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Lakefield South Subdivision

TRAFFIC IMPACT STUDY ADDENDUM

Triple T Holdings Ltd.

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Issue	Date	Description
1	June 28, 2023	Final Report
2	May 2, 2024	Final Report – Revised

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1 Introduction

Tatham Engineering Limited was retained by Triple T Holdings Ltd. to prepare an addendum the *Lakefield South Subdivision – 3358 Lakefield Road – Traffic Study Report*[1] (TIS) completed by Tranplan Associates.

1.1 VERSION HISTORY

Addendum #1 – June 2023

An addendum to the initial *3358 Lakefield Road Traffic Study Report* was prepared and submitted in June 2023. The addendum reviewed the proposed changes to the residential unit counts and commercial gross floor area, reassessed the network operations at the 2029 horizon (to assume partial build-out rather than full build-out as was assumed in the initial TIS) and further assessed network operations for the 2045 horizon. In addition, it addressed comments provided by the Township's peer reviewer with respect to the initial TIS.

Addendum #2 – April 2024

This report reflects a second addendum and has been prepared to address further changes to the site plan along with additional peer review comments received in relation to the June 2023 Addendum (peer review correspondence prepared by Stantec Consulting Ltd., dated November 21, 2023). Our responses to such are provided under separate cover.

[1] *Lakefield South Subdivision – 3358 Lakefield Road – Traffic Study Report*. Tranplan Associates, March 2020.

2 Proposed Development

2.1 LAND USES

As per the current site plan (refer to Figure 1), the proposed development will consist of the following:

- 263 single-family detached units;
- 65 townhouse units; and
- 582 apartment units with potential ground-floor commercial space.

It is noted that the size of the potential ground-floor commercial space is not currently specified. For the purposes of this report, it is assumed that such will consist of up to 4,000 m^2 (43,100 ft^2) of gross floor area (GFA), consistent with previous site plans and the previous submission of this addendum report.

This proposed ground-floor commercial space will displace a portion of the apartment units. Assuming an average apartment size of 93 m^2 (1,000 ft^2), the proposed ground floor commercial space will displace approximately 43 apartment units, reducing the total apartment unit count to 539 units. It has been assumed that the ground floor commercial space will be located centrally within the subject site, within the apartment block located immediately east of Water Tower Road and bounded by the internal loop road illustrated in the site plan.

2.2 ACTIVE TRANSPORATION

As indicated on the site plan, a comprehensive network of sidewalks and pedestrian pathways will be provided throughout the site. At least one sidewalk will be provided within the right-of-way for each road whereas pedestrian pathways will be provided within the proposed parks and around the stormwater management facilities. This active transportation network will tie into existing facilities present along County Road 29 and allow for future connections to be made via 7th Line and Murray Street.

The proposed active transportation facilities within the subject development are illustrated in Figure 2.

2.3 PHASING

Per communications with the client, construction of the development is expected to commence in 2025. In considering an average build rate of approximately 50 units per year (as is typical for the area), 200 units are expected to be built and occupied by the 2029 horizon. This reflects approximately 25% build-out of the residential component of the site by the 2029 horizon. For

the purposes of this study, it is assumed that the commercial development will also be 25% built out by the 2029 horizon.

2.4 TRIP GENERATION

In accordance with the methodologies adopted in the initial TIS, the number of vehicle trips to be generated by the proposed development for the weekday AM and weekday PM peak hours has been determined based on the type of use, development size, and trip generation rates per the *ITE Trip Generation Manual, 10th Edition*[2]. It is noted that the commercial space has been assumed to consist of 50% retail space and 50% office space, for which the *shopping centre* (ITE land-use code 820) and *general office* (ITE land-use code 710) land-uses have been applied, respectively. Furthermore, as resolved with the peer reviewer, the trip generation for the commercial uses has been established using the fitted curve equations as opposed to the average trip rates, resulting in a more conservative trip estimate (i.e. the fitted curve equations results in greater trip estimates as compared to the average trip rates). The trip rates/equations are summarized in Table 1.

Table 1: Trip Rates

LAND USE	VARIABLE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		In	Out	Total	In	Out	Total
single family detached (ITE 210)	unit	0.18	0.56	0.74	0.62	0.37	0.99
low-rise apartments (ITE 220)	unit	0.11	0.35	0.46	0.35	0.21	0.56
general office (ITE 710)	gross floor area	T = 0.94X + 26.49[1] 86% in / 14% out			LN(T) = 0.95LN(X) + 0.36[1] 16% in / 84% out		
shopping centre (ITE 820)	gross floor area	T = 0.50X + 150.78[1] 62% in / 38% out			LN(T) = 0.74LN(X) + 2.89[1] 48% in / 52% out		

[1] ITE fitted curve equation, where T = trips and X = 1,000 ft^2 GFA.

Rates for the *single family detached* (ITE land-use code 210) land-use have been considered for both the single-family units and townhouse units, in accordance with the methodologies adopted in the TIS. Trip estimates are summarized in Table 2. As indicated, the site is expected to generate a total of 700 trips during the weekday AM peak and 828 trips during the weekday PM peak.

[2] *Trip Generation Manual, 10th Edition.* Institute of Transportation Engineers. September 2017.

As resolved between Tranplan and the peer reviewer, a 10% reduction has been applied to the commercial trips (i.e. office + retail) to represent internal trips generated by the proposed development. Internal trips are those trips made without accessing the external road network. For example, someone living in one of the townhouse units near the commercial space may visit a store without needing to use the surrounding external road network, thus generating an internal trip. The net trip estimates are summarized in Table 3.

As indicated, the site is expected to generate 679 new trips during the weekday AM peak and 808 new trips during the weekday PM peak upon full build-out. For the 2029 horizon (i.e. 25% build-out), the site is expected to generate 170 new trips during the AM peak hour and 202 new trips during the PM peak hour.

Table 2: Trip Estimates – Gross Trips

LAND USE (ITE CODE USED)	SIZE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		In	Out	Total	In	Out	Total
single family (210)	263 units	49	146	195	164	96	260
townhouses (210)	65 units	12	36	48	40	24	64
apartments (220)	539 units	57	191	248	190	112	302
residential total	**867 units**	**118**	**373**	**491**	**394**	**232**	**626**
office space (710)	21,550 ft^2	40	7	47	4	23	27
retail space (820)	21,550 ft^2	100	62	162	84	91	175
commercial total	**43,100 ft^2**	**140**	**69**	**209**	**88**	**114**	**202**
Total Gross Trips		**258**	**442**	**700**	**482**	**346**	**828**

Table 3: Trip Estimates – Net Trips

TRIP TYPE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
	In	Out	Total	In	Out	Total
residential trips	118	373	491	394	232	626
commercial trips (gross)	140	69	209	88	114	202
internal trips (10% of commercial)	14	7	21	9	11	20
Total Net Trips	**244**	**435**	**679**	**475**	**333**	**808**
Phase 1 Total Net Trips (25%)	**61**	**109**	**170**	**118**	**84**	**202**

3 Traffic Volumes

3.1 EXISTING VOLUMES

The 2018 design hour volumes (DHVs), as provided in the initial TIS, are illustrated in Figure 3.

3.2 BACKGROUND VOLUMES

The 2029 background volumes (as provided in the initial TIS) are illustrated in Figure 4 and are based on the 2018 DHVs with an assumed 2% growth per annum on each road.

To determine traffic volumes for the 2045 horizon year, a 1% growth per annum was applied to the 2029 background volumes on each road. While this is lower than the growth rate applied in the TIS for the period 2018 to 2029, it is in line with historical growth rates observed in census data for the County of Peterborough (approximately 1% per annum from 2011 to 2021) and projected annual growth needed to reach the population targets set out in the province's *A Place to Grow – Growth Plan for the Greater Golden Horseshoe* [3] report (approximately 0.85% per annum from 2021 to 2051). The resulting 2045 background volumes are illustrated in Figure 5.

3.3 LAKEFIELD SOUTH VOLUMES

In considering the distribution of the site traffic volumes to the area road system, the residential trips were distributed based on the same distribution applied in the initial TIS, whereas the commercial trips were distributed based on a modified distribution resolved between Tranplan and the peer reviewer. The resulting trip distributions applied are summarized in Table 4.

Table 4: Trip Distribution

GATEWAY	TRAVEL DIRECTION	RESIDENTIAL	COMMERCIAL
Bridge Street	East	22%	30%
Clementi Street	North	2%	5%
County Road 18	West	18%	25%
7th Line	West	8%	5%
County Road 29	South	50%	25%
Internal	-	-	10%

[3] *A Place to Grow – Growth Plan for the Greater Golden Horseshoe*. Province of Ontario. August 2020

3.4 TOTAL VOLUMES

The resulting 2029 and 2045 total traffic volumes (i.e. background volumes + site traffic) are illustrated in Figure 10 and Figure 11.

4 Traffic Operations

The operations of the study area intersections were reviewed under 2029 total conditions (to determine the impact of the revised site trip generation), and for the 2045 horizon under both background and total conditions. The operational assessment has considered the intersection configuration and control as determined in the initial TIS, with intersection geometries reviewed and revised as needed based on subsequent field measurements undertaken by Tranplan (intersection geometries are provided in Appendix A). The existing signal timing plans in use at the intersections of County Road 29 with County Road 18 and with Clementi Street were obtained from the County and are provided in Appendix A, for reference.

Procedures outlined in the *2000 Highway Capacity Manual*[4] (using Synchro v.11 software) were used in the assessment. For signalized intersections, the analysis considers:

- the average delay (measured in seconds);
- level of service (LOS); and
- volume to capacity (v/c) for each signalized movements.

At unsignalized intersections, the analysis considers the same metrics, but with a focus on critical movements only, such as those operating under stop control.

With respect to the noted metrics:

- level of service A corresponds to the best operating condition with minimal delays whereas level of service F corresponds to poor operations resulting from high intersection delays (additional details provided in Appendix B); and
- a v/c ratio of less than 1.0 indicates the intersection movement/approach is operating at less than capacity while v/c of 1.0 indicates capacity has been reached.

Operational summaries at each horizon are provided below, with detailed operations worksheets provided in Appendix C.

4.1 2029 OPERATIONS

A summary of the intersection operations under 2029 total conditions (25% build-out) is provided in Table 5.

[4] *Highway Capacity Manual.* Transportation Research Board, Washington DC, 2000.

Table 5: Intersection Operations – 2029 Total

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 29 & Clementi Street	EB L	signal	7	A	0.12	11	B	0.32
	EB TR	signal	12	B	0.63	13	B	0.65
	WB L	signal	6	A	0.17	6	A	0.23
	WB TR	signal	8	A	0.58	15	B	0.82
	NB L	signal	31	C	0.41	30	C	0.32
	NB TR	signal	29	C	0.15	28	C	0.12
	SB L	signal	30	C	0.30	30	C	0.28
	SB TR	signal	28	C	0.05	28	C	0.09
	overall	signal	13	B	0.58	16	B	0.76
County Road 29 & Water Tower Road/ Commercial Access	EB L	free	9	A	0.01	11	B	0.00
	WB L	free	9	B	0.03	10	B	0.04
	NB LTR	stop	20	C	0.20	23	C	0.20
	SB LTR	stop	17	C	0.02	20	C	0.07
County Road 29 & County Road 18	EB L	signal	24	C	0.82	19	B	0.73
	EB R	signal	11	B	0.08	12	B	0.08
	NB L	signal	12	B	0.19	11	B	0.29
	NB T	signal	14	B	0.51	15	B	0.69
	SB T	signal	19	B	0.76	21	C	0.81
	SB R	signal	12	B	0.24	11	B	0.40
	overall	signal	18	B	0.79	16	B	0.77
County Road 29 & 7th Line	EB LTR	stop	18	C	0.06	29	D	0.16
	WB LTR	stop	24	C	0.35	29	D	0.33
William Street & Clementi Street	EB LT	stop	8	A	0.10	8	A	0.09
	WB TR	stop	8	A	0.10	7	A	0.04
	SB LR	stop	8	A	0.14	8	A	0.13
Water Tower Road & North Collector	EB LTR	stop	9	A	0.01	9	A	0.01
	WB LTR	stop	9	A	0.00	9	A	0.00
7th Line & South Collector	SB LR	stop	9	A	0.06	9	A	0.04

As indicated, each intersection is expected to provide acceptable operations (LOS D or better) through the 2029 horizon under total conditions, assuming a build-out of approximately 25% of the subject site. Therefore, no network improvements are required to support this level of build-out.

4.2 2045 OPERATIONS

4.2.1 Background Operations

Table 6 summarizes the intersection operations under 2045 background conditions.

Table 6: Intersection Operations – 2045 Background

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 29 & Clementi Street	EB L	signal	9	A	0.17	18	B	0.49
	EB TR	signal	18	C	0.77	14	B	0.73
	WB L	signal	9	A	0.24	7	A	0.29
	WB TR	signal	11	A	0.69	22	C	0.92
	NB L	signal	30	C	0.41	31	C	0.43
	NB TR	signal	27	C	0.17	28	C	0.15
	SB L	signal	29	C	0.30	31	C	0.38
	SB TR	signal	27	C	0.06	28	C	0.10
	overall	signal	17	B	0.68	19	B	0.87
County Road 29 & Water Tower Road/ Commercial Access	EB L	free	9	A	0.01	12	B	0.00
	WB L	free	11	B	0.00	11	B	0.00
	NB LTR	stop	18	C	0.01	22	C	0.01
	SB LTR	stop	18	C	0.02	24	C	0.10
County Road 29 & County Road 18	EB L	signal	34	C	0.91	26	C	0.80
	EB R	signal	11	B	0.09	13	B	0.08
	NB L	signal	13	B	0.23	13	B	0.42
	NB T	signal	15	B	0.57	18	B	0.74
	SB T	signal	25	C	0.83	29	C	0.90
	SB R	signal	12	B	0.26	12	B	0.46
	overall	signal	23	C	0.87	20	C	0.85
County Road 29 &	EB LTR	stop	18	C	0.05	34	D	0.15

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
7th Line	WB LTR	stop	21	C	0.19	20	C	0.15
William Street & Clementi Street	EB LT	stop	9	A	0.11	8	A	0.10
	WB TR	stop	8	A	0.12	7	A	0.04
	SB LR	stop	9	A	0.16	8	A	0.15

As indicated, and similar to the findings of the initial TIS under 2029 background conditions, the network will provide acceptable operations (LOS D or better) through the 2045 horizon under background conditions. Signal timing plans did not require modifications from those established under 2029 background conditions.

4.2.2 Total Conditions

A summary of the intersection operations under 2045 total conditions (i.e. 100% build-out) is provided in Table 7. Signal timing plans at each intersection were optimized as necessary to ensure optimal operations are achieved.

As indicated, most intersections are expected to provide acceptable operations (LOS E or better) through the 2045 horizon. It is noted that the intersections of County Road 29 with Water Tower Road and with 7th Line both experience poor operations (LOS F) with delays on some movements exceeding 150 seconds during peak times. Traffic signal warrants were completed at each of these intersections. The warrants are based on the methodologies outlined under *Justification 7* of *Ontario Traffic Manual Book 12 – Traffic Signals*. Completed traffic signal warrants are provided in Appendix D. As indicated, signals are warranted at the intersection of County Road 29 with 7th Line and are not warranted at the intersection of County Road 29 with Water Tower Road. Notwithstanding the warrant results, signals are still necessary at both intersections from an operational perspective to address delays on the side streets.

A reassessment of the noted intersections under signalized control is presented in Table 8 and demonstrates that each intersection will provide acceptable operations (LOS E or better) under signalized control.

It is noted that some intersections along the County Road 29 corridor are operating at or near capacity (i.e. v/c > 0.95), which indicates that additional capacity may be needed to accommodate increasing volumes by the 2045 horizon. It is noted that such capacity concerns

are also identified in the *Peterborough County 2022 Transportation Master Plan Update*[5]. The *Transportation Master Plan Update* recommends the construction of a new two-lane arterial road and bridge over the Otonabee River. The exact alignment of this new link is not yet determined but would extend between County Road 29 in the west and County Road 33 in the east (i.e. through the Lakefield South Planning Area, possibly via 7th Line), thus providing an alternative high-capacity route around Lakefield and through the study area. The recommendations in the *Transportation Master Plan Update* are expected to address the note capacity concerns.

Table 7: Intersection Operations – 2045 Total

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 29 & Clementi Street	EB L	signal	9	A	0.24	43	D	0.75
	EB TR	signal	23	C	0.86	16	B	0.75
	WB L	signal	12	B	0.32	9	A	0.36
	WB TR	signal	13	B	0.75	34	C	**0.96**
	NB L	signal	30	C	0.41	39	D	0.41
	NB TR	signal	28	C	0.17	36	D	0.15
	SB L	signal	29	C	0.32	39	D	0.39
	SB TR	signal	27	C	0.07	36	D	0.12
	overall	signal	19	B	0.75	28	C	0.91
County Road 29 & Water Tower Road/ Commercial Access	EB L	free	9	A	0.01	12	B	0.00
	WB L	free	12	B	0.13	13	B	0.22
	NB LTR	stop	**154**	**F**	**1.16**	**281**	**F**	**1.42**
	SB LTR	stop	33	D	0.04	47	E	0.19
County Road 29 & County Road 18	EB L	signal	61	E	**1.02**	39	D	0.89
	EB R	signal	12	B	0.10	16	B	0.12
	NB L	signal	14	B	0.36	17	B	0.51
	NB T	signal	15	B	0.58	22	C	0.78
	SB T	signal	32	C	0.89	31	C	0.89
	SB R	signal	13	B	0.32	15	B	0.52
	overall	signal	32	C	0.94	26	C	0.89

[5] *Peterborough County 2022 Transportation Master Plan Update*. Paradigm Transportation Solutions Inc. & Stantec. October 2022.

County Road 29 & 7th Line	EB LTR	stop	28	C	0.17	**118**	**F**	0.73
	WB LTR	stop	**333**	**F**	**1.58**	**776**	**F**	**2.47**
William Street & Clementi Street	EB LT	stop	9	A	0.13	8	A	0.11
	WB TR	stop	8	A	0.13	7	A	0.04
	SB LR	stop	9	A	0.17	8	A	0.17
Water Tower Road & North Collector	EB LTR	stop	11	B	0.03	11	B	0.03
	WB LTR	stop	9	A	0.01	9	A	0.01
7th Line & South Collector	SB LR	stop	9	A	0.23	9	A	0.16

Notwithstanding the recommended traffic signals at the intersections of County Road 29 with Water Tower Road and with 7th Line, no further improvements to the study area network are considered necessary to accommodate the 2045 future total conditions, recognizing that such will be addressed through the *Transportation Master Plan Update* improvements recommended for the wider road network.

Table 8: Intersection Operations – 2045 Total (with signalization)

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 29 & Water Tower Road/ Commercial Access	EB L	signal	6	A	0.03	5	A	0.02
	EB TR	signal	32	C	0.95	31	C	**0.95**
	WB L	signal	21	C	0.54	34	C	0.74
	WB TR	signal	16	B	0.78	41	D	**1.00**
	NB LTR	signal	48	D	0.81	60	E	0.80
	SB LTR	signal	26	C	0.01	36	D	0.04
	overall	signal	27	C	0.92	38	D	**0.96**
County Road 29 & 7th Line	EB LTR	signal	22	C	0.07	25	C	0.19
	WB LTR	signal	42	D	0.81	36	D	0.70
	NB LTR	signal	12	B	0.53	18	C	0.81
	SB LTR	signal	15	B	0.66	15	B	0.72
	overall	signal	19	B	0.70	19	B	0.78

4.3 TURN LANE REQUIREMENTS

Notwithstanding the otherwise acceptable intersection operations expected under future conditions, the need for exclusive turn lanes on County Road 29 at Line 7 and Water Tower Road was reviewed based on the following:

- the 2029 and 2045 traffic volumes; and
- MTO guidelines[6] for auxiliary turn lanes at unsignalized intersections

Left Turn Lanes

The need for a southbound left turn lane on County Road 29 at Line 7 was reviewed. The northbound turning volumes at Line 7 are minimal (thus will not warrant a left turn lane). With respect to a left turn lane on County Road 29 at Water Tower Road, a westbound left turn lane is already present by means of the existing two-way left turn lane.

In considering the need for an exclusive left turn lane, MTO warrants for auxiliary left turn lanes on 2-lane, undivided highways were considered. The warrants are based on design speed, advancing volume (i.e. traffic travelling in the same direction as the turning traffic), opposing volume (i.e. traffic travelling in the opposite direction as the turning traffic), and percentage of left turns in the advancing volume. A design speed of 80 km/h has been considered, reflective of the 70 km/h posted speed limit on County Road 29 at Line 7.

Completed left turn warrants are provided in Appendix E. As indicated, a southbound left turn is warranted at both the 2029 and 2045 horizons, under both background and total conditions, with the following storage required:

Background Conditions

- 2029 – 15 metres storage
- 2045 – 15 metres storage

Total Conditions

- 2029 – 15 metres storage
- 2045 – 25 metres storage

Given the need for a southbound left turn lane, a northbound right turn lane is also recommended. While not warranted based on volumes, such is nonetheless recommended to ensure lane balance through the intersection. A storage length of 15 metres is recommended.

[6] *MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads*. Ministry of Transportation of Ontario Design Standards & Specifications Office, April 2020.

Right Turn Lanes

With respect to right turn lanes, as per MTO standards, such are generally warranted where right-turning volumes exceed 60 vehicles per hour (vph) and/or impede the operations of through traffic. Based on the volume projections detailed in Figure 10 and Figure 11, right turning volumes on County Road 29 at each reviewed intersection are as follows:

2029 Total Horizon

- at Water Tower Road – 19 to 34 vph
- at Line 7 – 27 to 65 vph

2045 Total Horizon

- at Water Tower Road – 69 to 134 vph
- at Line 7 – 87 to 197 vph

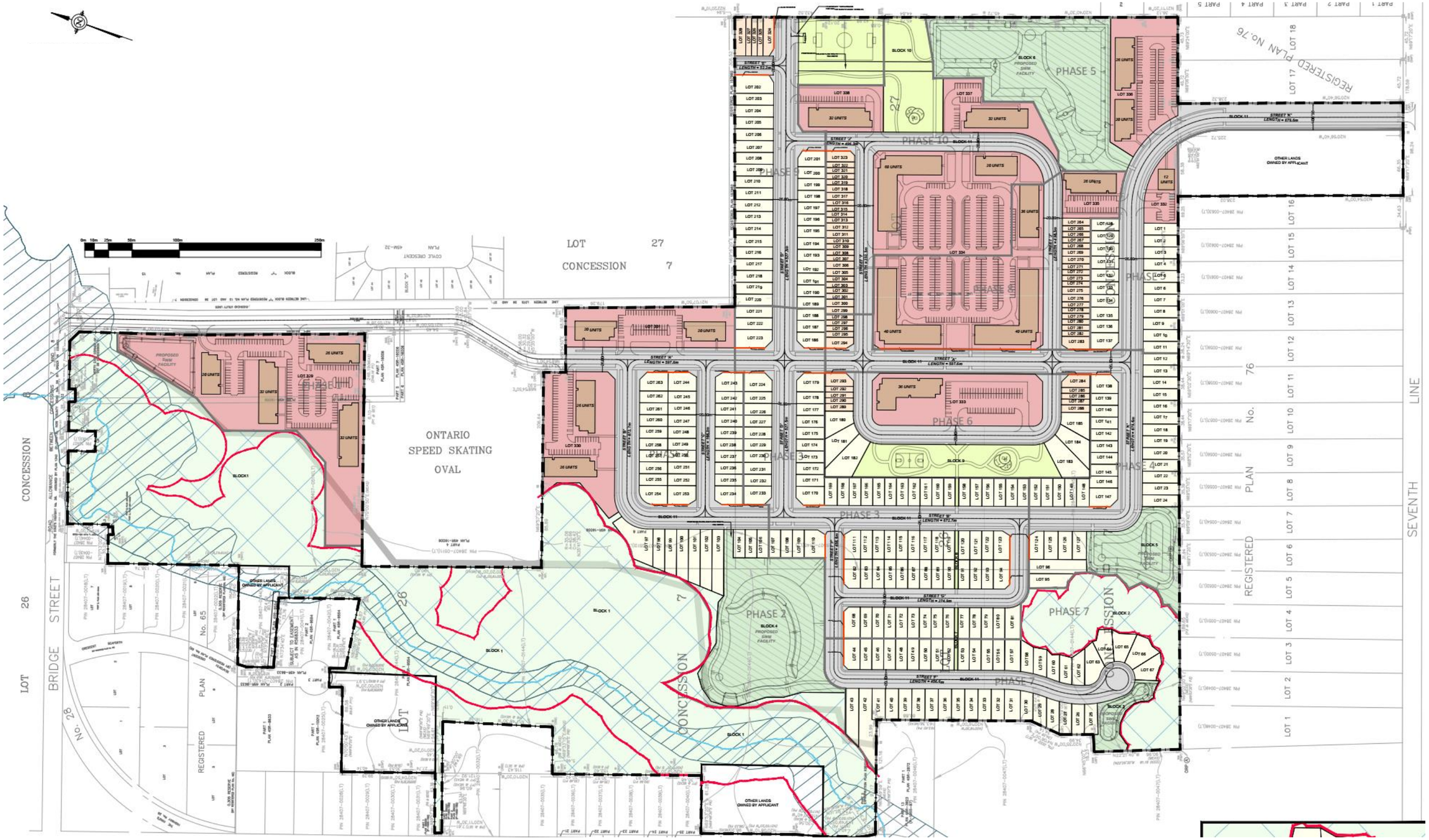
As indicated, based on the 60 vph warrant threshold, right turn lanes are not warranted under the 2029 horizon. While the northbound right turning volumes at Line 7 will marginally exceed the threshold during the weekday PM peak hour, the right turning volumes are not expected to impede through traffic or otherwise cause operational concerns.

By the 2045 horizon, based on the 60 vph threshold, a right turn lane is warranted at each intersection, with turning volumes exceeding the noted 60 vph threshold during both weekday AM and PM peak hours.

