10010@53.	93.7	77	F
Highway	SBT	485	474	0.5	1-24@403.2-21@1.2	49.1	114	D
1A/Crowchild	SBR	340	341	0.1	1-27@39.6-27@45.7	0.6	0	A
Trail	WBL	1332	1120	6.1	1-29@96.4-21@1.2	95.1	510	F
	NBR	823	824	0.0	1-30@27.0-30@30.1	1.0	71	A
	NB Peds	10	8	0.7	1-43@476.2-43@524.8	69.8	22	E
	WBT	2681	2521	3.1	1-95@100.5-13@5.2	39.5	510	D
	EBT	1588	1607	0.5	1-98@104.8-10029@41.	54.3	137	D
	Intersection Avg	9573	9138	4.5	1	43.2	510	D

VISSIM Signal Timings

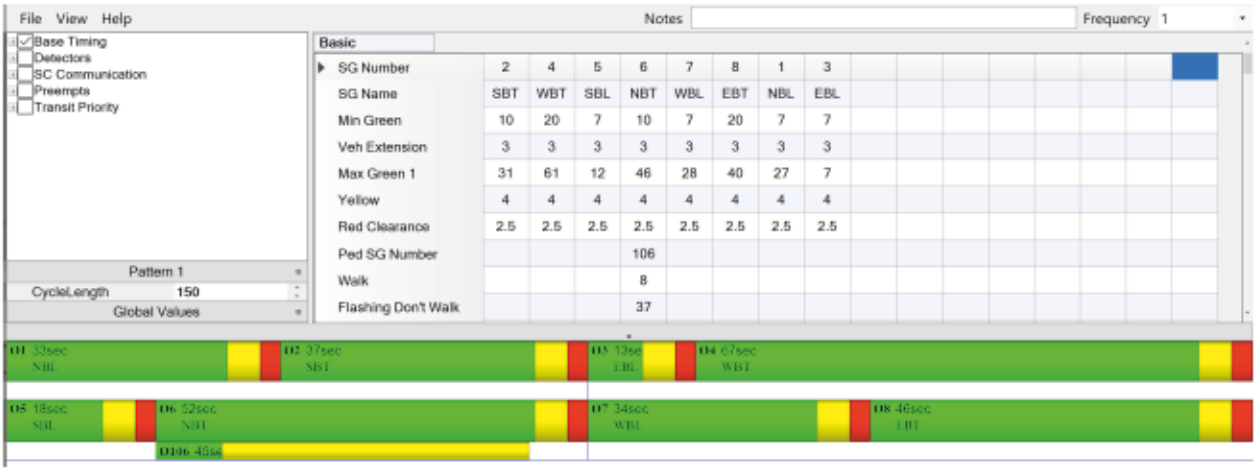
Bunt & Associates Engineering Ltd.

Ascension Transportation Impact Assessment Additional Analysis (dated March 1, 2023)

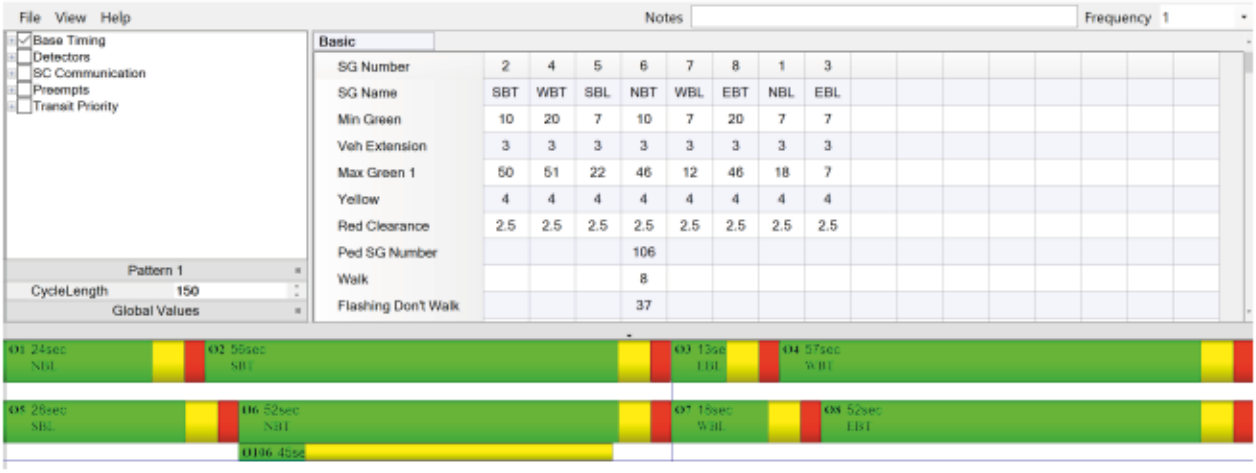
2028 After Development – Existing Configurations – AM Peak Hour



2028 After Development – Existing Configurations – PM Peak Hour

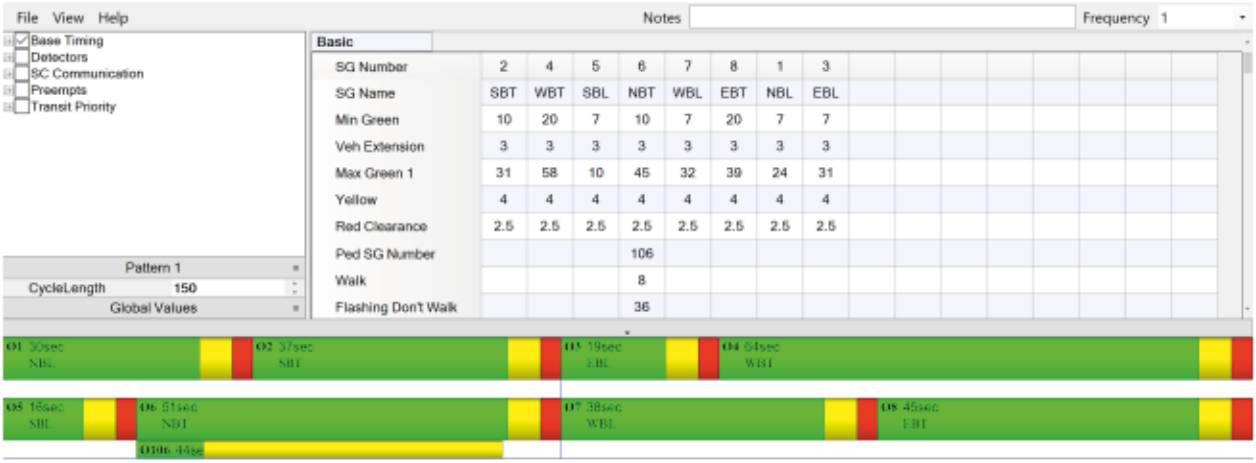


2028 After Development – 6 Lanes & Triple Lefts – AM Peak Hour



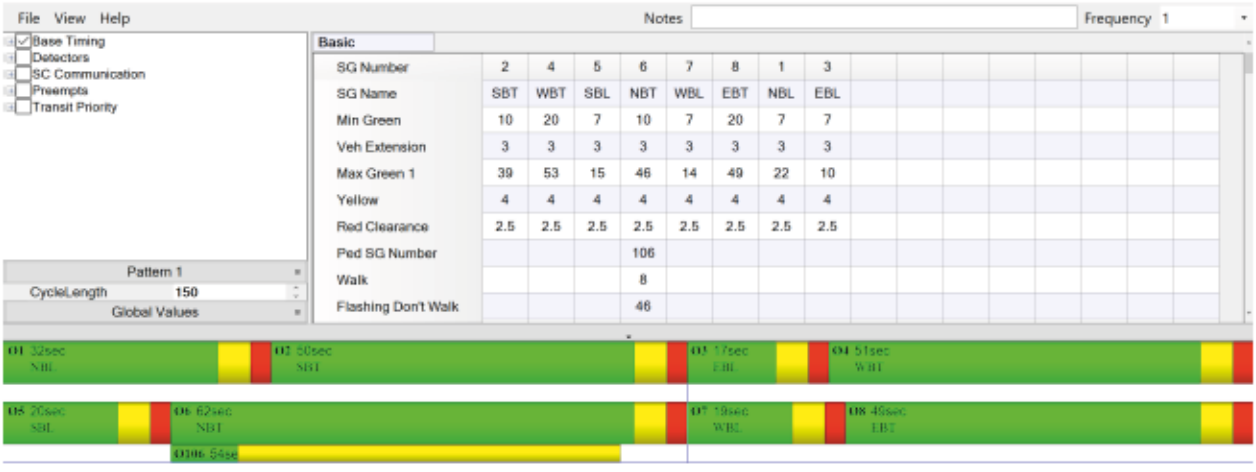
SG Number	2	4	5	6	7	8	1	3
SG Name	SBT	WBT	SBL	NBT	WBL	EBT	NBL	EBL
Min Green	10	20	7	10	7	20	7	7
Veh Extension	3	3	3	3	3	3	3	3
Max Green 1	50	51	22	46	12	46	18	7
Yellow	4	4	4	4	4	4	4	4
Red Clearance	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Ped SG Number				106				
Walk				8				
Flashing Don't Walk				37				

2028 After Development – 6 Lanes & Triple Lefts – PM Peak Hour



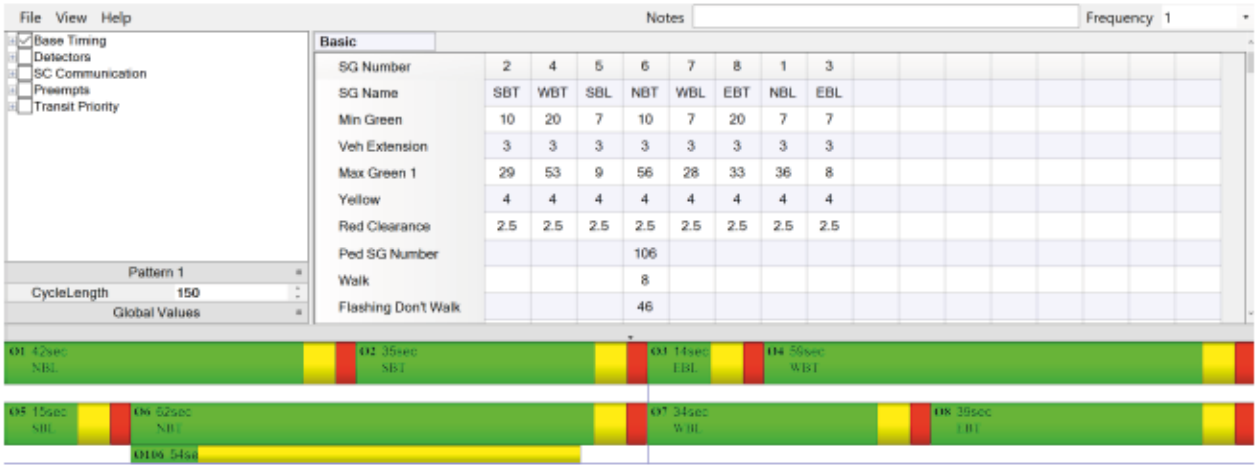
SG Number	2	4	5	6	7	8	1	3
SG Name	SBT	WBT	SBL	NBT	WBL	EBT	NBL	EBL
Min Green	10	20	7	10	7	20	7	7
Veh Extension	3	3	3	3	3	3	3	3
Max Green 1	31	58	10	45	32	39	24	31
Yellow	4	4	4	4	4	4	4	4
Red Clearance	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Ped SG Number				106				
Walk				8				
Flashing Don't Walk				36				

2039 After Development – 8 Lanes & Triple Lefts – AM Peak Hour



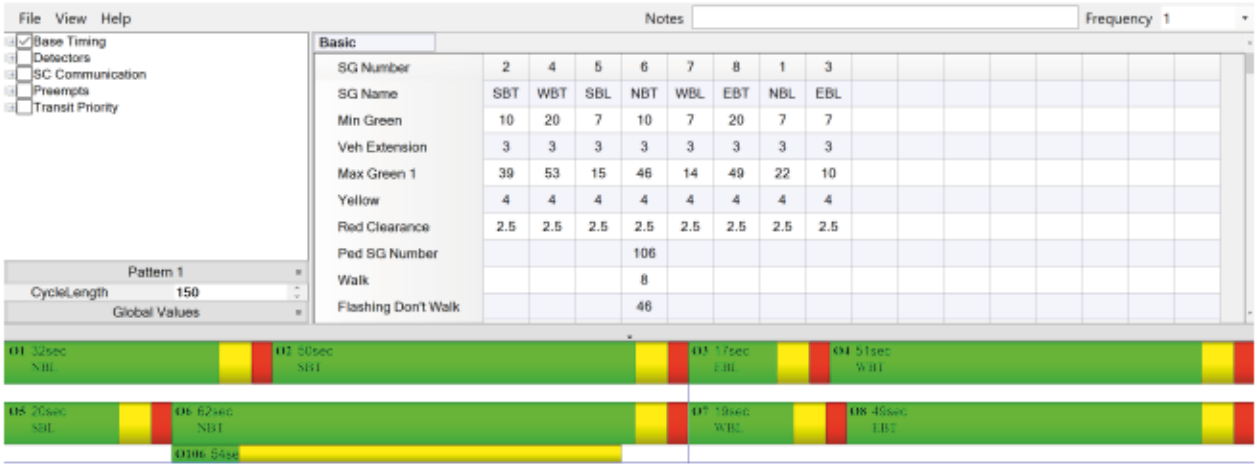
SG Number	2	4	5	6	7	8	1	3
SG Name	SBT	WBT	SBL	NBT	WBL	EBT	NBL	EBL
Min Green	10	20	7	10	7	20	7	7
Veh Extension	3	3	3	3	3	3	3	3
Max Green 1	39	53	15	46	14	49	22	10
Yellow	4	4	4	4	4	4	4	4
Red Clearance	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Ped SG Number				106				
Walk				8				
Flashing Don't Walk				46				

2039 After Development – 8 Lanes & Triple Lefts – PM Peak Hour



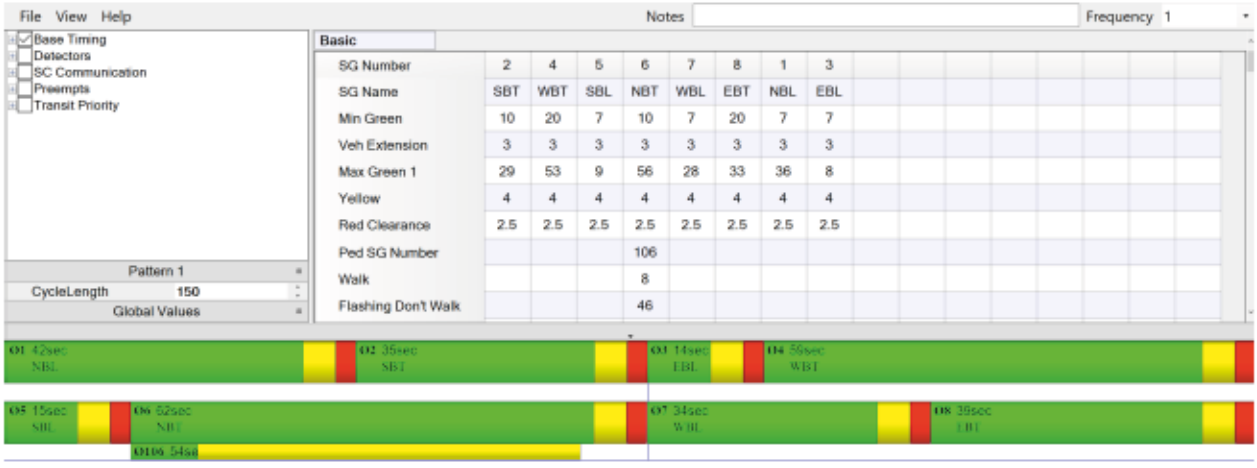
SG Number	2	4	5	6	7	8	1	3
SG Name	SBT	WBT	SBL	NBT	WBL	EBT	NBL	EBL
Min Green	10	20	7	10	7	20	7	7
Veh Extension	3	3	3	3	3	3	3	3
Max Green 1	29	53	9	56	28	33	36	8
Yellow	4	4	4	4	4	4	4	4
Red Clearance	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Ped SG Number				106				
Walk				8				
Flashing Don't Walk				46				

