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Christopher M Clemow

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Date: 2024.05.01 11:26:38 -07:00

TRANSPORTATION IMPACT ANALYSIS

To
City of Salem

For
Salem Gas and Convenience Store

Prepared
May 1, 2024

C&A Project Number
20240302.00

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I. EXECUTIVE SUMMARY

The following summarizes the materials contained in this analysis.

1. The subject property is located at the 5100 block of Macleay Road SE in Salem, Oregon. The property is more specifically described as tax lot 2400 on Marion County Assessors Map 072W32D and is approximately 1.54 acres.

2. The proposed development includes a 5,000-square-foot convenience store, automobile fueling pumps with 12 fueling positions, and a single-tunnel carwash. The property is currently zoned Industrial Commercial (IC) and the proposed development is an allowed use.

3. To support these land use actions, a Traffic Impact Analysis (TIA) is necessary to address Salem Public Works Design Standards Section 6.33. The Applicant is also proposing direct development access to Macleay Road SE which requires a Class 2 driveway permit, an adjustment to the access spacing standards, and supporting transportation analysis.

4. All study area intersection crash rates are less than 1.0 CMEV and the 90th percentile crash rates of the reference intersections. Overall, intersection operations are relatively safe and additional evaluation is not necessary.

5. The proposed development is anticipated to generate 124 AM peak hour, 120 PM peak hour, and 1,358 daily external trips. The development is anticipated to generate a maximum of 3,502 total daily trips which is less than the established property trip cap of 3,522 total daily trips.

6. As part of the development approval, the City is requiring the applicant to dedicate a half-width right-of-way (up to 36 feet on the development side of Macleay Road) and construct up to a three-quarter street improvement. The applicant's proposal to allow Macleay Road westbound left-turn movements into the development effectively results in the provision of a full-width, center two-way left-turn lane (TWTL) along the entire property frontage. This 'level of improvement' is assumed as part of the post-development analysis scenarios; however, the Cordon Road/Macleay Road intersection traffic signal is not assumed to be modified to provide for a separate eastbound left-turn lane.

7. All study intersections are anticipated to operate within agency mobility targets in all analysis scenarios. No operations mitigation is necessary to accommodate development traffic.

8. All study intersection approach movements are anticipated to have adequate queue storage in all analysis scenarios except for the southbound left and right-turning movements at the Cordon Road/Gaffin Road intersection. The proposed development does not measurably increase these queue lengths and the queue storage for southbound through movement is sufficiently long to accommodate any queue spillback. It is further noted that existing queues exceed the storage capacity and the safety analysis presented in this TIA did not identify an associated safety deficiency. Overall, no queuing mitigation is necessary to accommodate development queues.

9. The proposed Macleay Road access allows westbound left-turn movements into the development and operates without queue conflicts. The access is anticipated to operate safely and efficiently.

II. INTRODUCTION

Property Description and Proposed Land Use Actions

The subject property is at the 5100 block of Macleay Road SE in Salem, Oregon. The property is more specifically described as tax lot 2400 on Marion County Assessors Map 072W32D and is approximately 1.54 acres. The site area is illustrated in Figure 1 in Appendix A.

The proposed development includes a 5,000-square-foot convenience store, automobile fueling pumps with 12 fueling positions, and a single-tunnel carwash. The property is currently zoned Industrial Commercial (IC), and the proposed development is an allowed use A copy of the draft site plan is included in Appendix A.

Transportation Analysis Description

To support these land use actions, a Traffic Impact Analysis (TIA) is necessary to address Salem Public Works Design Standards Section 6.33. A February 26, 2024 Pre-Application conference meeting was held with Salem staff identifying the need for a TIA and there has been additional email correspondence discussing specific analysis details. A copy of this additional correspondence is included in Appendix B.

The Applicant is also proposing direct development access to Macleay Road SE which requires a Class 2 driveway permit, an adjustment to the access spacing standards, and supporting transportation analysis.

Study Area

Based on development trip generation and distribution described later in this analysis, the following project area intersections and development accesses are evaluated and are illustrated in Figure 2 in Appendix A.

- Macleay Road SE / Gaffin Road SE
- Macleay Road SE / North Site Access (Future Proposed Access)
- Cordon Road SE / Macleay Road SE
- Gaffin Road SE / West Site Access
- Cordon Road SE / Gaffin Road SE

III. EXISTING CONDITIONS

Existing Site Conditions

The subject property is at the 5100 block of Macleay Road SE in Salem, Oregon. The property is more specifically described as tax lot 2400 on Marion County Assessors Map 072W32D and is approximately 1.54 acres.

The property is currently undeveloped and has direct access to Gaffin Road to the west. The existing property access location to the west is illustrated in Figure 2 in Appendix A.

Previous Land Use Actions

As part of the previously approved Comprehensive Plan amendment and zone change (CPC-ZC12-07), the property was rezoned to Industrial Commercial (IC) which included Condition 1 which states:

> *"At the time of development review for any proposed use on the subject property, the proposed development's average daily trips shall be calculated pursuant to the then-current Institute of Transportation Engineers (ITE) Trip Generation manual. Traffic impacts from future development on the subject property shall be limited to a maximum of 3,522 average daily trips generated by the proposed use or uses."*

Roadway Facilities

The following table summarizes existing roadway classifications and characteristics within the study area.