5 Summary

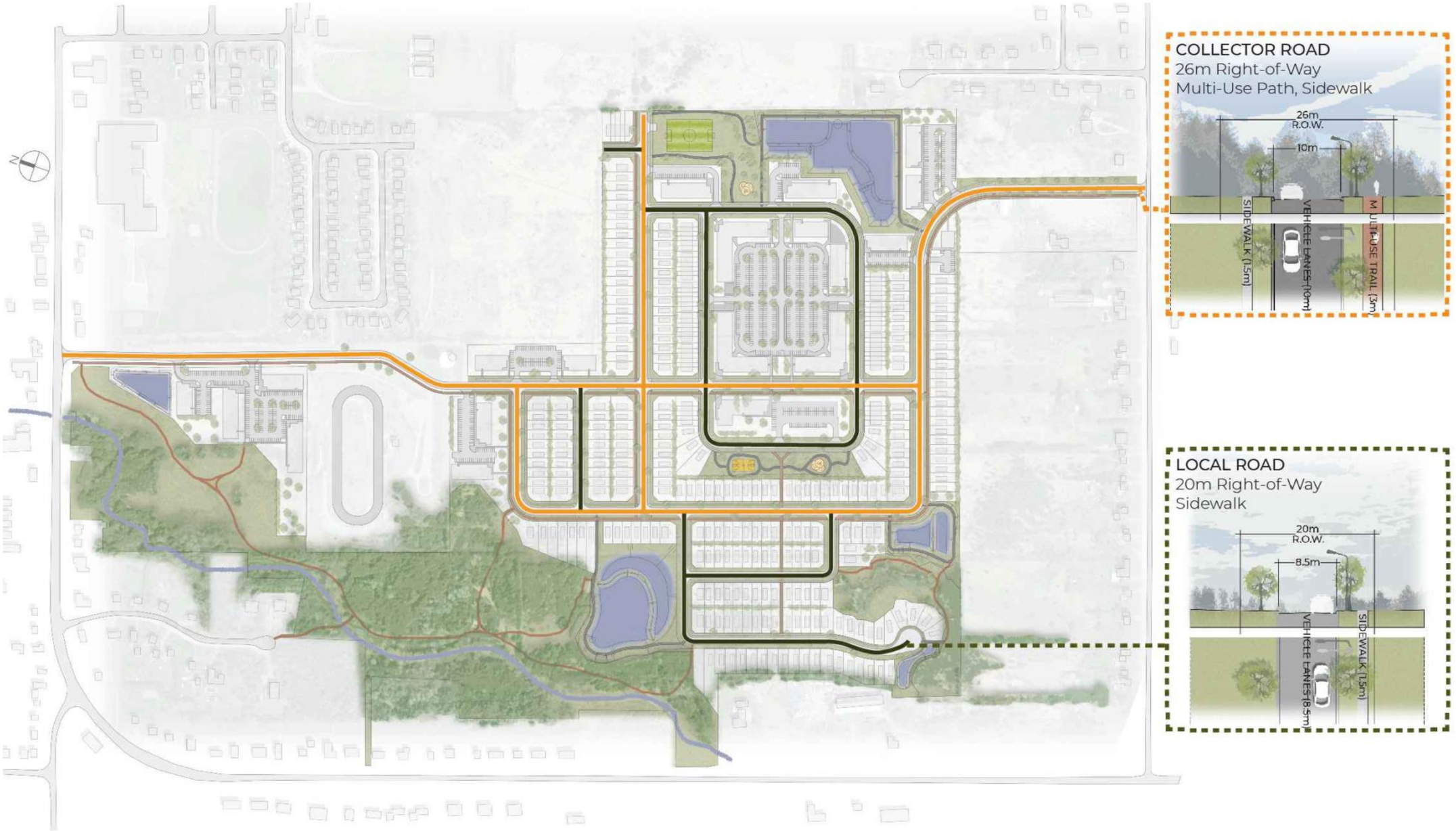
This addendum has been prepared to address comments provided by the peer reviewer and consider proposed changes to the Lakefield South Subdivision development plan. The trip generation for the site has been revisited and the road network operations reassessed for the future horizon years of 2029 and 2045. The following are the findings of the review for each horizon year:

- 2029 horizon
  - Assuming 25% build-out of the site, no improvements are required to accommodate the 2029 conditions.
  - On County Road 29, a southbound left turn lane with 15 metres of storage is warranted at Line 7 but is not operationally necessary.
- 2045 Horizon
  - Traffic signals are recommended for the intersections of County Road 29 with Water Tower Road and 7th Line to support full build-out of the site.
  - On County Road 29, a southbound left turn lane with 25 metres of storage is warranted at Line 7 but is not operationally necessary.
  - On County Road 29, a northbound and eastbound right turn lane is warranted (but not operationally necessary) at Line 7 and Water Tower Road, respectively.
  - While road capacity becomes somewhat limited at select intersections following build-out of the subject development, the capacity concerns are expected to be addressed through improvements to the wider road network as identified in the County's *Transportation Master Plan Update*.