2048 After Development – 8 Lanes & Triple Lefts – AM Peak Hour



SG Number	2	4	5	6	7	8	1	3
SG Name	SBT	WBT	SBL	NBT	WBL	EBT	NBL	EBL
Min Green	10	20	7	10	7	20	7	7
Veh Extension	3	3	3	3	3	3	3	3
Max Green 1	39	53	15	46	14	49	22	10
Yellow	4	4	4	4	4	4	4	4
Red Clearance	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Ped SG Number				106				
Walk				8				
Flashing Don't Walk				46				

2048 After Development – 8 Lanes & Triple Lefts – PM Peak Hour



SG Number	2	4	5	6	7	8	1	3
SG Name	SBT	WBT	SBL	NBT	WBL	EBT	NBL	EBL
Min Green	10	20	7	10	7	20	7	7
Veh Extension	3	3	3	3	3	3	3	3
Max Green 1	29	53	9	56	28	33	36	8
Yellow	4	4	4	4	4	4	4	4
Red Clearance	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Ped SG Number				106				
Walk				8				
Flashing Don't Walk				46				

APPENDIX D

CAP-X Results Summary

Capacity Analysis for Planning of Junctions

Dynamic Results Summary

2028 After Development - AM Peak Hour - Initial Options

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
Partial Cloverleaf A N-S	0.32	1	3.68	4.17
Diamond N-S	0.41	2	4.00	4.83
Partial Cloverleaf B N-S	0.46	3	2.94	4.17
Quadrant Roadway N-E	0.65	4	3.76	4.32
Quadrant Roadway S-W	0.70	5	3.76	4.32
Quadrant Roadway N-W	0.87	6	4.06	4.32
Displaced Left Turn	0.90	7	2.90	3.83
Quadrant Roadway S-E	1.06	8	3.98	4.32
Partial Displaced Left Turn E-W	1.11	9	3.22	3.16
Traffic Signal	1.17	10	3.58	4.32

Capacity Analysis for Planning of Junctions

Dynamic Results Summary

2028 After Development - AM Peak Hour - Top 10 Intersection Options

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
Partial Cloverleaf A N-S	0.32	1	3.68	4.17
Diamond N-S	0.41	2	4.00	4.83
Partial Cloverleaf B N-S	0.46	3	2.94	4.17
Quadrant Roadway N-E	0.65	4	3.76	4.32
Quadrant Roadway S-W	0.70	5	3.76	4.32
Quadrant Roadway N-W	0.87	6	4.06	4.32
Displaced Left Turn	0.90	7	2.90	3.83
Quadrant Roadway S-E	1.06	8	3.98	4.32
Displaced Left Turn (Interchange) N-S	1.07	9	3.25	4.17
Partial Displaced Left Turn E-W	1.11	10	3.22	3.16

Capacity Analysis for Planning of Junctions

Dynamic Results Summary

2028 After Development - PM Peak Hour - Initial Options

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
Partial Cloverleaf B N-S	0.30	1	2.87	4.17
Partial Cloverleaf A N-S	0.44	2	3.56	4.17
Displaced Left Turn	0.64	3	2.86	3.83
Partial Displaced Left Turn E-W	0.69	4	3.07	3.16
Diamond N-S	0.76	5	4.00	4.83
Quadrant Roadway S-W	0.85	6	3.76	4.32
Quadrant Roadway S-E	0.87	7	3.98	4.32
Quadrant Roadway N-W	0.91	8	4.06	4.32
Traffic Signal	0.94	9	3.42	4.32
Quadrant Roadway N-E	1.24	10	3.76	4.32

Capacity Analysis for Planning of Junctions

Dynamic Results Summary

2028 After Development - PM Peak Hour - Top 10 Intersection Options

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
Partial Cloverleaf B N-S	0.30	1	2.87	4.17
Partial Cloverleaf A N-S	0.44	2	3.56	4.17
Displaced Left Turn	0.64	3	2.86	3.83
Partial Displaced Left Turn E-W	0.69	4	3.07	3.16
Diamond N-S	0.76	5	4.00	4.83
Quadrant Roadway S-W	0.85	6	3.76	4.32
Quadrant Roadway S-E	0.87	7	3.98	4.32
Quadrant Roadway N-W	0.91	8	4.06	4.32
Traffic Signal	0.94	9	3.42	4.32
Signalized ThruCut E-W	0.97	10	3.42	4.49

Capacity Analysis for Planning of Junctions

Dynamic Results Summary

2039 After Development - AM Peak Hour - Initial Options

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
Partial Cloverleaf A N-S	0.39	1	3.62	4.17
Partial Cloverleaf B N-S	0.50	2	2.91	4.17
Diamond N-S	0.53	3	4.00	4.83
Quadrant Roadway N-E	0.89	4	3.76	4.32
Quadrant Roadway S-W	0.96	5	3.76	4.32
Displaced Left Turn	1.04	6	2.84	3.65
Quadrant Roadway N-W	1.21	7	4.06	4.32
Quadrant Roadway S-E	1.26	8	3.98	4.32
Partial Displaced Left Turn E-W	1.26	8	3.15	2.98
Traffic Signal	1.62	10	3.50	4.23

Capacity Analysis for Planning of Junctions

Dynamic Results Summary

2039 After Development - AM Peak Hour - Top 10 Intersection Options

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
Partial Cloverleaf A N-S	0.39	1	3.62	4.17
Partial Cloverleaf B N-S	0.50	2	2.91	4.17
Diamond N-S	0.53	3	4.00	4.83
Quadrant Roadway N-E	0.89	4	3.76	4.32
Quadrant Roadway S-W	0.96	5	3.76	4.32
Displaced Left Turn	1.04	6	2.84	3.65
Quadrant Roadway N-W	1.21	7	4.06	4.32
Quadrant Roadway S-E	1.26	8	3.98	4.32
Partial Displaced Left Turn E-W	1.26	8	3.15	2.98
Median U-Turn E-W	1.37	10	2.79	4.32

Capacity Analysis for Planning of Junctions

Dynamic Results Summary

2039 After Development - PM Peak Hour - Initial Options

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
Partial Cloverleaf B N-S	0.37	1	2.86	4.17
Partial Cloverleaf A N-S	0.60	2	3.49	4.17
Displaced Left Turn	0.73	3	2.81	3.65
Partial Displaced Left Turn E-W	0.82	4	3.07	2.98
Diamond N-S	1.08	5	3.93	4.83
Quadrant Roadway S-W	1.15	6	3.76	4.32
Quadrant Roadway N-W	1.21	7	4.06	4.32
Quadrant Roadway S-E	1.23	8	3.98	4.32
Traffic Signal	1.31	9	3.42	4.23
Quadrant Roadway N-E	1.68	10	3.76	4.32

Capacity Analysis for Planning of Junctions

Dynamic Results Summary

2039 After Development - PM Peak Hour - Top 10 Intersection Options

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
Partial Cloverleaf B N-S	0.37	1	2.86	4.17
Partial Cloverleaf A N-S	0.60	2	3.49	4.17
Displaced Left Turn	0.73	3	2.81	3.65
Partial Displaced Left Turn E-W	0.82	4	3.07	2.98
Diamond N-S	1.08	5	3.93	4.83
Quadrant Roadway S-W	1.15	6	3.76	4.32
Quadrant Roadway N-W	1.21	7	4.06	4.32
Quadrant Roadway S-E	1.23	8	3.98	4.32
Signalized ThruCut E-W	1.23	8	3.34	4.32
Traffic Signal	1.31	10	3.42	4.23

Capacity Analysis for Planning of Junctions

Dynamic Results Summary

2048 After Development - AM Peak Hour - Initial Options

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
Partial Cloverleaf A N-S	0.42	1	3.62	4.17
Partial Cloverleaf B N-S	0.51	2	2.91	4.17
Diamond N-S	0.56	3	4.00	4.83
Quadrant Roadway N-E	0.89	4	3.76	4.32
Quadrant Roadway S-W	0.96	5	3.76	4.32
Displaced Left Turn	1.01	6	2.84	3.65
Quadrant Roadway N-W	1.19	7	4.06	4.32
Partial Displaced Left Turn E-W	1.22	8	3.15	2.98
Quadrant Roadway S-E	1.23	9	3.98	4.32
Traffic Signal	1.59	10	3.50	4.23

Capacity Analysis for Planning of Junctions

Dynamic Results Summary

2048 After Development - AM Peak Hour - Top 10 Intersection Options

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
Partial Cloverleaf A N-S	0.42	1	3.62	4.17
Partial Cloverleaf B N-S	0.51	2	2.91	4.17
Diamond N-S	0.56	3	4.00	4.83
Quadrant Roadway N-E	0.89	4	3.76	4.32
Quadrant Roadway S-W	0.96	5	3.76	4.32
Displaced Left Turn	1.01	6	2.84	3.65
Quadrant Roadway N-W	1.19	7	4.06	4.32
Partial Displaced Left Turn E-W	1.22	8	3.15	2.98
Quadrant Roadway S-E	1.23	9	3.98	4.32
Median U-Turn E-W	1.43	10	2.79	4.32

Capacity Analysis for Planning of Junctions

Dynamic Results Summary

2048 After Development - PM Peak Hour - Initial Options

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
Partial Cloverleaf B N-S	0.41	1	2.86	4.17
Partial Cloverleaf A N-S	0.63	2	3.49	4.17
Displaced Left Turn	0.76	3	2.81	3.65
Partial Displaced Left Turn E-W	0.81	4	3.07	2.98
Diamond N-S	0.97	5	3.93	4.83
Quadrant Roadway S-W	1.22	6	3.76	4.32
Traffic Signal	1.28	7	3.42	4.23
Quadrant Roadway S-E	1.31	8	3.98	4.32
Quadrant Roadway N-W	1.31	8	4.06	4.32
Quadrant Roadway N-E	1.66	10	3.76	4.32

Capacity Analysis for Planning of Junctions

Dynamic Results Summary

2048 After Development - PM Peak Hour - Top 10 Intersection Options

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
Partial Cloverleaf B N-S	0.41	1	2.86	4.17
Partial Cloverleaf A N-S	0.63	2	3.49	4.17
Displaced Left Turn	0.76	3	2.81	3.65
Partial Displaced Left Turn E-W	0.81	4	3.07	2.98
Diamond N-S	0.97	5	3.93	4.83
Quadrant Roadway S-W	1.22	6	3.76	4.32
Traffic Signal	1.28	7	3.42	4.23
Quadrant Roadway S-E	1.31	8	3.98	4.32
Quadrant Roadway N-W	1.31	8	4.06	4.32
Signalized ThruCut E-W	1.33	10	3.34	4.32

APPENDIX E

Synchro CFI Results

Synchro CFI Analysis – East leg pedestrian crossing

The After Development analysis for the Highway 1A & 12 Mile Coulee Road CFI for the 2028, 2039, and 2048 horizons is summarized in the following three tables. Analysis is based on the volumes illustrated in **Exhibit 3.1**, **Exhibit 3.2**, and **Exhibit 3.3**.

This scenario includes a pedestrian crossing on the east leg. This reflects the location of the crossing in the existing intersection. Signal timing reflects an accommodation for a pedestrian crossing of all lanes on the east leg of the intersection operating at the same time as the northbound through movement.

Table E.1: 2028 After Development Intersection Analysis – CFI – Ped crossing east leg

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.03	C	26	12	0.10	B	13	22
	EBT	2	0.98	D	54	395	0.54	B	19	133
	EBR	1	0.08	A	0	<5	0.15	A	0	<5
	WBL	2	0.25	C	26	64	0.46	B	17	101
	WBT	2	0.52	C	30	167	0.79	C	26	244
	WBR	1	0.13	A	0	<5	0.44	A	1	<5
	NBL	2	0.64	E	77	30	0.74	E	77	43
	NBT	2	0.52	E	58	36	0.69	E	67	54
	NBR	1	0.63	A	2	<5	0.44	A	1	<5
	SBL	2	0.94	E	76	118	0.81	E	79	54
	SBT	2	0.15	D	36	18	0.82	E	72	73
	SBR	1	0.07	A	0	<5	0.15	A	0	<5
	Overall		-	D	37.2	-	-	C	24.1	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.11	D	45	12	0.73	E	77	43
	WBT	2	0.38	A	6	54	0.67	A	3	<5
	Overall		-	A	3.3	-	-	A	6.0	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	2	0.91	C	20	257	0.71	B	18	198
	WBL	2	0.87	E	71	68	0.90	E	58	143
	Overall		-	B	16.2	-	-	B	15.3	-

All intersection movements operate below acceptable capacity limits. It is noted that certain movements such as the southbound left movement at the main intersection operate with high volume to capacity ratios.

Table E.2: 2039 After Development Intersection Analysis – CFI – Ped crossing east leg

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.52	A	0	<5	0.12	A	2	<5
	EBT	3	1.04	E	63	345	0.58	C	22	135
	EBR	1	0.12	A	0	<5	0.18	A	0	<5
	WBL	2	0.52	A	1	<5	0.74	A	10	39
	WBT	3	0.40	C	22	80	0.94	D	37	309
	WBR	1	0.16	A	0	<5	0.62	A	2	<5
	NBL	2	0.73	F	83	39	0.80	E	79	53
	NBT	2	0.80	E	77	62	0.68	E	62	61
	NBR	1	0.80	A	5	<5	0.55	A	2	<5
	SBL	2	1.03	F	101	143	0.96	F	99	83
	SBT	2	0.23	D	45	32	0.83	E	69	84
	SBR	1	0.07	A	0	<5	0.20	A	0	<5
	Overall		-	D	41.3	-	-	C	26.6	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.61	E	80	27	0.73	E	78	41
	WBT	3	0.30	A	0	<5	0.73	A	3	<5
	Overall		-	A	2.6	-	-	A	4.9	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	0.99	B	18	294	0.52	B	16	124
	WBL	2	0.93	E	79	114	0.87	D	53	138
	Overall		-	B	17.0	-	-	B	13.5	-

Certain movements in this scenario (eastbound through and southbound left) show v/c ratios stating that they are operating above capacity during the AM peak hour. It is noted that certain movements such as the southbound left and northbound left movement at the main intersection operate with LOS F. The northbound left movement can be deemed as acceptable due to the accompanying low v/c ratio. But it is noted that the overall intersection results show that each intersection is operating within acceptable capacity limits despite the delays present for certain movements.