TABLE 1 – EXISTING ROADWAY CHARACTERISTICS

Roadway	Functional Classification	Lanes	Speed Limit (MPH)	Sidewalks	Bicycle Lanes	On-Street Parking
Cordon Road SE	Parkway (Salem)	2	65	No	Yes	No
Macleay Road SE	Minor Arterial – W/O Cordon Road (Salem) Major Collector – E/O Cordon Road (Marion County)	2	35 45	No	No	No
Gaffin Road SE	Local – W/O Cordon Road (Salem) Major Collector – E/O Cordon Road (Marion County)	2	25 45	Yes No	No	No

Safety Analysis

When evaluating intersection safety, consideration is given to the total number and types of crashes occurring and the number of vehicles entering the intersection. This leads to the concept known as "crash rate," typically expressed in terms of the number of crashes occurring per one million vehicles entering the intersection (CMEV). A critical crash rate analysis is then performed by comparing the subject intersection to the published statewide 90th percentile intersection crash rates at comparable/reference intersections. Crash rates close to or exceeding 1.0 CMEV or the 90th percentile rates require further analysis.

Crash data for the study area intersections were obtained from the Oregon Department of Transportation (ODOT) for five years from January 1, 2018 through December 31, 2022. The following table presents the study intersection crash rates and critical crash analysis. All crash data and crash rate calculations are provided in Appendix C.

TABLE 2 – INTERSECTION CRASH RATES										
Intersection	2018	2019	2020	2021	2022	Total	Crash Rate (CMEV)	Reference Population		Over or Under Crash Rate?
								Description [1]	90th%ile Crash Rate	
Macleay Road SE / Gaffin Road SE [1]	1	0	0	1	0	2	0.265	Urban 3ST	0.293	Under
Cordon Road SE / Macleay Road SE	2	0	3	4	2	11	0.377	Urban 4SG	0.860	Under
Cordon Road SE / Gaffin Road SE	3	4	1	1	2	11	0.345	Urban 4SG	0.860	Under

[1] 3ST is defined as a three-leg minor stop-control intersection and 4SG is a four-leg signalized intersection.

[2] The Macleay Road SE / Gaffin Road SE intersection is also identified as the Macleay Road SE / Old Macleay Road SE intersection.

All study area intersection crash rates are less than 1.0 CMEV and the 90th percentile crash rates of the reference intersections. A detailed review of the crash history at the Macleay Road SE/Gaffin Road SE intersection finds that both crashes were single-vehicle only where the motorist was driving too fast for conditions and/or in a reckless manner and struck a fixed object. Overall, intersection operations are relatively safe and additional evaluation is not necessary.

Existing Traffic Counts

Existing intersection traffic counts were obtained in April 2024 from 6:00 to 9:00 AM and 3:00 to 6:00 PM and are illustrated in Figure 2 for the AM peak hour and Figure 4 for the PM peak hour in Appendix A. Traffic count data is included in Appendix D.

Background Growth

Based on correspondence with Salem staff background traffic growth is assumed to be 2% per year.

Pre-Development Volumes

2025 Pre-Development volumes for the AM peak hour are illustrated in Figure 2 for the AM peak hour and Figure 4 for the PM peak hour in Appendix A.

IV. PROPOSED DEVELOPMENT

The proposed development includes a 5,000-square-foot convenience store, automobile fueling pumps with 12 fueling positions, and a single-tunnel carwash. It is further noted that the car wash is considered an ancillary use and is not assumed to generate unique trips because the customers are already visiting the convenience store and gas station for other purposes.

Trip generation for the proposed development is estimated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition, and practices from the ITE *Trip Generation Handbook*, 3rd Edition assuming ITE Land Use 945 – Convenience Store/Gas Station. For this land use, the *Trip Generation Manual* allows for multi-variable evaluation of sites using either the number of vehicle fueling positions (VFP) or the gross floor area (GFA) of the convenience store as the independent variable. The two variables produce two trip generation estimates – both of which can be considered.

The proposed development trip generation is presented in the following table.

TABLE 3 – TRIP GENERATION

Land Use	ITE Code	Size	AM Peak Hour			PM Peak Hour			Daily [1]
			Enter	Exit	Total	Enter	Exit	Total	
Convenience Store/Gas Station – GFA (4-5.5K)	945	12 VFP	162	162	324	137	136	273	3,086
Pass-By Trips (62% AM / 56% PM)			*(100)*	*(100)*	*(200)*	*(77)*	*(76)*	*(153)*	*(1,728)*
Total External Trip Generation			**62**	**62**	**124**	**60**	**60**	**120**	**1,358**
–OR–									
Convenience Store/Gas Station – VFP (9-15)	945	5,000 SF	141	142	283	136	137	273	3,502
Pass-By Trips (62% AM / 56% PM)			*(87)*	*(88)*	*(175)*	*(76)*	*(77)*	*(153)*	*(1,961)*
Total External Trip Generation			**54**	**54**	**108**	**60**	**60**	**120**	**1,541**

[1] The ITE *Trip Generation Handbook*, 3rd Edition does not contain pass-by data for daily trips. Noting that 62% of the AM and 56% of the PM trips are pass-by, it is conservatively assumed that 56% of the daily trips are pass-by.