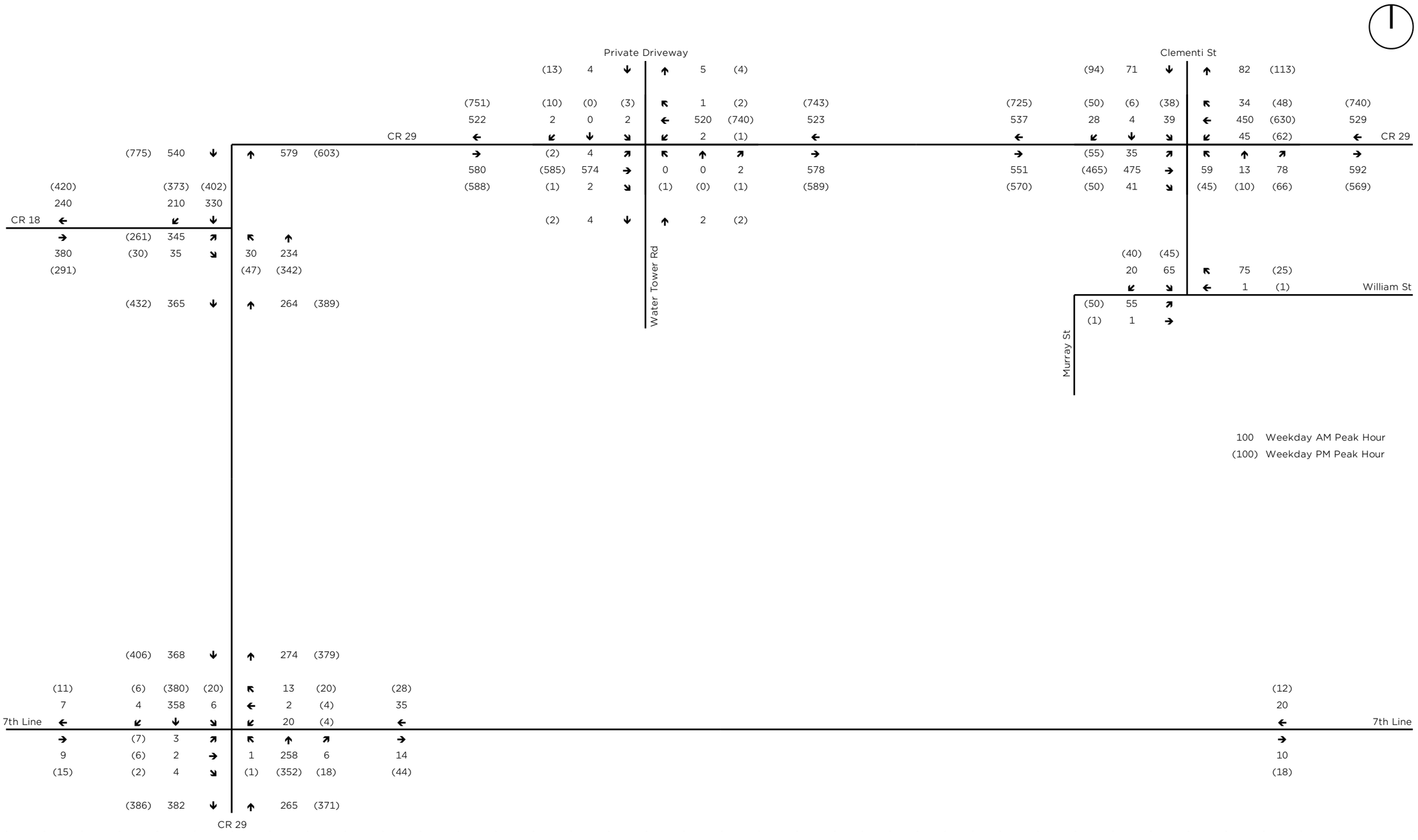
LAKEFIELD SOUTH SUBDIVISION

Figure 1: Site Plan



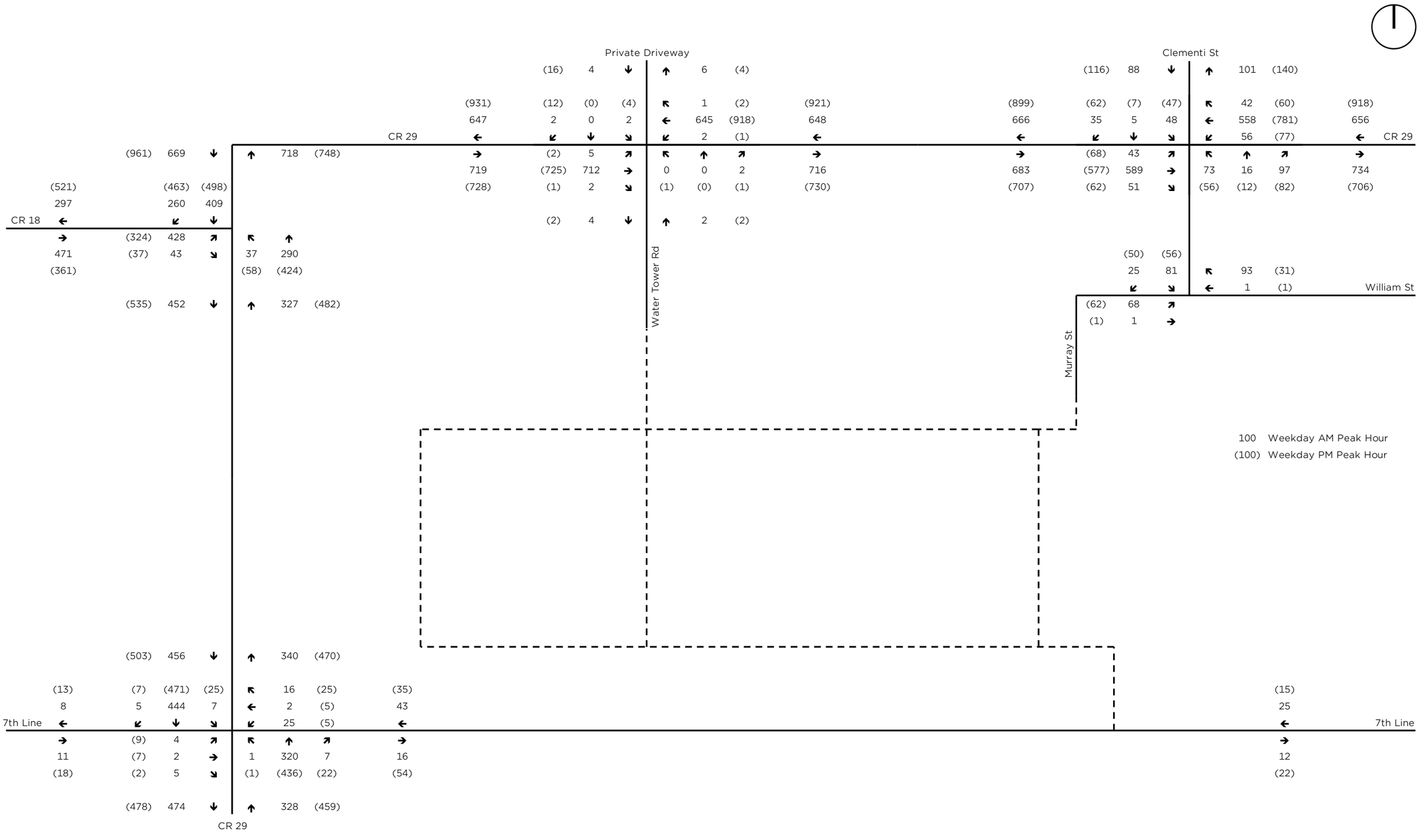
LAKEFIELD SOUTH SUBDIVISION

Figure 2: Active Transportation Facilities



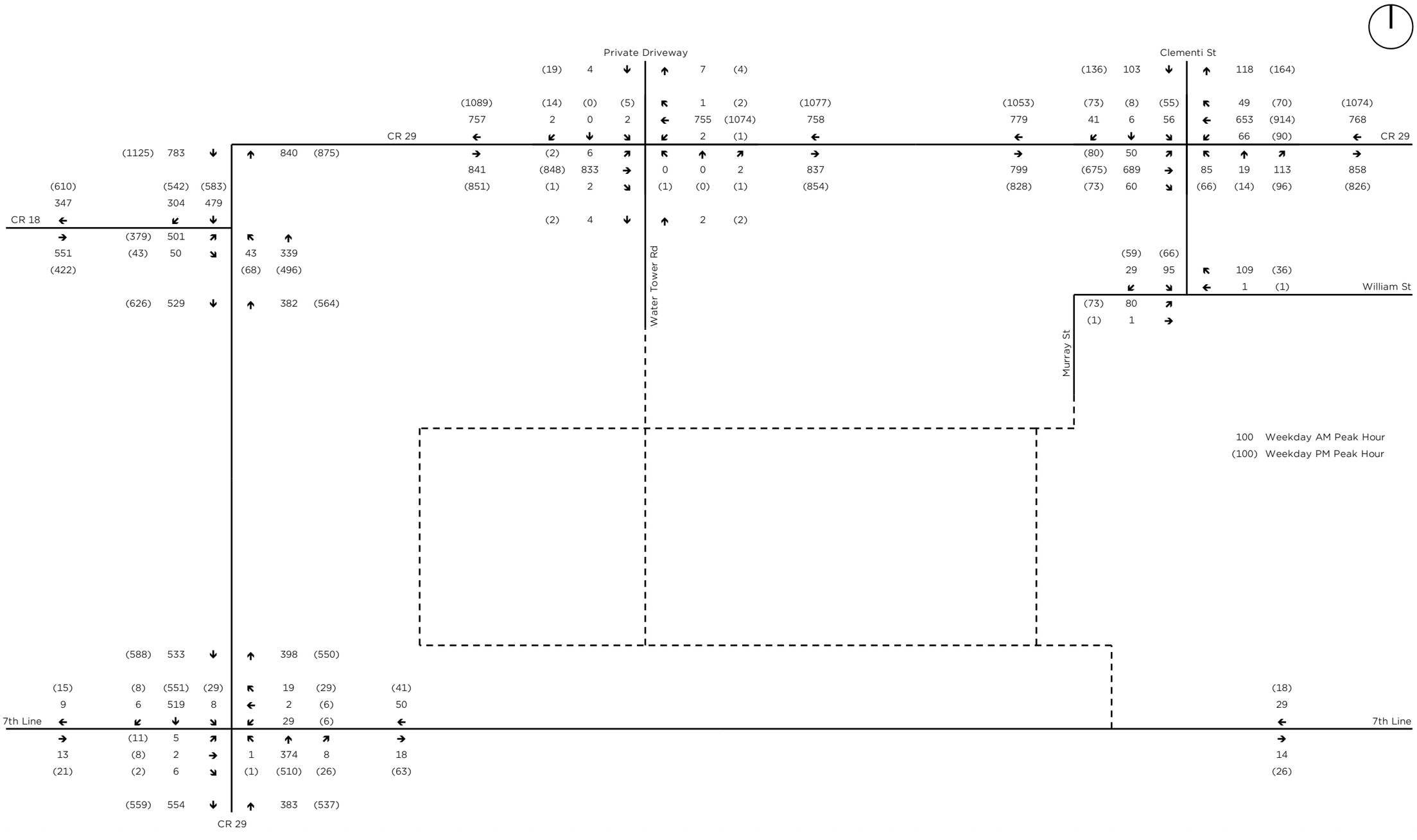
LAKEFIELD SOUTH SUBDIVISION

Figure 3: Traffic Volumes – 2018 DHV



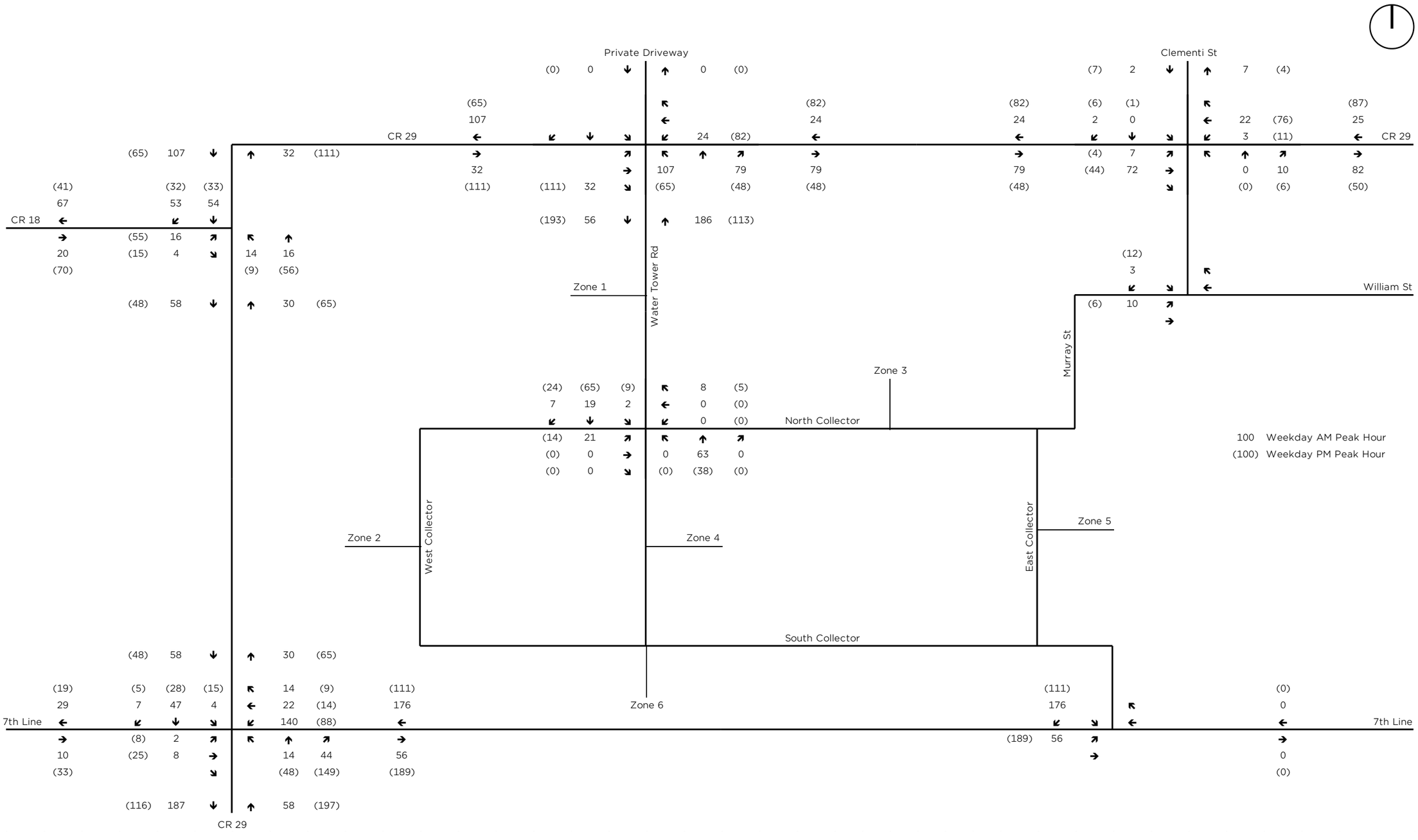
LAKEFIELD SOUTH SUBDIVISION

Figure 4: Traffic Volumes – 2029 Background



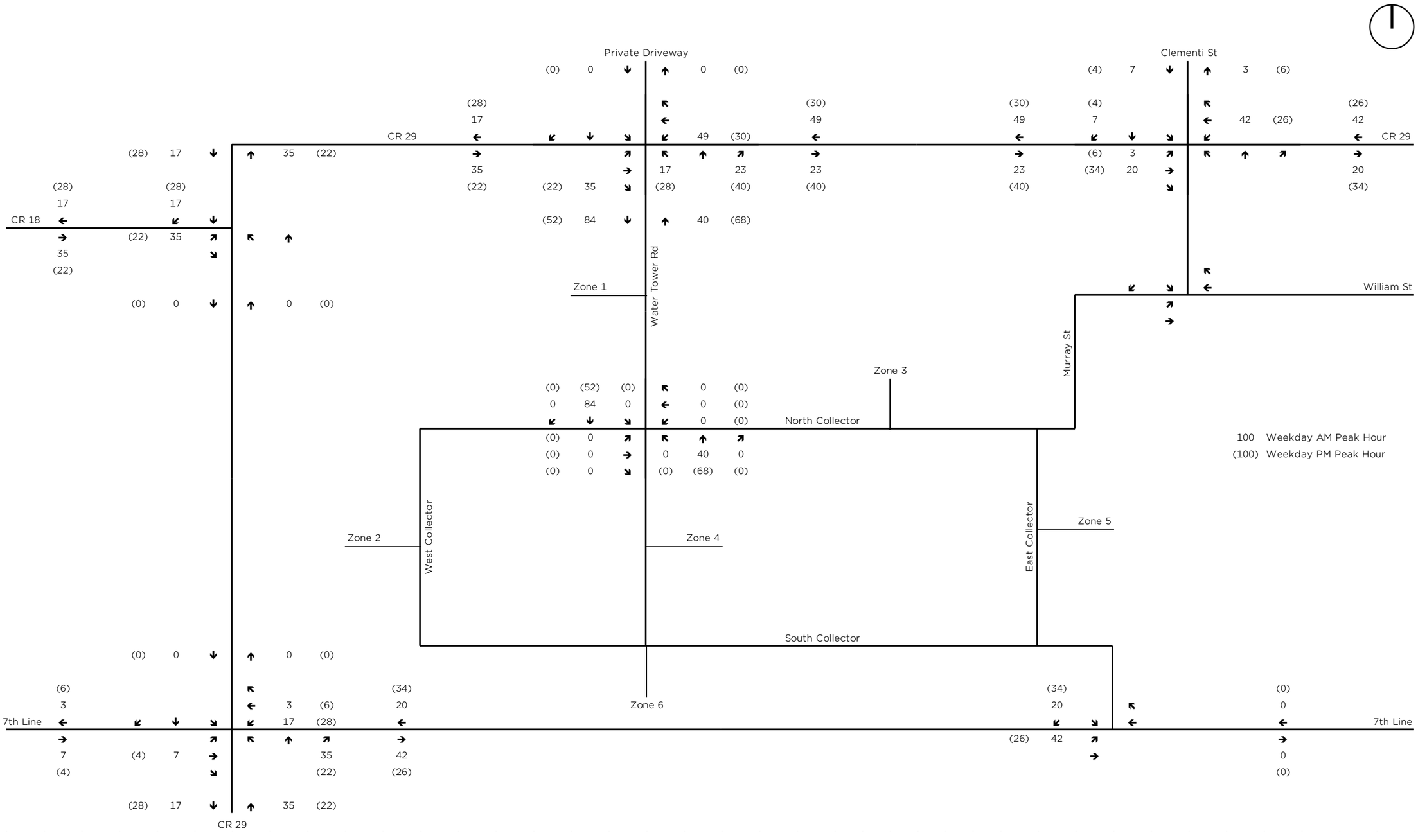
LAKEFIELD SOUTH SUBDIVISION

Figure 5: Traffic Volumes – 2045 Background



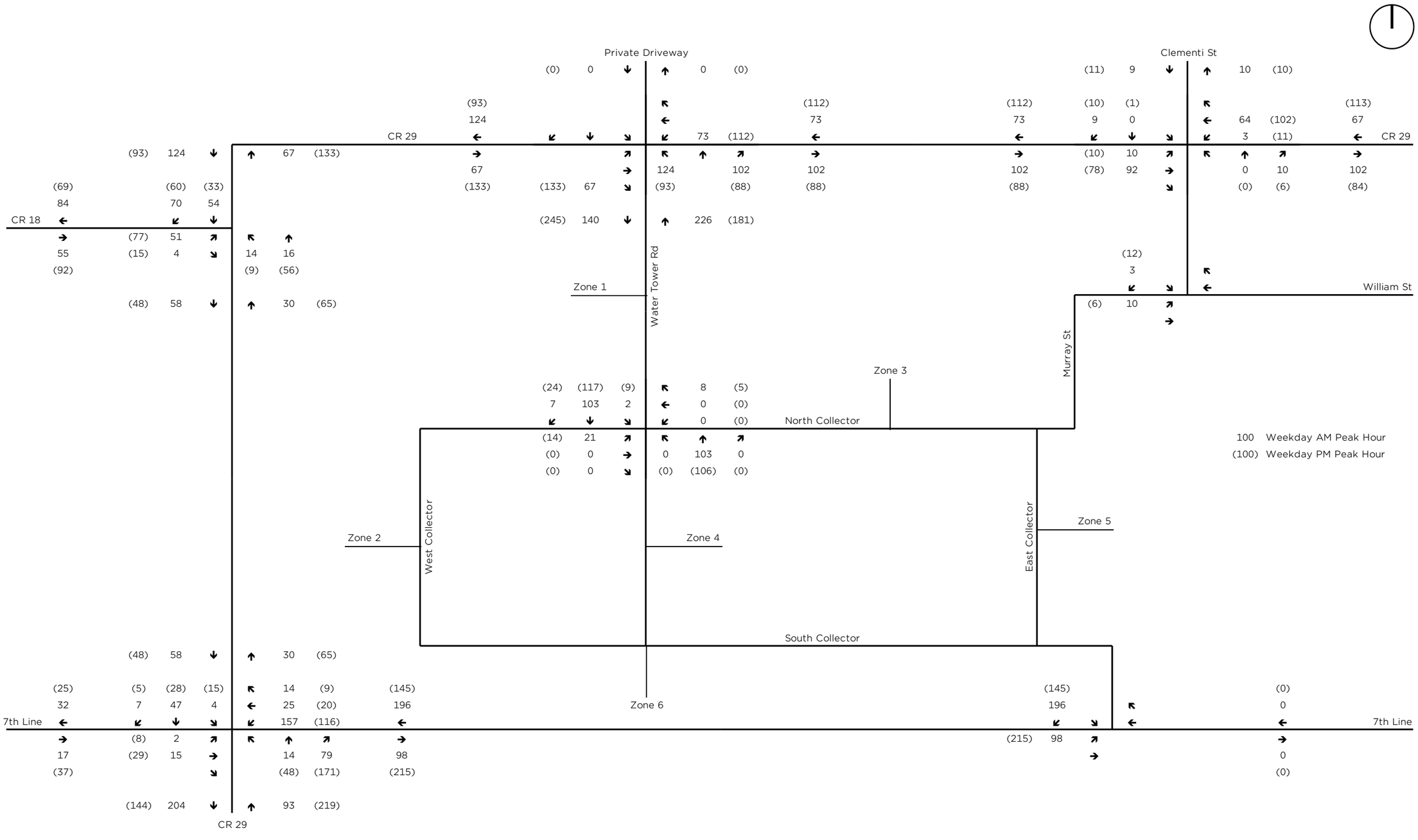
LAKEFIELD SOUTH SUBDIVISION

Figure 6: Site Traffic – Residential Trips



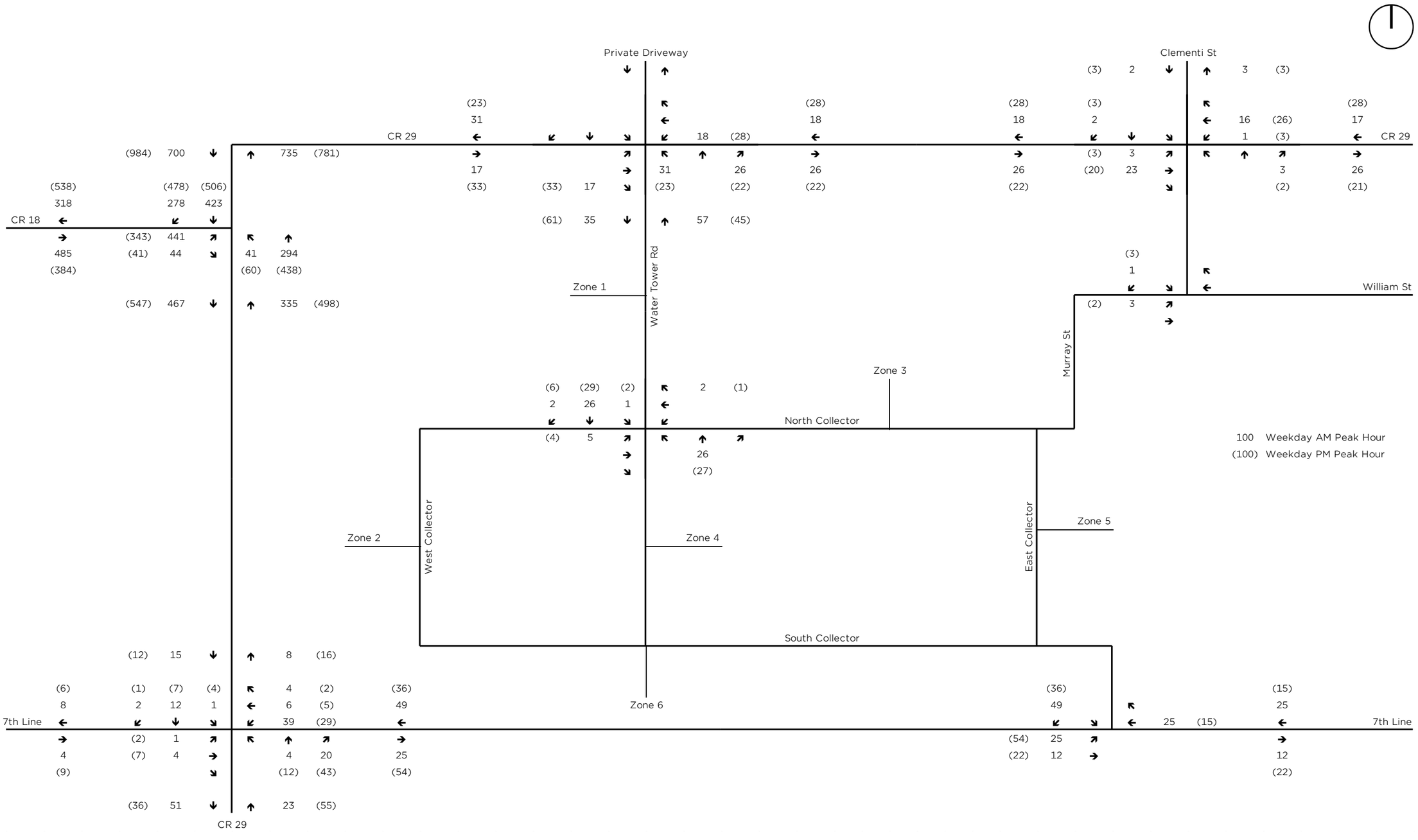
LAKEFIELD SOUTH SUBDIVISION

Figure 7: Site Traffic – Commercial Trips



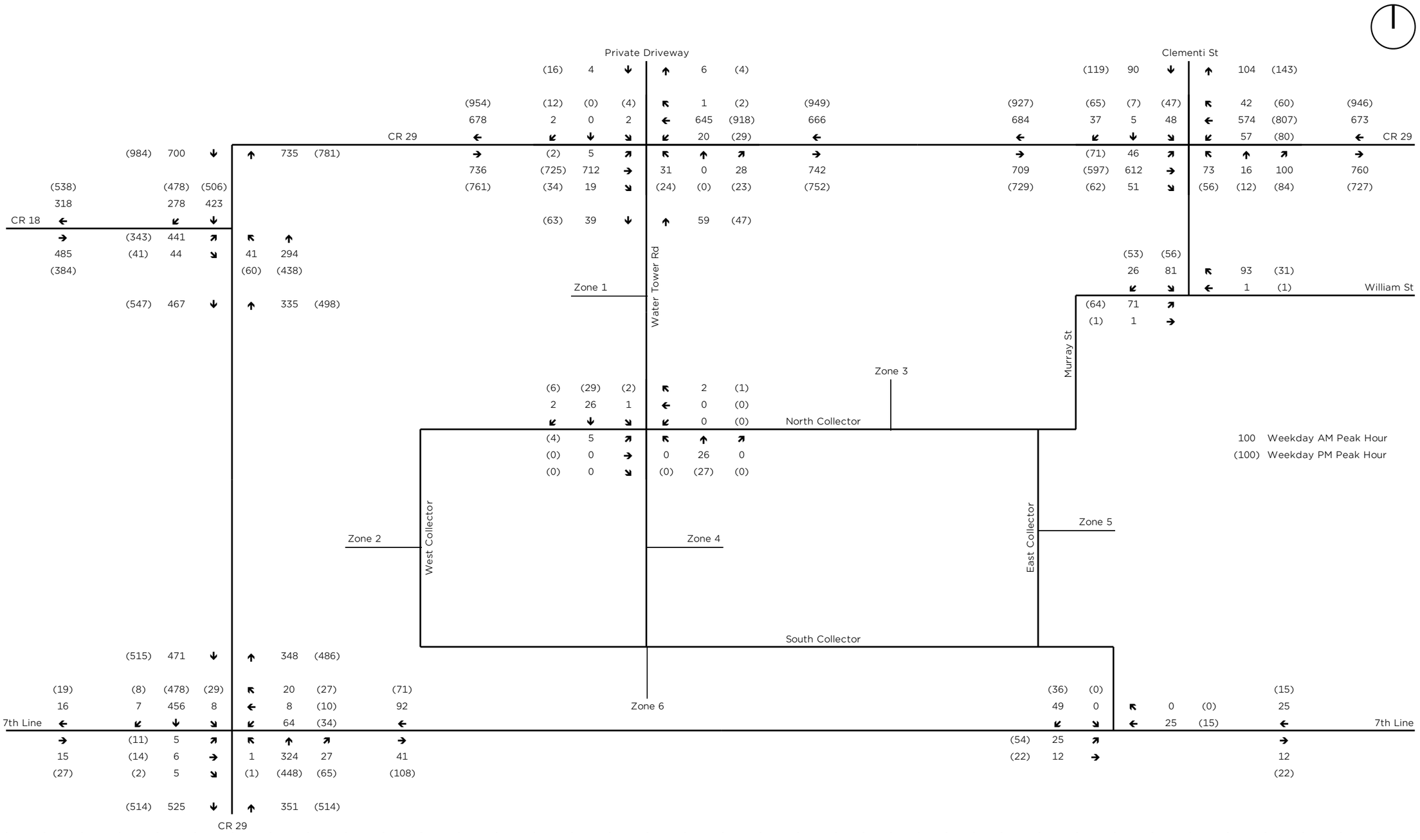
LAKEFIELD SOUTH SUBDIVISION

Figure 8: Site Traffic – Total Trips



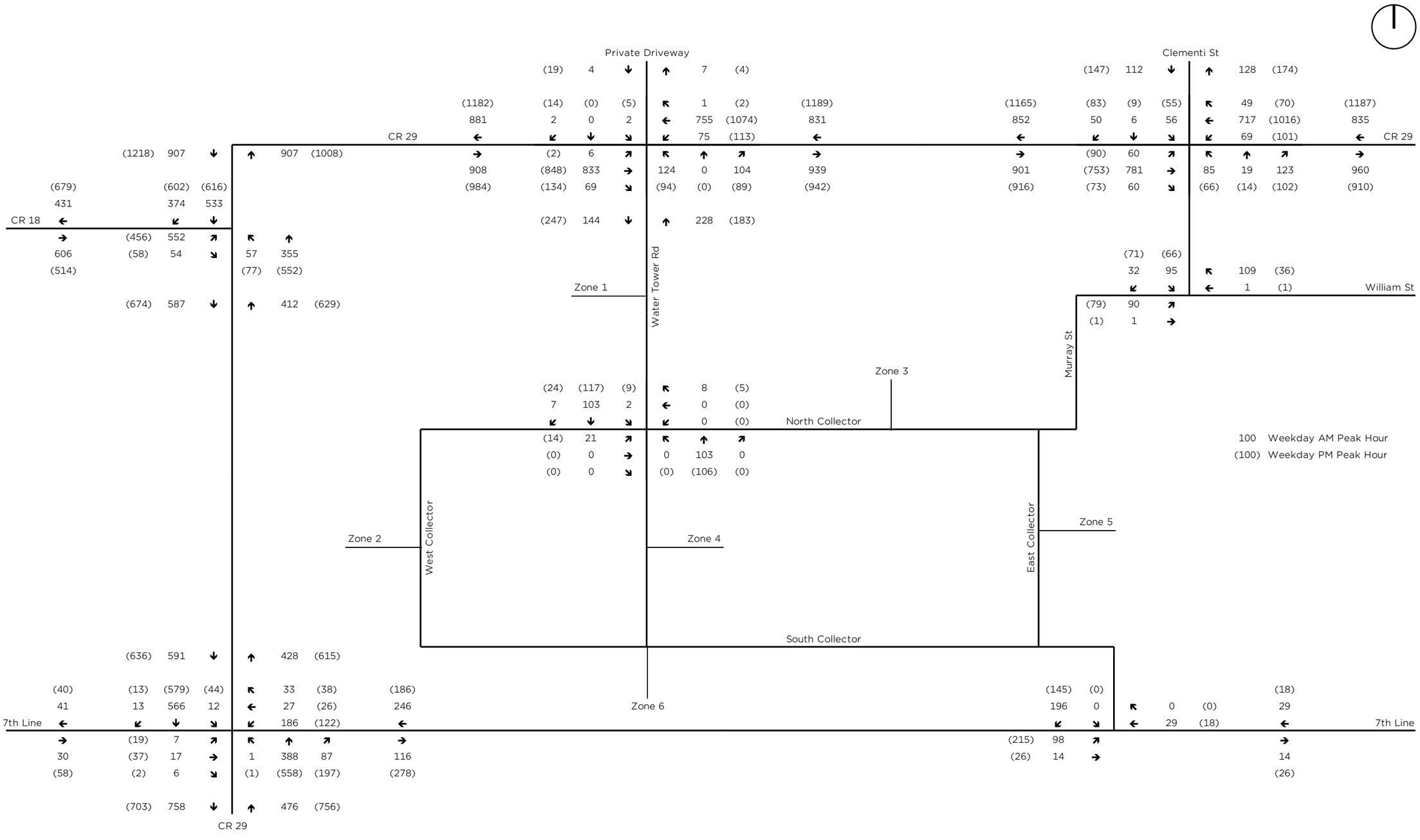
LAKEFIELD SOUTH SUBDIVISION

Figure 9: Site Traffic – 25% Build-out (2029)



LAKEFIELD SOUTH SUBDIVISION

Figure 10: Traffic Volumes – 2029 Total



LAKEFIELD SOUTH SUBDIVISION

Figure 11: Traffic Volumes – 2045 Total

Appendix A: Road Data

Location: **CR 29 & Clementi**

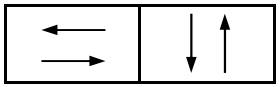
Analysis Date: Sep 10, 2018
Implementation Date:

Analysis: DB

Design For: Updated split timings by time of day
Problems:
Recommendations:
Special Notes:

Detailed Timings:

MSG

Direction	E/W	N/S
Phase		
Intergreen	3.3+1.9	3.3+1.9
Ped. Clr.	14+5.2	13+5.2
Walk	7	7

	Cycle	**Offset**			
Pattern 1	**Free**	n/a	20 - 29	10 - 16	Use Max 1
Pattern 2	**Free**	n/a	20 - 44	10 - 16	Use Max 2
Pattern 3	**Free**				

Day Plans

M-F, SS	**Pattern 1**	00:00-07:30, 18:00-00:00
	Pattern 2	07:30-18:00
	Pattern 3	

Date: 10-Sep-18
Intersection: CR 29 & Clementi
Controller:
Operation: Semi-Actuated

8 Phase Basic Timing Sheet

	1	2	3	4	5	6	7	8	2 Ped	4 Ped	6 Ped	8 Ped
Phases in use	X	X		X					X	X		
Direction	WBLT	E/W		N/S								
Min Green	5.0	20.0		10.0								
Veh Ext.	3.0			3.0								
Yellow	2.0	3.3		3.3								
Red	0.0	1.9		1.9								
Walk		7.0		7.0								
Don't Walk		14.0		13.0								
Max 1	10.0	29.0		16.0								
Max 2	10.0	44.0		16.0								
Max 3												
Veh Recall		x										
Ped Recall												
Notes:	Pedestrian Clearance does not include Amber and All Red Time											

Edit Date:
Design For:

Problems:
Recommendations:

Special Notes:

Coordination Patterns

Pattern 1

Cycle Length: Free
Offset (s):

Direction	WBLT	E/W		N/S
Phase	*1*	*2*	*3*	*4*
sec				
Direction				
Phase	*5*	*6*	*7*	*8*
sec				

Split Check:

Pattern 2

Cycle Length: Free
Offset (s):

Direction	WBLT	E/W		N/S
Phase	*1*	*2*	*3*	*4*
sec				
Direction				
Phase	*5*	*6*	*7*	*8*
sec				

Split Check:

Pattern 3

Cycle Length: Free
Offset (s):

Direction	WBLT	E/W		N/S
Phase	*1*	*2*	*3*	*4*
sec				
Direction				
Phase	*5*	*6*	*7*	*8*
sec				

Split Check:

Pattern 4

Cycle Length: Free
Offset (s):

Direction	WBLT	E/W		N/S
Phase	*1*	*2*	*3*	*4*
sec				
Direction				
Phase	*5*	*6*	*7*	*8*
sec				

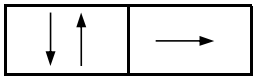
Split Check:

Location: **CR 29 & CR 18**

Analysis Date: Aug 29, 2017 Analysis: DB
Implementation Date:

Design For: Updated split timings by time of day
Problems:
Recommendations:
Special Notes:

Detailed Timings:

		MSG	
Direction	N/S	EB	
Phase			
Intergreen	3.7+1.9	3.3+2.4	
Ped. Clr.	16+5.6	23+5.7	
Walk	7	7	

	Cycle	Offset			
Pattern 1	**Free**	n/a	20 - 35	10 - 25	Use Max 1
Pattern 2	**Free**	n/a	20 - 45	10 - 25	Use Max 2
Pattern 3	**Free**	n/a	20 - 55	10 - 25	Use Max 3

Day Plans

M-F	**Pattern 1**	00:00-07:30, 18:00-00:00
	Pattern 2	07:30-15:00
	Pattern 3	15:00-18:00
S-S	**Pattern 1**	00:00-09:00, 18:00-00:00
	Pattern 2	09:00-18:00

Date: 29-Aug-17
Intersection: CR 29 & CR 18
Controller:
Operation: Semi-Actuated

8 Phase Basic Timing Sheet

	1	2	3	4	5	6	7	8	2 Ped	4 Ped	6 Ped	8 Ped
Phases in use		X		X		X			X	X	X	
Direction		NB		EB		SB						
Min Green		20.0		10.0		20.0						
Veh Ext.				3.0								
Yellow		3.7		3.3		3.7						
Red		1.9		2.4		1.9						
Walk		7.0		7.0		7.0						
Don't Walk		16.0		23.0		16.0						
Max 1		35.0		25.0		35.0						
Max 2		40.0		30.0		40.0						
Max 3		50.0		30.0		50.0						
Veh Recall		x				x						
Ped Recall												
Notes:	Pedestrian Clearance does not include Amber and All Red Time											

Edit Date:
Design For:

Problems:
Recommendations:

Special Notes:

Coordination Patterns

Pattern 1

Cycle Length: Free
Offset (s):

Direction		**NB**		**EB**
Phase	***1***	***2***	***3***	***4***
sec				
Direction		**SB**		
Phase	***5***	***6***	***7***	***8***
sec				

Split Check:

Pattern 2

Cycle Length: Free
Offset (s):

Direction		**NB**		**EB**
Phase	***1***	***2***	***3***	***4***
sec				
Direction		**SB**		
Phase	***5***	***6***	***7***	***8***
sec				

Split Check:

Pattern 3

Cycle Length: Free
Offset (s):

Direction		**NB**		**EB**
Phase	***1***	***2***	***3***	***4***
sec				
Direction		**SB**		
Phase	***5***	***6***	***7***	***8***
sec				

Split Check:

Pattern 4

Cycle Length: Free
Offset (s):

Direction		**NB**		**EB**
Phase	***1***	***2***	***3***	***4***
sec				
Direction		**SB**		
Phase	***5***	***6***	***7***	***8***
sec				

Split Check:

KINGSTON

Project: Lakefield South Subdivision

Date: 21-08-09

Major Street: P460 City Rd 29

Minor Street: 7th Line (Former Twp of Smith)

Control: TWSC - Stop 7th Line

GEOMETRICS

No. Of Approaches 4 X 3____

East Approach

Urban___ Rural X Grade to Intersection -3 % Post Spd 40 kph

No. Of Through Lanes 2 Total Width of Platform 6.3 m

Auxiliary Lanes

Rt Turn Taper N Length ___m Rt Turn Lane N Length ___m

Lt Turn Taper N Length ___m Lt Turn Lane N Length ___m

West Approach

Urban___ Rural X Grade to Intersection +2 % Post Spd None kph

No. Of Through Lanes 2 Total Width of Platform 6.3 m

Auxiliary Lanes

Rt Turn Taper N Length ___m Rt Turn Lane N Length ___m

Lt Turn Taper N Length ___m Lt Turn Lane N Length ___m

North Approach

Urban___ Rural X Grade to Intersection 0 % Post Spd 70 kph

No. Of Through Lanes 2 Total Width of Platform 7.7 m Partial Pad Shoulders

Auxiliary Lanes

Rt Turn Taper N Length ___m Rt Turn Lane N Length ___m

Lt Turn Taper N Length ___m Lt Turn Lane N Length ___m

South Approach

Urban___ Rural X Grade to Intersection 0 % Post Spd 70 kph

No. Of Through Lanes 2 Total Width of Platform 7.5 m

Auxiliary Lanes

Rt Turn Taper Y Length 50 m ~~Rt Turn~~ Parallel Lane Y Length 12 m

Lt Turn Taper N Length ___m Lt Turn Lane N Length ___m

46

Project: Lakefield South Subdivision

Date: 21-08-09

Major Street: Pkwy Cty Rd 29

Minor Street: Pkwy Cty Rd 18

Control: Signal - No Ped Signals

GEOMETRICS

No. Of Approaches 4____ 3 X

East Approach

Urban___ Rural____ Grade to Intersection _____% Post Spd _____kph

No. Of Through Lanes____ Total Width of Platform_____ m

Auxiliary Lanes

Rt Turn Taper_____ Length_____m Rt Turn Lane_____ Length_____m

Lt Turn Taper_____ Length_____m Lt Turn Lane_____ Length_____m

West Approach

Urban X Rural____ Grade to Intersection 4 % Post Spd 60 kph

No. Of Through Lanes 2 Total Width of ~~Platform~~ Lanes 7.6 m + Asphalt Shoulders

Auxiliary Lanes

Rt Turn Taper Y Length 25 m Rt Turn Lane N Length - m

Lt Turn Taper N Length - m Lt Turn Lane N Length - m

North Approach

Urban X Rural____ Grade to Intersection +3 % Post Spd 60 kph

No. Of Through Lanes 2 Total Width of Platform 10.7 m

Auxiliary Lanes

Rt Turn Taper Y Length 63 m Rt Turn Lane Y Length 62 m As Striped

Lt Turn Taper N Length - m Lt Turn Lane N Length - m

South Approach

Urban X Rural____ Grade to Intersection -2 % Post Spd 60 kph

No. Of Through Lanes 2 Total Width of Platform 10.5 m

Auxiliary Lanes

Rt Turn Taper N Length - m Rt Turn Lane N Length - m

Lt Turn Taper Y Length 135 m Lt Turn Lane Y Length 60 m As Striped

SJO

Project: Lakefield South Subdivision

Date: 21-08-09

Major Street: Ptbo Cty Rd. 29 (Bridge St)

Minor Street: Water Tower Rd. (Twp of Selwyn)

Control: TWSC - Stop on Water Tower Rd.

GEOMETRICS

No. Of Approaches 4____ 3 X plus North Commercial Entrance

East Approach

Urban X Rural____ Grade to Intersection -2 % Post Spd 60 kph

No. Of Through Lanes 2 Total Width of Platform 9.8 m

Auxiliary Lanes

Rt Turn Taper N Length / m Rt Turn Lane N Length / m

Lt Turn Taper NA Length / m Lt Turn Lane TWLTL Length____m Continuous

West Approach

Urban X Rural____ Grade to Intersection 0 % Post Spd 60 kph

No. Of Through Lanes 2 Total Width of Platform 10 m

Auxiliary Lanes

Rt Turn Taper Y Length 60 m Rt Turn Lane N Length / m

Lt Turn Taper NA Length / m Lt Turn Lane TWLTL Length____m Continuous

North Approach — Commercial Entrance

Urban X Rural____ Grade to Intersection 0 % Post Spd NA kph

No. Of Through Lanes 2 Total Width of Platform 10 m

Auxiliary Lanes

Rt Turn Taper N Length / m Rt Turn Lane N Length / m

Lt Turn Taper N Length / m Lt Turn Lane N Length / m

South Approach

Urban X Rural____ Grade to Intersection -2 % Post Spd Assume 50 kph

No. Of Through Lanes 2 Total Width of Platform 9.3 m Beyond Taper

Auxiliary Lanes

* Rt Turn Taper Y Length ~60 m Rt Turn Lane N Length / m

Lt Turn Taper N Length / m Lt Turn Lane N Length / m

* Stop Bar 5.6m

Curbing Continuous Taper - No Parallel Lane

gfb

Project: Lakefield South Subdivision

Date: 21-08-09

Major Street: Ptbo County Rd 29 (Bridge St)

Minor Street: Clementi St. (Twp of Selwyn)

Control: Signal

GEOMETRICS

No. Of Approaches 4 X 3 ____

East Approach

Urban X Rural ____ Grade to Intersection +2 % Post Spd 50 kph

No. Of Through Lanes 2 Total Width of Platform 12.5 m

Auxiliary Lanes

Rt Turn Taper N Length — m Rt Turn Lane N Length — m

Lt Turn Taper Y Length 37 m Lt Turn Lane Y Length 30 m As Striped

West Approach

Urban X Rural ____ Grade to Intersection −2 % Post Spd 50 kph

No. Of Through Lanes 2 Total Width of Platform 13.2 m

Auxiliary Lanes

Rt Turn Taper Y Length 50 m Rt Turn Lane Y Length 50 m

Lt Turn Taper — Length — m Lt Turn Lane Y Length 15 m

No LT Taper Transitions to TWLTL

North Approach

Urban X Rural ____ Grade to Intersection +2 % Post Spd 40 kph

No. Of Through Lanes 2 Total Width of Platform 10.5 m

Auxiliary Lanes

Rt Turn Taper N Length — m Rt Turn Lane N Length — m

Lt Turn Taper Y Length 15 m Lt Turn Lane Y Length 25 m Est No Lane Markings

South Approach

Urban X Rural ____ Grade to Intersection −3 % Post Spd 50 kph

No. Of Through Lanes 2 Total Width of Platform 11.5 m

Auxiliary Lanes

Rt Turn Taper N Length — m Rt Turn Lane N Length — m

Lt Turn Taper Y Length 15 m Lt Turn Lane Y Length 20 m Est No Marking

Project: Lakefield South Subdivision

Date: 21-08-09

Major Street: Clementi St. (Twp of Selwyn)

Minor Street: William St. (Twp of Selwyn)

Control: AWSC

GEOMETRICS

No. Of Approaches 4____ 3 X

East Approach

Urban___ Rural X Grade to Intersection +2 % Post Spd None kph

No. Of Through Lanes 2 Total Width of Platform 5.4 m

Auxiliary Lanes

Rt Turn Taper Y Length 30 m Rt Turn Lane N Length — m

Lt Turn Taper N Length — m Lt Turn Lane N Length — m

West Approach

Urban X Rural____ Grade to Intersection 0 % Post Spd None kph

No. Of Through Lanes 2 Total Width of Platform 6.9 m

Auxiliary Lanes

Rt Turn Taper N Length — m Rt Turn Lane N Length — m

Lt Turn Taper N Length — m Lt Turn Lane N Length — m

North Approach

Urban X Rural____ Grade to Intersection +2 % Post Spd None kph

No. Of Through Lanes 2 Total Width of Platform 8.1 m

Auxiliary Lanes

Rt Turn Taper N Length — m Rt Turn Lane N Length — m

Lt Turn Taper N Length — m Lt Turn Lane N Length — m

South Approach Entrance To Fairgrounds

Urban___ Rural X Grade to Intersection 0 % Post Spd NSA kph

No. Of Through Lanes 2 Total Width of Platform 10 m

Auxiliary Lanes

Rt Turn Taper____ Length____m Rt Turn Lane____ Length____m

Lt Turn Taper____ Length____m Lt Turn Lane____ Length____m

Appendix B:
Level of Service Definitions

TATHAM ENGINEERING

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CAPACITY ANALYSIS AT UNSIGNALIZED INTERSECTIONS

Highway Capacity Manual Methodology

The level of service at an unsignalized intersection is determined on the basis of control delay for each critical lane. This method of analysis is taken from the Highway Capacity Manual, Special Report 209, by the Transportation Research Board, 1997.

The average control delay for any particular critical movement (control delay includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay) is a function of the service rate or capacity of the approach and degree of saturation. The level of service criteria for unsignalized intersections is outlined below and is related to ranges in vehicle delay.

Level of Service	Expected Delay to Minor Street Traffic	Average Control Delay 'd' (sec/veh)
A	Little or no delays	$0 < d \leq 10$
B	Short traffic delays	$10 \leq d \leq 15$
C	Average traffic delays	$15 \leq d \leq 25$
D	Long traffic delays	$25 \leq d \leq 35$
E	Very long traffic delays	$35 \leq d \leq 50$
F	Extreme delays with queuing which may cause congestion affecting other traffic movements in the intersection	$d > 50$

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CAPACITY ANALYSIS AT SIGNALIZED INTERSECTIONS

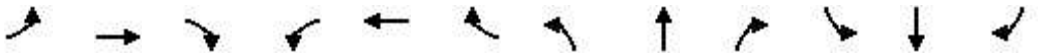
Highway Capacity Manual Methodology

The capacity of signalized intersections has been determined in terms of delay taken from Chapter 9 of the Highway Capacity Manual, Special Report 209, by the Transportation Research Board, 2000.