Table E.3: 2048 After Development Intersection Analysis – CFI – Ped crossing east leg

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.07	A	0	<5	0.10	A	7	<5
	EBT	3	1.03	E	57	359	0.64	C	27	177
	EBR	1	0.12	A	0	<5	0.17	A	0	<5
	WBL	2	0.38	A	2	<5	0.79	A	5	256
	WBT	3	0.43	C	21	89	1.08	E	75	430
	WBR	1	0.19	A	0	<5	0.57	A	1	<5
	NBL	2	0.73	F	83	41	0.84	F	84	63
	NBT	2	0.81	E	80	65	0.44	D	51	50
	NBR	1	0.76	A	4	<5	0.59	A	2	<5
	SBL	2	0.15	F	140	157	1.33	F	222	102
	SBT	2	0.28	D	50	38	0.82	E	70	90
	SBR	1	0.07	A	0	<5	0.24	A	0	<5
	Overall		-	D	42.2	-	-	D	42.0	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.64	F	83	30	0.72	F	84	40
	WBT	3	0.60	A	0	<5	0.80	A	8	73
	Overall		-	A	2.8	-	-	A	7.0	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	1.00	B	19	302	0.91	C	30	198
	WBL	2	1.01	F	96	145	0.96	E	57	254
	Overall		-	B	20	-	-	B	18	-

Multiple movements in this scenario display v/c ratios above 1.00 and LOS greater than F in the AM and PM peak hours. But it is noted again that the overall intersection results show that each intersection is operating within acceptable capacity limits despite the delays present for certain movements. The westbound left movement is also exceeding the provided storage length of 250m as set in the drawings received from ISL[3]. This storage length should be modified if possible to accommodate a slightly longer queue that may form during the peak hours.

The 2048 AM peak hour shows both movements at the at the east intersection to be operating over a v/c of 1.00. Additional through lanes on Crowchild trail could solve this issue.

[3] *12MC – LSFPS – Draft Geometric Concepts – 221222*, ISL Engineering and Land Services Ltd., 2023.

Synchro CFI Analysis – West and North Pedestrian Phase

As seen in the analysis above, the southbound left movement is frequently operating at, or over, capacity. The pedestrian crossing on the east leg of the main intersection runs at the same time as the northbound through phase. This limits the amount of time available for the conflicting southbound left movement which must run wither before or after the northbound through and pedestrian phase. Moving the pedestrian crossing to the west leg of the intersection allows for a greater amount of time to be provided to the southbound left movement. Pedestrian crossing to the west side of Twelve Mile Coulee Road can occur at the crossing on the north leg of the intersection or at the roundabout which will be built to the south of the Crowchild Trial/Highway 1A intersection. The After Development analysis for the Highway 1A & 12 Mile Coulee Road CFI for the 2028, 2039, and 2048 horizons is summarized in the following three tables. Analysis is based on the volumes illustrated in **Exhibit 3.1**, **Exhibit 3.2**, and **Exhibit 3.3**.

Table E.4: 2028 After Development Intersection Analysis – CFI – Ped crossing west and north leg

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.03	A	0	<5	0.10	B	12	21
	EBT	2	0.91	D	40	298	0.54	A	18	130
	EBR	1	0.08	A	0	<5	0.15	C	0	<5
	WBL	2	0.23	A	2	<5	0.46	B	17	100
	WBT	2	0.48	C	24	111	0.79	C	26	240
	WBR	1	0.13	A	0	<5	0.44	A	1	<5
	NBL	2	0.66	E	79	30	0.75	E	79	43
	NBT	2	0.76	E	77	48	0.70	E	68	55
	NBR	1	0.63	A	2	<5	0.44	A	1	<5
	SBL	2	0.90	E	70	106	0.80	E	78	53
	SBT	2	0.18	D	41	24	0.82	E	72	72
	SBR	1	0.07	A	0	<5	0.15	A	0	<5
	Overall		-	C	30.6	-	-	C	24.1	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.12	D	55	13	0.73	E	77	43
	WBT	2	0.36	A	0	<5	0.41	A	2	<5
	Overall		-	A	1.5	-	-	A	5.7	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	2	0.88	B	11	266	0.70	B	18	197
	WBL	2	0.86	E	78	72	0.90	E	58	143
	Overall		-	B	12.2	-	-	B	15.3	-

All intersection movements operate below acceptable capacity limits. It is noted that the southbound left movement functions with a lower v/c ratio with the pedestrian crossing on the west leg of the road instead of the east leg. This allows for a shorter minimum split to be assigned to the northbound through movement which runs at the same time as the pedestrian phase. This allows more time to be allotted to the southbound left movement.

Table E.5: 2039 After Development Intersection Analysis – CFI – Ped crossing west and north leg

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.07	A	0	<5	0.11	A	5	<5
	EBT	3	1.07	E	72	369	0.59	C	22	125
	EBR	1	0.12	A	0	<5	0.18	A	0	<5
	WBL	2	0.36	A	2	<5	0.75	B	10	38
	WBT	3	0.41	C	24	87	0.95	D	38	290
	WBR	1	0.16	A	0	<5	0.62	A	2	<5
	NBL	2	0.80	F	94	43	0.83	E	79	54
	NBT	2	0.82	E	82	64	0.76	E	65	61
	NBR	1	0.80	A	5	<5	0.55	A	2	<5
	SBL	2	0.91	F	80	129	0.85	E	73	63
	SBT	2	0.21	D	43	31	0.82	E	64	77
	SBR	1	0.07	A	0	<5	0.20	A	0	<5
	Overall		-	D	43.6	-	-	C	25.9	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.62	F	83	28	0.72	E	72	38
	WBT	3	0.30	A	0	<5	0.74	A	4	28
	Overall		-		2.7	-	-	A	5.1	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	0.97	B	14	331	0.52	B	16	118
	WBL	2	0.98	F	91	130	0.89	D	53	131
	Overall		-	B	16	-	-	B	13.1	-

The Eastbound through movement in the AM peak hour shows a v/c ratio over 1.0. This can be remedied with an additional through lane if desired. It is noted that many of the LOS Fs are due to a high delay despite the presence of a low v/c ratio for the movement. This can be expected at major intersection such as this and can be seen in numerous other existing locations throughout the City of Calgary. Despite operating above capacity for certain movements the overall intersections continue to operate below acceptable capacity parameters.

Table E.6: 2048 After Development Intersection Analysis – CFI – Ped crossing west and north leg

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.07	A	0	<5	0.10	A	8	30
	EBT	3	1.10	F	87	387	0.64	C	27	182
	EBR	1	0.12	A	0	<5	0.17	A	0	<5
	WBL	2	0.40	A	2	<5	0.79	A	5	256
	WBT	3	0.46	C	25	100	1.08	E	71	437
	WBR	1	0.19	A	0	<5	0.57	A	1	<5
	NBL	2	0.73	F	84	41	1.02	F	122	82
	NBT	2	0.82	F	81	66	0.57	E	61	55
	NBR	1	0.76	A	4	<5	0.59	A	2	<5
	SBL	2	0.94	F	80	129	0.85	F	83	69
	SBT	2	0.24	D	45	36	0.78	E	64	82
	SBR	1	0.07	A	0	<5	0.24	A	0	<5
	Overall		-	D	48.1	-	-	D	37.3	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.64	F	83	30	0.72	F	84	40
	WBT	3	0.33	A	0	<5	0.80	A	7	103
	Overall		-	A	2.8	-	-	A	6.8	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	1.00	B	19	328	0.93	D	38	223
	WBL	2	1.01	F	96	145	0.97	E	59	257
	Overall		-	B	19.7	-	-	C	20.3	-

The Eastbound through movement in the AM peak hour again shows a v/c ratio over 1.0. This can be remedied with an additional through lane if desired. It is noted that many of the LOS Fs are due to a high delay despite the presence of a low v/c ratio for the movement. This can be expected at major intersection such as this and can be seen in numerous other existing locations throughout the City of Calgary. Despite operating above capacity for certain movements the overall intersections continue to operate below acceptable capacity parameters. The westbound left movement is also exceeding the provided storage length of 250m as set in the drawings received from ISL. This storage length should be modified if possible to accommodate a slightly longer queue that may form during the peak hours.

The 2048 AM peak hour shows both movements at the at the east intersection to be operating over a v/c of 1.00. Additional through lanes on Crowchild Trail could solve this issue.

Synchro CFI Analysis – East leg pedestrian crossing with triple Southbound left turn and split north/south phase

The addition of a third southbound left turn lane was assessed as an alternative to attempt to solve the capacity issues seen with this movement. The addition of a third turn lane also required a split phase to be used for the north and south movements. Note that the 2028 horizon did not require three southbound left lanes, although it would still benefit from the addition. The After Development analysis for the Highway 1A & 12 Mile Coulee Road CFI for the 2028, 2039, and 2048 horizons is summarized in the following three tables. The analysis is based on the volumes illustrated in **Exhibit 3.1**, **Exhibit 3.2**, and **Exhibit 3.3**.

Table E.7: 2028 After Development Intersection Analysis – CFI – Ped crossing east leg, split north/south phase

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.03	B	19	8	0.12	C	0	<5
	EBT	2	0.95	D	45	282	0.63	C	29	183
	EBR	1	0.08	A	0	<5	0.15	A	0	<5
	WBL	2	0.24	A	2	<5	0.53	B	19	175
	WBT	2	0.51	C	24	105	0.92	D	40	347
	WBR	1	0.13	A	0	<5	0.44	A	1	<5
	NBL	2	0.42	E	59	27	0.44	E	59	34
	NBT	2	0.75	E	71	46	0.59	E	63	46
	NBR	1	0.63	A	2	<5	0.44	A	1	<5
	SBL	2	0.91	E	67	102	0.48	E	60	68
	SBT	2	0.20	D	42	25	0.69	E	65	113
	SBR	1	0.07	A	0	<5	0.15	A	0	0
	Overall		-	C	31.3	-	-	C	27.2	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.05	B	15.2	6	0.74	F	83	46
	WBT	2	0.38	A	7.8	62	0.66	A	3	56
	Overall		-	A	3.3	-	-	A	6.6	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	2	0.89	A	10	245	0.71	B	10	51
	WBL	2	0.88	E	77	74	0.86	E	57	147
	Overall		-	B	11.3	-	-	B	13.0	-

All intersection movements operate below acceptable capacity limits. It is noted that the southbound left movement functions with a lower v/c ratio with the addition of split phasing. A triple southbound left was not required at the 2028 phase but would further improve performance.

Table E.8: 2039 After Development Intersection Analysis – CFI – Ped crossing east leg, split north/south phase

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.06	A	0	<5	0.13	A	1	<5
	EBT	3	0.98	D	43	356	0.63	C	30	186
	EBR	1	0.12	A	0	<5	0.18	A	0	<5
	WBL	2	0.34	B	16	103	0.80	C	30	296
	WBT	3	0.38	B	20	82	1.02	E	57	405
	WBR	1	0.16	A	0	<5	0.62	A	2	<5
	NBL	2	0.46	E	65	37	0.51	E	59	42
	NBT	2	0.80	E	80	63	0.66	E	64	55
	NBR	1	0.80	A	5	<5	0.55	A	2	<5
	SBL	3	0.84	E	71	80	0.48	E	60	47
	SBT	2	0.33	E	56	36	0.88	E	79	104
	SBR	1	0.07	A	0	<5	0.20	A	0	<5
	Overall		-	C	32.6	-	-	C	34.6	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.62	F	83	28	0.74	F	84	43
	WBT	3	0.30	A	1	<5	0.72	A	5	117
	Overall		-	A	2.8	-	-	A	6	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	0.97	B	12	118	0.51	A	7	34
	WBL	2	0.98	F	91	130	0.87	E	57	148
	Overall		-	B	15.4	-	-	B	11.9	-

All intersection movements operate below acceptable capacity limits. It is noted that the southbound left movement functions with a lower v/c ratio with the addition of split phasing and the addition of a third lane. The westbound left movement is also exceeding the provided storage length of 250m as set in the drawings received from ISL (**Figure 3.1**). This storage length should be modified if possible to accommodate a slightly longer queue that may form during the peak hours.

As noted before, many of the LOS Fs are due to a high delay despite the presence of a low v/c ratio for the movement. This can be expected at major intersection such as this and can be seen in numerous other existing locations throughout the City of Calgary.

Table E.9: 2048 After Development Intersection Analysis – CFI – Ped crossing east leg, split north/south phase

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.07	B	18	17	0.10	A	9	<5
	EBT	3	1.02	E	56	377	0.65	C	27	170
	EBR	1	0.12	A	0	<5	0.17	A	0	<5
	WBL	2	0.38	C	21	82	0.80	C	22	242
	WBT	3	0.43	C	0	96	1.09	E	80	418
	WBR	1	0.19	A	65	<5	0.57	A	1	<5
	NBL	2	0.47	E	80	39	0.80	E	79	61
	NBT	2	0.81	E	4	65	0.80	E	79	63
	NBR	1	0.76	A	71	<5	0.59	A	2	<5
	SBL	3	0.84	E	57	80	0.60	E	61	63
	SBT	2	0.37	E	0	39	0.85	E	74	96
	SBR	1	0.07	A	18	<5	0.24	A	0	<5
	Overall		-	D	37.9	-	-	D	41.2	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.63	F	80	29	0.72	F	84	40
	WBT	3	0.33	A	3	36	0.80	A	8	51
	Overall		-	A	3.6	-	-	A	7.3	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	1.01	D	42	395	0.93	C	29	238
	WBL	2	0.99	F	90	140	0.97	E	59	258
	Overall		-	C	31.2	-	-	B	18.3	-

In the 2048 horizon all movements except for the westbound through movement in the PM peak at the main intersection are operating within acceptable capacity parameter. Individual movements at the east and west intersection are operating above acceptable capacity limits. But each intersection is overall operating within acceptable limits with no overall intersection displaying a Level of Service over a D.

The 2048 AM peak hour shows both movements at the at the east intersection to be operating over a v/c of 1.00 or very close. Additional through lanes on Crowchild trail could solve this issue.

Synchro CFI Analysis – East leg staged pedestrian crossing

An additional analysis was conducted to assess the operational improvements of using a staged pedestrian crossing. With this arrangement pedestrians would cross in two stages. First crossing the westbound left and eastbound through lanes in one pedestrian phase and then crossing the westbound through lanes in a second pedestrian phase or vice-versa. A normal full traffic cycle would run in between the two pedestrian phases. This again provided a greater amount of time to be allocated to the southbound left movement. This would not provide the ideal environment for pedestrians, but due to the low pedestrian volumes present in existing counts this was considered to be an appropriate option to review to determine the impact to improve traffic operation at a congested intersection. The After Development analysis for the Highway 1A & 12 Mile Coulee Road CFI for the 2028, 2039, and 2048 horizons is summarized in the following three tables. The analysis is based on the volumes illustrated in **Exhibit 3.1**, **Exhibit 3.2**, and **Exhibit 3.3**.

Table E.10: 2028 After Development Intersection Analysis – CFI – Staged ped crossing east leg

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.03	A	1	0	0.11	A	1	<5
	EBT	2	0.97	D	48	345	0.56	B	18	122
	EBR	1	0.08	A	0	<5	0.15	A	0	<5
	WBL	2	0.25	A	1	<5	0.48	A	1	<5
	WBT	2	0.51	C	27	131	0.82	C	25	225
	WBR	1	0.13	A	0	<5	0.44	A	1	<5
	NBL	2	0.63	E	74	29	0.74	E	71	40
	NBT	2	0.61	E	62	41	0.66	E	59	49
	NBR	1	0.63	A	2	<5	0.44	A	1	<5
	SBL	2	0.90	E	69	104	0.84	E	78	55
	SBT	2	0.16	D	36	20	0.81	E	66	66
	SBR	1	0.07	A	0	<5	0.15	A	0	<5
	Overall		-	C	32.2	-	-	C	20.4	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.12	D	52	13	0.71	E	68	38
	WBT	2	0.51	A	1	<5	0.69	A	3	<5
	Overall		-	A	1.5	-	-	A	5.7	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	2	0.89	B	13	181	0.72	B	17	178
	WBL	2	0.88	E	79	75	0.90	D	53	129
	Overall		-	A	13.0	-	-	B	14	-

All intersection movements operate below acceptable capacity limits. Staging the pedestrian crossing allows for more time to be allocated to the southbound left phase as the directly conflicting northbound through phase is no longer required to be extended to accommodate the full pedestrian crossing.