As presented in the previous table, the proposed convenience store/gas station is anticipated to generate 124 AM peak hour, 120 PM peak hour, and 1,358 daily external trips using vehicle fueling positions as the independent variable. It is further noted that when using either independent variable (VFP or SF) to estimate trips, the development is anticipated to generate a maximum of 3,502 total daily trips which is less than the established property trip cap of 3,522 total daily trips.

Trip Distribution and Traffic Assignment

Specific development trip distribution is based on existing intersection volumes, surrounding land uses, and engineering judgment. Trip distribution and traffic assignment are illustrated in Figure 3 for the AM peak hour and Figure 5 for the PM peak hour in Appendix A, assuming development trip generation using VFP as the independent variable.

Post-Development Volumes

The 2025 Post-Development traffic volumes for the AM and PM peak hours are the sum of the 2025 Pre-Development volumes and the development volumes and are illustrated in Figure 6 in Appendix A.

V. TRANSPORTATION ANALYSIS

Study Area

Based on development trip generation and distribution, the following project area intersections and development accesses are evaluated and are illustrated in Figure 2 in Appendix A.

- Macleay Road SE / Gaffin Road SE
- Macleay Road SE / North Site Access (Future Proposed Access)
- Cordon Road SE / Macleay Road SE
- Gaffin Road SE / West Site Access
- Cordon Road SE / Gaffin Road SE

The Applicant is contemplating direct development access to Macleay Road, which also requires a Class 2 driveway permit and an adjustment to the access spacing standards,

As part of the development approval, the City is requiring the applicant to dedicate a half-width right-of-way (up to 36 feet on the development side of Macleay Road) and construct up to a three-quarter street improvement. The applicant's proposal to allow Macleay Road westbound left-turn movements into the development effectively results in the provision of a full-width, center two-way left-turn lane (TWTL) along the entire property frontage. This 'level of improvement' is assumed as part of the post-development analysis scenarios; however, the Cordon Road/Macleay Road intersection traffic signal is not assumed to be modified to provide for a separate eastbound left-turn lane.

Intersection Operations Analysis Description

Current and future year intersection peak hour factors (PHFs) are based on the existing individual intersection PHFs.

Traffic signal cycle lengths and operation are based on actual signal timing data provided by the City.

Intersection operation characteristics are typically defined by two mobility standards: volume-to-capacity (v/c) ratio and level-of-service (LOS). At unsignalized intersections, the v/c ratio and LOS are calculated for intersection approach movements yielding the right-of-way.

All analysis intersections are under City jurisdiction. For signalized intersections, the operational standard is a maximum LOS E, control delay < 80 seconds, and/or a v/c ratio < 0.90. For unsignalized intersections, it is a maximum LOS E and total delay < 50 seconds.

Intersection Operations Analysis

Unsignalized intersection operations analyses were performed using the Transportation Research Board's *Highway Capacity Manual* 6th Edition methodologies using Trafficware's *Synchro* software (Version 11).

Signalized intersection operations analyses were performed per the Transportation Research Board's Highway Capacity Manual 6th Edition, 2000, and 2010 methodologies using Trafficware's Synchro software (Version 11) and practices outlined in the ODOT Analysis Procedures Manual V2 necessary to calculate the intersection v/c ratio.

The proposed land use actions contemplate specific development that is anticipated to be constructed and occupied by 2025. As such, weekday AM and PM peak hour conditions are evaluated in 2024 – the existing condition, and in 2025 – the development build year. Analysis scenarios include:

- 2024 Existing Conditions
- 2025 Pre-Development
- 2025 Post-Development

The following table summarizes weekday AM and PM peak hour operations analysis results. Data output sheets from all operations calculations are included in Appendix E.

TABLE 4 – INTERSECTION OPERATIONS ANALYSIS

Intersection	Critical Movement Lane Group	Mobility Target	AM Peak Hour			PM Peak Hour		
			2024 Existing	2025 Pre-Development	2025 Post-Development	2024 Existing	2025 Pre-Development	2025 Post-Development
Macleay Road SE / Gaffin Road SE	NB L/R	LOS E Delay < 50s	B 10.5	B 10.6	B 11.2	B 11.2	B 11.3	B 11.9
	WB L/T	LOS E Delay < 50s	A 7.6	A 7.6	A 7.7	A 7.7	A 7.7	A 7.8
Macleay Road SE / North Site Access	NB L/R	N/A	—	—	B 10.1	—	—	B 10.4
	WB L	LOS E Delay < 50s	—	—	A 7.6	—	—	A 7.7
Cordon Road SE / Macleay Road SE	Intersection	LOS E Delay < 80s v/c < 0.90	D 41.7 0.46	D 41.5 0.47	D 42.7 0.51	B 14.0 0.60	B 14.2 0.62	D 53.7 0.65
Gaffin Road SE / West Site Access	SB L/T	LOS E Delay < 50s	—	—	A 7.5	—	—	A 7.5
	WB L/R	N/A	—	—	B 10.1	—	—	A 9.7
Cordon Road SE / Gaffin Road SE	Intersection	LOS E Delay < 80s v/c < 0.90	E 55.5 0.51	E 55.5 0.53	E 55.8 0.55	D 51.7 0.68	D 51.6 0.69	C 31.9 0.71

Operations Analysis Discussion

As identified in the table above, all study intersections are anticipated to operate within agency mobility targets in all analysis scenarios. No operations mitigation is necessary to accommodate development traffic.