To assist in clarifying the arithmetic analysis associated with traffic engineering, it is often useful to refer to "Level of Service". Level of Service (LOS) for signalized intersections is defined in terms of delay, which is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Only the portion of total delay attributed to the control facility is quantified. This control delay includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay. The following table describes in detail the characteristics of each level:

Level of Service	Expected Delay to Minor Street Traffic	Average Control Delay 'd' (sec/veh)
A	Describes operations with very low control delay, up to 10 seconds/vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all at this LOS. Short cycle lengths may also contribute to low delay.	$d \leq 10$
B	Describes operations with control delay greater than 10 seconds and up to 20 seconds/vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop at this level than at LOS A, causing longer average delays.	$10 \leq d \leq 20$
C	Describes operations with control delay greater than 20 seconds and up to 35 seconds/vehicle. These higher delays may result from fair progression, longer cycle length, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.	$20 \leq d \leq 35$
D	Describes operations with control delay greater than 35 seconds and up to 55 seconds/vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavourable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures become noticeable.	$35 \leq d \leq 55$
E	Describes operations with control delay greater than 55 seconds and up to 80 seconds/vehicle. This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.	$55 \leq d \leq 80$
F	**LOS F** describes operations with control delay in excess of 80 seconds/vehicle. This *oversaturation*, considered to be unacceptable to most drivers, occurs when arrival flow rates exceed the design capacity of the intersection. It may also occur at high v/c ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such high delay levels.	$d > 80$

Appendix C: Intersection Operations Worksheets

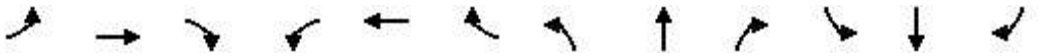


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	612	51	57	574	42	73	16	100	48	5	37
Future Volume (vph)	46	612	51	57	574	42	73	16	100	48	5	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	4.5	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		-2%			2%			-3%			2%	
Storage Length (m)	15.0		0.0	37.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99			0.99		0.94	0.91		0.95	0.91	
Frt		0.989			0.990			0.870			0.867	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1568	1803	0	1554	1610	0	1745	1450	0	1702	1406	0
Flt Permitted	0.394			0.270			0.728			0.676		
Satd. Flow (perm)	636	1803	0	442	1610	0	1262	1450	0	1150	1406	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			9			109			40	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.2			136.6			120.3			71.2	
Travel Time (s)		23.0			9.8			8.7			5.1	
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			20			20			20			20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	50	665	55	62	624	46	79	17	109	52	5	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	720	0	62	670	0	79	126	0	52	45	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	0.87	0.87	1.01	1.01	1.01	0.98	0.98	0.98	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		5.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.2	26.2		10.0	26.2		25.2	25.2		25.2	25.2	
Total Split (s)	44.8	44.8		10.0	54.8		25.2	25.2		25.2	25.2	
Total Split (%)	56.0%	56.0%		12.5%	68.5%		31.5%	31.5%		31.5%	31.5%	
Maximum Green (s)	39.6	39.6		8.0	49.6		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.3	3.3		2.0	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.9	1.9		0.0	1.9		1.9	1.9		1.9	1.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0			14.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	20	20			20		20	20		20	20	
Act Effct Green (s)	49.0	49.0		56.2	54.1		13.7	13.7		13.7	13.7	
Actuated g/C Ratio	0.66	0.66		0.76	0.73		0.19	0.19		0.19	0.19	
v/c Ratio	0.12	0.60		0.14	0.57		0.34	0.35		0.24	0.15	
Control Delay	10.5	14.7		4.8	9.6		29.7	10.1		27.9	10.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.5	14.7		4.8	9.6		29.7	10.1		27.9	10.7	
LOS	B	B		A	A		C	B		C	B	
Approach Delay		14.5			9.2			17.6			20.0	
Approach LOS		B			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 74			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 13.0		Intersection LOS: B	
Intersection Capacity Utilization 70.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Clementi St & CR 29



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	612	51	57	574	42	73	16	100	48	5	37
Future Volume (vph)	46	612	51	57	574	42	73	16	100	48	5	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	4.5	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		-2%			2%			-3%			2%	
Total Lost time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.90		1.00	0.89	
Flpb, ped/bikes	0.98	1.00		1.00	1.00		0.95	1.00		0.95	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1536	1803		1549	1610		1652	1431		1621	1385	
Flt Permitted	0.39	1.00		0.27	1.00		0.73	1.00		0.68	1.00	
Satd. Flow (perm)	638	1803		440	1610		1265	1431		1154	1385	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	665	55	62	624	46	79	17	109	52	5	40
RTOR Reduction (vph)	0	3	0	0	3	0	0	92	0	0	34	0
Lane Group Flow (vph)	50	717	0	62	667	0	79	34	0	52	11	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	47.8	47.8		53.8	53.8		11.6	11.6		11.6	11.6	
Effective Green, g (s)	47.8	47.8		53.8	53.8		11.6	11.6		11.6	11.6	
Actuated g/C Ratio	0.63	0.63		0.71	0.71		0.15	0.15		0.15	0.15	
Clearance Time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	402	1136		370	1142		193	218		176	211	
v/s Ratio Prot		c0.40		0.01	c0.41			0.02			0.01	
v/s Ratio Perm	0.08			0.11			c0.06			0.05		
v/c Ratio	0.12	0.63		0.17	0.58		0.41	0.15		0.30	0.05	
Uniform Delay, d1	5.6	8.6		5.1	5.5		29.0	27.8		28.5	27.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	2.7		0.2	2.2		1.4	0.3		0.9	0.1	
Delay (s)	6.2	11.3		5.3	7.6		30.4	28.2		29.4	27.5	
Level of Service	A	B		A	A		C	C		C	C	
Approach Delay (s)		10.9			7.4			29.0			28.5	
Approach LOS		B			A			C			C	

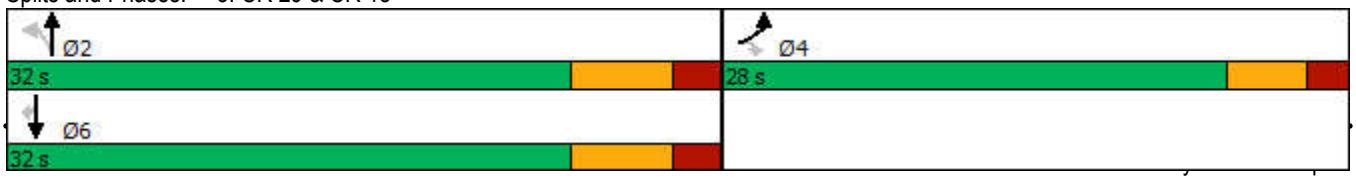
Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	75.8	Sum of lost time (s)	12.4
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	441	44	41	294	423	278
Future Volume (vph)	441	44	41	294	423	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	4%			-2%	3%	
Storage Length (m)	0.0	5.0	60.0			62.0
Storage Lanes	1	1	1			1
Taper Length (m)	25.0		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.93	0.98			0.93
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1521	1361	1568	1650	1609	1368
Flt Permitted	0.950		0.391			
Satd. Flow (perm)	1464	1271	634	1650	1609	1279
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		16				302
Link Speed (k/h)	60			60	60	
Link Distance (m)	280.3			308.3	145.8	
Travel Time (s)	16.8			18.5	8.7	
Confl. Peds. (#/hr)	20	20	20			20
Confl. Bikes (#/hr)		10				10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%
Adj. Flow (vph)	479	48	45	320	460	302
Shared Lane Traffic (%)						
Lane Group Flow (vph)	479	48	45	320	460	302
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane					Yes	
Headway Factor	1.04	1.04	1.00	1.00	1.03	1.03
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	21.5	21.5	23.2	23.2	23.2	23.2
Total Split (s)	28.0	28.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Maximum Green (s)	22.5	22.5	25.2	25.2	25.2	25.2
Yellow Time (s)	3.5	3.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5
Act Effct Green (s)	19.7	19.7	19.4	19.4	19.4	19.4
Actuated g/C Ratio	0.38	0.38	0.37	0.37	0.37	0.37
v/c Ratio	0.83	0.10	0.19	0.52	0.76	0.45
Control Delay	31.0	9.5	13.5	16.2	24.0	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	9.5	13.5	16.2	24.0	4.2
LOS	C	A	B	B	C	A
Approach Delay	29.0			15.9	16.1	
Approach LOS	C			B	B	

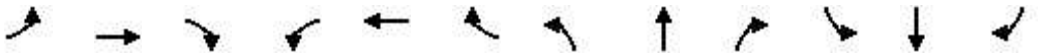
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 51.9			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 20.2		Intersection LOS: C	
Intersection Capacity Utilization 68.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: CR 29 & CR 18



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	441	44	41	294	423	278
Future Volume (vph)	441	44	41	294	423	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	4%			-2%	3%	
Total Lost time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.94	1.00	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1521	1278	1545	1650	1609	1284
Flt Permitted	0.95	1.00	0.39	1.00	1.00	1.00
Satd. Flow (perm)	1521	1278	635	1650	1609	1284
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	479	48	45	320	460	302
RTOR Reduction (vph)	0	10	0	0	0	188
Lane Group Flow (vph)	479	38	45	320	460	114
Confl. Peds. (#/hr)	20	20	20			20
Confl. Bikes (#/hr)		10				10
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	19.7	19.7	19.4	19.4	19.4	19.4
Effective Green, g (s)	19.7	19.7	19.4	19.4	19.4	19.4
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38
Clearance Time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	582	489	239	622	607	484
v/s Ratio Prot	c0.31			0.19	c0.29	
v/s Ratio Perm		0.03	0.07			0.09
v/c Ratio	0.82	0.08	0.19	0.51	0.76	0.24
Uniform Delay, d1	14.3	10.1	10.7	12.4	14.0	10.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.2	0.1	0.4	0.7	5.4	0.3
Delay (s)	23.5	10.1	11.1	13.1	19.3	11.2
Level of Service	C	B	B	B	B	B
Approach Delay (s)	22.2			12.8	16.1	
Approach LOS	C			B	B	

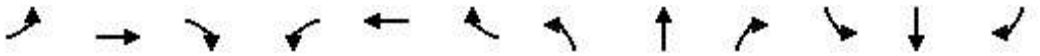
Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	12.3
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	712	19	20	645	1	31	1	28	2	1	2
Future Volume (Veh/h)	5	712	19	20	645	1	31	1	28	2	1	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			-2%			-2%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	774	21	22	701	1	34	1	30	2	1	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	702			795			1542	1540	784	1560	1550	702
vC1, stage 1 conf vol							794	794		746	746	
vC2, stage 2 conf vol							748	746		814	805	
vCu, unblocked vol	702			795			1542	1540	784	1560	1550	702
tC, single (s)	4.2			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.3			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			97			88	100	92	99	100	100
cM capacity (veh/h)	838			772			275	294	388	251	285	433

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	5	795	22	702	65	5
Volume Left	5	0	22	0	34	2
Volume Right	0	21	0	1	30	2
cSH	838	1700	772	1700	318	310
Volume to Capacity	0.01	0.47	0.03	0.41	0.20	0.02
Queue Length 95th (m)	0.1	0.0	0.7	0.0	6.0	0.4
Control Delay (s)	9.3	0.0	9.8	0.0	19.2	16.8
Lane LOS	A		A		C	C
Approach Delay (s)	0.1		0.3		19.2	16.8
Approach LOS					C	C

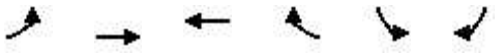
Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	50.3%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	6	5	64	8	20	1	324	27	8	456	7
Future Volume (Veh/h)	5	6	5	64	8	20	1	324	27	8	456	7
Sign Control		Stop			Stop			Free			Free	
Grade		2%			-3%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	7	5	70	9	22	1	352	29	9	496	8
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	913	901	500	895	890	366	504			381		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	913	901	500	895	890	366	504			381		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	98	97	99	72	97	97	100			99		
cM capacity (veh/h)	235	272	565	250	277	672	1021			1135		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	17	101	382	513
Volume Left	5	70	1	9
Volume Right	5	22	29	8
cSH	304	292	1021	1135
Volume to Capacity	0.06	0.35	0.00	0.01
Queue Length 95th (m)	1.4	11.9	0.0	0.2
Control Delay (s)	17.5	23.7	0.0	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	17.5	23.7	0.0	0.2
Approach LOS	C	C		

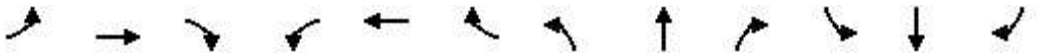
Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	47.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	71	1	1	93	81	26
Future Volume (vph)	71	1	1	93	81	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	77	1	1	101	88	28

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	78	102	116
Volume Left (vph)	77	0	88
Volume Right (vph)	0	101	28
Hadj (s)	0.23	-0.56	0.04
Departure Headway (s)	4.5	3.7	4.3
Degree Utilization, x	0.10	0.10	0.14
Capacity (veh/h)	775	940	797
Control Delay (s)	8.0	7.1	8.0
Approach Delay (s)	8.0	7.1	8.0
Approach LOS	A	A	A

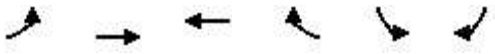
Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	23.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	1	1	1	2	1	26	1	1	26	2
Future Volume (Veh/h)	5	1	1	1	1	2	1	26	1	1	26	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1	1	1	1	2	1	28	1	1	28	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	64	62	29	63	62	28	30			29		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	64	62	29	63	62	28	30			29		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	919	822	1037	922	821	1038	1564			1565		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	7	4	30	31
Volume Left	5	1	1	1
Volume Right	1	2	1	2
cSH	919	946	1564	1565
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (m)	0.2	0.1	0.0	0.0
Control Delay (s)	8.9	8.8	0.2	0.2
Lane LOS	A	A	A	A
Approach Delay (s)	8.9	8.8	0.2	0.2
Approach LOS	A	A		

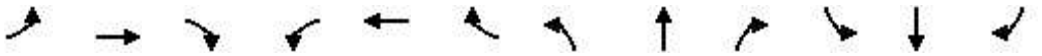
Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	12	25	1	1	53
Future Volume (Veh/h)	25	12	25	1	1	53
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	13	27	1	1	58
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	28				94	28
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	28				94	28
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	94
cM capacity (veh/h)	1566				882	1039

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	40	28	59
Volume Left	27	0	1
Volume Right	0	1	58
cSH	1566	1700	1036
Volume to Capacity	0.02	0.02	0.06
Queue Length 95th (m)	0.4	0.0	1.4
Control Delay (s)	5.0	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	5.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		

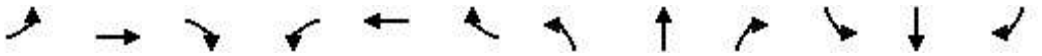


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	597	62	80	807	60	56	12	84	47	7	65
Future Volume (vph)	71	597	62	80	807	60	56	12	84	47	7	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	4.5	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		-2%			2%			-3%			2%	
Storage Length (m)	15.0		0.0	37.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99			0.99		0.95	0.91		0.95	0.90	
Frt		0.986			0.990			0.869			0.865	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1568	1795	0	1554	1610	0	1745	1447	0	1702	1401	0
Flt Permitted	0.238			0.260			0.706			0.690		
Satd. Flow (perm)	389	1795	0	425	1610	0	1227	1447	0	1172	1401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			9			91			71	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.2			136.6			120.3			71.2	
Travel Time (s)		23.0			9.8			8.7			5.1	
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			20			20			20			20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	77	649	67	87	877	65	61	13	91	51	8	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	716	0	87	942	0	61	104	0	51	79	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	0.87	0.87	1.01	1.01	1.01	0.98	0.98	0.98	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		5.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.2	26.2		10.0	26.2		25.2	25.2		25.2	25.2	
Total Split (s)	44.8	44.8		10.0	54.8		25.2	25.2		25.2	25.2	
Total Split (%)	56.0%	56.0%		12.5%	68.5%		31.5%	31.5%		31.5%	31.5%	
Maximum Green (s)	39.6	39.6		8.0	49.6		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.3	3.3		2.0	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.9	1.9		0.0	1.9		1.9	1.9		1.9	1.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0			14.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	20	20			20		20	20		20	20	
Act Effct Green (s)	47.1	47.1		56.2	54.1		13.7	13.7		13.7	13.7	
Actuated g/C Ratio	0.64	0.64		0.76	0.73		0.19	0.19		0.19	0.19	
v/c Ratio	0.31	0.62		0.21	0.80		0.27	0.30		0.24	0.25	
Control Delay	16.0	15.9		5.2	17.9		28.2	10.0		27.7	9.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.0	15.9		5.2	17.9		28.2	10.0		27.7	9.9	
LOS	B	B		A	B		C	A		C	A	
Approach Delay		15.9			16.8			16.7			16.9	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 74			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 16.4		Intersection LOS: B	
Intersection Capacity Utilization 89.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Clementi St & CR 29



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	597	62	80	807	60	56	12	84	47	7	65
Future Volume (vph)	71	597	62	80	807	60	56	12	84	47	7	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	4.5	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		-2%			2%			-3%			2%	
Total Lost time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.89		1.00	0.89	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.95	1.00		0.95	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1551	1796		1550	1609		1656	1427		1619	1382	
Flt Permitted	0.24	1.00		0.26	1.00		0.71	1.00		0.69	1.00	
Satd. Flow (perm)	389	1796		424	1609		1230	1427		1175	1382	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	649	67	87	877	65	61	13	91	51	8	71
RTOR Reduction (vph)	0	4	0	0	3	0	0	77	0	0	60	0
Lane Group Flow (vph)	77	712	0	87	939	0	61	27	0	51	19	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	46.0	46.0		53.4	53.4		11.6	11.6		11.6	11.6	
Effective Green, g (s)	46.0	46.0		53.4	53.4		11.6	11.6		11.6	11.6	
Actuated g/C Ratio	0.61	0.61		0.71	0.71		0.15	0.15		0.15	0.15	
Clearance Time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	237	1095		380	1139		189	219		180	212	
v/s Ratio Prot		0.40		0.02	c0.58			0.02			0.01	
v/s Ratio Perm	0.20			0.15			c0.05			0.04		
v/c Ratio	0.32	0.65		0.23	0.82		0.32	0.12		0.28	0.09	
Uniform Delay, d1	7.1	9.5		5.4	7.7		28.4	27.5		28.2	27.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	3.0		0.3	6.8		1.0	0.3		0.9	0.2	
Delay (s)	10.8	12.5		5.7	14.6		29.4	27.8		29.1	27.6	
Level of Service	B	B		A	B		C	C		C	C	
Approach Delay (s)		12.3			13.8			28.4			28.2	
Approach LOS		B			B			C			C	

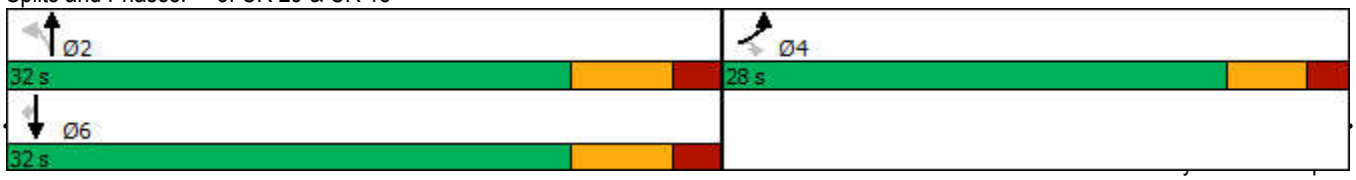
Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	75.4	Sum of lost time (s)	12.4
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	343	41	60	438	506	478
Future Volume (vph)	343	41	60	438	506	478
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	4%			-2%	3%	
Storage Length (m)	0.0	5.0	60.0			62.0
Storage Lanes	1	1	1			1
Taper Length (m)	25.0		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.93	0.99			0.93
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1521	1361	1568	1650	1609	1368
Flt Permitted	0.950		0.326			
Satd. Flow (perm)	1464	1271	531	1650	1609	1279
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		19				520
Link Speed (k/h)	60			60	60	
Link Distance (m)	280.3			308.3	145.8	
Travel Time (s)	16.8			18.5	8.7	
Confl. Peds. (#/hr)	20	20	20			20
Confl. Bikes (#/hr)		10				10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%
Adj. Flow (vph)	373	45	65	476	550	520
Shared Lane Traffic (%)						
Lane Group Flow (vph)	373	45	65	476	550	520
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane					Yes	
Headway Factor	1.04	1.04	1.00	1.00	1.03	1.03
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	21.5	21.5	23.2	23.2	23.2	23.2
Total Split (s)	28.0	28.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Maximum Green (s)	22.5	22.5	25.2	25.2	25.2	25.2
Yellow Time (s)	3.5	3.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5
Act Effct Green (s)	17.2	17.2	21.5	21.5	21.5	21.5
Actuated g/C Ratio	0.33	0.33	0.42	0.42	0.42	0.42
v/c Ratio	0.73	0.10	0.29	0.69	0.82	0.62
Control Delay	25.4	9.4	15.5	19.4	26.9	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	9.4	15.5	19.4	26.9	5.2
LOS	C	A	B	B	C	A
Approach Delay	23.6			18.9	16.3	
Approach LOS	C			B	B	

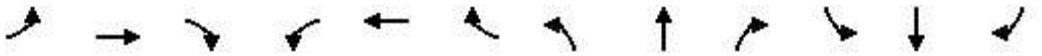
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 51.5			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 69.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: CR 29 & CR 18



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	343	41	60	438	506	478
Future Volume (vph)	343	41	60	438	506	478
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	4%			-2%	3%	
Total Lost time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.94	1.00	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1521	1277	1549	1650	1609	1286
Flt Permitted	0.95	1.00	0.33	1.00	1.00	1.00
Satd. Flow (perm)	1521	1277	532	1650	1609	1286
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	373	45	65	476	550	520
RTOR Reduction (vph)	0	13	0	0	0	301
Lane Group Flow (vph)	373	32	65	476	550	219
Confl. Peds. (#/hr)	20	20	20			20
Confl. Bikes (#/hr)		10				10
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	17.2	17.2	21.4	21.4	21.4	21.4
Effective Green, g (s)	17.2	17.2	21.4	21.4	21.4	21.4
Actuated g/C Ratio	0.34	0.34	0.42	0.42	0.42	0.42
Clearance Time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	513	431	223	693	676	540
v/s Ratio Prot	c0.25			0.29	c0.34	
v/s Ratio Perm		0.03	0.12			0.17
v/c Ratio	0.73	0.08	0.29	0.69	0.81	0.40
Uniform Delay, d1	14.8	11.4	9.7	12.0	13.0	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.1	0.7	2.8	7.4	0.5
Delay (s)	19.9	11.5	10.5	14.9	20.4	10.8
Level of Service	B	B	B	B	C	B
Approach Delay (s)	19.0			14.3	15.7	
Approach LOS	B			B	B	

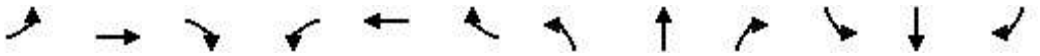
Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	12.3
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	725	34	29	918	2	24	1	23	4	1	12
Future Volume (Veh/h)	2	725	34	29	918	2	24	1	23	4	1	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			-2%			-2%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	788	37	32	998	2	26	1	25	4	1	13
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1000			825			1886	1874	806	1880	1892	999
vC1, stage 1 conf vol							810	810		1063	1063	
vC2, stage 2 conf vol							1076	1064		818	829	
vCu, unblocked vol	1000			825			1886	1874	806	1880	1892	999
tC, single (s)	4.2			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.3			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			87	100	93	98	100	96
cM capacity (veh/h)	644			752			199	231	377	196	223	292

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	2	825	32	1000	52	18
Volume Left	2	0	32	0	26	4
Volume Right	0	37	0	2	25	13
cSH	644	1700	752	1700	258	259
Volume to Capacity	0.00	0.49	0.04	0.59	0.20	0.07
Queue Length 95th (m)	0.1	0.0	1.1	0.0	5.9	1.8
Control Delay (s)	10.6	0.0	10.0	0.0	22.4	19.9
Lane LOS	B		B		C	C
Approach Delay (s)	0.0		0.3		22.4	19.9
Approach LOS					C	C

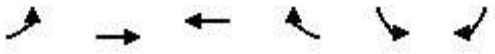
Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	60.5%	ICU Level of Service		B
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	14	2	34	10	27	1	448	65	29	478	8
Future Volume (Veh/h)	11	14	2	34	10	27	1	448	65	29	478	8
Sign Control		Stop			Stop			Free			Free	
Grade		2%			-3%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	15	2	37	11	29	1	487	71	32	520	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1148	1148	524	1122	1118	522	529			558		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1148	1148	524	1122	1118	522	529			558		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	92	92	100	78	94	95	100			97		
cM capacity (veh/h)	153	189	547	165	198	549	999			974		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	29	77	559	561
Volume Left	12	37	1	32
Volume Right	2	29	71	9
cSH	180	231	999	974
Volume to Capacity	0.16	0.33	0.00	0.03
Queue Length 95th (m)	4.5	11.2	0.0	0.8
Control Delay (s)	28.8	28.1	0.0	0.9
Lane LOS	D	D	A	A
Approach Delay (s)	28.8	28.1	0.0	0.9
Approach LOS	D	D		

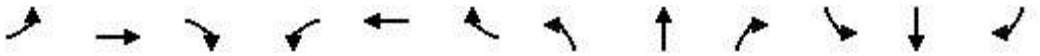
Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	60.4%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	64	1	1	31	56	53
Future Volume (vph)	64	1	1	31	56	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	1	1	34	61	58

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	71	35	119
Volume Left (vph)	70	0	61
Volume Right (vph)	0	34	58
Hadj (s)	0.23	-0.55	-0.16
Departure Headway (s)	4.4	3.7	4.0
Degree Utilization, x	0.09	0.04	0.13
Capacity (veh/h)	789	940	875
Control Delay (s)	7.8	6.8	7.6
Approach Delay (s)	7.8	6.8	7.6
Approach LOS	A	A	A

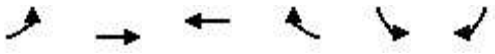
Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	1	1	1	1	1	1	27	1	2	29	6
Future Volume (Veh/h)	4	1	1	1	1	1	1	27	1	2	29	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1	1	1	1	1	1	29	1	2	32	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	72	72	36	72	74	30	39			30		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	72	72	36	72	74	30	39			30		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	908	812	1029	908	809	1037	1552			1564		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	6	3	31	41
Volume Left	4	1	1	2
Volume Right	1	1	1	7
cSH	908	908	1552	1564
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (m)	0.2	0.1	0.0	0.0
Control Delay (s)	9.0	9.0	0.2	0.4
Lane LOS	A	A	A	A
Approach Delay (s)	9.0	9.0	0.2	0.4
Approach LOS	A	A		

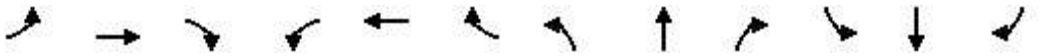
Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	57	22	15	1	1	37
Future Volume (Veh/h)	57	22	15	1	1	37
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	24	16	1	1	40
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	17				164	16
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	17				164	16
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				100	96
cM capacity (veh/h)	1581				787	1054

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	86	17	41
Volume Left	62	0	1
Volume Right	0	1	40
cSH	1581	1700	1045
Volume to Capacity	0.04	0.01	0.04
Queue Length 95th (m)	1.0	0.0	1.0
Control Delay (s)	5.4	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	5.4	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	21.0%	ICU Level of Service	A
Analysis Period (min)	15		

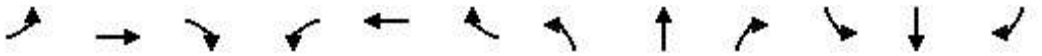


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	689	60	66	653	49	85	19	113	56	6	41
Future Volume (vph)	50	689	60	66	653	49	85	19	113	56	6	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	4.5	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		-2%			2%			-3%			2%	
Storage Length (m)	15.0		0.0	37.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99			0.99		0.94	0.91		0.95	0.91	
Frt		0.988			0.990			0.872			0.870	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1568	1800	0	1554	1609	0	1745	1456	0	1702	1415	0
Flt Permitted	0.333			0.184			0.723			0.651		
Satd. Flow (perm)	540	1800	0	301	1609	0	1254	1456	0	1109	1415	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			9			123			45	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.2			136.6			120.3			71.2	
Travel Time (s)		23.0			9.8			8.7			5.1	
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			20			20			20			20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	54	749	65	72	710	53	92	21	123	61	7	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	814	0	72	763	0	92	144	0	61	52	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	0.87	0.87	1.01	1.01	1.01	0.98	0.98	0.98	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		5.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.2	26.2		10.0	26.2		25.2	25.2		25.2	25.2	
Total Split (s)	44.8	44.8		10.0	54.8		25.2	25.2		25.2	25.2	
Total Split (%)	56.0%	56.0%		12.5%	68.5%		31.5%	31.5%		31.5%	31.5%	
Maximum Green (s)	39.6	39.6		8.0	49.6		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.3	3.3		2.0	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.9	1.9		0.0	1.9		1.9	1.9		1.9	1.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0			14.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	20	20			20		20	20		20	20	
Act Effct Green (s)	45.4	45.4		55.9	52.6		14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.59	0.59		0.73	0.68		0.18	0.18		0.18	0.18	
v/c Ratio	0.17	0.77		0.22	0.69		0.41	0.39		0.30	0.18	
Control Delay	11.8	20.7		5.7	12.8		31.7	10.3		29.4	10.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.8	20.7		5.7	12.8		31.7	10.3		29.4	10.8	
LOS	B	C		A	B		C	B		C	B	
Approach Delay		20.1			12.2			18.6			20.9	
Approach LOS		C			B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 77.1			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 16.8		Intersection LOS: B	
Intersection Capacity Utilization 90.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Clementi St & CR 29