Table E.11: 2039 After Development Intersection Analysis – CFI – Staged ped crossing east leg

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.07	A	0	<5	0.11	C	28	44
	EBT	3	1.03	E	59	351	0.58	C	22	134
	EBR	1	0.12	A	0	<5	0.18	A	0	<5
	WBL	2	0.35	B	15	118	0.73	D	53	223
	WBT	3	0.40	C	22	81	0.93	D	36	307
	WBR	1	0.16	A	0	<5	0.62	A	2	<5
	NBL	2	0.75	F	87	40	0.80	E	79	53
	NBT	2	0.82	F	81	64	0.77	E	70	64
	NBR	1	0.80	A	5	<5	0.55	A	2	<5
	SBL	2	1.03	F	102	147	0.86	E	79	68
	SBT	2	0.23	D	47	33	0.86	E	72	84
	SBR	1	0.07	A	0	<5	0.20	A	0	<5
	Overall		-	D	41.3	-	-	C	32.6	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.62	F	83	28	0.73	E	78	41
	WBT	3	0.30	A	0	<5	0.73	A	8	45
	Overall		-	A	2.7	-	-	A	7.6	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	0.99	B	14	84	0.52	C	21	95
	WBL	2	0.92	E	79	111	0.87	D	53	138
	Overall		-	B	15.0	-	-	B	14.8	-

The southbound left movement is operating over capacity. Individual movements are operating above acceptable capacity limits. But each intersection is overall operating within acceptable limits with no overall intersection displaying a Level of Service over a D.

Table E.12: 2048 After Development Intersection Analysis – CFI – Staged ped crossing east leg

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.07	F	0	<5	0.10	B	14	<5
	EBT	3	1.06	E	70	369	0.61	C	23	146
	EBR	1	0.44	A	0	<5	0.17	A	0	<5
	WBL	2	0.38	A	1	<5	0.75	A	3	<5
	WBT	3	0.44	C	23	93	1.03	D	54	377
	WBR	1	0.19	A	0	<5	0.57	A	1	<5
	NBL	2	0.75	F	86	42	0.95	F	105	78
	NBT	2	0.82	F	81	66	0.60	E	63	60
	NBR	1	0.76	A	4	<5	0.59	A	2	<5
	SBL	2	1.03	F	102	147	0.95	F	101	85
	SBT	2	0.26	D	47	37	0.88	E	78	97
	SBR	1	0.06	A	0	<5	0.24	A	0	<5
	Overall		-	D	44.0	-	-	C	32.6	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.64	F	84	30	0.72	F	84	40
	WBT	3	0.33	A	0	<5	0.80	A	6	25
	Overall		-	A	2.8	-	-	A	6.3	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	1.00	C	20	300	0.93	D	39	211
	WBL	2	1.01	F	30	146	0.97	E	59	258
	Overall		-	C	20.2	-	-	C	21	-

The southbound left movement in the AM peak our and the westbound through movement in the PM peak hour are operating above capacity. Individual movements are operating above acceptable capacity limits. But each intersection is overall operating within acceptable limits with no overall intersection displaying a Level of Service over a D.

The 2048 AM peak hour shows both movements at the at the east intersection to be operating over a v/c of 1.00. Additional through lanes on Crowchild Trail could solve this issue.

Synchro CFI Analysis – West and north leg staged pedestrian crossing

The scenario discussed in the previous section was also analyzed with the pedestrian crossing moved to the west and north legs. The After Development analysis for the Highway 1A & 12 Mile Coulee Road CFI for the 2028, 2039, and 2048 horizons is summarized in the following three tables. The analysis is based on the volumes illustrated in **Exhibit 3.1**, **Exhibit 3.2**, and **Exhibit 3.3**.

Table E.13: 2028 After Development Intersection Analysis – CFI – Staged ped crossing west and north leg

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.03	A	9	<5	0.11	A	0	<5
	EBT	2	0.93	D	38	251	0.59	B	18	114
	EBR	1	0.08	A	0	<5	0.15	A	0	<5
	WBL	2	0.23	A	8	<5	0.50	A	0	<5
	WBT	2	0.49	C	22	92	0.86	C	26	227
	WBR	1	0.13	A	0	<5	0.44	A	1	<5
	NBL	2	0.70	E	77	28	0.81	E	73	42
	NBT	2	0.80	E	75	46	0.71	E	56	45
	NBR	1	0.63	A	2	<5	0.44	A	1	<5
	SBL	2	0.94	E	72	111	0.77	E	62	44
	SBT	2	0.18	D	38	24	0.77	E	55	57
	SBR	1	0.07	A	0	<5	0.15	A	0	<5
	Overall		-	C	30.2	-	-	B	19.4	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.11	D	47	12	0.68	E	59	34
	WBT	2	0.37	B	19	113	0.71	A	3	8
	Overall		-	A	7.7	-	-	A	5.3	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	2	0.90	B	13	324	0.73	B	15	49
	WBL	2	0.88	E	74	72	0.93	D	53	131
	Overall		-	E	13	-	-	B	13.6	-

All intersection movements operate below acceptable capacity limits. The staged pedestrian crossing as well as the adjustment of the crossing location both serve to maintain the southbound left movement operation below capacity.

Table E.14: 2039 After Development Intersection Analysis – CFI – Staged ped crossing west and north leg

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.07	A	0	<5	0.11	A	1	<5
	EBT	3	1.02	E	57	335	0.58	C	22	133
	EBR	1	0.12	A	0	<5	0.18	A	0	<5
	WBL	2	0.35	B	15	118	0.73	A	9	38
	WBT	3	0.39	C	21	76	0.93	D	36	307
	WBR	1	0.16	A	0	<5	0.62	A	2	<5
	NBL	2	0.77	F	90	41	0.80	E	79	53
	NBT	2	0.95	F	104	80	0.77	E	70	64
	NBR	1	0.80	A	5	<5	0.55	A	2	<5
	SBL	2	0.96	F	85	136	0.86	E	79	68
	SBT	2	0.23	D	47	34	0.86	E	72	84
	SBR	1	0.07	A	0	<5	0.20	A	0	<5
	Overall		-	D	40.3	-	-	C	25.9	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.62	F	83	28	0.73	E	78	41
	WBT	3	0.30	A	0	<5	0.73	A	3	287
	Overall		-	A	2.7	-	-	A	4.9	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	0.99	B	13	379	0.52	B	16	126
	WBL	2	0.92	E	79	112	0.87	D	53	138
	Overall		-	B	15	-	-	B	13.6	-

All movements operate with v/c ratios below 1.00, but certain movements have LOS Fs due to higher delays. Higher delays can be expected with the long cycle length that has been used.

Table E.15: 2048 After Development Intersection Analysis – CFI – Staged ped crossing west and north leg

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.07	A	0	<5	0.10	B	17	43
	EBT	3	1.03	E	56	340	0.61	C	23	146
	EBR	1	0.12	A	0	<5	0.17	A	0	<5
	WBL	2	0.38	B	14	108	0.75	A	3	<5
	WBT	3	0.43	C	21	82	1.03	D	55	378
	WBR	1	0.19	A	0	<5	0.57	A	0	<5
	NBL	2	0.83	F	96	48	0.95	F	105	78
	NBT	2	1.05	F	128	88	0.65	E	67	63
	NBR	1	0.76	A	4	<5	0.59	A	2	<5
	SBL	2	1.00	F	94	143	0.85	F	83	69
	SBT	2	0.27	D	49	39	0.88	E	77	96
	SBR	1	0.06	A	0	<5	0.24	A	0	<5
	Overall		-	D	41.4	-	-	C	32.2	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.64	F	83	30	0.72	F	84	40
	WBT	3	0.33	A	0	<5	0.80	A	7	26
	Overall		-	A	2.8	-	-	A	6.4	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	1.00	B	15	75	0.93	D	40	224
	WBL	2	1.01	F	96	145	0.97	E	59	258
	Overall		-	B	17.6	-	-	C	21.0	-

The eastbound through, northbound through and southbound left movements operate with v/c ratios of 1.00 in the AM peak hour. The westbound through movement operates with a high v/c ratio in the PM peak hour. Individual movements are operating above acceptable capacity limits. But each intersection is overall operating within acceptable limits with no overall intersection displaying a Level of Service over a D.

The 2048 AM peak hour shows both movements at the at the east intersection to be operating over a v/c of 1.00. Additional through lanes on Crowchild trail could solve this issue.

Synchro CFI Analysis – East leg staged pedestrian crossing with triple Southbound left turn and split north/south phase

The scenarios discussed in the previous two sections were also analyzed with the addition of a triple southbound left lane and split north/south traffic phases. The After Development analysis for the Highway 1A & 12 Mile Coulee Road CFI for the 2028, 2039, and 2048 horizons is summarized in the following three tables. The analysis is based on the volumes illustrated in **Exhibit 3.1**, **Exhibit 3.2**, and **Exhibit 3.3**.

Table E.16: 2028 After Development Intersection Analysis – CFI – Staged ped crossing east leg, split north/south phase

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.03	A	0	<5	0.48	A	50	45
	EBT	2	0.94	D	45	339	0.63	C	24	137
	EBR	1	0.08	A	0	<5	0.15	A	0	<5
	WBL	2	0.24	B	17	79	0.12	A	7	148
	WBT	2	0.50	C	27	127	0.92	D	36	267
	WBR	1	0.13	A	0	<5	0.44	A	1	<5
	NBL	2	0.36	E	60	26	0.57	E	58	37
	NBT	2	0.64	E	68	44	0.77	E	67	51
	NBR	1	0.63	A	2	<5	0.44	A	1	<5
	SBL	2	0.92	E	74	122	0.48	D	50	46
	SBT	2	0.21	D	47	28	0.67	D	55	66
	SBR	1	0.07	A	0	<5	0.15	A	0	<5
	Overall		-	C	33.6	-	-	C	22.9	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.13	E	58	14	0.71	E	68	39
	WBT	2	0.36	A	1	<5	0.69	A	3	250
	Overall		-	A	1.7	-	-	A	5.6	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	2	0.88	A	9	109	0.72	A	10	96
	WBL	2	0.85	E	78	73	0.90	D	53	129
	Overall		-	B	11.4	-	-	B	12.3	-

All intersection movements operate below acceptable capacity limits.

Table E.17: 2039 After Development Intersection Analysis – CFI – Staged ped crossing east leg, split north/south phase

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.07	A	0	<5	0.12	A	0	<5
	EBT	3	1.00	D	48	352	0.61	C	26	152
	EBR	1	0.12	A	0	<5	0.18	A	0	<5
	WBL	2	0.34	B	13	115	0.77	C	27	237
	WBT	3	0.38	C	20	82	0.98	D	46	342
	WBR	1	0.16	A	0	<5	0.62	A	2	<5
	NBL	2	0.46	E	63	36	0.64	E	67	52
	NBT	2	0.81	E	79	62	0.82	E	77	67
	NBR	1	0.80	A	5	<5	0.55	A	2	<5
	SBL	3	0.84	E	69	77	0.46	E	56	42
	SBT	2	0.33	D	55	34	0.85	E	73	86
	SBR	1	0.07	A	0	<5	0.20	A	0	<5
	Overall		-	C	33.8	-	-	C	30.7	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.61	E	80		0.73	E	80	42
	WBT	3	0.29	A	0		0.39	A	4	47
	Overall		-	A	2.6	-	-	A	5.3	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	0.97	B	11	108	0.52	A	9	105
	WBL	2	0.92	E	77	109	0.87	D	54	142
	Overall		-	B	13.2	-	-	B	11.7	-

The Eastbound through movement in the AM peak hour shows a v/c ratio over 1.0. This can be remedied with an additional through lane if desired. All other movements operate within acceptable capacity parameters.

Table E.18: 2048 After Development Intersection Analysis – CFI – Staged ped crossing east leg, split north/south phase

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.07	A	0	<5	0.10	A	1	<5
	EBT	3	1.01	D	52	370	0.65	C	27	170
	EBR	1	0.12	A	0	<5	0.17	A	0	<5
	WBL	2	0.37	B	15	108	0.57	C	22	242
	WBT	3	0.42	C	21	93	1.09	F	80	417
	WBR	1	0.19	A	0	<5	0.57	A	1	<5
	NBL	2	0.49	E	66	39	0.80	E	80	62
	NBT	2	0.84	F	84	67	0.80	E	80	64
	NBR	1	0.76	A	4	<5	0.59	A	2	<5
	SBL	3	0.84	E	71	80	0.41	E	55	42
	SBT	2	0.37	E	57	40	0.85	E	73	96
	SBR	1	0.07	A	0	<5	0.24	A	0	<5
	Overall		-	D	35.7	-	-	D	41.0	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.64	F	83	30	0.72	F	83	40
	WBT	3	0.33	A	1	<5	0.41	A	7	50
	Overall		-	A	2.8	-	-	A	6.4	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	1.00	B	19	111	0.93	C	30	238
	WBL	2	1.01	F	96	146	0.97	E	59	258
	Overall		-	B	19.6	-	-	B	18.4	-

The eastbound through movement in the AM and the westbound through movement in the PM each show v/c ratios over 1.00.

The 2048 AM peak hour shows both movements at the at the east intersection to be operating over a v/c of 1.00. Additional through lanes on Crowchild Trail could solve this issue.

Synchro CFI Analysis – No pedestrian crossing

The final scenario analyzed was one with no pedestrian crossing at the intersection. This scenario assumes that pedestrians would be re-routed to an alternative crossing method. The After Development analysis for the Highway 1A & 12 Mile Coulee Road CFI for the 2028, 2039, and 2048 horizons is summarized in the following three tables. The analysis is based on the volumes illustrated in **Exhibit 3.1**, **Exhibit 3.2**, and **Exhibit 3.3**.

Table E.19: 2028 After Development Intersection Analysis – CFI – No pedestrian crossing

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.03	B	20	14	0.11	A	9	<5
	EBT	2	0.93	D	37	237	0.56	B	17	109
	EBR	1	0.08	A	0	<5	0.15	A	0	<5
	WBL	2	0.24	A	1	<5	0.47	A	2	<5
	WBT	2	0.49	C	21	86	0.82	C	24	200
	WBR	1	0.13	A	0	<5	0.44	A	1	<5
	NBL	2	0.64	E	69	27	0.77	E	72	39
	NBT	2	0.87	F	83	54	0.73	E	63	50
	NBR	1	0.63	A	2	<5	0.44	A	1	<5
	SBL	2	0.94	E	69	107	0.82	E	73	51
	SBT	2	0.19	D	38	24	0.86	E	69	66
	SBR	1	0.07	A	0	<5	0.15	A	0	<5
	Overall		-	C	29.3	-	-	C	20.4	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.11	D	45	12	0.70	E	66	37
	WBT	2	0.51	A	5	32	0.69	A	4	32
	Overall		-	A	2.7	-	-	A	5.9	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	2	0.91	B	10	229	0.73	C	23	183
	WBL	2	0.87	E	71	68	0.89	D	51	124
	Overall		-	B	11.3	-	-	B	15.2	-

All intersection movements operate below acceptable capacity limits. It is noted that the southbound left movement functions with a lower v/c ratio with the pedestrian crossing on the west leg of the road instead of the east leg. This allows for a shorter minimum split to be assigned to the northbound through movement which runs at the same time as the pedestrian phase. This allows more time to be allotted to the southbound left movement.