Intersection Queuing Analysis

Queuing analysis was performed to evaluate queue storage adequacy. 95th percentile queues were estimated using Trafficware's *SimTraffic* software (Version 11) and ODOT *Analysis Procedure Manual* methodologies. Available storage is rounded to the nearest five feet, and queue demand is rounded to the nearest 25 feet, the average length of a queued vehicle.

The following table summarizes weekday queuing analysis results. 95th percentile queue lengths are graphically illustrated in Figures 7 and 8 for the AM and PM peak hours in Appendix A and data output sheets from all queuing calculations are contained in Appendix E.

TABLE 5 – INTERSECTION QUEUING ANALYSIS

Intersection	Critical Movement Lane Group	Queue Storage Available (Feet) [1]	95th Percentile Queue Length (Feet)					
			AM Peak Hour			PM Peak Hour		
			2024 Existing	2025 Pre-Development	2025 Post-Development	2024 Existing	2025 Pre-Development	2025 Post-Development
Macleay Road SE / Gaffin Road SE	NB L/R	500+	75	75	75	75	75	75
	WB L/T	450	25	25	25	25	25	25
Macleay Road SE / North Site Access	NB L/R	50	—	—	75	—	—	75
	WB L	210	—	—	50	—	—	50
Cordon Road SE / Macleay Road SE	NB L	150	25	25	50	50	25	125
	NB T/R	1,000+	150	150	150	250	275	350
	SB L	150	50	75	50	75	75	125
	SB T/R	1,000+	150	175	200	175	175	275
	EB L/T/R	450	75	100	150	150	150	200
	WB L/T/R	850	125	125	125	100	100	125
Gaffin Road SE / West Site Access	SB L/T	110	—	—	50	—	—	50
	WB L/R	50	—	—	25	—	—	25
Cordon Road SE / Gaffin Road SE	NB L	350	75	100	150	275	250	225
	NB T/R	1,000+	400	400	425	650	650	600
	SB L	200	250	250	250	200	200	250
	SB T	1,000+	550	550	550	450	400	500
	SB R	100	200	175	175	175	175	175
	EB L	100	75	75	75	75	100	100
	EB T/R	175	125	125	150	150	150	175
	WB L	175	75	75	75	125	125	100
	WB T/R	1,000+	100	100	125	250	225	225

[1] Available queue storage is measured to the nearest upstream intersection for continuous lanes between intersections and to the end of full-width storage for turn lanes. For freeway off-ramps, it is the total ramp length minus the deceleration ramp length.

Queuing Analysis Discussion

As identified in the table above, all study intersection approach movements are anticipated to have adequate queue storage in all analysis scenarios except for the southbound left and right-turning movements at the Cordon Road/Gaffin Road intersection. The proposed development does not measurably increase these queue lengths and the queue storage for southbound through movement is sufficiently long to accommodate any queue spillback. It is further noted that existing queues exceed the storage capacity and the safety analysis presented in this TIA did not identify an associated safety deficiency.

As previously identified, the applicant is proposing to allow Macleay Road westbound left-turn movements into the development which effectively results in the provision of a full-width, center two-way left-turn lane (TWTL) along the entire property frontage. Based on the queue lengths presented in the table above and illustrated in Figures 7 and 8 for the AM and PM peak hours, there are no queue conflicts, and the proposed access is anticipated to operate safely and efficiently.

Overall, no queuing mitigation is necessary to accommodate development queues.

VI. CONCLUSION

The following summary and recommendations are based on materials contained in this analysis.

1. The subject property is located at the 5100 block of Macleay Road SE in Salem, Oregon. The property is more specifically described as tax lot 2400 on Marion County Assessors Map 072W32D and is approximately 1.54 acres.

2. The proposed development includes a 5,000-square-foot convenience store, automobile fueling pumps with 12 fueling positions, and a single-tunnel carwash. The property is currently zoned Industrial Commercial (IC) and the proposed development is an allowed use.

3. All study area intersection crash rates are less than 1.0 CMEV and the 90th percentile crash rates of the reference intersections. Overall, intersection operations are relatively safe and additional evaluation is not necessary.

4. The proposed development is anticipated to generate 124 AM peak hour, 120 PM peak hour, and 1,358 daily external trips. The development is anticipated to generate a maximum of 3,502 total daily trips which is less than the established property trip cap of 3,522 total daily trips.

5. As part of the development approval, the City is requiring the applicant to dedicate a half-width right-of-way (up to 36 feet on the development side of Macleay Road) and construct up to a three-quarter street improvement. The applicant's proposal to allow Macleay Road westbound left-turn movements into the development effectively results in the provision of a full-width, center two-way left-turn lane (TWTL) along the entire property frontage. This 'level of improvement' is assumed as part of the post-development analysis scenarios; however, the Cordon Road/Macleay Road intersection traffic signal is not assumed to be modified to provide for a separate eastbound left-turn lane.

6. All study intersections are anticipated to operate within agency mobility targets in all analysis scenarios. No operations mitigation is necessary to accommodate development traffic.

7. All study intersection approach movements are anticipated to have adequate queue storage in all analysis scenarios except for the southbound left and right-turning movements at the Cordon Road/Gaffin Road intersection. The proposed development does not measurably increase these queue lengths and the queue storage for southbound through movement is sufficiently long to accommodate any queue spillback. It is further noted that existing queues exceed the storage capacity and the safety analysis presented in this TIA did not identify an associated safety deficiency. Overall, no queuing mitigation is necessary to accommodate development queues.