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	689	60	66	653	49	85	19	113	56	6	41
Future Volume (vph)	50	689	60	66	653	49	85	19	113	56	6	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	4.5	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		-2%			2%			-3%			2%	
Total Lost time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.90		1.00	0.90	
Flpb, ped/bikes	0.98	1.00		1.00	1.00		0.95	1.00		0.95	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1541	1801		1554	1609		1651	1444		1622	1403	
Flt Permitted	0.33	1.00		0.18	1.00		0.72	1.00		0.65	1.00	
Satd. Flow (perm)	540	1801		300	1609		1256	1444		1111	1403	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	749	65	72	710	53	92	21	123	61	7	45
RTOR Reduction (vph)	0	3	0	0	3	0	0	101	0	0	37	0
Lane Group Flow (vph)	54	811	0	72	760	0	92	43	0	61	15	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	45.4	45.4		52.9	52.9		14.0	14.0		14.0	14.0	
Effective Green, g (s)	45.4	45.4		52.9	52.9		14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.59	0.59		0.68	0.68		0.18	0.18		0.18	0.18	
Clearance Time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	317	1057		294	1101		227	261		201	254	
v/s Ratio Prot		c0.45		0.02	c0.47			0.03			0.01	
v/s Ratio Perm	0.10			0.15			c0.07			0.05		
v/c Ratio	0.17	0.77		0.24	0.69		0.41	0.17		0.30	0.06	
Uniform Delay, d1	7.3	12.0		8.0	7.3		28.0	26.7		27.4	26.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	5.3		0.4	3.6		1.2	0.3		0.9	0.1	
Delay (s)	8.5	17.3		8.4	10.9		29.2	27.0		28.3	26.3	
Level of Service	A	B		A	B		C	C		C	C	
Approach Delay (s)		16.8			10.6			27.9			27.4	
Approach LOS		B			B			C			C	

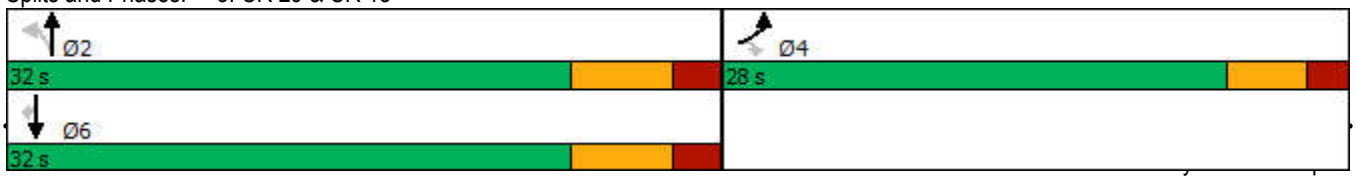
Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	12.4
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	501	50	43	339	479	304
Future Volume (vph)	501	50	43	339	479	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	4%			-2%	3%	
Storage Length (m)	0.0	5.0	60.0			62.0
Storage Lanes	1	1	1			1
Taper Length (m)	25.0		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.93	0.99			0.93
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1521	1361	1568	1650	1609	1368
Flt Permitted	0.950		0.316			
Satd. Flow (perm)	1464	1271	514	1650	1609	1279
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		15				330
Link Speed (k/h)	60			60	60	
Link Distance (m)	280.3			308.3	145.8	
Travel Time (s)	16.8			18.5	8.7	
Confl. Peds. (#/hr)	20	20	20			20
Confl. Bikes (#/hr)		10				10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%
Adj. Flow (vph)	545	54	47	368	521	330
Shared Lane Traffic (%)						
Lane Group Flow (vph)	545	54	47	368	521	330
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane					Yes	
Headway Factor	1.04	1.04	1.00	1.00	1.03	1.03
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	21.5	21.5	23.2	23.2	23.2	23.2
Total Split (s)	28.0	28.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Maximum Green (s)	22.5	22.5	25.2	25.2	25.2	25.2
Yellow Time (s)	3.5	3.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5
Act Effct Green (s)	22.0	22.0	21.8	21.8	21.8	21.8
Actuated g/C Ratio	0.39	0.39	0.39	0.39	0.39	0.39
v/c Ratio	0.92	0.11	0.24	0.58	0.84	0.47
Control Delay	42.1	10.3	15.0	17.6	29.6	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	10.3	15.0	17.6	29.6	4.2
LOS	D	B	B	B	C	A
Approach Delay	39.3			17.3	19.7	
Approach LOS	D			B	B	

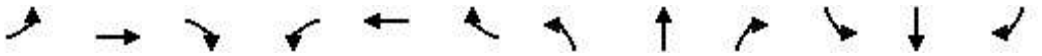
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 56.2			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 25.5		Intersection LOS: C	
Intersection Capacity Utilization 73.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: CR 29 & CR 18



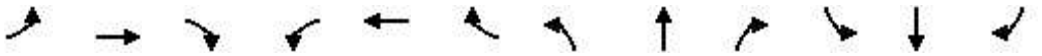
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	501	50	43	339	479	304
Future Volume (vph)	501	50	43	339	479	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	4%			-2%	3%	
Total Lost time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.94	1.00	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1521	1275	1547	1650	1609	1281
Flt Permitted	0.95	1.00	0.32	1.00	1.00	1.00
Satd. Flow (perm)	1521	1275	515	1650	1609	1281
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	545	54	47	368	521	330
RTOR Reduction (vph)	0	9	0	0	0	202
Lane Group Flow (vph)	545	45	47	368	521	128
Confl. Peds. (#/hr)	20	20	20			20
Confl. Bikes (#/hr)		10				10
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	22.0	22.0	21.8	21.8	21.8	21.8
Effective Green, g (s)	22.0	22.0	21.8	21.8	21.8	21.8
Actuated g/C Ratio	0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	596	500	200	641	625	497
v/s Ratio Prot	c0.36			0.22	c0.32	
v/s Ratio Perm		0.04	0.09			0.10
v/c Ratio	0.91	0.09	0.23	0.57	0.83	0.26
Uniform Delay, d1	16.2	10.7	11.5	13.5	15.5	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.6	0.1	0.6	1.2	9.3	0.3
Delay (s)	34.8	10.8	12.1	14.7	24.8	11.9
Level of Service	C	B	B	B	C	B
Approach Delay (s)	32.6			14.5	19.8	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	12.3
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	833	2	2	755	1	1	1	2	2	1	2
Future Volume (vph)	6	833	2	2	755	1	1	1	2	2	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.4	3.4	3.4	3.4	3.4	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			-2%			-2%			0%	
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	20.0			20.0			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.932			0.946	
Flt Protected	0.950			0.950				0.988			0.980	
Satd. Flow (prot)	1535	1615	0	1550	1632	0	0	1683	0	0	1678	0
Flt Permitted	0.950			0.950				0.988			0.980	
Satd. Flow (perm)	1535	1615	0	1550	1632	0	0	1683	0	0	1678	0
Link Speed (k/h)		50			50			50			20	
Link Distance (m)		185.2			179.3			262.8			81.7	
Travel Time (s)		13.3			12.9			18.9			14.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	7	905	2	2	821	1	1	1	2	2	1	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	907	0	2	822	0	0	4	0	0	5	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.4			3.4			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.03	1.03	1.03	1.02	1.02	1.02	0.99	0.99	0.99	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.0%		ICU Level of Service A	
Analysis Period (min) 15			



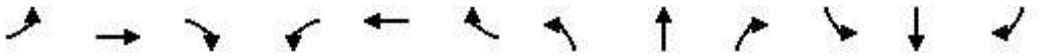
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	833	2	2	755	1	1	1	2	2	1	2
Future Volume (Veh/h)	6	833	2	2	755	1	1	1	2	2	1	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			-2%			-2%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	905	2	2	821	1	1	1	2	2	1	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	822			907			1748	1746	906	1747	1746	822
vC1, stage 1 conf vol							920	920		826	826	
vC2, stage 2 conf vol							828	826		922	921	
vCu, unblocked vol	822			907			1748	1746	906	1747	1746	822
tC, single (s)	4.2			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.3			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	99	99	100	99
cM capacity (veh/h)	754			699			238	260	330	238	261	370

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	7	907	2	822	4	5
Volume Left	7	0	2	0	1	2
Volume Right	0	2	0	1	2	2
cSH	754	1700	699	1700	284	283
Volume to Capacity	0.01	0.53	0.00	0.48	0.01	0.02
Queue Length 95th (m)	0.2	0.0	0.1	0.0	0.3	0.4
Control Delay (s)	9.8	0.0	10.2	0.0	17.9	17.9
Lane LOS	A		B		C	C
Approach Delay (s)	0.1		0.0		17.9	17.9
Approach LOS					C	C

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	54.0%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	2	6	29	2	19	1	374	8	8	519	6
Future Volume (vph)	5	2	6	29	2	19	1	374	8	8	519	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	3.4
Grade (%)		2%			-3%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.932			0.948			0.997			0.998	
Flt Protected		0.982			0.972						0.999	
Satd. Flow (prot)	0	1567	0	0	1617	0	0	1684	0	0	1684	0
Flt Permitted		0.982			0.972						0.999	
Satd. Flow (perm)	0	1567	0	0	1617	0	0	1684	0	0	1684	0
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		123.1			271.6			54.3			121.2	
Travel Time (s)		6.3			14.0			2.8			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	5	2	7	32	2	21	1	407	9	9	564	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	55	0	0	417	0	0	580	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.04	1.04	1.04	1.03	1.03	1.03	1.03	1.03	1.03
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

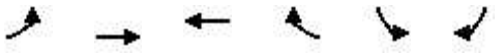
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2	6	29	2	19	1	374	8	8	519	6
Future Volume (Veh/h)	5	2	6	29	2	19	1	374	8	8	519	6
Sign Control		Stop			Stop			Free			Free	
Grade		2%			-3%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	2	7	32	2	21	1	407	9	9	564	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1021	1004	568	1007	1002	412	571			416		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1021	1004	568	1007	1002	412	571			416		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	98	99	99	85	99	97	100			99		
cM capacity (veh/h)	202	237	517	211	238	634	963			1101		

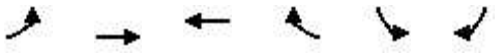
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	55	417	580
Volume Left	5	32	1	9
Volume Right	7	21	9	7
cSH	299	285	963	1101
Volume to Capacity	0.05	0.19	0.00	0.01
Queue Length 95th (m)	1.2	5.6	0.0	0.2
Control Delay (s)	17.6	20.6	0.0	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	17.6	20.6	0.0	0.2
Approach LOS	C	C		

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	80	1	1	109	93	29
Future Volume (vph)	80	1	1	109	93	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.0	3.0	3.5	3.5	4.0	4.0
Grade (%)		0%	2%		2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.866		0.968	
Flt Protected		0.953			0.963	
Satd. Flow (prot)	0	1657	1579	0	1795	0
Flt Permitted		0.953			0.963	
Satd. Flow (perm)	0	1657	1579	0	1795	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		290.6	128.8		159.7	
Travel Time (s)		20.9	9.3		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1	1	118	101	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	88	119	0	133	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.03	1.03	0.96	0.96
Turning Speed (k/h)	25			15	25	15
Sign Control		Stop	Stop		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	80	1	1	109	93	29
Future Volume (vph)	80	1	1	109	93	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	87	1	1	118	101	32

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	88	119	133
Volume Left (vph)	87	0	101
Volume Right (vph)	0	118	32
Hadj (s)	0.23	-0.56	0.04
Departure Headway (s)	4.6	3.8	4.4
Degree Utilization, x	0.11	0.12	0.16
Capacity (veh/h)	762	921	782
Control Delay (s)	8.1	7.3	8.2
Approach Delay (s)	8.1	7.3	8.2
Approach LOS	A	A	A

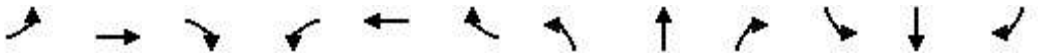
Intersection Summary				
Delay	7.9			
Level of Service	A			
Intersection Capacity Utilization	24.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	675	73	90	914	70	66	14	96	55	6	73
Future Volume (vph)	80	675	73	90	914	70	66	14	96	55	6	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	4.5	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		-2%			2%			-3%			2%	
Storage Length (m)	15.0		0.0	37.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99		0.95	0.91		0.95	0.90	
Frt		0.985			0.989			0.869			0.862	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1568	1792	0	1554	1608	0	1745	1449	0	1702	1394	0
Flt Permitted	0.175			0.208			0.701			0.681		
Satd. Flow (perm)	289	1792	0	340	1608	0	1219	1449	0	1158	1394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			9			104			79	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.2			136.6			120.3			71.2	
Travel Time (s)		23.0			9.8			8.7			5.1	
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			20			20			20			20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	87	734	79	98	993	76	72	15	104	60	7	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	813	0	98	1069	0	72	119	0	60	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	0.87	0.87	1.01	1.01	1.01	0.98	0.98	0.98	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		5.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.2	26.2		10.0	26.2		25.2	25.2		25.2	25.2	
Total Split (s)	44.0	44.0		10.0	54.0		26.0	26.0		26.0	26.0	
Total Split (%)	55.0%	55.0%		12.5%	67.5%		32.5%	32.5%		32.5%	32.5%	
Maximum Green (s)	38.8	38.8		8.0	48.8		20.8	20.8		20.8	20.8	
Yellow Time (s)	3.3	3.3		2.0	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.9	1.9		0.0	1.9		1.9	1.9		1.9	1.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0			14.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	20	20			20		20	20		20	20	
Act Effct Green (s)	46.0	46.0		55.3	53.1		12.1	12.1		12.1	12.1	
Actuated g/C Ratio	0.64	0.64		0.77	0.74		0.17	0.17		0.17	0.17	
v/c Ratio	0.47	0.70		0.26	0.89		0.35	0.36		0.31	0.29	
Control Delay	24.6	17.5		5.2	23.2		30.8	10.6		30.0	10.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.6	17.5		5.2	23.2		30.8	10.6		30.0	10.2	
LOS	C	B		A	C		C	B		C	B	
Approach Delay		18.2			21.7			18.2			18.3	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 71.4			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 96.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Clementi St & CR 29



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	675	73	90	914	70	66	14	96	55	6	73
Future Volume (vph)	80	675	73	90	914	70	66	14	96	55	6	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	4.5	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		-2%			2%			-3%			2%	
Total Lost time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.89		1.00	0.89	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.95	1.00		0.95	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1557	1794		1552	1609		1660	1422		1623	1368	
Flt Permitted	0.17	1.00		0.21	1.00		0.70	1.00		0.68	1.00	
Satd. Flow (perm)	286	1794		339	1609		1225	1422		1163	1368	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	734	79	98	993	76	72	15	104	60	7	79
RTOR Reduction (vph)	0	3	0	0	3	0	0	90	0	0	68	0
Lane Group Flow (vph)	87	810	0	98	1066	0	72	29	0	60	18	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	44.9	44.9		52.4	52.4		10.0	10.0		10.0	10.0	
Effective Green, g (s)	44.9	44.9		52.4	52.4		10.0	10.0		10.0	10.0	
Actuated g/C Ratio	0.62	0.62		0.72	0.72		0.14	0.14		0.14	0.14	
Clearance Time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	176	1106		335	1158		168	195		159	187	
v/s Ratio Prot		0.45		0.02	c0.66			0.02			0.01	
v/s Ratio Perm	0.30			0.19			c0.06			0.05		
v/c Ratio	0.49	0.73		0.29	0.92		0.43	0.15		0.38	0.10	
Uniform Delay, d1	7.7	9.7		6.3	8.5		28.8	27.7		28.6	27.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.6	4.3		0.5	13.2		1.8	0.4		1.5	0.2	
Delay (s)	17.3	14.0		6.8	21.7		30.5	28.0		30.1	27.7	
Level of Service	B	B		A	C		C	C		C	C	
Approach Delay (s)		14.4			20.4			29.0			28.7	
Approach LOS		B			C			C			C	

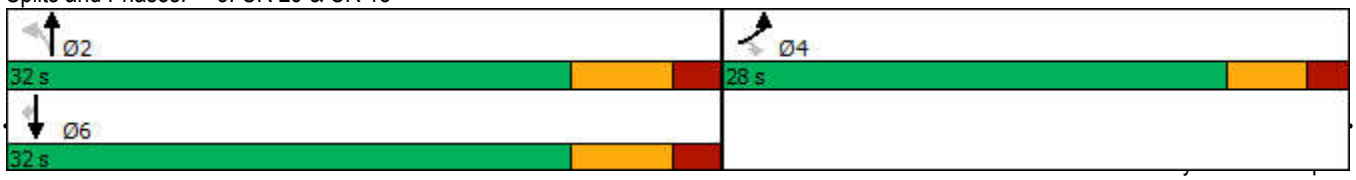
Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	12.4
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	379	43	68	496	583	542
Future Volume (vph)	379	43	68	496	583	542
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	4%			-2%	3%	
Storage Length (m)	0.0	5.0	60.0			62.0
Storage Lanes	1	1	1			1
Taper Length (m)	25.0		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.93	0.99			0.93
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1521	1361	1568	1650	1609	1368
Flt Permitted	0.950		0.248			
Satd. Flow (perm)	1464	1271	405	1650	1609	1279
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		18				589
Link Speed (k/h)	60			60	60	
Link Distance (m)	280.3			308.3	145.8	
Travel Time (s)	16.8			18.5	8.7	
Confl. Peds. (#/hr)	20	20	20			20
Confl. Bikes (#/hr)		10				10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%
Adj. Flow (vph)	412	47	74	539	634	589
Shared Lane Traffic (%)						
Lane Group Flow (vph)	412	47	74	539	634	589
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane					Yes	
Headway Factor	1.04	1.04	1.00	1.00	1.03	1.03
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	21.5	21.5	23.2	23.2	23.2	23.2
Total Split (s)	28.0	28.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Maximum Green (s)	22.5	22.5	25.2	25.2	25.2	25.2
Yellow Time (s)	3.5	3.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5
Act Effct Green (s)	18.8	18.8	24.4	24.4	24.4	24.4
Actuated g/C Ratio	0.34	0.34	0.44	0.44	0.44	0.44
v/c Ratio	0.80	0.11	0.42	0.75	0.90	0.66
Control Delay	30.5	9.4	21.1	22.5	35.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.5	9.4	21.1	22.5	35.5	5.5
LOS	C	A	C	C	D	A
Approach Delay	28.4			22.3	21.1	
Approach LOS	C			C	C	

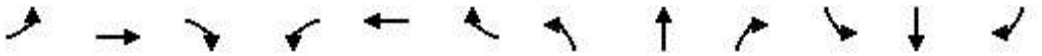
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 55.6			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 22.9		Intersection LOS: C	
Intersection Capacity Utilization 75.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: CR 29 & CR 18



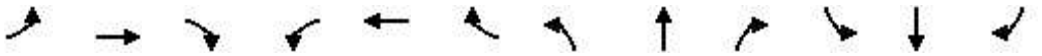
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	379	43	68	496	583	542
Future Volume (vph)	379	43	68	496	583	542
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	4%			-2%	3%	
Total Lost time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.94	1.00	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1521	1273	1552	1650	1609	1283
Flt Permitted	0.95	1.00	0.25	1.00	1.00	1.00
Satd. Flow (perm)	1521	1273	406	1650	1609	1283
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	412	47	74	539	634	589
RTOR Reduction (vph)	0	12	0	0	0	330
Lane Group Flow (vph)	412	35	74	539	634	259
Confl. Peds. (#/hr)	20	20	20			20
Confl. Bikes (#/hr)		10				10
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	18.8	18.8	24.4	24.4	24.4	24.4
Effective Green, g (s)	18.8	18.8	24.4	24.4	24.4	24.4
Actuated g/C Ratio	0.34	0.34	0.44	0.44	0.44	0.44
Clearance Time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	515	431	178	725	707	564
v/s Ratio Prot	c0.27			0.33	c0.39	
v/s Ratio Perm		0.03	0.18			0.20
v/c Ratio	0.80	0.08	0.42	0.74	0.90	0.46
Uniform Delay, d1	16.6	12.5	10.7	12.9	14.4	10.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	0.1	1.6	4.1	14.0	0.6
Delay (s)	25.3	12.6	12.2	17.1	28.4	11.5
Level of Service	C	B	B	B	C	B
Approach Delay (s)	24.0			16.5	20.3	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	12.3
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	848	1	1	1074	2	1	1	1	5	1	14
Future Volume (vph)	2	848	1	1	1074	2	1	1	1	5	1	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.4	3.4	3.4	3.4	3.4	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			-2%			-2%			0%	
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	20.0			20.0			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.955			0.904	
Flt Protected	0.950			0.950				0.984			0.988	
Satd. Flow (prot)	1535	1615	0	1550	1632	0	0	1717	0	0	1616	0
Flt Permitted	0.950			0.950				0.984			0.988	
Satd. Flow (perm)	1535	1615	0	1550	1632	0	0	1717	0	0	1616	0
Link Speed (k/h)		50			50			50			20	
Link Distance (m)		185.2			179.3			262.8			81.7	
Travel Time (s)		13.3			12.9			18.9			14.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	2	922	1	1	1167	2	1	1	1	5	1	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	923	0	1	1169	0	0	3	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.4			3.4			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.03	1.03	1.03	1.02	1.02	1.02	0.99	0.99	0.99	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.6%		ICU Level of Service C	
Analysis Period (min) 15			



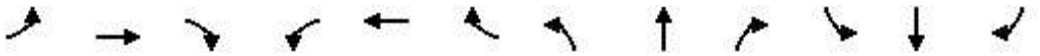
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	848	1	1	1074	2	1	1	1	5	1	14
Future Volume (Veh/h)	2	848	1	1	1074	2	1	1	1	5	1	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			-2%			-2%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	922	1	1	1167	2	1	1	1	5	1	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1169			923			2111	2098	922	2098	2097	1168
vC1, stage 1 conf vol							926	926		1170	1170	
vC2, stage 2 conf vol							1184	1171		928	927	
vCu, unblocked vol	1169			923			2111	2098	922	2098	2097	1168
tC, single (s)	4.2			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.3			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	97	100	94
cM capacity (veh/h)	553			689			172	207	323	183	208	232

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	2	923	1	1169	3	21
Volume Left	2	0	1	0	1	5
Volume Right	0	1	0	2	1	15
cSH	553	1700	689	1700	218	217
Volume to Capacity	0.00	0.54	0.00	0.69	0.01	0.10
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.3	2.5
Control Delay (s)	11.5	0.0	10.2	0.0	21.7	23.3
Lane LOS	B		B		C	C
Approach Delay (s)	0.0		0.0		21.7	23.3
Approach LOS					C	C

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	66.6%	ICU Level of Service		C
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	8	2	6	6	29	1	510	26	29	551	8
Future Volume (vph)	11	8	2	6	6	29	1	510	26	29	551	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	3.4
Grade (%)		2%			-3%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.906			0.994			0.998	
Flt Protected		0.975			0.992						0.998	
Satd. Flow (prot)	0	1649	0	0	1577	0	0	1679	0	0	1682	0
Flt Permitted		0.975			0.992						0.998	
Satd. Flow (perm)	0	1649	0	0	1577	0	0	1679	0	0	1682	0
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		123.1			271.6			54.3			121.2	
Travel Time (s)		6.3			14.0			2.8			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	12	9	2	7	7	32	1	554	28	32	599	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	46	0	0	583	0	0	640	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.04	1.04	1.04	1.03	1.03	1.03	1.03	1.03	1.03
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		



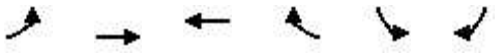
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	8	2	6	6	29	1	510	26	29	551	8
Future Volume (Veh/h)	11	8	2	6	6	29	1	510	26	29	551	8
Sign Control		Stop			Stop			Free			Free	
Grade		2%			-3%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	9	2	7	7	32	1	554	28	32	599	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1273	1252	604	1244	1242	568	608			582		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1273	1252	604	1244	1242	568	608			582		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	90	95	100	95	96	94	100			97		
cM capacity (veh/h)	126	164	493	139	167	517	933			954		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	23	46	583	640
Volume Left	12	7	1	32
Volume Right	2	32	28	9
cSH	149	298	933	954
Volume to Capacity	0.15	0.15	0.00	0.03
Queue Length 95th (m)	4.2	4.3	0.0	0.8
Control Delay (s)	33.6	19.3	0.0	0.9
Lane LOS	D	C	A	A
Approach Delay (s)	33.6	19.3	0.0	0.9
Approach LOS	D	C		

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	62.0%	ICU Level of Service	B	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	73	1	1	36	66	59
Future Volume (vph)	73	1	1	36	66	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.0	3.0	3.5	3.5	4.0	4.0
Grade (%)		0%	2%		2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.868		0.936	
Flt Protected		0.953			0.974	
Satd. Flow (prot)	0	1657	1583	0	1756	0
Flt Permitted		0.953			0.974	
Satd. Flow (perm)	0	1657	1583	0	1756	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		290.6	128.8		159.7	
Travel Time (s)		20.9	9.3		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	1	1	39	72	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	80	40	0	136	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.03	1.03	0.96	0.96
Turning Speed (k/h)	25			15	25	15
Sign Control		Stop	Stop		Stop	

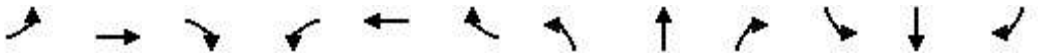
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	73	1	1	36	66	59
Future Volume (vph)	73	1	1	36	66	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	1	1	39	72	64

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	80	40	136
Volume Left (vph)	79	0	72
Volume Right (vph)	0	39	64
Hadj (s)	0.23	-0.55	-0.14
Departure Headway (s)	4.5	3.7	4.0
Degree Utilization, x	0.10	0.04	0.15
Capacity (veh/h)	779	922	864
Control Delay (s)	8.0	6.9	7.7
Approach Delay (s)	8.0	6.9	7.7
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	24.7%	ICU Level of Service	A
Analysis Period (min)	15		

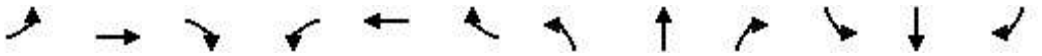


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	781	60	69	717	49	85	19	123	56	6	50
Future Volume (vph)	60	781	60	69	717	49	85	19	123	56	6	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	4.5	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		-2%			2%			-3%			2%	
Storage Length (m)	15.0		0.0	37.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99			0.99		0.94	0.91		0.95	0.91	
Frt		0.989			0.990			0.870			0.867	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1568	1804	0	1554	1610	0	1745	1451	0	1702	1407	0
Flt Permitted	0.289			0.121			0.717			0.622		
Satd. Flow (perm)	471	1804	0	198	1610	0	1244	1451	0	1061	1407	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			8			134			54	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.2			136.6			120.3			71.2	
Travel Time (s)		23.0			9.8			8.7			5.1	
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			20			20			20			20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	65	849	65	75	779	53	92	21	134	61	7	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	914	0	75	832	0	92	155	0	61	61	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	0.87	0.87	1.01	1.01	1.01	0.98	0.98	0.98	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		5.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.2	26.2		10.0	26.2		25.2	25.2		25.2	25.2	
Total Split (s)	44.8	44.8		10.0	54.8		25.2	25.2		25.2	25.2	
Total Split (%)	56.0%	56.0%		12.5%	68.5%		31.5%	31.5%		31.5%	31.5%	
Maximum Green (s)	39.6	39.6		8.0	49.6		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.3	3.3		2.0	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.9	1.9		0.0	1.9		1.9	1.9		1.9	1.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0			14.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	20	20			20		20	20		20	20	
Act Effct Green (s)	45.4	45.4		55.9	52.6		14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.59	0.59		0.73	0.68		0.18	0.18		0.18	0.18	
v/c Ratio	0.23	0.86		0.29	0.76		0.41	0.42		0.32	0.20	
Control Delay	13.3	26.5		7.0	15.4		31.8	10.2		30.0	10.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.3	26.5		7.0	15.4		31.8	10.2		30.0	10.4	
LOS	B	C		A	B		C	B		C	B	
Approach Delay		25.6			14.7			18.2			20.2	
Approach LOS		C			B			B			C	