Table E.20: 2039 After Development Intersection Analysis – CFI – No pedestrian crossing

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR v/c	AM LOS	AM Delay	AM Queue	PM PEAK HOUR v/c	PM LOS	PM Delay	PM Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.07	A	0	<5	0.11	C	28	44
	EBT	3	1.01	D	53	328	0.58	C	22	134
	EBR	1	0.12	A	0	<5	0.18	A	0	<5
	WBL	2	0.34	B	15	118	0.73	D	53	222
	WBT	3	0.39	C	21	74	0.93	D	36	307
	WBR	1	0.16	A	0	<5	0.62	A	2	<5
	NBL	2	0.75	F	87	40	0.80	E	79	53
	NBT	2	0.99	F	114	84	0.77	E	70	64
	NBR	1	0.79	A	5	<5	0.55	A	2	<5
	SBL	2	0.98	F	88	140	0.86	E	79	68
	SBT	2	0.24	D	49	35	0.86	E	72	84
	SBR	1	0.07	A	0	<5	0.20	A	0	<5
	Overall		-	D	39.3	-	-	C	32.6	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.62	F	83	28	0.73	E	78	41
	WBT	3	0.30	A	0	<5	0.39	A	8	45
	Overall		-	A	2.7	-	-	A	7.6	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	0.99	B	13	379	0.52	C	21	95
	WBL	2	0.92	E	79	112	0.87	D	53	138
	Overall		-	B	14.4	-	-	B	14.8	-

The Eastbound through movement in the AM peak hour shows a v/c ratio over 1.0. This can be remedied with an additional through lane if desired. As noted before, many of the LOS Fs are due to a high delay despite the presence of a low v/c ratio for the movement. This may often be expected at major intersection such as this and can be seen in numerous other existing locations throughout the City of Calgary.

Table E.21: 2048 After Development Intersection Analysis – CFI – No pedestrian crossing

INTERSECTION	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
12 Mile Coulee Road & Highway 1A *(CFI – Main Intersection)* *Synchro*	EBL	2	0.07	A	0	<5	0.09	A	0	0
	EBT	3	1.03	E	56	340	0.59	B	19	120
	EBR	1	0.12	A	0	<5	0.17	A	0	<5
	WBL	2	0.37	B	15	126	0.72	A	3	1
	WBT	3	0.43	C	21	82	0.99	D	40	332
	WBR	1	0.19	A	0	<5	0.57	A	1	<5
	NBL	2	0.75	F	86	42	0.98	F	111	78
	NBT	2	1.05	F	128	87	0.77	E	75	70
	NBR	1	0.76	A	4	<5	0.59	A	2	<5
	SBL	2	1.00	F	94	143	0.90	F	90	77
	SBT	2	0.28	D	51	39	1.05	F	112	121
	SBR	1	0.07	A	0	<5	0.24	A	0	<5
	Overall		-	D	41.3	-	-	C	29.5	-
12 Mile Coulee Road & Highway 1A *(CFI – West Intersection)* *Synchro*	EBL	2	0.64	F	83	30	0.71	E	80	38
	WBT	3	0.33	A	0	<5	0.80	A	2	<5
	Overall		-	A	2.8	-	-	A	3.6	-
12 Mile Coulee Road & Highway 1A *(CFI – East Intersection)* *Synchro*	EBT	3	1.03	C	24	383	0.92	D	40	209
	WBL	2	0.94	E	79	128	0.98	E	60	257
	Overall		-	C	1.03	-	-	C	21.3	-

Individual movements are operating above acceptable capacity limits. But each intersection is overall operating within acceptable limits with no overall intersection displaying a Level of Service over a D.