8. The proposed Macleay Road access allows westbound left-turn movements into the development and operates without queue conflicts. The access is anticipated to operate safely and efficiently.

VII. APPENDICES

A. Figures

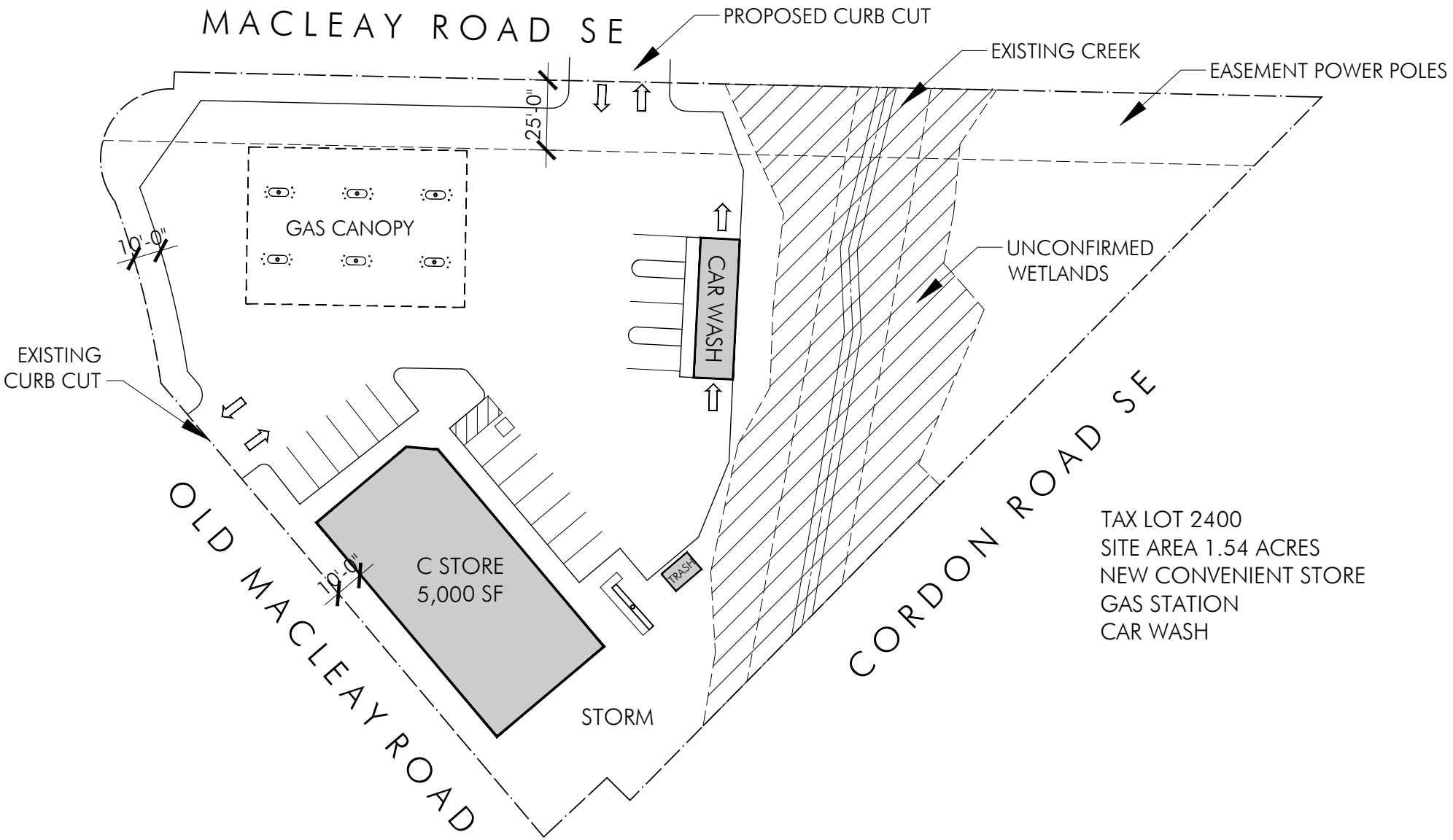
B. Transportation Analysis Scope of Work Materials