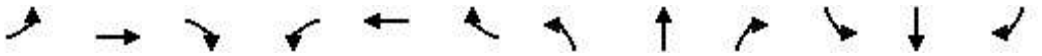
Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 77.1			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 20.1		Intersection LOS: C	
Intersection Capacity Utilization 93.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Clementi St & CR 29



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	781	60	69	717	49	85	19	123	56	6	50
Future Volume (vph)	60	781	60	69	717	49	85	19	123	56	6	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	4.5	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		-2%			2%			-3%			2%	
Total Lost time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.90		1.00	0.90	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.95	1.00		0.95	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1546	1805		1554	1611		1652	1439		1624	1395	
Flt Permitted	0.29	1.00		0.12	1.00		0.72	1.00		0.62	1.00	
Satd. Flow (perm)	471	1805		198	1611		1247	1439		1063	1395	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	849	65	75	779	53	92	21	134	61	7	54
RTOR Reduction (vph)	0	3	0	0	3	0	0	110	0	0	44	0
Lane Group Flow (vph)	65	911	0	75	829	0	92	45	0	61	17	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	45.4	45.4		53.0	53.0		14.0	14.0		14.0	14.0	
Effective Green, g (s)	45.4	45.4		53.0	53.0		14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.59	0.59		0.68	0.68		0.18	0.18		0.18	0.18	
Clearance Time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	276	1058		233	1103		225	260		192	252	
v/s Ratio Prot		c0.50		0.02	c0.51			0.03			0.01	
v/s Ratio Perm	0.14			0.20			c0.07			0.06		
v/c Ratio	0.24	0.86		0.32	0.75		0.41	0.17		0.32	0.07	
Uniform Delay, d1	7.7	13.4		10.7	7.9		28.0	26.8		27.5	26.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	9.2		0.8	4.7		1.2	0.3		1.0	0.1	
Delay (s)	9.7	22.6		11.5	12.7		29.3	27.1		28.5	26.4	
Level of Service	A	C		B	B		C	C		C	C	
Approach Delay (s)		21.7			12.6			27.9			27.5	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	12.4
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

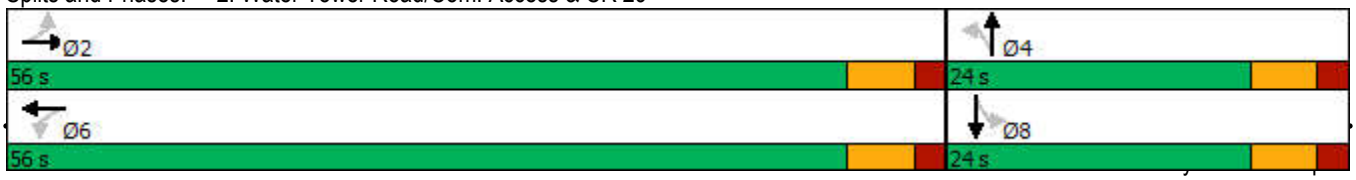


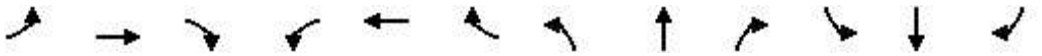
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	833	69	75	755	1	124	1	104	2	1	2
Future Volume (vph)	6	833	69	75	755	1	124	1	104	2	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.4	3.4	3.4	3.4	3.4	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			-2%			-2%			0%	
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	20.0			20.0			25.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			0.91			0.95	
Frt		0.989						0.939			0.946	
Flt Protected	0.950			0.950				0.974			0.980	
Satd. Flow (prot)	1535	1586	0	1550	1631	0	0	1583	0	0	1614	0
Flt Permitted	0.236			0.144				0.828			0.892	
Satd. Flow (perm)	381	1586	0	235	1631	0	0	1298	0	0	1454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10						48			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		113.3			319.2			166.2			51.2	
Travel Time (s)		8.2			23.0			12.0			3.7	
Confl. Peds. (#/hr)	30		30	30		30	30		30	20		20
Confl. Bikes (#/hr)			20			20			20			20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	7	905	75	82	821	1	135	1	113	2	1	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	980	0	82	822	0	0	249	0	0	5	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.03	1.03	1.03	1.02	1.02	1.02	0.99	0.99	0.99	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	56.0	56.0		56.0	56.0		24.0	24.0		24.0	24.0	
Total Split (s)	56.0	56.0		56.0	56.0		24.0	24.0		24.0	24.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	50.0	50.0		50.0	50.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
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	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	5	5		5	5		5	5		5	5	
Act Effct Green (s)	51.6	51.6		51.6	51.6			15.9			15.9	
Actuated g/C Ratio	0.65	0.65		0.65	0.65			0.20			0.20	
v/c Ratio	0.03	0.95		0.54	0.78			0.84			0.02	
Control Delay	6.2	33.8		26.0	17.4			49.2			21.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.2	33.8		26.0	17.4			49.2			21.0	
LOS	A	C		C	B			D			C	
Approach Delay		33.6			18.1			49.2			21.0	
Approach LOS		C			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 79.5			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 28.9		Intersection LOS: C	
Intersection Capacity Utilization 92.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Water Tower Road/Com. Access & CR 29





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	833	69	75	755	1	124	1	104	2	1	2
Future Volume (vph)	6	833	69	75	755	1	124	1	104	2	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.4	3.4	3.4	3.4	3.4	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			-2%			-2%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.95			0.96	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			0.96			0.99	
Frt	1.00	0.99		1.00	1.00			0.94			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1518	1585		1550	1631			1523			1596	
Flt Permitted	0.24	1.00		0.14	1.00			0.83			0.89	
Satd. Flow (perm)	376	1585		235	1631			1296			1453	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	905	75	82	821	1	135	1	113	2	1	2
RTOR Reduction (vph)	0	4	0	0	0	0	0	38	0	0	2	0
Lane Group Flow (vph)	7	976	0	82	822	0	0	211	0	0	3	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	20		20
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	51.6	51.6		51.6	51.6			15.9			15.9	
Effective Green, g (s)	51.6	51.6		51.6	51.6			15.9			15.9	
Actuated g/C Ratio	0.65	0.65		0.65	0.65			0.20			0.20	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	244	1028		152	1058			259			290	
v/s Ratio Prot		c0.62			0.50							
v/s Ratio Perm	0.02			0.35				c0.16			0.00	
v/c Ratio	0.03	0.95		0.54	0.78			0.81			0.01	
Uniform Delay, d1	5.0	12.8		7.5	9.9			30.4			25.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	18.3		13.1	5.6			17.4			0.0	
Delay (s)	5.2	31.1		20.6	15.5			47.8			25.5	
Level of Service	A	C		C	B			D			C	
Approach Delay (s)		30.9			16.0			47.8			25.5	
Approach LOS		C			B			D			C	

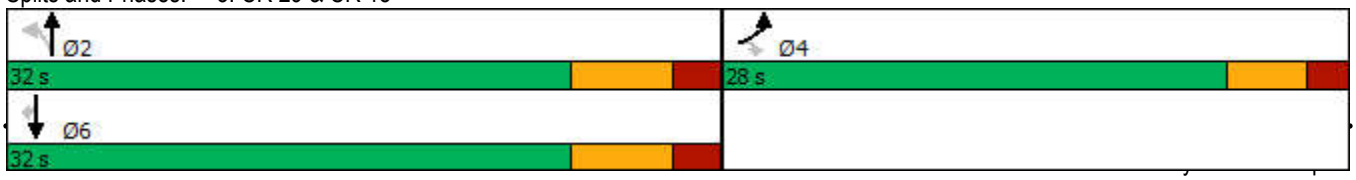
Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	552	54	57	355	533	374
Future Volume (vph)	552	54	57	355	533	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	4%			-2%	3%	
Storage Length (m)	0.0	5.0	60.0			62.0
Storage Lanes	1	1	1			1
Taper Length (m)	25.0		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.93	0.99			0.93
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1521	1361	1568	1650	1609	1368
Flt Permitted	0.950		0.261			
Satd. Flow (perm)	1464	1271	426	1650	1609	1279
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		15				407
Link Speed (k/h)	60			60	60	
Link Distance (m)	280.3			308.3	145.8	
Travel Time (s)	16.8			18.5	8.7	
Confl. Peds. (#/hr)	20	20	20			20
Confl. Bikes (#/hr)		10				10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%
Adj. Flow (vph)	600	59	62	386	579	407
Shared Lane Traffic (%)						
Lane Group Flow (vph)	600	59	62	386	579	407
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane					Yes	
Headway Factor	1.04	1.04	1.00	1.00	1.03	1.03
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	21.5	21.5	23.2	23.2	23.2	23.2
Total Split (s)	28.0	28.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Maximum Green (s)	22.5	22.5	25.2	25.2	25.2	25.2
Yellow Time (s)	3.5	3.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5
Act Effct Green (s)	22.5	22.5	23.5	23.5	23.5	23.5
Actuated g/C Ratio	0.39	0.39	0.40	0.40	0.40	0.40
v/c Ratio	1.02	0.12	0.36	0.58	0.89	0.54
Control Delay	66.0	10.6	19.3	17.6	35.6	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.0	10.6	19.3	17.6	35.6	4.5
LOS	E	B	B	B	D	A
Approach Delay	61.1			17.9	22.7	
Approach LOS	E			B	C	

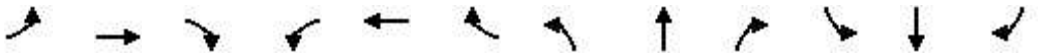
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 58.4			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 33.8		Intersection LOS: C	
Intersection Capacity Utilization 82.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: CR 29 & CR 18



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	552	54	57	355	533	374
Future Volume (vph)	552	54	57	355	533	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	4%			-2%	3%	
Total Lost time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.94	1.00	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1521	1273	1550	1650	1609	1279
Flt Permitted	0.95	1.00	0.26	1.00	1.00	1.00
Satd. Flow (perm)	1521	1273	426	1650	1609	1279
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	600	59	62	386	579	407
RTOR Reduction (vph)	0	9	0	0	0	243
Lane Group Flow (vph)	600	50	62	386	579	164
Confl. Peds. (#/hr)	20	20	20			20
Confl. Bikes (#/hr)		10				10
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	22.6	22.6	23.5	23.5	23.5	23.5
Effective Green, g (s)	22.6	22.6	23.5	23.5	23.5	23.5
Actuated g/C Ratio	0.39	0.39	0.40	0.40	0.40	0.40
Clearance Time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	588	492	171	663	647	514
v/s Ratio Prot	c0.39			0.23	c0.36	
v/s Ratio Perm		0.04	0.15			0.13
v/c Ratio	1.02	0.10	0.36	0.58	0.89	0.32
Uniform Delay, d1	17.9	11.4	12.2	13.6	16.3	12.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	42.4	0.1	1.3	1.3	14.9	0.4
Delay (s)	60.3	11.5	13.5	14.9	31.2	12.3
Level of Service	E	B	B	B	C	B
Approach Delay (s)	55.9			14.7	23.4	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	12.3
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

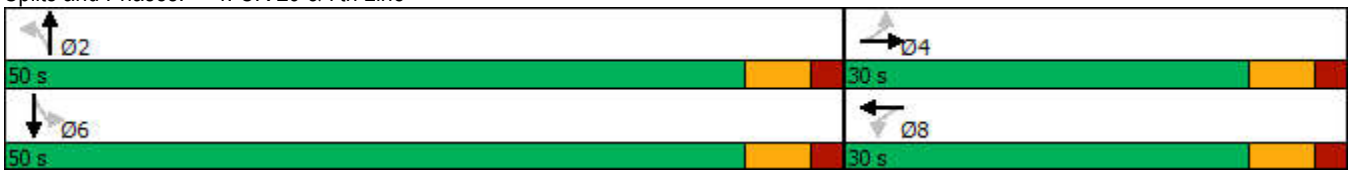


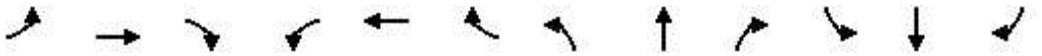
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	17	6	186	27	33	1	388	87	12	566	13
Future Volume (vph)	7	17	6	186	27	33	1	388	87	12	566	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	3.4
Grade (%)		2%			-3%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.96			0.99			1.00	
Frt		0.971			0.982			0.975			0.997	
Flt Protected		0.988			0.964						0.999	
Satd. Flow (prot)	0	1616	0	0	1645	0	0	1626	0	0	1680	0
Flt Permitted		0.909			0.757			0.999			0.988	
Satd. Flow (perm)	0	1478	0	0	1250	0	0	1624	0	0	1661	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			10			22			2	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		284.6			347.2			74.9			308.3	
Travel Time (s)		20.5			25.0			3.9			15.9	
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	8	18	7	202	29	36	1	422	95	13	615	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	267	0	0	518	0	0	642	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.04	1.04	1.04	1.03	1.03	1.03	1.03	1.03	1.03
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		50.0	50.0		50.0	50.0	
Total Split (s)	30.0	30.0		30.0	30.0		50.0	50.0		50.0	50.0	
Total Split (%)	37.5%	37.5%		37.5%	37.5%		62.5%	62.5%		62.5%	62.5%	
Maximum Green (s)	24.0	24.0		24.0	24.0		44.0	44.0		44.0	44.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
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	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	5	5		5	5		5	5		5	5	
Act Effct Green (s)		19.7			19.7			45.3			45.3	
Actuated g/C Ratio		0.26			0.26			0.59			0.59	
v/c Ratio		0.09			0.82			0.54			0.66	
Control Delay		17.8			46.2			12.6			15.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		17.8			46.2			12.6			15.7	
LOS		B			D			B			B	
Approach Delay		17.8			46.2			12.6			15.7	
Approach LOS		B			D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 77			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 20.2		Intersection LOS: C	
Intersection Capacity Utilization 70.4%		ICU Level of Service C	
Analysis Period (min) 15			

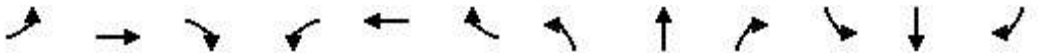
Splits and Phases: 4: CR 29 & 7th Line





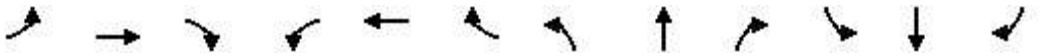
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	17	6	186	27	33	1	388	87	12	566	13
Future Volume (vph)	7	17	6	186	27	33	1	388	87	12	566	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	3.4
Grade (%)		2%			-3%			0%			0%	
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.98			0.99			0.99			1.00	
Flpb, ped/bikes		0.99			0.97			1.00			1.00	
Frt		0.97			0.98			0.98			1.00	
Flt Protected		0.99			0.96			1.00			1.00	
Satd. Flow (prot)		1607			1593			1626			1679	
Flt Permitted		0.91			0.76			1.00			0.99	
Satd. Flow (perm)		1478			1251			1625			1661	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	18	7	202	29	36	1	422	95	13	615	14
RTOR Reduction (vph)	0	5	0	0	7	0	0	9	0	0	1	0
Lane Group Flow (vph)	0	28	0	0	260	0	0	509	0	0	641	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	10%	10%	10%	10%	10%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		19.7			19.7			45.3			45.3	
Effective Green, g (s)		19.7			19.7			45.3			45.3	
Actuated g/C Ratio		0.26			0.26			0.59			0.59	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		378			320			956			977	
v/s Ratio Prot												
v/s Ratio Perm		0.02			c0.21			0.31			c0.39	
v/c Ratio		0.07			0.81			0.53			0.66	
Uniform Delay, d1		21.7			26.9			9.5			10.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			14.4			2.1			3.4	
Delay (s)		21.8			41.3			11.6			14.1	
Level of Service		C			D			B			B	
Approach Delay (s)		21.8			41.3			11.6			14.1	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	77.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	833	69	75	755	1	133	1	114	2	1	2
Future Volume (vph)	6	833	69	75	755	1	133	1	114	2	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.4	3.4	3.4	3.4	3.4	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			-2%			-2%			0%	
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	20.0			20.0			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989						0.938			0.946	
Flt Protected	0.950			0.950				0.974			0.980	
Satd. Flow (prot)	1535	1598	0	1550	1632	0	0	1670	0	0	1678	0
Flt Permitted	0.950			0.950				0.974			0.980	
Satd. Flow (perm)	1535	1598	0	1550	1632	0	0	1670	0	0	1678	0
Link Speed (k/h)		50			50			50			20	
Link Distance (m)		185.2			179.3			262.8			81.7	
Travel Time (s)		13.3			12.9			18.9			14.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	7	905	75	82	821	1	145	1	124	2	1	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	980	0	82	822	0	0	270	0	0	5	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.4			3.4			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.03	1.03	1.03	1.02	1.02	1.02	0.99	0.99	0.99	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

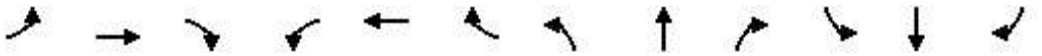
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	833	69	75	755	1	133	1	114	2	1	2
Future Volume (Veh/h)	6	833	69	75	755	1	133	1	114	2	1	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			-2%			-2%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	905	75	82	821	1	145	1	124	2	1	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	822			980			1944	1942	942	2029	1980	822
vC1, stage 1 conf vol							956	956		986	986	
vC2, stage 2 conf vol							988	986		1044	994	
vCu, unblocked vol	822			980			1944	1942	942	2029	1980	822
tC, single (s)	4.2			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.3			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			87			24	100	61	97	99	99
cM capacity (veh/h)	754			655			191	212	315	77	183	370

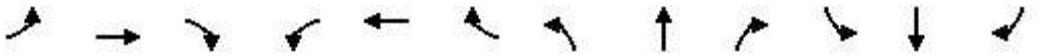
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	7	980	82	822	270	5
Volume Left	7	0	82	0	145	2
Volume Right	0	75	0	1	124	2
cSH	754	1700	655	1700	233	136
Volume to Capacity	0.01	0.58	0.13	0.48	1.16	0.04
Queue Length 95th (m)	0.2	0.0	3.4	0.0	101.2	0.9
Control Delay (s)	9.8	0.0	11.3	0.0	153.1	32.6
Lane LOS	A		B		F	D
Approach Delay (s)	0.1		1.0		153.1	32.6
Approach LOS					F	D

Intersection Summary				
Average Delay	19.6			
Intersection Capacity Utilization	83.3%	ICU Level of Service	E	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	17	6	198	30	33	1	389	89	12	568	14
Future Volume (vph)	7	17	6	198	30	33	1	389	89	12	568	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	3.4
Grade (%)		2%			-3%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.983			0.975			0.997	
Flt Protected		0.988			0.964						0.999	
Satd. Flow (prot)	0	1642	0	0	1663	0	0	1647	0	0	1682	0
Flt Permitted		0.988			0.964						0.999	
Satd. Flow (perm)	0	1642	0	0	1663	0	0	1647	0	0	1682	0
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		123.1			271.6			54.3			121.2	
Travel Time (s)		6.3			14.0			2.8			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	8	18	7	215	33	36	1	423	97	13	617	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	284	0	0	521	0	0	645	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.04	1.04	1.04	1.03	1.03	1.03	1.03	1.03	1.03
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.7%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	17	6	198	30	33	1	389	89	12	568	14
Future Volume (Veh/h)	7	17	6	198	30	33	1	389	89	12	568	14
Sign Control		Stop			Stop			Free			Free	
Grade		2%			-3%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	18	7	215	33	36	1	423	97	13	617	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1176	1172	624	1140	1132	472	632			520		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1176	1172	624	1140	1132	472	632			520		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	94	90	99	0	83	94	100			99		
cM capacity (veh/h)	134	187	480	159	198	586	913			1007		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	33	284	521	645
Volume Left	8	215	1	13
Volume Right	7	36	97	15
cSH	193	180	913	1007
Volume to Capacity	0.17	1.58	0.00	0.01
Queue Length 95th (m)	4.8	149.8	0.0	0.3
Control Delay (s)	27.4	332.7	0.0	0.3
Lane LOS	D	F	A	A
Approach Delay (s)	27.4	332.7	0.0	0.3
Approach LOS	D	F		

Intersection Summary				
Average Delay	64.5			
Intersection Capacity Utilization	67.7%	ICU Level of Service	C	
Analysis Period (min)	15			

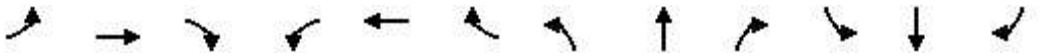
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	1	1	109	95	33
Future Volume (vph)	90	1	1	109	95	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.0	3.0	3.5	3.5	4.0	4.0
Grade (%)		0%	2%		2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.866		0.965	
Flt Protected		0.953			0.964	
Satd. Flow (prot)	0	1657	1579	0	1792	0
Flt Permitted		0.953			0.964	
Satd. Flow (perm)	0	1657	1579	0	1792	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		290.6	128.8		159.7	
Travel Time (s)		20.9	9.3		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1	1	118	103	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	99	119	0	139	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.03	1.03	0.96	0.96
Turning Speed (k/h)	25			15	25	15
Sign Control		Stop	Stop		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	90	1	1	109	95	33
Future Volume (vph)	90	1	1	109	95	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	98	1	1	118	103	36

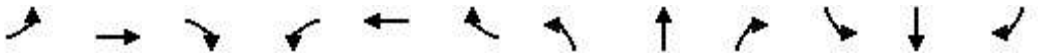
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	99	119	139
Volume Left (vph)	98	0	103
Volume Right (vph)	0	118	36
Hadj (s)	0.23	-0.56	0.03
Departure Headway (s)	4.6	3.8	4.4
Degree Utilization, x	0.13	0.13	0.17
Capacity (veh/h)	759	912	779
Control Delay (s)	8.2	7.3	8.3
Approach Delay (s)	8.2	7.3	8.3
Approach LOS	A	A	A

Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1	1	1	1	8	1	121	1	2	101	7
Future Volume (vph)	19	1	1	1	1	8	1	121	1	2	101	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.890			0.999			0.991	
Flt Protected		0.956			0.995						0.999	
Satd. Flow (prot)	0	1720	0	0	1602	0	0	1808	0	0	1791	0
Flt Permitted		0.956			0.995						0.999	
Satd. Flow (perm)	0	1720	0	0	1602	0	0	1808	0	0	1791	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		135.3			290.6			243.0			262.8	
Travel Time (s)		9.7			20.9			17.5			18.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	21	1	1	1	1	9	1	132	1	2	110	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	11	0	0	134	0	0	120	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

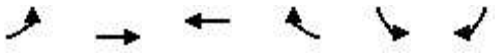
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	1	1	1	1	8	1	121	1	2	101	7
Future Volume (Veh/h)	19	1	1	1	1	8	1	121	1	2	101	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	1	1	1	1	9	1	132	1	2	110	8
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	262	253	114	254	256	132	118			133		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	262	253	114	254	256	132	118			133		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	100	100	100	99	100			100		
cM capacity (veh/h)	676	644	931	690	641	909	1452			1433		

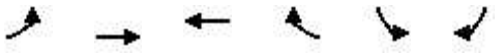
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	23	11	134	120
Volume Left	21	1	1	2
Volume Right	1	9	1	8
cSH	683	852	1452	1433
Volume to Capacity	0.03	0.01	0.00	0.00
Queue Length 95th (m)	0.8	0.3	0.0	0.0
Control Delay (s)	10.5	9.3	0.1	0.1
Lane LOS	B	A	A	A
Approach Delay (s)	10.5	9.3	0.1	0.1
Approach LOS	B	A		

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	20.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	100	14	29	1	1	211
Future Volume (vph)	100	14	29	1	1	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996		0.866	
Flt Protected		0.958				
Satd. Flow (prot)	0	1655	1720	0	1496	0
Flt Permitted		0.958				
Satd. Flow (perm)	0	1655	1720	0	1496	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		271.6	207.2		243.0	
Travel Time (s)		19.6	14.9		17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	109	15	32	1	1	229
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	124	33	0	230	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

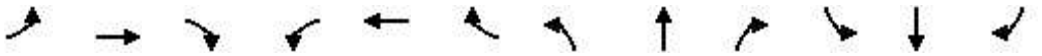
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	100	14	29	1	1	211
Future Volume (Veh/h)	100	14	29	1	1	211
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	15	32	1	1	229
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	33				266	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	33				266	32
tC, single (s)	4.2				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	93				100	78
cM capacity (veh/h)	1529				656	1019

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	124	33	230
Volume Left	109	0	1
Volume Right	0	1	229
cSH	1529	1700	1016
Volume to Capacity	0.07	0.02	0.23
Queue Length 95th (m)	1.8	0.0	7.0
Control Delay (s)	6.7	0.0	9.6
Lane LOS	A		A
Approach Delay (s)	6.7	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

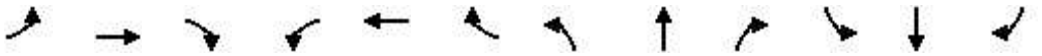


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	753	73	101	1016	70	66	14	102	55	9	83
Future Volume (vph)	90	753	73	101	1016	70	66	14	102	55	9	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	4.5	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		-2%			2%			-3%			2%	
Storage Length (m)	15.0		0.0	37.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99		0.93	0.89		0.94	0.89	
Frt		0.987			0.990			0.868			0.865	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1568	1796	0	1554	1609	0	1745	1415	0	1702	1371	0
Flt Permitted	0.121			0.185			0.692			0.630		
Satd. Flow (perm)	200	1796	0	303	1609	0	1188	1415	0	1059	1371	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			8			111			90	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.2			136.6			120.3			71.2	
Travel Time (s)		23.0			9.8			8.7			5.1	
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			20			20			20			20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	98	818	79	110	1104	76	72	15	111	60	10	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	897	0	110	1180	0	72	126	0	60	100	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	0.87	0.87	1.01	1.01	1.01	0.98	0.98	0.98	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		5.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.2	26.2		8.0	26.2		25.2	25.2		25.2	25.2	
Total Split (s)	66.8	66.8		8.0	74.8		25.2	25.2		25.2	25.2	
Total Split (%)	66.8%	66.8%		8.0%	74.8%		25.2%	25.2%		25.2%	25.2%	
Maximum Green (s)	61.6	61.6		6.0	69.6		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.3	3.3		2.0	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.9	1.9		0.0	1.9		1.9	1.9		1.9	1.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0			14.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	20	20			20		20	20		20	20	
Act Effct Green (s)	63.3	63.3		74.5	71.3		14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.66	0.66		0.78	0.75		0.15	0.15		0.15	0.15	
v/c Ratio	0.74	0.75		0.35	0.98		0.41	0.42		0.39	0.36	
Control Delay	50.8	17.2		6.3	36.8		43.4	13.3		43.2	13.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	50.8	17.2		6.3	36.8		43.4	13.3		43.2	13.1	
LOS	D	B		A	D		D	B		D	B	
Approach Delay		20.5			34.2			24.2			24.4	
Approach LOS		C			C			C			C	

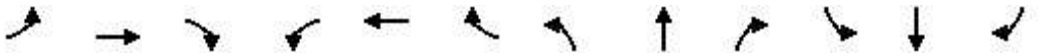
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 95.7			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 27.7		Intersection LOS: C	
Intersection Capacity Utilization 101.9%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: Clementi St & CR 29