APPENDIX F

SIDRA Reports

MOVEMENT SUMMARY

Site: [AM 2028 After Development - Op 1 (Site Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	45	2.0	48	2.0	0.384	12.2	LOS B	2.0	15.1	0.58	0.65	0.58	58.0
8	T1	609	2.0	648	2.0	0.384	6.2	LOS A	2.0	15.2	0.58	0.63	0.58	58.2
18	R2	10	2.0	11	2.0	0.384	6.4	LOS A	2.0	15.2	0.58	0.61	0.58	56.6
Approach		664	2.0	706	2.0	0.384	6.6	LOS A	2.0	15.2	0.58	0.63	0.58	58.2
East: WB Tusslewood Drive														
1	L2	20	2.0	21	2.0	0.067	12.5	LOS B	0.3	2.0	0.59	0.74	0.59	56.7
6	T1	27	2.0	29	2.0	0.067	6.6	LOS A	0.3	2.0	0.59	0.74	0.59	56.6
16	R2	333	2.0	354	2.0	0.467	8.1	LOS A	2.5	19.5	0.71	0.89	0.83	56.1
Approach		380	2.0	404	2.0	0.467	8.3	LOS A	2.5	19.5	0.70	0.87	0.80	56.1
North: SB 12 Mile Coulee Road														
7	L2	160	2.0	170	2.0	0.190	10.3	LOS B	0.9	7.0	0.22	0.59	0.22	57.3
4	T1	312	2.0	332	2.0	0.190	4.4	LOS A	0.9	7.1	0.22	0.44	0.22	59.8
14	R2	153	2.0	163	2.0	0.116	4.4	LOS A	0.5	4.1	0.18	0.47	0.18	58.9
Approach		625	2.0	665	2.0	0.190	5.9	LOS A	0.9	7.1	0.21	0.49	0.21	58.9
West: EB Blueridge Rise														
5	L2	295	2.0	314	2.0	0.154	11.2	LOS B	0.7	5.4	0.45	0.70	0.45	55.5
2	T1	35	2.0	37	2.0	0.154	5.1	LOS A	0.7	5.4	0.44	0.68	0.44	55.9
12	R2	37	2.0	39	2.0	0.031	4.9	LOS A	0.1	1.1	0.36	0.51	0.36	58.2
Approach		367	2.0	390	2.0	0.154	10.0	LOS A	0.7	5.4	0.44	0.68	0.44	55.8
All Vehicles		2036	2.0	2166	2.0	0.467	7.3	LOS A	2.5	19.5	0.46	0.64	0.48	57.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [AM 2039 After Development - Op 1 (Site Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	48	2.0	51	2.0	0.514	15.0	LOS B	3.2	24.5	0.75	0.91	0.90	56.5
8	T1	659	2.0	701	2.0	0.514	8.8	LOS A	3.2	25.1	0.75	0.90	0.90	57.0
18	R2	10	2.0	11	2.0	0.514	8.8	LOS A	3.2	25.1	0.75	0.90	0.89	55.7
Approach		717	2.0	763	2.0	0.514	9.2	LOS A	3.2	25.1	0.75	0.90	0.90	56.9
East: WB Tusslewood Drive														
1	L2	20	2.0	21	2.0	0.092	13.4	LOS B	0.4	2.9	0.67	0.80	0.67	56.4
6	T1	35	2.0	37	2.0	0.092	7.5	LOS A	0.4	2.9	0.67	0.80	0.67	56.3
16	R2	353	2.0	376	2.0	0.577	10.6	LOS B	3.5	27.1	0.80	0.98	1.07	54.1
Approach		408	2.0	434	2.0	0.577	10.4	LOS B	3.5	27.1	0.78	0.95	1.01	54.4
North: SB 12 Mile Coulee Road														
7	L2	170	2.0	181	2.0	0.229	10.4	LOS B	1.2	8.9	0.25	0.58	0.25	57.5
4	T1	392	2.0	417	2.0	0.229	4.4	LOS A	1.2	9.0	0.24	0.45	0.24	59.7
14	R2	359	2.0	382	2.0	0.276	4.5	LOS A	1.5	11.8	0.23	0.48	0.23	58.7
Approach		921	2.0	980	2.0	0.276	5.6	LOS A	1.5	11.8	0.24	0.49	0.24	58.9
West: EB Blueridge Rise														
5	L2	565	2.0	601	2.0	0.312	11.6	LOS B	1.6	12.4	0.54	0.75	0.54	55.2
2	T1	76	2.0	81	2.0	0.312	5.5	LOS A	1.6	12.4	0.53	0.72	0.53	55.7
12	R2	63	2.0	67	2.0	0.054	5.1	LOS A	0.2	1.9	0.41	0.54	0.41	58.0
Approach		704	2.0	749	2.0	0.312	10.4	LOS B	1.6	12.4	0.53	0.73	0.53	55.5
All Vehicles		2750	2.0	2926	2.0	0.577	8.5	LOS A	3.5	27.1	0.53	0.73	0.60	56.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [AM 2048 After Development - Op 1 (Site Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	48	2.0	51	2.0	0.537	15.0	LOS B	3.4	26.4	0.76	0.92	0.92	56.5
8	T1	689	2.0	733	2.0	0.537	8.8	LOS A	3.5	27.0	0.76	0.91	0.92	57.0
18	R2	20	2.0	21	2.0	0.537	8.9	LOS A	3.5	27.0	0.75	0.91	0.91	55.7
Approach		757	2.0	805	2.0	0.537	9.2	LOS A	3.5	27.0	0.76	0.91	0.92	56.9
East: WB Tusslewood Drive														
1	L2	20	2.0	21	2.0	0.093	13.5	LOS B	0.4	3.0	0.68	0.81	0.68	56.4
6	T1	35	2.0	37	2.0	0.093	7.6	LOS A	0.4	3.0	0.68	0.81	0.68	56.3
16	R2	303	2.0	322	2.0	0.503	9.8	LOS A	2.8	21.7	0.78	0.94	0.97	54.7
Approach		358	2.0	381	2.0	0.503	9.8	LOS A	2.8	21.7	0.76	0.92	0.93	54.9
North: SB 12 Mile Coulee Road														
7	L2	150	2.0	160	2.0	0.266	10.4	LOS B	1.4	10.8	0.26	0.55	0.26	58.2
4	T1	502	2.0	534	2.0	0.266	4.5	LOS A	1.4	10.9	0.25	0.46	0.25	59.6
14	R2	359	2.0	382	2.0	0.276	4.5	LOS A	1.5	11.8	0.23	0.48	0.23	58.7
Approach		1011	2.0	1076	2.0	0.276	5.4	LOS A	1.5	11.8	0.24	0.48	0.24	59.1
West: EB Blueridge Rise														
5	L2	555	2.0	590	2.0	0.317	11.9	LOS B	1.7	12.8	0.57	0.77	0.57	55.1
2	T1	76	2.0	81	2.0	0.317	5.7	LOS A	1.7	12.8	0.56	0.74	0.56	55.6
12	R2	63	2.0	67	2.0	0.056	5.4	LOS A	0.3	2.0	0.45	0.56	0.45	57.8
Approach		694	2.0	738	2.0	0.317	10.6	LOS B	1.7	12.8	0.56	0.75	0.56	55.3
All Vehicles		2820	2.0	3000	2.0	0.537	8.3	LOS A	3.5	27.0	0.53	0.72	0.59	57.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [PM 2028 After Development - Op 1 (Site Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	35	2.0	37	2.0	0.347	13.1	LOS B	1.8	14.0	0.67	0.74	0.67	57.5
8	T1	460	2.0	484	2.0	0.347	7.1	LOS A	1.8	14.2	0.67	0.72	0.67	57.7
18	R2	30	2.0	32	2.0	0.347	7.2	LOS A	1.8	14.2	0.66	0.70	0.66	56.2
Approach		525	2.0	553	2.0	0.347	7.5	LOS A	1.8	14.2	0.67	0.72	0.67	57.6
East: WB Tusslewood Drive														
1	L2	50	2.0	53	2.0	0.138	12.4	LOS B	0.6	4.3	0.58	0.75	0.58	56.5
6	T1	53	2.0	56	2.0	0.138	6.5	LOS A	0.6	4.3	0.58	0.75	0.58	56.5
16	R2	310	2.0	326	2.0	0.408	7.2	LOS A	2.0	15.5	0.66	0.84	0.72	56.9
Approach		413	2.0	435	2.0	0.408	7.8	LOS A	2.0	15.5	0.64	0.82	0.69	56.8
North: SB 12 Mile Coulee Road														
7	L2	293	2.0	308	2.0	0.423	10.8	LOS B	2.7	20.8	0.35	0.60	0.35	57.3
4	T1	719	2.0	757	2.0	0.423	4.8	LOS A	2.7	21.2	0.34	0.49	0.34	59.1
14	R2	492	2.0	518	2.0	0.375	4.6	LOS A	2.3	17.8	0.25	0.48	0.25	58.6
Approach		1504	2.0	1583	2.0	0.423	5.9	LOS A	2.7	21.2	0.31	0.51	0.31	58.6
West: EB Blueridge Rise														
5	L2	334	2.0	352	2.0	0.236	12.7	LOS B	1.3	10.0	0.67	0.82	0.67	54.8
2	T1	71	2.0	75	2.0	0.236	6.4	LOS A	1.3	10.0	0.67	0.78	0.67	55.6
12	R2	64	2.0	67	2.0	0.063	6.1	LOS A	0.3	2.5	0.57	0.62	0.57	57.3
Approach		469	2.0	494	2.0	0.236	10.9	LOS B	1.3	10.0	0.65	0.79	0.65	55.3
All Vehicles		2911	2.0	3064	2.0	0.423	7.3	LOS A	2.7	21.2	0.48	0.64	0.49	57.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [PM 2039 After Development - Op 1 (Site Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	70	2.0	74	2.0	0.566	18.4	LOS B	3.9	29.8	0.86	1.01	1.12	53.3
8	T1	510	2.0	537	2.0	0.566	11.9	LOS B	4.1	31.4	0.87	1.01	1.12	54.2
18	R2	30	2.0	32	2.0	0.566	11.7	LOS B	4.1	31.4	0.87	1.00	1.11	53.4
Approach		610	2.0	642	2.0	0.566	12.6	LOS B	4.1	31.4	0.87	1.01	1.12	54.1
East: WB Tusslewood Drive														
1	L2	50	2.0	53	2.0	0.246	13.6	LOS B	1.1	8.5	0.69	0.81	0.69	56.5
6	T1	105	2.0	111	2.0	0.246	7.7	LOS A	1.1	8.5	0.69	0.81	0.69	56.4
16	R2	290	2.0	305	2.0	0.438	8.4	LOS A	2.3	17.6	0.73	0.89	0.85	55.8
Approach		445	2.0	468	2.0	0.438	8.8	LOS A	2.3	17.6	0.72	0.87	0.79	56.0
North: SB 12 Mile Coulee Road														
7	L2	327	2.0	344	2.0	0.498	11.6	LOS B	3.4	26.0	0.47	0.66	0.47	56.6
4	T1	773	2.0	814	2.0	0.498	5.5	LOS A	3.5	26.9	0.46	0.56	0.46	58.5
14	R2	919	2.0	967	2.0	0.755	6.3	LOS A	8.8	67.8	0.57	0.60	0.58	57.3
Approach		2019	2.0	2125	2.0	0.755	6.9	LOS A	8.8	67.8	0.51	0.59	0.52	57.7
West: EB Blueridge Rise														
5	L2	555	2.0	584	2.0	0.498	14.7	LOS B	3.6	27.7	0.80	0.96	0.94	53.6
2	T1	226	2.0	238	2.0	0.498	8.0	LOS A	3.6	27.7	0.81	0.91	0.93	55.3
12	R2	124	2.0	131	2.0	0.130	6.4	LOS A	0.7	5.6	0.63	0.68	0.63	57.1
Approach		905	2.0	953	2.0	0.498	11.9	LOS B	3.6	27.7	0.78	0.91	0.90	54.5
All Vehicles		3979	2.0	4188	2.0	0.755	9.1	LOS A	8.8	67.8	0.65	0.76	0.73	56.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [PM 2048 After Development - Op 1 (Site Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	90	2.0	95	2.0	0.629	20.5	LOS C	4.7	36.2	0.90	1.06	1.25	51.6
8	T1	540	2.0	568	2.0	0.629	13.9	LOS B	5.0	38.5	0.90	1.06	1.25	52.7
18	R2	20	2.0	21	2.0	0.629	13.6	LOS B	5.0	38.5	0.91	1.06	1.24	52.0
Approach		650	2.0	684	2.0	0.629	14.8	LOS B	5.0	38.5	0.90	1.06	1.25	52.5
East: WB Tusslewood Drive														
1	L2	20	2.0	21	2.0	0.206	13.6	LOS B	0.9	7.0	0.70	0.78	0.70	57.2
6	T1	105	2.0	111	2.0	0.206	7.7	LOS A	0.9	7.0	0.70	0.78	0.70	57.1
16	R2	320	2.0	337	2.0	0.492	8.9	LOS A	2.7	20.9	0.75	0.92	0.92	55.4
Approach		445	2.0	468	2.0	0.492	8.8	LOS A	2.7	20.9	0.74	0.88	0.86	55.9
North: SB 12 Mile Coulee Road														
7	L2	377	2.0	397	2.0	0.528	11.6	LOS B	3.7	28.3	0.47	0.66	0.47	56.4
4	T1	803	2.0	845	2.0	0.528	5.5	LOS A	3.8	29.3	0.46	0.55	0.46	58.5
14	R2	919	2.0	967	2.0	0.768	7.0	LOS A	9.4	72.8	0.59	0.63	0.64	57.0
Approach		2099	2.0	2209	2.0	0.768	7.2	LOS A	9.4	72.8	0.52	0.61	0.54	57.5
West: EB Blueridge Rise														
5	L2	555	2.0	584	2.0	0.513	15.2	LOS B	3.9	30.1	0.83	0.98	0.99	53.3
2	T1	226	2.0	238	2.0	0.513	8.5	LOS A	3.9	30.1	0.83	0.94	0.97	55.0
12	R2	174	2.0	183	2.0	0.184	6.7	LOS A	1.1	8.6	0.67	0.71	0.67	56.9
Approach		955	2.0	1005	2.0	0.513	12.1	LOS B	3.9	30.1	0.80	0.92	0.93	54.3
All Vehicles		4149	2.0	4367	2.0	0.768	9.7	LOS A	9.4	72.8	0.67	0.78	0.77	55.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [AM 2028 After Development - Op 2 (Site Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	45	2.0	48	2.0	0.321	11.8	LOS B	1.6	12.3	0.55	0.62	0.55	58.1
8	T1	609	2.0	648	2.0	0.321	5.7	LOS A	1.7	12.8	0.54	0.57	0.54	58.4
18	R2	10	2.0	11	2.0	0.008	4.7	LOS A	0.0	0.3	0.30	0.46	0.30	58.4
Approach		664	2.0	706	2.0	0.321	6.1	LOS A	1.7	12.8	0.53	0.57	0.53	58.4
East: WB Tusslewood Drive														
1	L2	20	2.0	21	2.0	0.067	12.6	LOS B	0.3	2.0	0.59	0.74	0.59	56.7
6	T1	27	2.0	29	2.0	0.067	6.7	LOS A	0.3	2.0	0.59	0.74	0.59	56.6
16	R2	333	2.0	354	2.0	0.465	8.2	LOS A	2.5	19.5	0.71	0.89	0.83	56.0
Approach		380	2.0	404	2.0	0.465	8.3	LOS A	2.5	19.5	0.69	0.87	0.80	56.1
North: SB 12 Mile Coulee Road														
7	L2	160	2.0	170	2.0	0.190	10.3	LOS B	0.9	7.0	0.22	0.59	0.22	57.3
4	T1	312	2.0	332	2.0	0.190	4.4	LOS A	0.9	7.1	0.22	0.44	0.22	59.8
14	R2	153	2.0	163	2.0	0.116	4.4	LOS A	0.5	4.1	0.18	0.47	0.18	58.9
Approach		625	2.0	665	2.0	0.190	5.9	LOS A	0.9	7.1	0.21	0.49	0.21	58.9
West: EB Blueridge Rise														
5	L2	295	2.0	314	2.0	0.154	11.2	LOS B	0.7	5.4	0.45	0.70	0.45	55.5
2	T1	35	2.0	37	2.0	0.154	5.1	LOS A	0.7	5.4	0.44	0.68	0.44	55.9
12	R2	37	2.0	39	2.0	0.031	4.9	LOS A	0.1	1.1	0.36	0.51	0.36	58.2
Approach		367	2.0	390	2.0	0.154	10.0	LOS A	0.7	5.4	0.44	0.68	0.44	55.8
All Vehicles		2036	2.0	2166	2.0	0.465	7.1	LOS A	2.5	19.5	0.45	0.62	0.47	57.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [AM 2039 After Development - Op 2 (Site Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	48	2.0	51	2.0	0.417	13.5	LOS B	2.3	18.0	0.71	0.80	0.77	57.2
8	T1	659	2.0	701	2.0	0.417	7.0	LOS A	2.5	18.9	0.70	0.72	0.75	57.5
18	R2	10	2.0	11	2.0	0.008	4.8	LOS A	0.0	0.3	0.34	0.47	0.34	58.3
Approach		717	2.0	763	2.0	0.417	7.4	LOS A	2.5	18.9	0.70	0.72	0.74	57.5
East: WB Tusslewood Drive														
1	L2	20	2.0	21	2.0	0.092	13.6	LOS B	0.4	2.9	0.67	0.81	0.67	56.4
6	T1	35	2.0	37	2.0	0.092	7.6	LOS A	0.4	2.9	0.67	0.81	0.67	56.3
16	R2	353	2.0	376	2.0	0.576	10.8	LOS B	3.5	27.4	0.80	0.98	1.08	53.9
Approach		408	2.0	434	2.0	0.576	10.7	LOS B	3.5	27.4	0.78	0.96	1.02	54.2
North: SB 12 Mile Coulee Road														
7	L2	170	2.0	181	2.0	0.229	10.4	LOS B	1.2	8.9	0.25	0.58	0.25	57.5
4	T1	392	2.0	417	2.0	0.229	4.4	LOS A	1.2	9.0	0.24	0.45	0.24	59.7
14	R2	359	2.0	382	2.0	0.276	4.5	LOS A	1.5	11.7	0.23	0.48	0.23	58.7
Approach		921	2.0	980	2.0	0.276	5.6	LOS A	1.5	11.7	0.24	0.49	0.24	58.9
West: EB Blueridge Rise														
5	L2	565	2.0	601	2.0	0.312	11.6	LOS B	1.6	12.4	0.54	0.75	0.54	55.2
2	T1	76	2.0	81	2.0	0.312	5.5	LOS A	1.6	12.4	0.53	0.72	0.53	55.7
12	R2	63	2.0	67	2.0	0.054	5.1	LOS A	0.2	1.9	0.41	0.54	0.41	58.0
Approach		704	2.0	749	2.0	0.312	10.4	LOS B	1.6	12.4	0.53	0.73	0.53	55.5
All Vehicles		2750	2.0	2926	2.0	0.576	8.0	LOS A	3.5	27.4	0.51	0.68	0.56	56.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [AM 2048 After Development - Op 2 (Site Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	48	2.0	51	2.0	0.432	13.4	LOS B	2.5	19.0	0.71	0.79	0.77	57.2
8	T1	689	2.0	733	2.0	0.432	7.0	LOS A	2.6	19.9	0.70	0.72	0.75	57.5
18	R2	20	2.0	21	2.0	0.016	4.8	LOS A	0.1	0.6	0.32	0.48	0.32	58.3
Approach		757	2.0	805	2.0	0.432	7.3	LOS A	2.6	19.9	0.69	0.72	0.74	57.5
East: WB Tusslewood Drive														
1	L2	20	2.0	21	2.0	0.093	13.6	LOS B	0.4	3.0	0.68	0.82	0.68	56.3
6	T1	35	2.0	37	2.0	0.093	7.7	LOS A	0.4	3.0	0.68	0.82	0.68	56.2
16	R2	303	2.0	322	2.0	0.502	10.0	LOS B	2.8	22.0	0.78	0.95	0.98	54.5
Approach		358	2.0	381	2.0	0.502	10.0	LOS B	2.8	22.0	0.77	0.93	0.94	54.8
North: SB 12 Mile Coulee Road														
7	L2	150	2.0	160	2.0	0.266	10.4	LOS B	1.4	10.8	0.26	0.55	0.26	58.2
4	T1	502	2.0	534	2.0	0.266	4.5	LOS A	1.4	10.9	0.25	0.46	0.25	59.6
14	R2	359	2.0	382	2.0	0.276	4.5	LOS A	1.5	11.7	0.23	0.48	0.23	58.7
Approach		1011	2.0	1076	2.0	0.276	5.4	LOS A	1.5	11.7	0.24	0.48	0.24	59.1
West: EB Blueridge Rise														
5	L2	555	2.0	590	2.0	0.317	11.9	LOS B	1.7	12.8	0.57	0.77	0.57	55.1
2	T1	76	2.0	81	2.0	0.317	5.7	LOS A	1.7	12.8	0.56	0.74	0.56	55.6
12	R2	63	2.0	67	2.0	0.056	5.4	LOS A	0.3	2.0	0.45	0.56	0.45	57.8
Approach		694	2.0	738	2.0	0.317	10.6	LOS B	1.7	12.8	0.56	0.75	0.56	55.3
All Vehicles		2820	2.0	3000	2.0	0.502	7.8	LOS A	2.8	22.0	0.51	0.67	0.54	57.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [PM 2028 After Development - Op 2 (Site Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	35	2.0	37	2.0	0.273	12.6	LOS B	1.4	10.9	0.63	0.69	0.63	57.6
8	T1	460	2.0	484	2.0	0.273	6.3	LOS A	1.5	11.6	0.63	0.64	0.63	57.9
18	R2	30	2.0	32	2.0	0.026	5.4	LOS A	0.1	1.1	0.44	0.51	0.44	57.8
Approach		525	2.0	553	2.0	0.273	6.7	LOS A	1.5	11.6	0.62	0.63	0.62	57.9
East: WB Tusslewood Drive														
1	L2	50	2.0	53	2.0	0.137	12.4	LOS B	0.6	4.3	0.58	0.75	0.58	56.6
6	T1	53	2.0	56	2.0	0.137	6.5	LOS A	0.6	4.3	0.58	0.75	0.58	56.5
16	R2	310	2.0	326	2.0	0.407	7.3	LOS A	2.0	15.7	0.66	0.84	0.72	56.8
Approach		413	2.0	435	2.0	0.407	7.8	LOS A	2.0	15.7	0.64	0.82	0.69	56.7
North: SB 12 Mile Coulee Road														
7	L2	293	2.0	308	2.0	0.422	10.8	LOS B	2.7	20.8	0.35	0.60	0.35	57.3
4	T1	719	2.0	757	2.0	0.422	4.8	LOS A	2.7	21.2	0.34	0.49	0.34	59.1
14	R2	492	2.0	518	2.0	0.375	4.6	LOS A	2.3	17.7	0.25	0.48	0.25	58.6
Approach		1504	2.0	1583	2.0	0.422	5.9	LOS A	2.7	21.2	0.31	0.51	0.31	58.6
West: EB Blueridge Rise														
5	L2	334	2.0	352	2.0	0.236	12.7	LOS B	1.3	10.0	0.67	0.82	0.67	54.8
2	T1	71	2.0	75	2.0	0.236	6.4	LOS A	1.3	10.0	0.67	0.78	0.67	55.6
12	R2	64	2.0	67	2.0	0.063	6.1	LOS A	0.3	2.5	0.57	0.62	0.57	57.3
Approach		469	2.0	494	2.0	0.236	10.9	LOS B	1.3	10.0	0.65	0.79	0.65	55.3
All Vehicles		2911	2.0	3064	2.0	0.422	7.1	LOS A	2.7	21.2	0.47	0.62	0.48	57.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [PM 2039 After Development - Op 2 (Site Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	70	2.0	74	2.0	0.434	15.6	LOS B	2.7	20.8	0.83	0.95	0.94	55.3
8	T1	510	2.0	537	2.0	0.434	8.8	LOS A	3.0	23.0	0.83	0.88	0.93	56.4
18	R2	30	2.0	32	2.0	0.030	6.3	LOS A	0.2	1.4	0.57	0.57	0.57	57.3
Approach		610	2.0	642	2.0	0.434	9.5	LOS A	3.0	23.0	0.82	0.88	0.91	56.3
East: WB Tusslewood Drive														
1	L2	50	2.0	53	2.0	0.242	13.4	LOS B	1.1	8.2	0.68	0.80	0.68	56.5
6	T1	105	2.0	111	2.0	0.242	7.5	LOS A	1.1	8.2	0.68	0.80	0.68	56.5
16	R2	290	2.0	305	2.0	0.437	8.4	LOS A	2.3	17.4	0.73	0.89	0.84	55.9
Approach		445	2.0	468	2.0	0.437	8.7	LOS A	2.3	17.4	0.71	0.86	0.79	56.1
North: SB 12 Mile Coulee Road														
7	L2	327	2.0	344	2.0	0.498	11.6	LOS B	3.4	25.9	0.47	0.66	0.47	56.6
4	T1	773	2.0	814	2.0	0.498	5.5	LOS A	3.5	26.8	0.46	0.56	0.46	58.5
14	R2	919	2.0	967	2.0	0.755	6.3	LOS A	8.7	67.6	0.56	0.60	0.58	57.4
Approach		2019	2.0	2125	2.0	0.755	6.9	LOS A	8.7	67.6	0.51	0.59	0.52	57.7
West: EB Blueridge Rise														
5	L2	555	2.0	584	2.0	0.498	14.7	LOS B	3.6	27.7	0.80	0.96	0.94	53.6
2	T1	226	2.0	238	2.0	0.498	8.0	LOS A	3.6	27.7	0.81	0.91	0.93	55.3
12	R2	124	2.0	131	2.0	0.130	6.4	LOS A	0.7	5.6	0.63	0.68	0.63	57.1
Approach		905	2.0	953	2.0	0.498	11.9	LOS B	3.6	27.7	0.78	0.91	0.90	54.5
All Vehicles		3979	2.0	4188	2.0	0.755	8.6	LOS A	8.7	67.6	0.64	0.74	0.69	56.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [PM 2048 After Development - Op 2 (Site Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	90	2.0	95	2.0	0.490	16.9	LOS B	3.3	25.6	0.86	0.99	1.04	54.0
8	T1	540	2.0	568	2.0	0.490	10.0	LOS A	3.7	28.6	0.87	0.98	1.03	55.8
18	R2	20	2.0	21	2.0	0.021	6.6	LOS A	0.1	1.0	0.61	0.56	0.61	57.2
Approach		650	2.0	684	2.0	0.490	10.8	LOS B	3.7	28.6	0.86	0.97	1.02	55.6
East: WB Tusslewood Drive														
1	L2	20	2.0	21	2.0	0.203	13.5	LOS B	0.9	6.8	0.69	0.77	0.69	57.2
6	T1	105	2.0	111	2.0	0.203	7.5	LOS A	0.9	6.8	0.69	0.77	0.69	57.1
16	R2	320	2.0	337	2.0	0.493	9.1	LOS A	2.7	21.1	0.76	0.92	0.92	55.3
Approach		445	2.0	468	2.0	0.493	8.9	LOS A	2.7	21.1	0.74	0.88	0.86	55.8
North: SB 12 Mile Coulee Road														
7	L2	377	2.0	397	2.0	0.527	11.6	LOS B	3.7	28.3	0.47	0.66	0.47	56.4
4	T1	803	2.0	845	2.0	0.527	5.5	LOS A	3.8	29.2	0.46	0.55	0.46	58.5
14	R2	919	2.0	967	2.0	0.767	6.9	LOS A	9.4	72.4	0.59	0.63	0.63	57.0
Approach		2099	2.0	2209	2.0	0.767	7.2	LOS A	9.4	72.4	0.52	0.61	0.54	57.5
West: EB Blueridge Rise														
5	L2	555	2.0	584	2.0	0.512	15.2	LOS B	3.9	30.1	0.83	0.98	0.99	53.3
2	T1	226	2.0	238	2.0	0.512	8.5	LOS A	3.9	30.1	0.83	0.94	0.97	55.0
12	R2	174	2.0	183	2.0	0.184	6.7	LOS A	1.1	8.6	0.67	0.71	0.67	56.9
Approach		955	2.0	1005	2.0	0.512	12.1	LOS B	3.9	30.1	0.80	0.92	0.93	54.3
All Vehicles		4149	2.0	4367	2.0	0.767	9.1	LOS A	9.4	72.4	0.66	0.77	0.74	56.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [AM 2028 After Development - Op 3 North (Site Folder: General)]