C. Crash Data

D. Traffic Count Summaries

E. Operation Analyses

Appendix A



CONCEPTUAL SITE PLAN

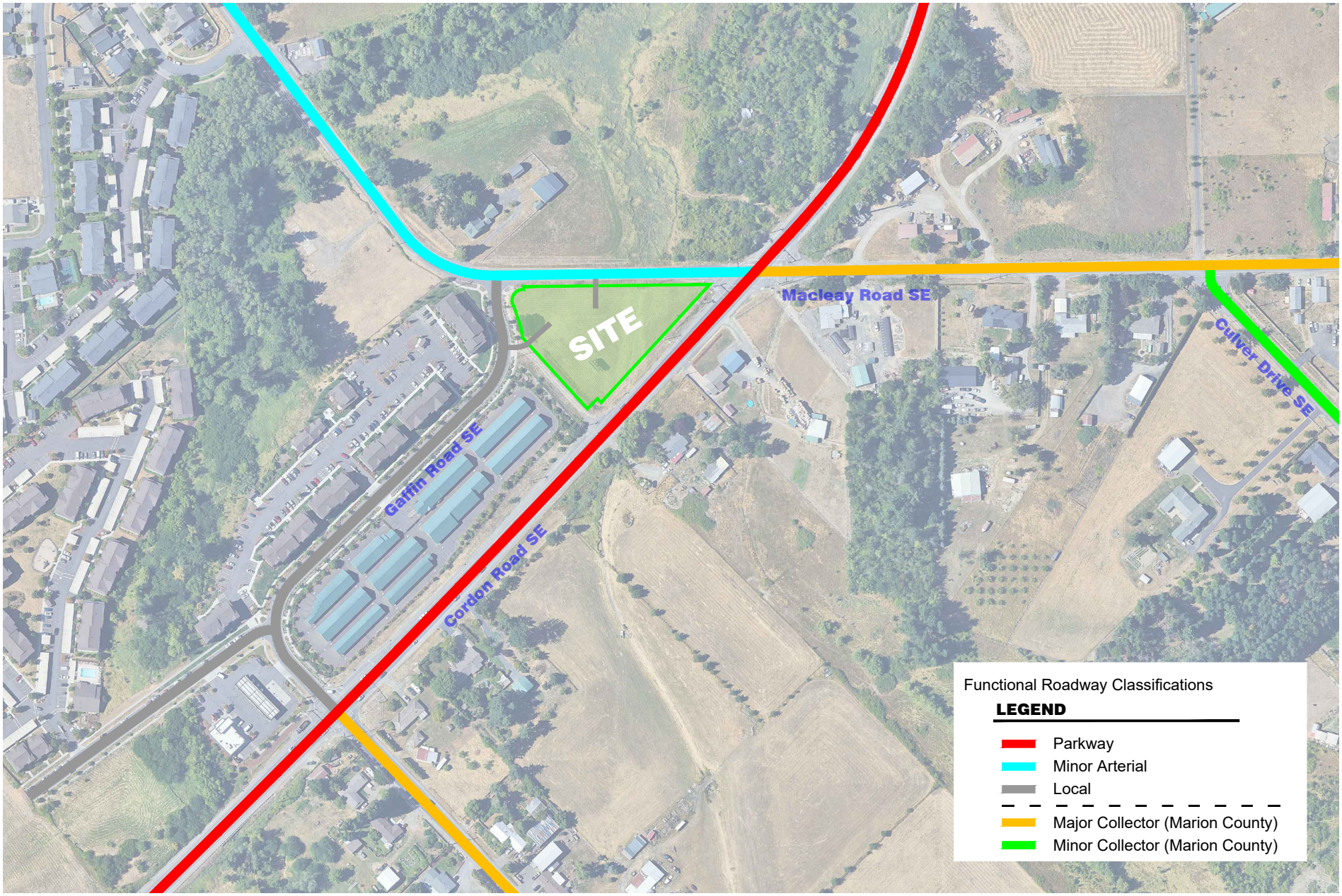
SCALE 1:50 @ 8 $\frac{1}{2}$ x 11

27 FEB 2024

N

STUDIO

3



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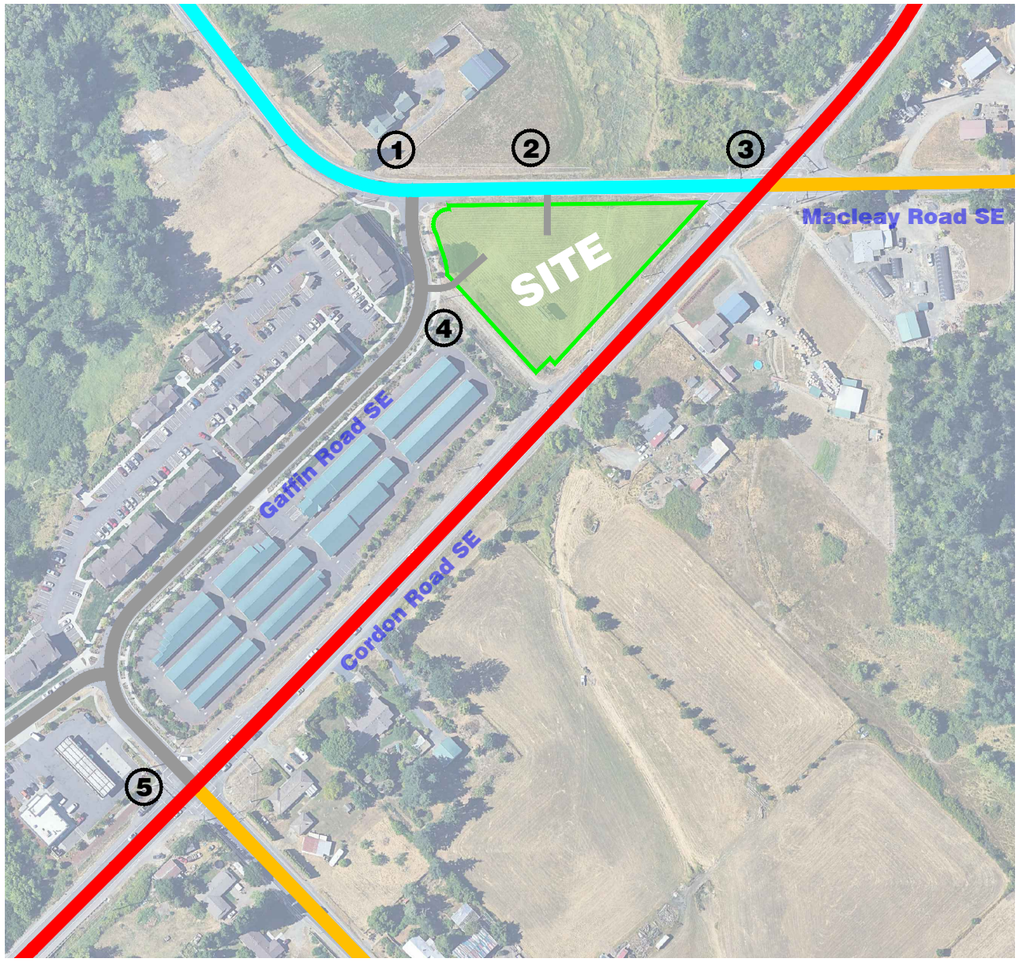
SITE AREA