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	753	73	101	1016	70	66	14	102	55	9	83
Future Volume (vph)	90	753	73	101	1016	70	66	14	102	55	9	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	4.5	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		-2%			2%			-3%			2%	
Total Lost time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.88		1.00	0.88	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.94	1.00		0.94	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1568	1796		1554	1610		1636	1401		1602	1358	
Flt Permitted	0.12	1.00		0.18	1.00		0.69	1.00		0.63	1.00	
Satd. Flow (perm)	199	1796		302	1610		1192	1401		1063	1358	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	818	79	110	1104	76	72	15	111	60	10	90
RTOR Reduction (vph)	0	3	0	0	2	0	0	95	0	0	77	0
Lane Group Flow (vph)	98	894	0	110	1178	0	72	31	0	60	23	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	63.3	63.3		71.3	71.3		14.0	14.0		14.0	14.0	
Effective Green, g (s)	63.3	63.3		71.3	71.3		14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.66	0.66		0.75	0.75		0.15	0.15		0.15	0.15	
Clearance Time (s)	5.2	5.2		2.0	5.2		5.2	5.2		5.2	5.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	131	1187		303	1199		174	204		155	198	
v/s Ratio Prot		0.50		0.02	c0.73			0.02			0.02	
v/s Ratio Perm	0.49			0.25			c0.06			0.06		
v/c Ratio	0.75	0.75		0.36	0.98		0.41	0.15		0.39	0.12	
Uniform Delay, d1	10.9	10.9		8.9	11.6		37.1	35.7		37.0	35.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.9	4.4		0.7	22.1		1.6	0.4		1.6	0.3	
Delay (s)	42.7	15.4		9.6	33.7		38.7	36.0		38.6	35.7	
Level of Service	D	B		A	C		D	D		D	D	
Approach Delay (s)		18.1			31.7			37.0			36.8	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	95.7	Sum of lost time (s)	12.4
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

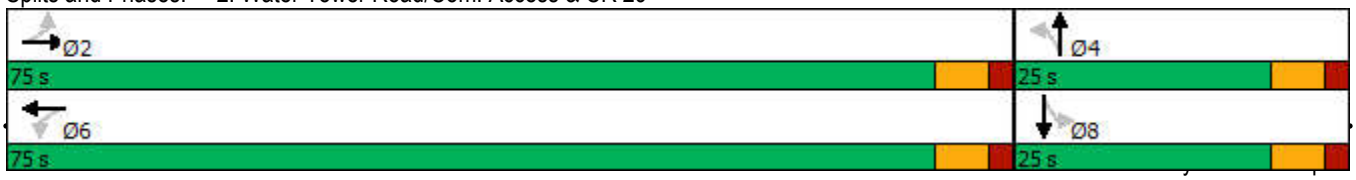


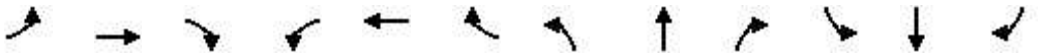
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	848	134	113	1074	2	94	1	89	5	1	14
Future Volume (vph)	2	848	134	113	1074	2	94	1	89	5	1	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.4	3.4	3.4	3.4	3.4	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			-2%			-2%			0%	
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	20.0			20.0			25.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			1.00			0.89			0.91	
Frt		0.979						0.935			0.904	
Flt Protected	0.950			0.950				0.975			0.988	
Satd. Flow (prot)	1535	1557	0	1550	1631	0	0	1555	0	0	1488	0
Flt Permitted	0.091			0.143				0.828			0.933	
Satd. Flow (perm)	147	1557	0	233	1631	0	0	1266	0	0	1394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18						42			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		113.3			319.2			166.2			51.2	
Travel Time (s)		8.2			23.0			12.0			3.7	
Confl. Peds. (#/hr)	30		30	30		30	30		30	20		20
Confl. Bikes (#/hr)			20			20			20			20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	2	922	146	123	1167	2	102	1	97	5	1	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	1068	0	123	1169	0	0	200	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.03	1.03	1.03	1.02	1.02	1.02	0.99	0.99	0.99	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	56.0	56.0		56.0	56.0		24.0	24.0		24.0	24.0	
Total Split (s)	75.0	75.0		75.0	75.0		25.0	25.0		25.0	25.0	
Total Split (%)	75.0%	75.0%		75.0%	75.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	69.0	69.0		69.0	69.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
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	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	5	5		5	5		5	5		5	5	
Act Effct Green (s)	72.0	72.0		72.0	72.0			16.4			16.4	
Actuated g/C Ratio	0.72	0.72		0.72	0.72			0.16			0.16	
v/c Ratio	0.02	0.95		0.74	1.00			0.83			0.09	
Control Delay	5.5	32.9		40.7	43.1			58.7			19.8	
Queue Delay	0.0	0.8		0.0	0.0			0.0			0.0	
Total Delay	5.5	33.7		40.7	43.1			58.7			19.8	
LOS	A	C		D	D			E			B	
Approach Delay		33.6			42.9			58.7			19.8	
Approach LOS		C			D			E			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100.4			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 40.1		Intersection LOS: D	
Intersection Capacity Utilization 98.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Water Tower Road/Com. Access & CR 29





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	848	134	113	1074	2	94	1	89	5	1	14
Future Volume (vph)	2	848	134	113	1074	2	94	1	89	5	1	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.4	3.4	3.4	3.4	3.4	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			-2%			-2%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00			0.93			0.92	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.96			0.99	
Frt	1.00	0.98		1.00	1.00			0.93			0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1535	1558		1550	1631			1485			1469	
Flt Permitted	0.09	1.00		0.14	1.00			0.83			0.93	
Satd. Flow (perm)	146	1558		234	1631			1262			1387	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	922	146	123	1167	2	102	1	97	5	1	15
RTOR Reduction (vph)	0	5	0	0	0	0	0	35	0	0	13	0
Lane Group Flow (vph)	2	1063	0	123	1169	0	0	165	0	0	8	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	20		20
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	72.0	72.0		72.0	72.0			16.4			16.4	
Effective Green, g (s)	72.0	72.0		72.0	72.0			16.4			16.4	
Actuated g/C Ratio	0.72	0.72		0.72	0.72			0.16			0.16	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	104	1117		167	1169			206			226	
v/s Ratio Prot		0.68			c0.72							
v/s Ratio Perm	0.01			0.53				c0.13			0.01	
v/c Ratio	0.02	0.95		0.74	1.00			0.80			0.04	
Uniform Delay, d1	4.1	12.6		8.5	14.2			40.4			35.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	17.5		24.9	26.3			19.6			0.1	
Delay (s)	4.4	30.2		33.4	40.5			60.0			35.4	
Level of Service	A	C		C	D			E			D	
Approach Delay (s)		30.1			39.8			60.0			35.4	
Approach LOS		C			D			E			D	

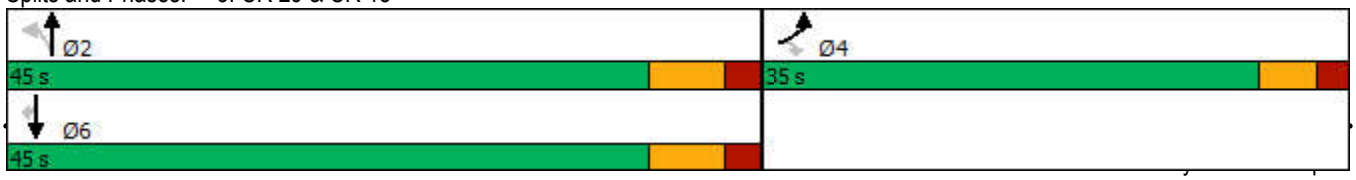
Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	100.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	456	58	77	552	616	602
Future Volume (vph)	456	58	77	552	616	602
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	4%			-2%	3%	
Storage Length (m)	0.0	5.0	60.0			62.0
Storage Lanes	1	1	1			1
Taper Length (m)	25.0		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.92				0.92
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1521	1361	1568	1650	1609	1368
Flt Permitted	0.950		0.213			
Satd. Flow (perm)	1445	1254	351	1650	1609	1263
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		15				654
Link Speed (k/h)	60			60	60	
Link Distance (m)	280.3			308.3	145.8	
Travel Time (s)	16.8			18.5	8.7	
Confl. Peds. (#/hr)	20	20	20			20
Confl. Bikes (#/hr)		10				10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%
Adj. Flow (vph)	496	63	84	600	670	654
Shared Lane Traffic (%)						
Lane Group Flow (vph)	496	63	84	600	670	654
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane					Yes	
Headway Factor	1.04	1.04	1.00	1.00	1.03	1.03
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	21.5	21.5	23.2	23.2	23.2	23.2
Total Split (s)	35.0	35.0	45.0	45.0	45.0	45.0
Total Split (%)	43.8%	43.8%	56.3%	56.3%	56.3%	56.3%
Maximum Green (s)	29.5	29.5	38.2	38.2	38.2	38.2
Yellow Time (s)	3.5	3.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5
Act Effct Green (s)	26.9	26.9	34.4	34.4	34.4	34.4
Actuated g/C Ratio	0.36	0.36	0.47	0.47	0.47	0.47
v/c Ratio	0.90	0.14	0.52	0.78	0.90	0.70
Control Delay	44.6	14.4	28.3	25.7	35.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	14.4	28.3	25.7	35.6	5.8
LOS	D	B	C	C	D	A
Approach Delay	41.2			26.0	20.9	
Approach LOS	D			C	C	

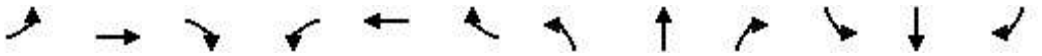
Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 73.9			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 26.7		Intersection LOS: C	
Intersection Capacity Utilization 81.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: CR 29 & CR 18



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	456	58	77	552	616	602
Future Volume (vph)	456	58	77	552	616	602
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	4%			-2%	3%	
Total Lost time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.93	1.00	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1521	1259	1568	1650	1609	1268
Flt Permitted	0.95	1.00	0.21	1.00	1.00	1.00
Satd. Flow (perm)	1521	1259	352	1650	1609	1268
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	496	63	84	600	670	654
RTOR Reduction (vph)	0	10	0	0	0	349
Lane Group Flow (vph)	496	53	84	600	670	305
Confl. Peds. (#/hr)	20	20	20			20
Confl. Bikes (#/hr)		10				10
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	27.0	27.0	34.4	34.4	34.4	34.4
Effective Green, g (s)	27.0	27.0	34.4	34.4	34.4	34.4
Actuated g/C Ratio	0.37	0.37	0.47	0.47	0.47	0.47
Clearance Time (s)	5.5	5.5	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	557	461	164	770	751	591
v/s Ratio Prot	c0.33			0.36	c0.42	
v/s Ratio Perm		0.04	0.24			0.24
v/c Ratio	0.89	0.12	0.51	0.78	0.89	0.52
Uniform Delay, d1	22.0	15.5	13.8	16.5	18.0	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.3	0.1	2.7	5.0	12.9	0.8
Delay (s)	38.2	15.6	16.5	21.5	30.9	14.6
Level of Service	D	B	B	C	C	B
Approach Delay (s)	35.7			20.9	22.8	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	73.7	Sum of lost time (s)	12.3
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

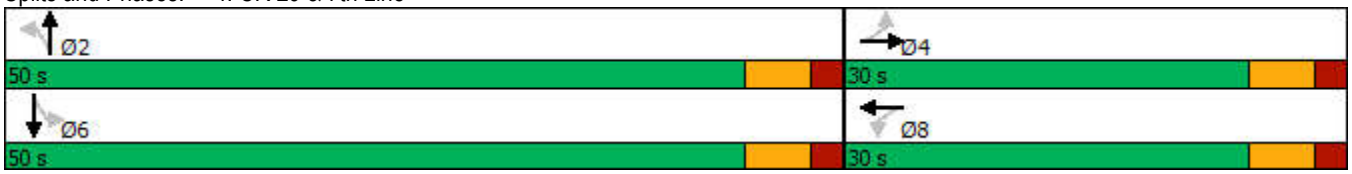


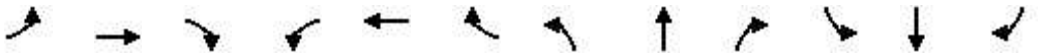
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	37	2	122	26	38	1	558	197	44	579	13
Future Volume (vph)	19	37	2	122	26	38	1	558	197	44	579	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	3.4
Grade (%)		2%			-3%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.96			0.98			1.00	
Frt		0.996			0.973			0.965			0.997	
Flt Protected		0.984			0.968						0.997	
Satd. Flow (prot)	0	1674	0	0	1628	0	0	1600	0	0	1676	0
Flt Permitted		0.877			0.763						0.908	
Satd. Flow (perm)	0	1477	0	0	1249	0	0	1600	0	0	1526	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			16			35			2	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		284.6			347.2			74.9			308.3	
Travel Time (s)		20.5			25.0			3.9			15.9	
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	21	40	2	133	28	41	1	607	214	48	629	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	0	0	202	0	0	822	0	0	691	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.04	1.04	1.04	1.03	1.03	1.03	1.03	1.03	1.03
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		50.0	50.0		50.0	50.0	
Total Split (s)	30.0	30.0		30.0	30.0		50.0	50.0		50.0	50.0	
Total Split (%)	37.5%	37.5%		37.5%	37.5%		62.5%	62.5%		62.5%	62.5%	
Maximum Green (s)	24.0	24.0		24.0	24.0		44.0	44.0		44.0	44.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
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	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	5	5		5	5		5	5		5	5	
Act Effct Green (s)		16.4			16.4			47.0			47.0	
Actuated g/C Ratio		0.22			0.22			0.62			0.62	
v/c Ratio		0.20			0.71			0.81			0.73	
Control Delay		22.9			38.5			20.7			17.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.9			38.5			20.7			17.3	
LOS		C			D			C			B	
Approach Delay		22.9			38.5			20.7			17.3	
Approach LOS		C			D			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 75.4			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 21.5		Intersection LOS: C	
Intersection Capacity Utilization 93.8%		ICU Level of Service F	
Analysis Period (min) 15			

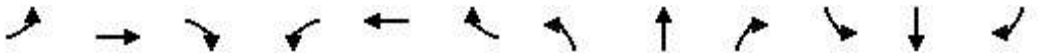
Splits and Phases: 4: CR 29 & 7th Line





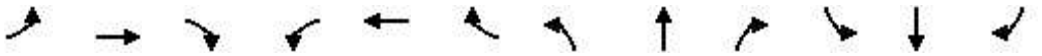
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	37	2	122	26	38	1	558	197	44	579	13
Future Volume (vph)	19	37	2	122	26	38	1	558	197	44	579	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	3.4
Grade (%)		2%			-3%			0%			0%	
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			0.98			0.98			1.00	
Flpb, ped/bikes		0.99			0.97			1.00			1.00	
Frt		1.00			0.97			0.96			1.00	
Flt Protected		0.98			0.97			1.00			1.00	
Satd. Flow (prot)		1657			1586			1601			1675	
Flt Permitted		0.88			0.76			1.00			0.91	
Satd. Flow (perm)		1478			1250			1601			1527	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	40	2	133	28	41	1	607	214	48	629	14
RTOR Reduction (vph)	0	2	0	0	13	0	0	13	0	0	1	0
Lane Group Flow (vph)	0	61	0	0	189	0	0	809	0	0	690	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	10%	10%	10%	10%	10%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.3			16.3			47.0			47.0	
Effective Green, g (s)		16.3			16.3			47.0			47.0	
Actuated g/C Ratio		0.22			0.22			0.62			0.62	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		319			270			999			953	
v/s Ratio Prot												
v/s Ratio Perm		0.04			c0.15			0.51			0.45	
v/c Ratio		0.19			0.70			0.81			0.72	
Uniform Delay, d1		24.1			27.3			10.8			9.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			8.0			7.1			4.8	
Delay (s)		24.4			35.2			17.8			14.5	
Level of Service		C			D			B			B	
Approach Delay (s)		24.4			35.2			17.8			14.5	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	75.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	848	143	122	1074	2	98	1	90	5	1	14
Future Volume (vph)	2	848	143	122	1074	2	98	1	90	5	1	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.4	3.4	3.4	3.4	3.4	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			-2%			-2%			0%	
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	20.0			20.0			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978						0.936			0.904	
Flt Protected	0.950			0.950				0.975			0.988	
Satd. Flow (prot)	1535	1580	0	1550	1632	0	0	1592	0	0	1543	0
Flt Permitted	0.950			0.950				0.975			0.988	
Satd. Flow (perm)	1535	1580	0	1550	1632	0	0	1592	0	0	1543	0
Link Speed (k/h)		50			50			50			20	
Link Distance (m)		185.2			179.3			262.8			81.7	
Travel Time (s)		13.3			12.9			18.9			14.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	15%	15%	15%	15%	15%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	2	922	155	133	1167	2	107	1	98	5	1	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	1077	0	133	1169	0	0	206	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.4			3.4			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.03	1.03	1.03	1.02	1.02	1.02	0.99	0.99	0.99	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 87.7%		ICU Level of Service E	
Analysis Period (min) 15			



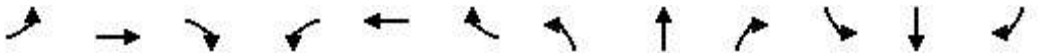
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	848	143	122	1074	2	98	1	90	5	1	14
Future Volume (Veh/h)	2	848	143	122	1074	2	98	1	90	5	1	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			-2%			-2%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	922	155	133	1167	2	107	1	98	5	1	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1169			1077			2452	2438	1000	2458	2515	1168
vC1, stage 1 conf vol							1004	1004		1434	1434	
vC2, stage 2 conf vol							1448	1435		1024	1081	
vCu, unblocked vol	1169			1077			2452	2438	1000	2458	2515	1168
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)							6.2	5.6		6.2	5.6	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			78			0	99	66	88	99	93
cM capacity (veh/h)	553			601			100	130	285	42	104	227

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	2	1077	133	1169	206	21
Volume Left	2	0	133	0	107	5
Volume Right	0	155	0	2	98	15
cSH	553	1700	601	1700	145	108
Volume to Capacity	0.00	0.63	0.22	0.69	1.42	0.19
Queue Length 95th (m)	0.1	0.0	6.7	0.0	106.9	5.4
Control Delay (s)	11.5	0.0	12.7	0.0	280.6	46.1
Lane LOS	B		B		F	E
Approach Delay (s)	0.0		1.3		280.6	46.1
Approach LOS					F	E

Intersection Summary				
Average Delay	23.2			
Intersection Capacity Utilization	87.7%	ICU Level of Service	E	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	38	2	126	25	37	1	560	209	43	581	13
Future Volume (vph)	19	38	2	126	25	37	1	560	209	43	581	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	3.4
Grade (%)		2%			-3%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.974			0.963			0.997	
Flt Protected		0.984			0.968						0.997	
Satd. Flow (prot)	0	1601	0	0	1579	0	0	1556	0	0	1606	0
Flt Permitted		0.984			0.968						0.997	
Satd. Flow (perm)	0	1601	0	0	1579	0	0	1556	0	0	1606	0
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		123.1			271.6			54.3			121.2	
Travel Time (s)		6.3			14.0			2.8			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	15%	15%	15%	15%	15%	15%
Adj. Flow (vph)	21	41	2	137	27	40	1	609	227	47	632	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	204	0	0	837	0	0	693	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.04	1.04	1.04	1.03	1.03	1.03	1.03	1.03	1.03
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

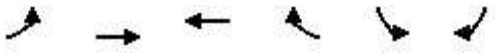
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 89.5%		ICU Level of Service E	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	38	2	126	25	37	1	560	209	43	581	13
Future Volume (Veh/h)	19	38	2	126	25	37	1	560	209	43	581	13
Sign Control		Stop			Stop			Free			Free	
Grade		2%			-3%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	41	2	137	27	40	1	609	227	47	632	14
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1511	1571	639	1480	1464	722	646			836		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1511	1571	639	1480	1464	722	646			836		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	68	59	100	0	77	90	100			94		
cM capacity (veh/h)	67	99	462	64	116	414	880			744		

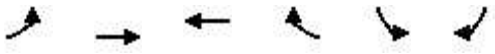
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	64	204	837	693
Volume Left	21	137	1	47
Volume Right	2	40	227	14
cSH	87	83	880	744
Volume to Capacity	0.73	2.47	0.00	0.06
Queue Length 95th (m)	29.3	153.3	0.0	1.6
Control Delay (s)	117.6	775.3	0.0	1.7
Lane LOS	F	F	A	A
Approach Delay (s)	117.6	775.3	0.0	1.7
Approach LOS	F	F		

Intersection Summary				
Average Delay	92.8			
Intersection Capacity Utilization	89.5%	ICU Level of Service	E	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	79	1	1	36	66	71
Future Volume (vph)	79	1	1	36	66	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.0	3.0	3.5	3.5	4.0	4.0
Grade (%)		0%	2%		2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.868		0.930	
Flt Protected		0.953			0.976	
Satd. Flow (prot)	0	1657	1583	0	1748	0
Flt Permitted		0.953			0.976	
Satd. Flow (perm)	0	1657	1583	0	1748	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		290.6	128.8		159.7	
Travel Time (s)		20.9	9.3		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	1	1	39	72	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	87	40	0	149	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.03	1.03	0.96	0.96
Turning Speed (k/h)	25			15	25	15
Sign Control		Stop	Stop		Stop	

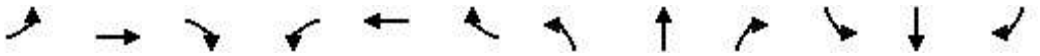
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	79	1	1	36	66	71
Future Volume (vph)	79	1	1	36	66	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	86	1	1	39	72	77

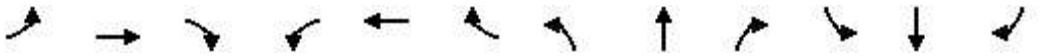
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	87	40	149
Volume Left (vph)	86	0	72
Volume Right (vph)	0	39	77
Hadj (s)	0.23	-0.55	-0.18
Departure Headway (s)	4.5	3.8	4.0
Degree Utilization, x	0.11	0.04	0.17
Capacity (veh/h)	773	910	867
Control Delay (s)	8.0	6.9	7.8
Approach Delay (s)	8.0	6.9	7.8
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1	1	1	1	5	1	107	1	9	134	21
Future Volume (vph)	14	1	1	1	1	5	1	107	1	9	134	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.904			0.999			0.983	
Flt Protected		0.958			0.993						0.997	
Satd. Flow (prot)	0	1720	0	0	1624	0	0	1726	0	0	1693	0
Flt Permitted		0.958			0.993						0.997	
Satd. Flow (perm)	0	1720	0	0	1624	0	0	1726	0	0	1693	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		135.3			290.6			243.0			262.8	
Travel Time (s)		9.7			20.9			17.5			18.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	15	1	1	1	1	5	1	116	1	10	146	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	0	0	7	0	0	118	0	0	179	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

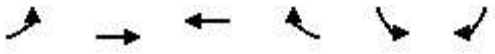
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	1	1	1	1	5	1	107	1	9	134	21
Future Volume (Veh/h)	14	1	1	1	1	5	1	107	1	9	134	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	1	1	1	1	5	1	116	1	10	146	23
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	302	296	158	298	308	116	169			117		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	302	296	158	298	308	116	169			117		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	98	100	100	100	100	99	100			99		
cM capacity (veh/h)	637	605	880	643	597	928	1361			1423		

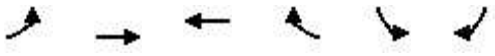
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	17	7	118	179
Volume Left	15	1	1	10
Volume Right	1	5	1	23
cSH	645	812	1361	1423
Volume to Capacity	0.03	0.01	0.00	0.01
Queue Length 95th (m)	0.6	0.2	0.0	0.2
Control Delay (s)	10.7	9.5	0.1	0.5
Lane LOS	B	A	A	A
Approach Delay (s)	10.7	9.5	0.1	0.5
Approach LOS	B	A		

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	24.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	227	26	18	1	1	147
Future Volume (vph)	227	26	18	1	1	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.994		0.866	
Flt Protected		0.957				
Satd. Flow (prot)	0	1653	1717	0	1496	0
Flt Permitted		0.957				
Satd. Flow (perm)	0	1653	1717	0	1496	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		271.6	207.2		243.0	
Travel Time (s)		19.6	14.9		17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	247	28	20	1	1	160
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	275	21	0	161	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	227	26	18	1	1	147
Future Volume (Veh/h)	227	26	18	1	1	147
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	247	28	20	1	1	160
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	21				542	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	21				542	20
tC, single (s)	4.2				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	84				100	85
cM capacity (veh/h)	1544				410	1034

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	275	21	161
Volume Left	247	0	1
Volume Right	0	1	160
cSH	1544	1700	1025
Volume to Capacity	0.16	0.01	0.16
Queue Length 95th (m)	4.6	0.0	4.5
Control Delay (s)	7.1	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	7.1	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	36.4%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix D:
Traffic Signal Warrants

TATHAM ENGINEERING

TRAFFIC SIGNAL WARRANT

Project & No.: Lakefield South Subdivision 517651

GENERAL INFORMATION

Analyst	MJB	**Jurisdiction/Area**	Lakefield	**Date**	Apr 2024
Agency or Company	Tatham Engineering Limited	**East-West Street**	County Road 29		
Analysis Period	2045 Total Conditions	**North-South Street**	Water Tower Road		

Flow Conditions	Restricted flow (urban)	**Major Street**	East-West
T Intersection	No	**Approach Lanes per Direction**	1
		Existing or Planned Intersection	existing intersection

Additional Comments

TRAFFIC & PEDESTRIAN VOLUMES

	AM Peak Hour			PM Peak Hour			Average Hour (AM+PM) ÷ 4		
	right	thru	left	right	thru	left	right	thru	left
MAJOR STREET									
Eastbound	69	833	6	134	848	2	**51**	**420**	**2**
Westbound	1	755	75	2	1074	113	**1**	**457**	**47**
MINOR STREET									
Northbound	104	0	124	89	0	94	**48**	**0**	**55**
Southbound	2	0	2	14	0	5	**4**	**0**	**2**
PEDESTRIANS									
crossing MAJOR street		0			0			**0**	
crossing MINOR street		0			0			**0**	

	AM Peak Hour			PM Peak Hour			Average Hour (AM+PM) ÷ 4		
	major	minor	total	major	minor	total	major	minor	total
APPROACH VOLUMES	1739	232	1971	2173	202	2375	**978**	**109**	**1087**
CROSSING VOLUMES			126			99			**56**

JUSTIFICATION 7 - PROJECTED VOLUMES

Justification	Description	Warrant Level			Warrant Adjustment	Sectional Numerical	Sectional Compliance	Entire Compliance
1. MINIMUM VEHICULAR VOLUMES	A. Vehicle volume, all approaches (average hour)	720 (1 lane approach on main road)	or	900 (2 or more lane approach on main road)	**120%**	**1087**	**100%**	53%
	B. Vehicle volume, along minor streets (average hour)	170 (full intersection)	or	255 (tee intersection)	**120%**	**109**	**53%**	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volume, major street (average hour)	720 (1 lane approach on main road)	or	900 (2 or more lane approach on main road)	**120%**	**978**	**100%**	63%
	B. Combined vehicle and pedestrian volume crossing artery from minor streets	75 (1 lane approach on main road)	or	170 (2 or more lane approach on main road)	**120%**	**56**	**63%**	

Signals are warranted if BOTH Justification 1A and Justification 1B OR Justification 2A and Justification 2B are 100% compliant.	Not Warranted
Signals are warranted if THE LESSER of Justification 1A or 1B AND the lesser of Justification 2A or Justification 2B are 80% compliant.	Not Warranted

Notes:

Restricted Flow Conditions
- roads with operating speeds less than 70 km/h
- normally encountered in urban areas where the traffic volumes approach or exceed practical working capacity of road

Free Flow Conditions
- roads with operating speeds greater than or equal to 70 km/h
- normally encountered in rural areas
- may also be used at intersections within the built-up area of a community with < 10 000 people and outside the commuting influence of a large urban centre, even if the speed is less than 70 km/h

TATHAM ENGINEERING

TRAFFIC SIGNAL WARRANT

Project & No.: Lakefield South Subdivision 517651

GENERAL INFORMATION

Analyst	MJB	**Jurisdiction/Area**	Lakefield	**Date**	Apr 2024
Agency or Company	Tatham Engineering Limited	**East-West Street**	7th Line		
Analysis Period	2045 Total Conditions	**North-South Street**	County Road 29		
Flow Conditions	Free flow (rural)	**Major Street**	North-South		
T Intersection	No	**Approach Lanes per Direction**	1		
		Existing or Planned Intersection	existing intersection		

Additional Comments

TRAFFIC & PEDESTRIAN VOLUMES

	AM Peak Hour			PM Peak Hour			Average Hour (AM+PM) ÷ 4		
	right	thru	left	right	thru	left	right	thru	left
MAJOR STREET									
Northbound	87	388	1	197	558	1	**71**	**237**	**1**
Southbound	13	566	12	13	579	44	**7**	**286**	**14**
MINOR STREET									
Eastbound	6	17	7	2	37	19	**2**	**14**	**7**
Westbound	33	27	186	38	26	122	**18**	**13**	**77**
PEDESTRIANS									
crossing MAJOR street		0			0			**0**	
crossing MINOR street		0			0			**0**	

	AM Peak Hour			PM Peak Hour			Average Hour (AM+PM) ÷ 4		
	major	minor	total	major	minor	total	major	minor	total
APPROACH VOLUMES	1067	276	1343	1392	244	1636	**615**	**130**	**745**
CROSSING VOLUMES			220			178			**100**

JUSTIFICATION 7 - PROJECTED VOLUMES

Justification	Description	Warrant Level			Warrant Adjustment	Sectional Numerical	Sectional Compliance	Entire Compliance
1. MINIMUM VEHICULAR VOLUMES	A. Vehicle volume, all approaches (average hour)	480 (1 lane approach on main road)	or	600 (2 or more lane approach on main road)	**120%**	**745**	**100%**	90%
	B. Vehicle volume, along minor streets (average hour)	120 (full intersection)	or	180 (tee intersection)	**120%**	**130**	**90%**	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volume, major street (average hour)	480 (1 lane approach on main road)	or	600 (2 or more lane approach on main road)	**120%**	**615**	**100%**	100%
	B. Combined vehicle and pedestrian volume crossing artery from minor streets	50 (1 lane approach on main road)	or	120 (2 or more lane approach on main road)	**120%**	**100**	**100%**	

Signals are warranted if BOTH Justification 1A and Justification 1B OR Justification 2A and Justification 2B are 100% compliant.