Network: N101 [AM 2028 AD Option 3 (Network Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	77	2.0	77	2.0	0.528	9.8	LOS A	1.3	10.4	0.58	0.67	0.60	57.0
8	T1	1002	2.0	1002	2.0	0.528	4.5	LOS A	1.3	10.4	0.58	0.66	0.60	57.4
Approach		1079	2.0	1079	2.0	0.528	4.9	LOS A	1.3	10.4	0.58	0.66	0.60	57.3
North: SB 12 Mile Coulee Road														
4	T1	502	2.0	502	2.0	0.187	4.3	LOS A	0.5	3.6	0.26	0.40	0.26	54.9
14	R2	163	2.0	163	2.0	0.117	4.4	LOS A	0.3	2.1	0.24	0.46	0.24	58.7
Approach		665	2.0	665	2.0	0.187	4.3	LOS A	0.5	3.6	0.26	0.41	0.26	56.2
West: EB Blueridge Rise														
5	L2	314	2.0	314	2.0	0.209	11.7	LOS B	0.3	2.7	0.49	0.76	0.49	55.5
12	R2	77	2.0	77	2.0	0.209	5.9	LOS A	0.3	2.7	0.48	0.74	0.48	49.3
Approach		390	2.0	390	2.0	0.209	10.5	LOS B	0.3	2.7	0.49	0.76	0.49	54.8
All Vehicles		2134	2.0	2134	2.0	0.528	5.7	LOS A	1.3	10.4	0.46	0.60	0.47	56.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [AM 2028 After Development - Op 3 South (Site Folder: General)]

Network: N101 [AM 2028 AD Option 3 (Network Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
8	T1	696	2.0	696	2.0	0.290	5.1	LOS A	0.7	5.3	0.42	0.49	0.42	53.4
18	R2	11	2.0	11	2.0	0.290	5.2	LOS A	0.7	5.3	0.42	0.49	0.42	57.5
Approach		706	2.0	706	2.0	0.290	5.1	LOS A	0.7	5.3	0.42	0.49	0.42	53.5
East: WB Tusslewood Drive														
1	L2	21	2.0	21	2.0	0.025	11.7	LOS B	0.0	0.3	0.51	0.72	0.51	54.8
16	R2	383	2.0	383	2.0	0.451	7.1	LOS A	1.0	7.5	0.65	0.84	0.73	52.1
Approach		404	2.0	404	2.0	0.451	7.3	LOS A	1.0	7.5	0.65	0.84	0.71	52.4
North: SB 12 Mile Coulee Road														
7	L2	207	2.0	207	2.0	0.204	8.0	LOS A	0.5	3.9	0.13	0.60	0.13	55.6
4	T1	371	2.0	371	2.0	0.204	2.6	LOS A	0.5	4.0	0.13	0.40	0.13	60.0
Approach		579	2.0	579	2.0	0.204	4.5	LOS A	0.5	4.0	0.13	0.47	0.13	58.3
All Vehicles		1689	2.0	1689	2.0	0.451	5.4	LOS A	1.0	7.5	0.38	0.57	0.39	54.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [AM 2039 After Development - Op 3 North (Site Folder: General)]

Network: N101 [AM 2039 AD Option 3 (Network Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	88	2.0	88	2.0	0.695	13.5	LOS B	2.3	17.9	0.80	0.98	1.05	52.5
8	T1	1077	2.0	1077	2.0	0.695	8.0	LOS A	2.3	18.1	0.80	0.97	1.05	53.1
Approach		1165	2.0	1165	2.0	0.695	8.4	LOS A	2.3	18.1	0.80	0.97	1.05	53.1
North: SB 12 Mile Coulee Road														
4	T1	598	2.0	598	2.0	0.227	4.4	LOS A	0.6	4.7	0.31	0.41	0.31	54.4
14	R2	382	2.0	382	2.0	0.279	4.5	LOS A	0.8	6.1	0.32	0.48	0.32	58.3
Approach		980	2.0	980	2.0	0.279	4.4	LOS A	0.8	6.1	0.31	0.44	0.31	56.5
West: EB Blueridge Rise														
5	L2	601	2.0	601	2.0	0.426	12.6	LOS B	0.9	6.7	0.61	0.87	0.65	55.1
12	R2	148	2.0	148	2.0	0.426	6.8	LOS A	0.9	6.7	0.60	0.85	0.64	48.5
Approach		749	2.0	749	2.0	0.426	11.5	LOS B	0.9	6.7	0.61	0.86	0.65	54.2
All Vehicles		2894	2.0	2894	2.0	0.695	7.9	LOS A	2.3	18.1	0.59	0.76	0.69	54.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [AM 2039 After Development - Op 3 South (Site Folder: General)]

Network: N101 [AM 2039 AD Option 3 (Network Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
8	T1	752	2.0	752	2.0	0.330	5.3	LOS A	0.8	6.1	0.47	0.53	0.47	52.9
18	R2	11	2.0	11	2.0	0.330	5.4	LOS A	0.8	6.1	0.47	0.51	0.47	57.2
Approach		763	2.0	763	2.0	0.330	5.3	LOS A	0.8	6.1	0.47	0.53	0.47	53.0
East: WB Tusslewood Drive														
1	L2	21	2.0	21	2.0	0.026	11.9	LOS B	0.0	0.3	0.53	0.73	0.53	54.7
16	R2	413	2.0	413	2.0	0.516	7.8	LOS A	1.2	9.2	0.70	0.88	0.82	51.1
Approach		434	2.0	434	2.0	0.516	8.0	LOS A	1.2	9.2	0.69	0.88	0.81	51.5
North: SB 12 Mile Coulee Road														
7	L2	248	2.0	248	2.0	0.259	8.0	LOS A	0.7	5.3	0.14	0.59	0.14	55.8
4	T1	484	2.0	484	2.0	0.259	2.6	LOS A	0.7	5.3	0.14	0.40	0.14	59.8
Approach		732	2.0	732	2.0	0.259	4.4	LOS A	0.7	5.3	0.14	0.46	0.14	58.4
All Vehicles		1929	2.0	1929	2.0	0.516	5.6	LOS A	1.2	9.2	0.39	0.58	0.42	54.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [AM 2048 After Development - Op 3 North (Site Folder: General)]

Network: N101 [AM 2048 AD Option 3 (Network Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	88	2.0	88	2.0	0.681	13.2	LOS B	2.2	17.2	0.79	0.97	1.02	52.9
8	T1	1055	2.0	1055	2.0	0.681	7.7	LOS A	2.2	17.3	0.79	0.96	1.02	53.5
Approach		1144	2.0	1144	2.0	0.681	8.1	LOS A	2.2	17.3	0.79	0.96	1.02	53.5
North: SB 12 Mile Coulee Road														
4	T1	694	2.0	694	2.0	0.264	4.4	LOS A	0.7	5.7	0.32	0.41	0.32	54.3
14	R2	382	2.0	382	2.0	0.279	4.5	LOS A	0.8	6.1	0.32	0.48	0.32	58.3
Approach		1076	2.0	1076	2.0	0.279	4.4	LOS A	0.8	6.1	0.32	0.44	0.32	56.3
West: EB Blueridge Rise														
5	L2	590	2.0	590	2.0	0.441	13.2	LOS B	0.9	7.1	0.64	0.90	0.71	54.7
12	R2	148	2.0	148	2.0	0.441	7.3	LOS A	0.9	7.1	0.63	0.88	0.70	48.0
Approach		738	2.0	738	2.0	0.441	12.0	LOS B	0.9	7.1	0.64	0.90	0.71	53.8
All Vehicles		2957	2.0	2957	2.0	0.681	7.8	LOS A	2.2	17.3	0.58	0.75	0.69	54.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [AM 2048 After Development - Op 3 South (Site Folder: General)]

Network: N101 [AM 2048 AD Option 3 (Network Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
8	T1	784	2.0	784	2.0	0.342	5.3	LOS A	0.8	6.6	0.47	0.52	0.47	52.9
18	R2	21	2.0	21	2.0	0.342	5.4	LOS A	0.8	6.6	0.47	0.51	0.47	57.3
Approach		805	2.0	805	2.0	0.342	5.3	LOS A	0.8	6.6	0.47	0.52	0.47	53.1
East: WB Tusslewood Drive														
1	L2	21	2.0	21	2.0	0.026	11.9	LOS B	0.0	0.3	0.54	0.73	0.54	54.6
16	R2	360	2.0	360	2.0	0.450	7.4	LOS A	1.0	7.4	0.68	0.86	0.76	51.7
Approach		381	2.0	381	2.0	0.450	7.6	LOS A	1.0	7.4	0.67	0.85	0.75	52.0
North: SB 12 Mile Coulee Road														
7	L2	240	2.0	240	2.0	0.297	8.0	LOS A	0.8	6.4	0.15	0.56	0.15	56.6
4	T1	601	2.0	601	2.0	0.297	2.6	LOS A	0.8	6.4	0.14	0.41	0.14	59.7
Approach		841	2.0	841	2.0	0.297	4.2	LOS A	0.8	6.4	0.14	0.45	0.14	58.8
All Vehicles		2028	2.0	2028	2.0	0.450	5.3	LOS A	1.0	7.4	0.37	0.56	0.39	55.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [PM 2028 After Development - Op 3 North (Site Folder: General)]

Network: N101 [PM 2028 AD Option 3 (Network Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	93	2.0	93	2.0	0.465	9.7	LOS A	1.1	8.4	0.58	0.67	0.59	56.6
8	T1	811	2.0	811	2.0	0.465	4.3	LOS A	1.1	8.4	0.58	0.64	0.58	57.2
Approach		903	2.0	903	2.0	0.465	4.9	LOS A	1.1	8.4	0.58	0.64	0.58	57.1
North: SB 12 Mile Coulee Road														
4	T1	1065	2.0	1065	2.0	0.405	4.5	LOS A	1.2	9.6	0.36	0.43	0.36	53.9
14	R2	518	2.0	518	2.0	0.378	4.6	LOS A	1.1	8.7	0.34	0.48	0.34	58.2
Approach		1583	2.0	1583	2.0	0.405	4.5	LOS A	1.2	9.6	0.36	0.45	0.36	55.9
West: EB Blueridge Rise														
5	L2	352	2.0	352	2.0	0.358	14.0	LOS B	0.7	5.2	0.69	0.91	0.74	54.1
12	R2	142	2.0	142	2.0	0.358	7.9	LOS A	0.7	5.2	0.68	0.89	0.73	48.1
Approach		494	2.0	494	2.0	0.358	12.3	LOS B	0.7	5.2	0.69	0.90	0.74	53.0
All Vehicles		2980	2.0	2980	2.0	0.465	5.9	LOS A	1.2	9.6	0.48	0.58	0.49	55.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [PM 2028 After Development - Op 3 South (Site Folder: General)]

Network: N101 [PM 2028 AD Option 3 (Network Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
8	T1	521	2.0	521	2.0	0.262	6.0	LOS A	0.6	5.0	0.57	0.60	0.57	52.1
18	R2	32	2.0	32	2.0	0.262	6.1	LOS A	0.6	5.0	0.56	0.58	0.56	56.8
Approach		553	2.0	553	2.0	0.262	6.0	LOS A	0.6	5.0	0.57	0.59	0.57	52.6
East: WB Tusslewood Drive														
1	L2	53	2.0	53	2.0	0.058	11.4	LOS B	0.1	0.7	0.48	0.72	0.48	54.9
16	R2	382	2.0	382	2.0	0.421	6.2	LOS A	0.9	6.9	0.61	0.76	0.63	52.9
Approach		435	2.0	435	2.0	0.421	6.8	LOS A	0.9	6.9	0.59	0.76	0.61	53.3
North: SB 12 Mile Coulee Road														
7	L2	383	2.0	383	2.0	0.439	8.2	LOS A	1.4	10.9	0.28	0.57	0.28	55.5
4	T1	824	2.0	824	2.0	0.439	2.9	LOS A	1.4	10.9	0.27	0.42	0.27	58.9
Approach		1207	2.0	1207	2.0	0.439	4.6	LOS A	1.4	10.9	0.28	0.47	0.28	57.7
All Vehicles		2195	2.0	2195	2.0	0.439	5.4	LOS A	1.4	10.9	0.41	0.56	0.42	55.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [PM 2039 After Development - Op 3 North (Site Folder: General)]

Network: N101 [PM 2039 AD Option 3 (Network Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	184	2.0	184	2.0	0.639	12.9	LOS B	2.1	15.9	0.81	0.98	1.00	51.9
8	T1	842	2.0	842	2.0	0.639	7.4	LOS A	2.1	16.1	0.81	0.96	0.99	53.4
Approach		1026	2.0	1026	2.0	0.639	8.4	LOS A	2.1	16.1	0.81	0.96	0.99	53.2
North: SB 12 Mile Coulee Road														
4	T1	1158	2.0	1158	2.0	0.484	5.2	LOS A	1.6	12.6	0.56	0.51	0.56	52.1
14	R2	967	2.0	967	2.0	0.770	6.6	LOS A	4.2	32.8	0.81	0.65	0.84	56.4
Approach		2125	2.0	2125	2.0	0.770	5.8	LOS A	4.2	32.8	0.67	0.58	0.69	54.7
West: EB Blueridge Rise														
5	L2	584	2.0	584	2.0	0.779	20.7	LOS C	2.6	20.3	0.89	1.14	1.45	49.4
12	R2	368	2.0	368	2.0	0.779	14.0	LOS B	2.6	20.3	0.89	1.13	1.44	42.5
Approach		953	2.0	953	2.0	0.779	18.1	LOS B	2.6	20.3	0.89	1.13	1.45	47.5
All Vehicles		4104	2.0	4104	2.0	0.779	9.3	LOS A	4.2	32.8	0.76	0.80	0.94	52.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [PM 2039 After Development - Op 3 South (Site Folder: General)]