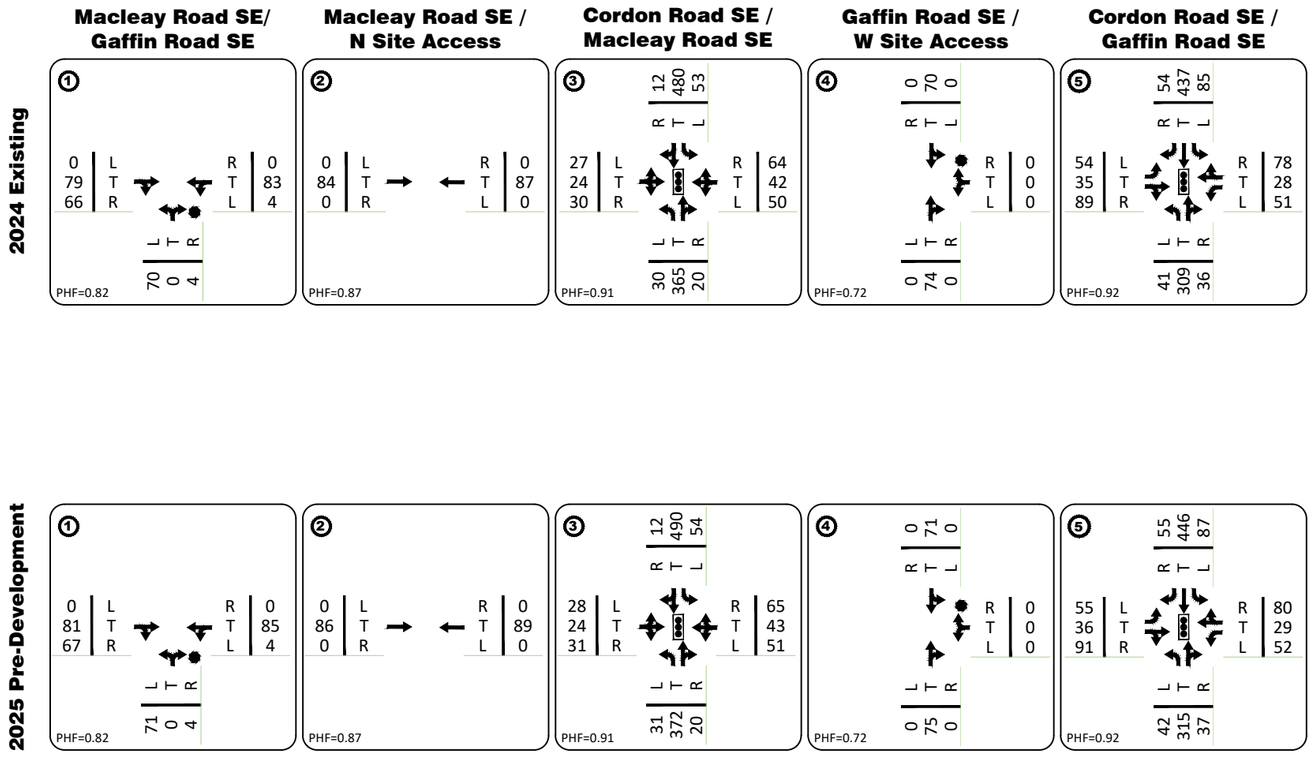
Convenience Store and Gas Station TIA - Macleay Road - Salem, Oregon