Signals are warranted if THE LESSER of Justification 1A or 1B AND the lesser of Justification 2A or Justification 2B are 80% compliant.

Warranted

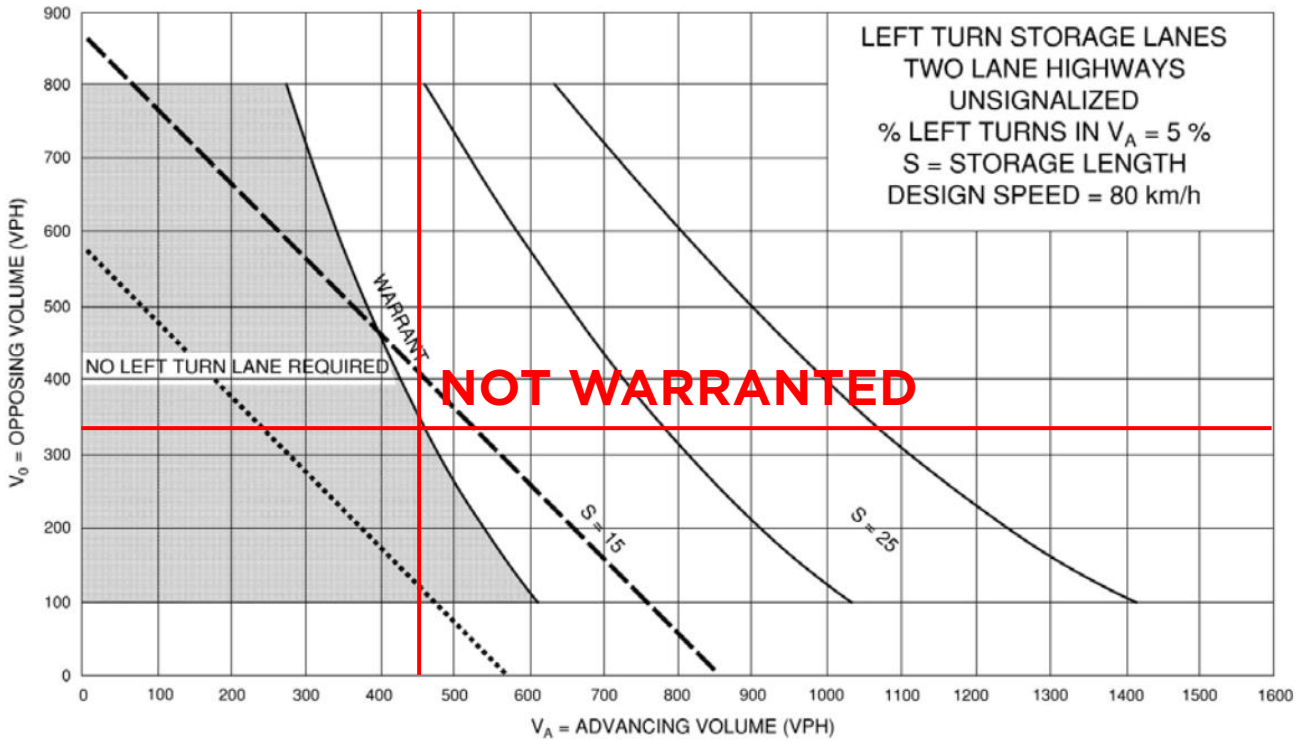
Not Warranted

Notes:

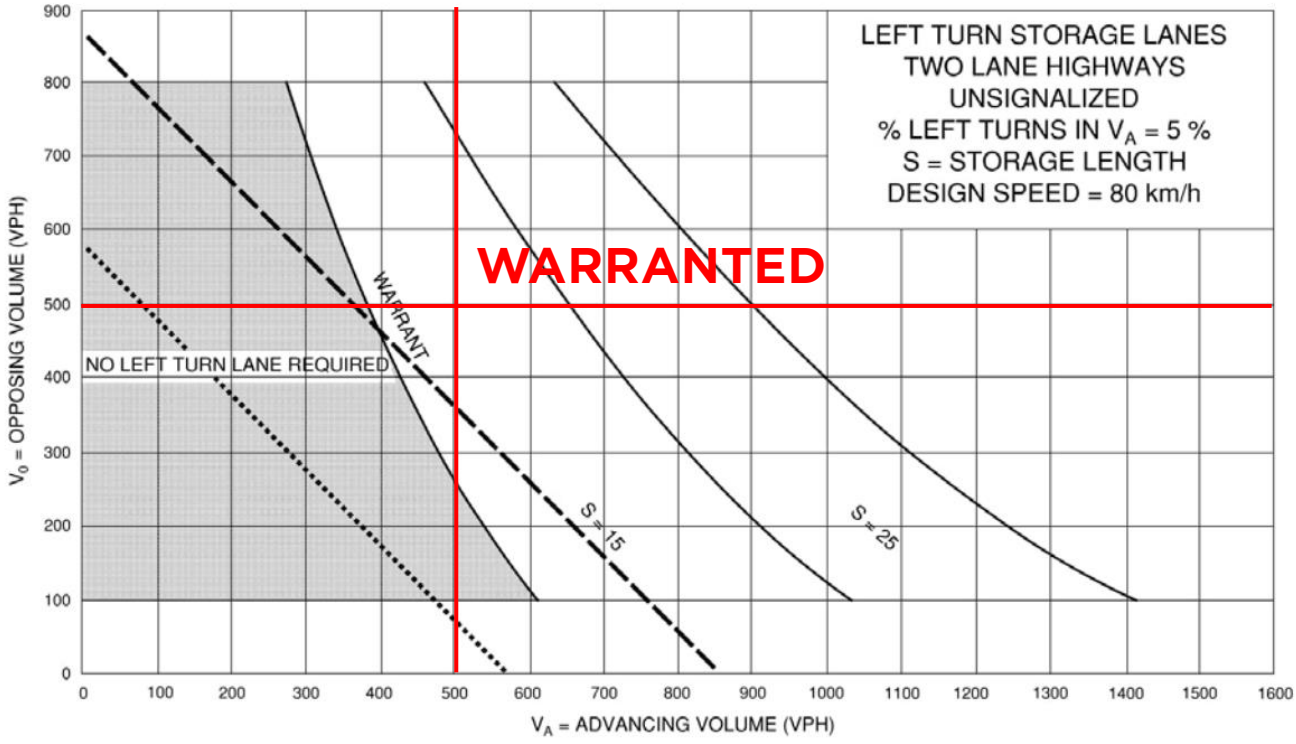
Restricted Flow Conditions
- roads with operating speeds less than 70 km/h
- normally encountered in urban areas where the traffic volumes approach or exceed practical working capacity of road

Free Flow Conditions
- roads with operating speeds greater than or equal to 70 km/h
- normally encountered in rural areas
- may also be used at intersections within the built-up area of a community with < 10 000 people and outside the commuting influence of a large urban centre, even if the speed is less than 70 km/h

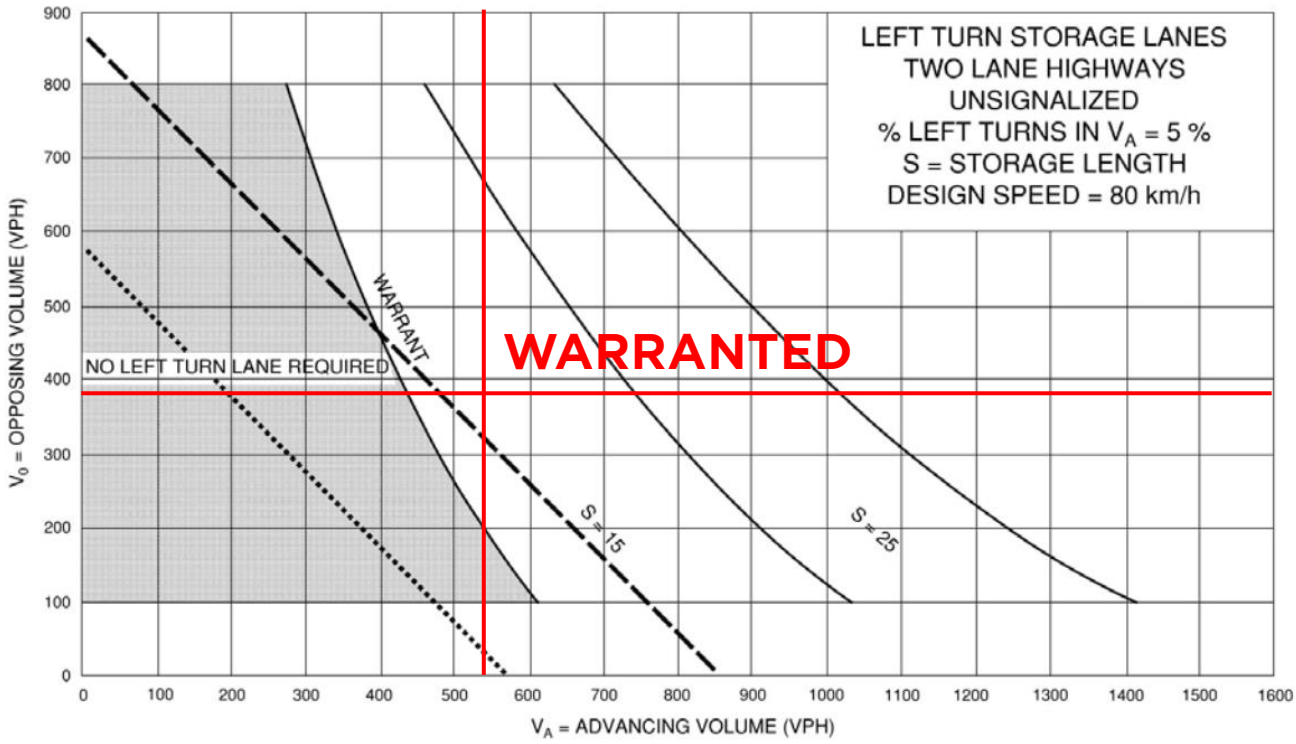
Appendix E:
Left Turn Lane Warrants



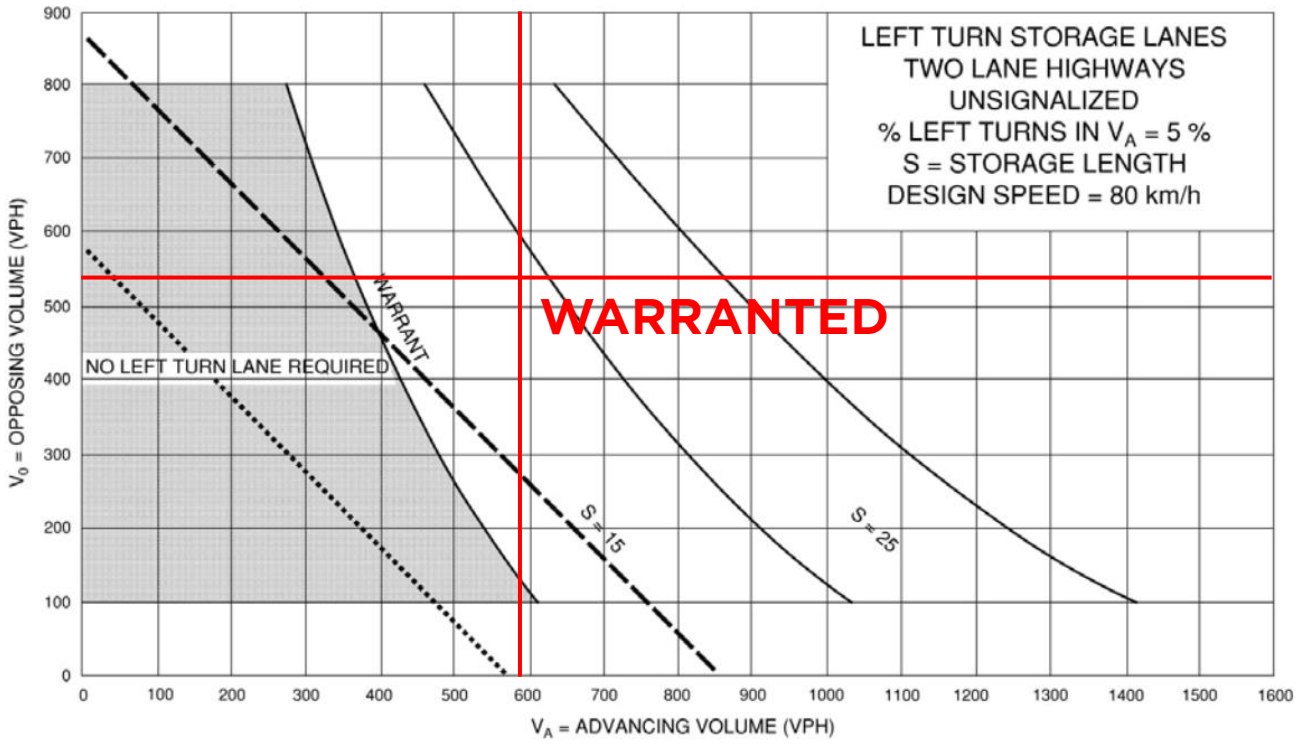
Weekday AM Peak Hour



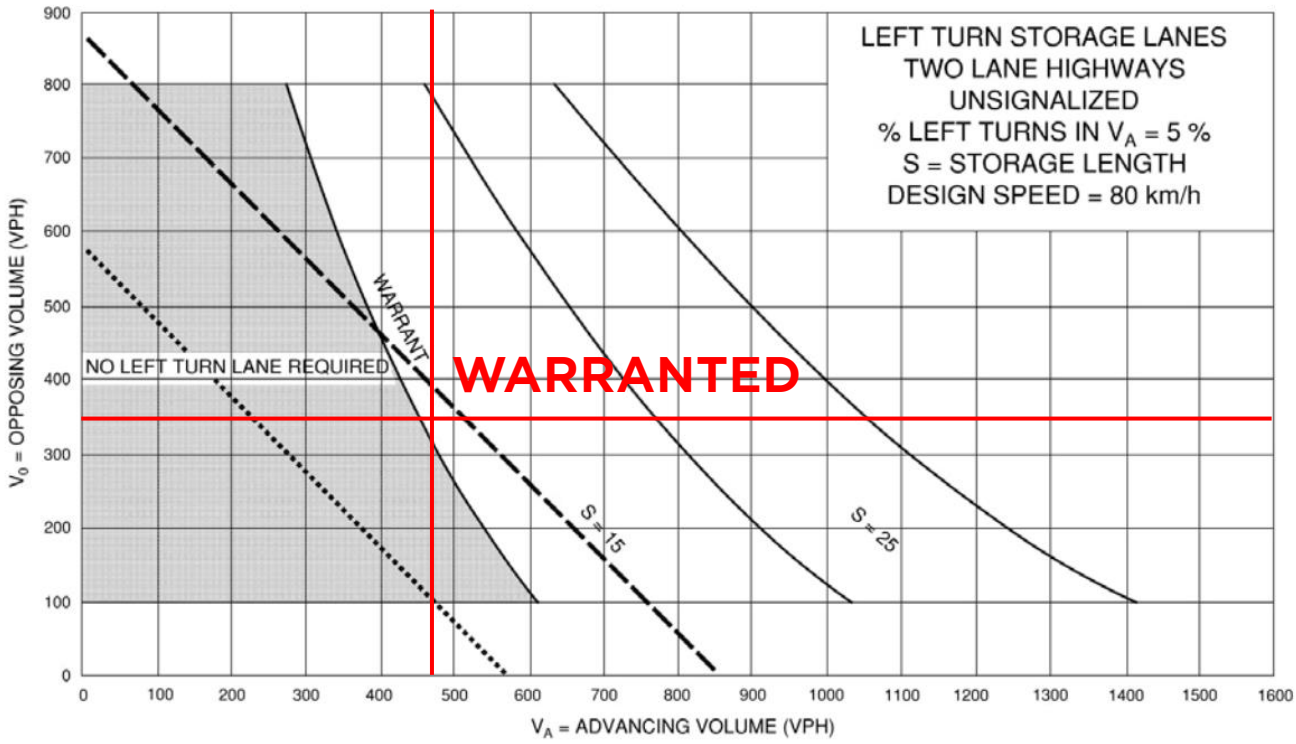
Weekday PM Peak Hour



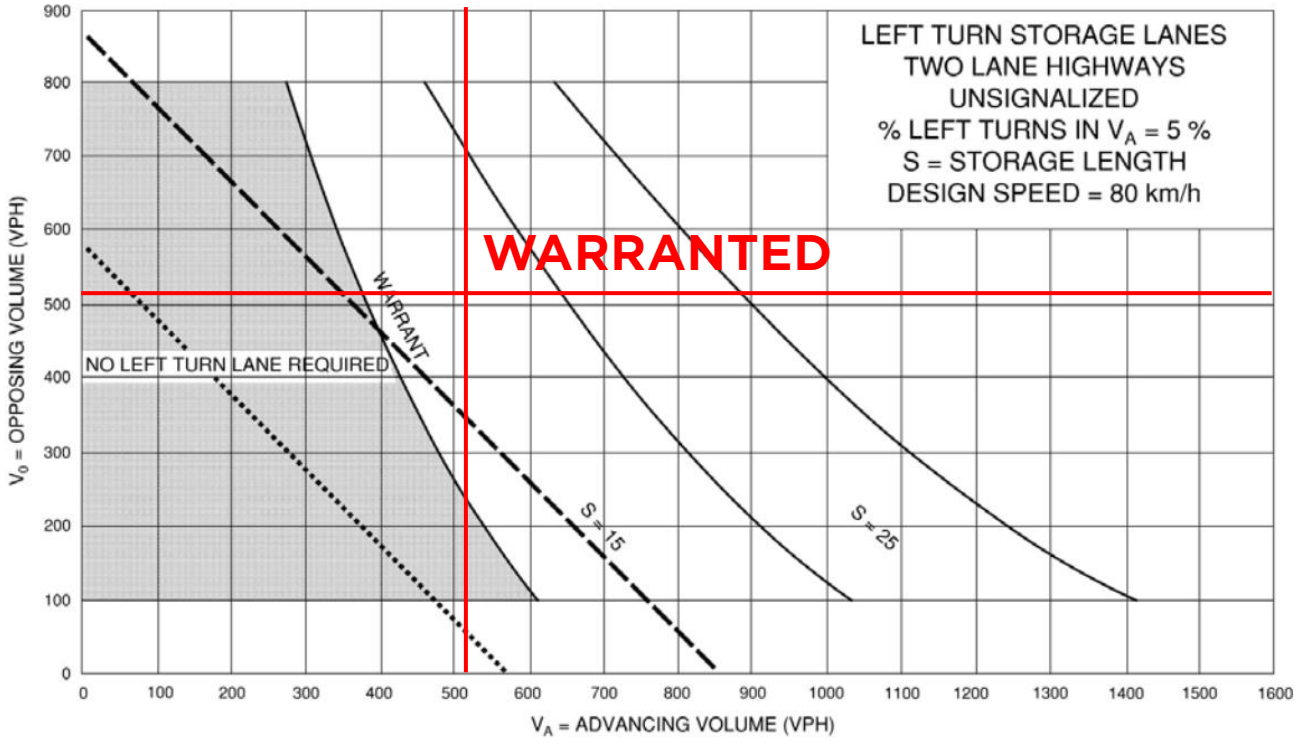
Weekday AM Peak Hour



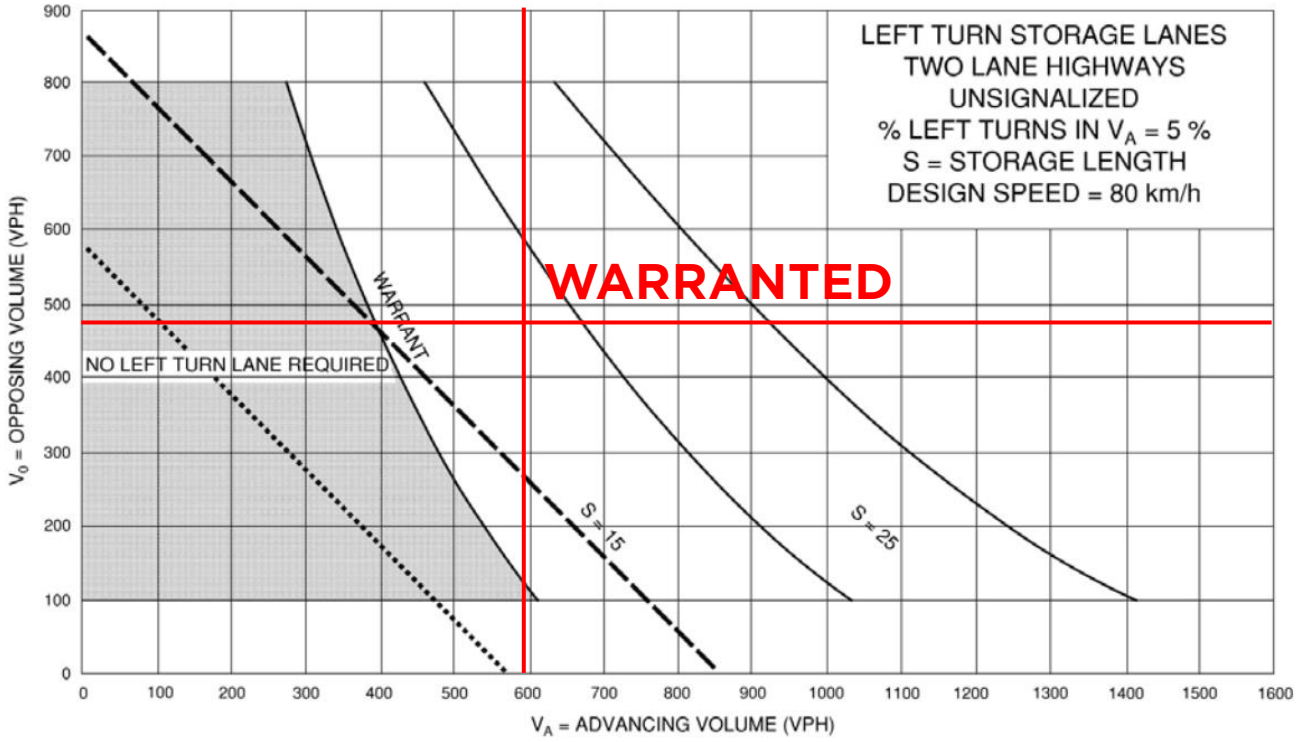
Weekday PM Peak Hour



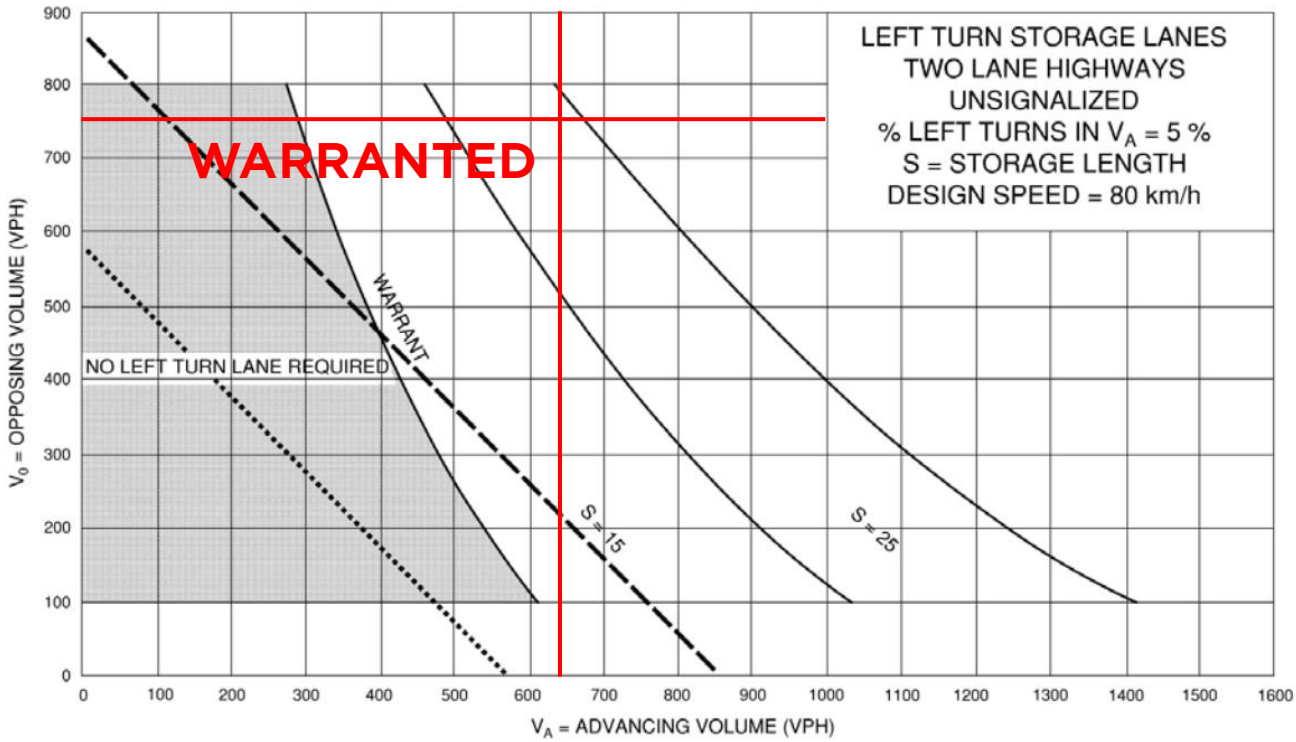
Weekday AM Peak Hour



Weekday PM Peak Hour



Weekday AM Peak Hour



Weekday PM Peak Hour