Network: N101 [PM 2039 AD Option 3 (Network Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
8	T1	611	2.0	611	2.0	0.363	7.7	LOS A	1.0	7.8	0.73	0.74	0.73	50.7
18	R2	32	2.0	32	2.0	0.363	7.6	LOS A	1.0	7.8	0.73	0.73	0.73	55.9
Approach		642	2.0	642	2.0	0.363	7.7	LOS A	1.0	7.8	0.73	0.74	0.73	51.1
East: WB Tusslewood Drive														
1	L2	53	2.0	53	2.0	0.063	11.6	LOS B	0.1	0.8	0.53	0.75	0.53	54.7
16	R2	416	2.0	416	2.0	0.495	7.0	LOS A	1.2	9.2	0.69	0.86	0.77	52.2
Approach		468	2.0	468	2.0	0.495	7.6	LOS A	1.2	9.2	0.67	0.85	0.74	52.7
North: SB 12 Mile Coulee Road														
7	L2	582	2.0	582	2.0	0.557	8.3	LOS A	2.2	16.7	0.34	0.58	0.34	54.3
4	T1	944	2.0	944	2.0	0.557	3.0	LOS A	2.2	16.7	0.33	0.41	0.33	58.7
Approach		1526	2.0	1526	2.0	0.557	5.0	LOS A	2.2	16.7	0.33	0.48	0.33	56.9
All Vehicles		2637	2.0	2637	2.0	0.557	6.1	LOS A	2.2	16.7	0.49	0.61	0.50	54.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [PM 2048 After Development - Op 3 North (Site Folder: General)]

Network: N101 [PM 2048 AD Option 3 (Network Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
3	L2	205	2.0	205	2.0	0.703	14.0	LOS B	2.6	19.9	0.86	1.03	1.12	50.5
8	T1	905	2.0	905	2.0	0.703	8.5	LOS A	2.6	20.1	0.86	1.02	1.11	52.0
Approach		1111	2.0	1111	2.0	0.703	9.5	LOS A	2.6	20.1	0.86	1.02	1.11	51.7
North: SB 12 Mile Coulee Road														
4	T1	1242	2.0	1242	2.0	0.554	5.4	LOS A	1.9	14.6	0.62	0.53	0.62	51.6
14	R2	967	2.0	967	2.0	0.787	7.5	LOS A	4.7	36.3	0.86	0.71	0.93	56.2
Approach		2209	2.0	2209	2.0	0.787	6.3	LOS A	4.7	36.3	0.73	0.61	0.76	54.2
West: EB Blueridge Rise														
5	L2	584	2.0	584	2.0	0.904	28.8	LOS C	3.9	30.3	0.95	1.32	2.05	44.7
12	R2	421	2.0	421	2.0	0.904	21.4	LOS C	3.9	30.3	0.94	1.32	2.02	36.6
Approach		1005	2.0	1005	2.0	0.904	25.7	LOS C	3.9	30.3	0.95	1.32	2.04	42.2
All Vehicles		4325	2.0	4325	2.0	0.904	11.6	LOS B	4.7	36.3	0.81	0.88	1.15	49.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [PM 2048 After Development - Op 3 South (Site Folder: General)]

Network: N101 [PM 2048 AD Option 3 (Network Folder: General)]

12 Mile Coulee Road & Blueridge Rise/Tusslewood Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: NB 12 Mile Coulee Road														
8	T1	663	2.0	663	2.0	0.428	8.4	LOS A	1.1	8.5	0.76	0.79	0.78	50.3
18	R2	21	2.0	21	2.0	0.428	8.1	LOS A	1.1	8.5	0.75	0.76	0.75	55.7
Approach		684	2.0	684	2.0	0.428	8.4	LOS A	1.1	8.5	0.76	0.79	0.77	50.6
East: WB Tusslewood Drive														
1	L2	21	2.0	21	2.0	0.026	11.7	LOS B	0.0	0.3	0.54	0.72	0.54	54.6
16	R2	447	2.0	447	2.0	0.598	8.1	LOS A	1.5	11.5	0.74	0.92	0.90	50.7
Approach		468	2.0	468	2.0	0.598	8.2	LOS A	1.5	11.5	0.73	0.91	0.88	51.1
North: SB 12 Mile Coulee Road														
7	L2	635	2.0	635	2.0	0.587	8.1	LOS A	2.5	19.5	0.22	0.58	0.22	54.9
4	T1	1028	2.0	1028	2.0	0.587	2.7	LOS A	2.5	19.5	0.21	0.38	0.21	59.5
Approach		1663	2.0	1663	2.0	0.587	4.8	LOS A	2.5	19.5	0.22	0.46	0.22	57.6
All Vehicles		2816	2.0	2816	2.0	0.598	6.2	LOS A	2.5	19.5	0.43	0.61	0.46	54.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX G

HCS Weaving Reports

HCS Freeway Weaving Report

Project Information

Analyst	J. Willis	Date	2/10/2023
Agency	Bunt & Associates	Analysis Year	2028
Jurisdiction	City of Calgary	Time Analyzed	AM Peak
Project Description	02-23-0005: Ascension Additional Analysis	Units	Metric System

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Segment Length (L_S), m	510.0	Number of Maneuver Lanes (N_{WL}), ln	0
Weaving Configuration	Two-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	3
Interchange Density (ID), int/km	0.60	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adjustment Factor for CAVs, CAF_{CAV}	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	747	263	134	236
Peak Hour Factor (PHF)	0.94	0.94	0.94	0.94
Total Trucks, %	2.00	10.00	14.00	3.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.909	0.877	0.971
Flow Rate (v_i), pc/h	811	308	163	259
Weaving Flow Rate (v_w), pc/h	163	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2219
Non-Weaving Flow Rate (v_{NW}), pc/h	1378	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		6987
Total Flow Rate (v), pc/h	1541	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		-
Volume Ratio (VR)	0.106	Weaving Area Capacity (c_W), veh/h		6987
Minimum Lane Change Rate (LC_{MIN}), lc/h	489	Adjusted Weaving Area Capacity (c_{WA}), veh/h		6987
Maximum Weaving Length (L_{MAX}), m	2051.3	Demand-to-Capacity Ratio (v/c)		0.21

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	223	Average Weaving Speed (S_W), km/h	74.2
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	420	Average Non-Weaving Speed (S_{NW}), km/h	74.8
Weaving Lane Change Rate (LC_W), lc/h	886	Average Speed (S), km/h	74.8
Weaving Lane Change Rate (LC_{All}), lc/h	1306	Density (D), pc/km/ln	5.2
Weaving Intensity Factor (W)	0.186	Level of Service (LOS)	A

HCS Freeway Weaving Report

Project Information

Analyst	J. Willis	Date	2/10/2023
Agency	Bunt & Associates	Analysis Year	2028
Jurisdiction	City of Calgary	Time Analyzed	PM Peak
Project Description	02-23-0005: Ascension Additional Analysis	Units	Metric System

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Segment Length (L_S), m	510.0	Number of Maneuver Lanes (N_{WL}), ln	0
Weaving Configuration	Two-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	3
Interchange Density (ID), int/km	0.60	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adjustment Factor for CAVs, CAF_{CAV}	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	2036	262	156	727
Peak Hour Factor (PHF)	0.95	0.95	0.95	0.95
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.980	0.980	0.980
Flow Rate (v_i), pc/h	2187	281	168	781
Weaving Flow Rate (v_w), pc/h	168	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2219
Non-Weaving Flow Rate (v_{NW}), pc/h	3249	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		7346
Total Flow Rate (v), pc/h	3417	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		-
Volume Ratio (VR)	0.049	Weaving Area Capacity (c_W), veh/h		7346
Minimum Lane Change Rate (LC_{MIN}), lc/h	504	Adjusted Weaving Area Capacity (c_{WA}), veh/h		7346
Maximum Weaving Length (L_{MAX}), m	1884.9	Demand-to-Capacity Ratio (v/c)		0.46

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	525	Average Weaving Speed (S_W), km/h	72.4
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	806	Average Non-Weaving Speed (S_{NW}), km/h	71.1
Weaving Lane Change Rate (LC_W), lc/h	901	Average Speed (S), km/h	71.1
Weaving Lane Change Rate (LC_{All}), lc/h	1707	Density (D), pc/km/ln	12.0
Weaving Intensity Factor (W)	0.230	Level of Service (LOS)	B

HCS Freeway Weaving Report

Project Information

Analyst	J. Willis	Date	2/10/2023
Agency	Bunt & Associates	Analysis Year	2039
Jurisdiction	City of Calgary	Time Analyzed	AM Peak
Project Description	02-23-0005: Ascension Additional Analysis	Units	Metric System

Geometric Data

Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), m	510.0	Number of Maneuver Lanes (N_{WL}), ln	0
Weaving Configuration	Two-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	4
Interchange Density (ID), int/km	0.60	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adjustment Factor for CAVs, CAF_{CAV}	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	706	249	192	339
Peak Hour Factor (PHF)	0.94	0.94	0.94	0.94
Total Trucks, %	2.00	10.00	14.00	3.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.909	0.877	0.971
Flow Rate (v_i), pc/h	766	291	233	371
Weaving Flow Rate (v_w), pc/h	233	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2219
Non-Weaving Flow Rate (v_{NW}), pc/h	1428	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		8593
Total Flow Rate (v), pc/h	1661	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		-
Volume Ratio (VR)	0.140	Weaving Area Capacity (c_W), veh/h		8593
Minimum Lane Change Rate (LC_{MIN}), lc/h	932	Adjusted Weaving Area Capacity (c_{WA}), veh/h		8593
Maximum Weaving Length (L_{MAX}), m	2153.1	Demand-to-Capacity Ratio (v/c)		0.18

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	231	Average Weaving Speed (S_W), km/h	72.1
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	238	Average Non-Weaving Speed (S_{NW}), km/h	70.2
Weaving Lane Change Rate (LC_W), lc/h	1552	Average Speed (S), km/h	70.5
Weaving Lane Change Rate (LC_{All}), lc/h	1790	Density (D), pc/km/ln	4.7
Weaving Intensity Factor (W)	0.238	Level of Service (LOS)	A

HCS Freeway Weaving Report

Project Information

Analyst	J. Willis	Date	2/10/2023
Agency	Bunt & Associates	Analysis Year	2039
Jurisdiction	City of Calgary	Time Analyzed	PM Peak
Project Description	02-23-0005: Ascension Additional Analysis	Units	Metric System

Geometric Data

Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), m	510.0	Number of Maneuver Lanes (N_{WL}), ln	0
Weaving Configuration	Two-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	4
Interchange Density (ID), int/km	0.60	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adjustment Factor for CAVs, CAF_{CAV}	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	2304	296	175	818
Peak Hour Factor (PHF)	0.95	0.95	0.95	0.95
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.980	0.980	0.980
Flow Rate (v_i), pc/h	2475	318	188	879
Weaving Flow Rate (v_w), pc/h	188	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2219
Non-Weaving Flow Rate (v_{NW}), pc/h	3672	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		9183
Total Flow Rate (v), pc/h	3860	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		-
Volume Ratio (VR)	0.049	Weaving Area Capacity (c_W), veh/h		9183
Minimum Lane Change Rate (LC_{MIN}), lc/h	752	Adjusted Weaving Area Capacity (c_{WA}), veh/h		9183
Maximum Weaving Length (L_{MAX}), m	1884.9	Demand-to-Capacity Ratio (v/c)		0.41

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	593	Average Weaving Speed (S_W), km/h	71.0
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	700	Average Non-Weaving Speed (S_{NW}), km/h	68.9
Weaving Lane Change Rate (LC_W), lc/h	1372	Average Speed (S), km/h	69.0
Weaving Lane Change Rate (LC_{All}), lc/h	2072	Density (D), pc/km/ln	11.2
Weaving Intensity Factor (W)	0.268	Level of Service (LOS)	B

HCS Freeway Weaving Report

Project Information

Analyst	J. Willis	Date	2/10/2023
Agency	Bunt & Associates	Analysis Year	2048
Jurisdiction	City of Calgary	Time Analyzed	AM Peak
Project Description	02-23-0005: Ascension Additional Analysis	Units	Metric System

Geometric Data

Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), m	510.0	Number of Maneuver Lanes (N_{WL}), ln	0
Weaving Configuration	Two-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	4
Interchange Density (ID), int/km	0.60	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adjustment Factor for CAVs, CAF_{CAV}	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	775	304	192	342
Peak Hour Factor (PHF)	0.94	0.94	0.94	0.94
Total Trucks, %	2.00	10.00	14.00	3.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.909	0.877	0.971
Flow Rate (v_i), pc/h	841	356	233	375
Weaving Flow Rate (v_w), pc/h	233	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2219
Non-Weaving Flow Rate (v_{NW}), pc/h	1572	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		8629
Total Flow Rate (v), pc/h	1805	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		-
Volume Ratio (VR)	0.129	Weaving Area Capacity (c_W), veh/h		8629
Minimum Lane Change Rate (LC_{MIN}), lc/h	932	Adjusted Weaving Area Capacity (c_{WA}), veh/h		8629
Maximum Weaving Length (L_{MAX}), m	2119.9	Demand-to-Capacity Ratio (v/c)		0.20

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	254	Average Weaving Speed (S_W), km/h	71.9
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	268	Average Non-Weaving Speed (S_{NW}), km/h	70.0
Weaving Lane Change Rate (LC_W), lc/h	1552	Average Speed (S), km/h	70.3
Weaving Lane Change Rate (LC_{All}), lc/h	1820	Density (D), pc/km/ln	5.2
Weaving Intensity Factor (W)	0.242	Level of Service (LOS)	A

HCS Freeway Weaving Report

Project Information

Analyst	J. Willis	Date	2/10/2023
Agency	Bunt & Associates	Analysis Year	2048
Jurisdiction	City of Calgary	Time Analyzed	PM Peak
Project Description	02-23-0005: Ascension Additional Analysis	Units	Metric System

Geometric Data

Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), m	510.0	Number of Maneuver Lanes (N_{WL}), ln	0
Weaving Configuration	Two-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	4
Interchange Density (ID), int/km	0.60	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adjustment Factor for CAVs, CAF_{CAV}	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	2334	332	130	845
Peak Hour Factor (PHF)	0.95	0.95	0.95	0.95
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.980	0.980	0.980
Flow Rate (v_i), pc/h	2507	357	140	908
Weaving Flow Rate (v_w), pc/h	140	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2219
Non-Weaving Flow Rate (v_{NW}), pc/h	3772	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		9227
Total Flow Rate (v), pc/h	3912	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		-
Volume Ratio (VR)	0.036	Weaving Area Capacity (c_W), veh/h		9227
Minimum Lane Change Rate (LC_{MIN}), lc/h	560	Adjusted Weaving Area Capacity (c_{WA}), veh/h		9227
Maximum Weaving Length (L_{MAX}), m	1847.4	Demand-to-Capacity Ratio (v/c)		0.42

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	609	Average Weaving Speed (S_W), km/h	71.6
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	721	Average Non-Weaving Speed (S_{NW}), km/h	71.0
Weaving Lane Change Rate (LC_W), lc/h	1180	Average Speed (S), km/h	71.0
Weaving Lane Change Rate (LC_{All}), lc/h	1901	Density (D), pc/km/ln	11.0
Weaving Intensity Factor (W)	0.250	Level of Service (LOS)	B