C&A Project No. 20240302.00

FIGURE

1





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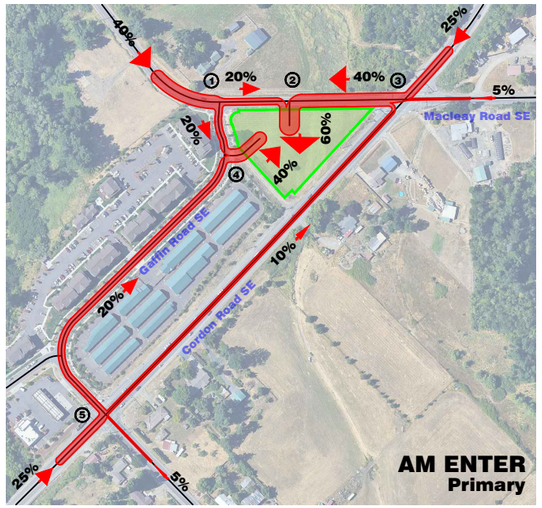
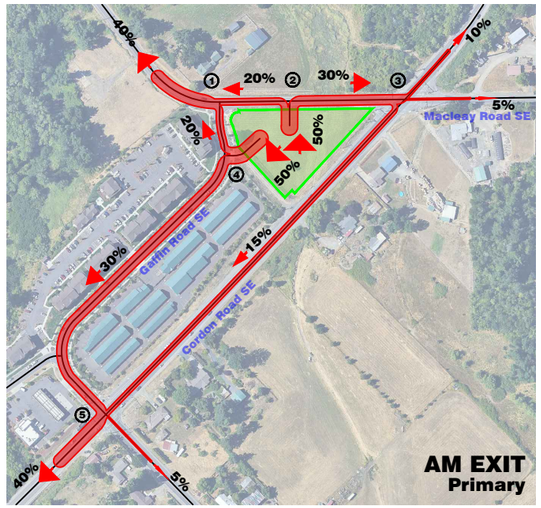
AM PRE-DEVELOPMENT VOLUMES

Convenience Store and Gas Station TIA - Macleay Road - Salem, Oregon

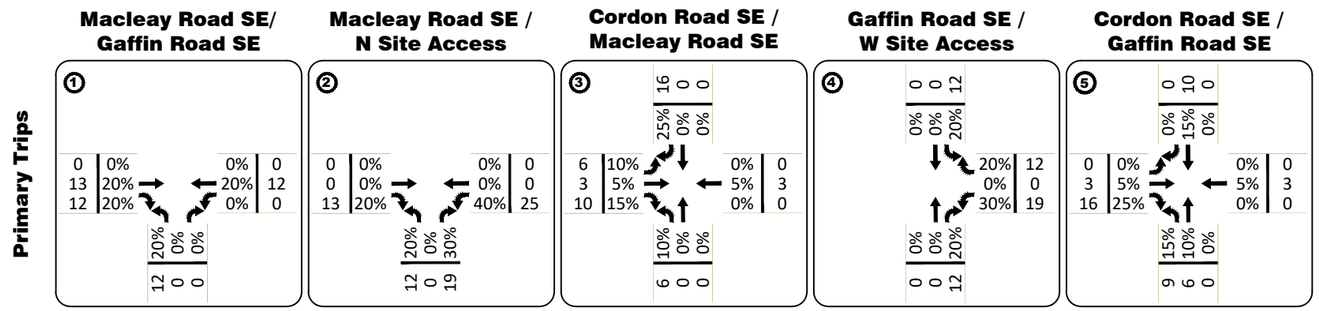
C&A Project No. 20240302.00

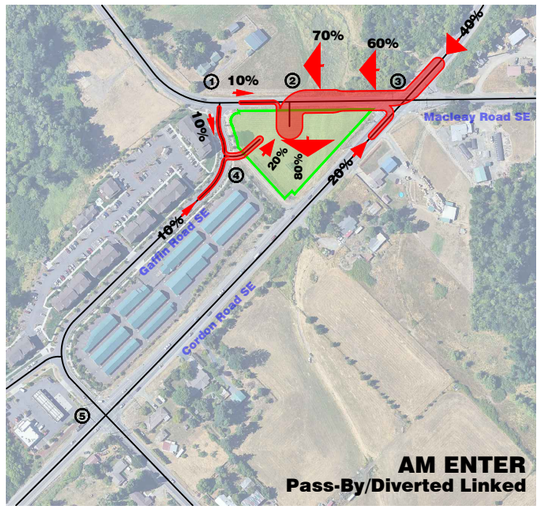
FIGURE 2

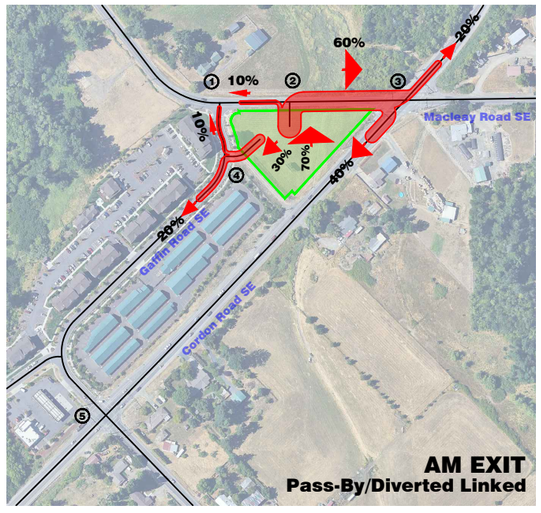




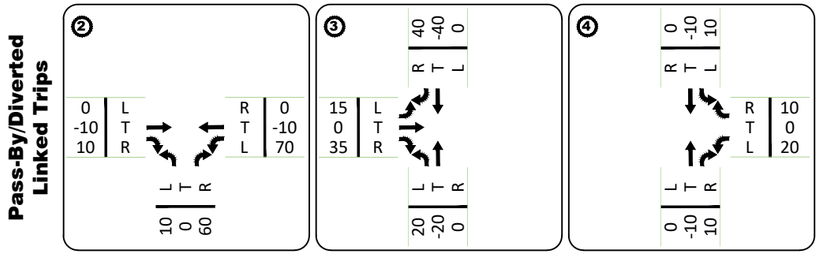
Primary Trips







Pass-By/Diverted Linked Trips



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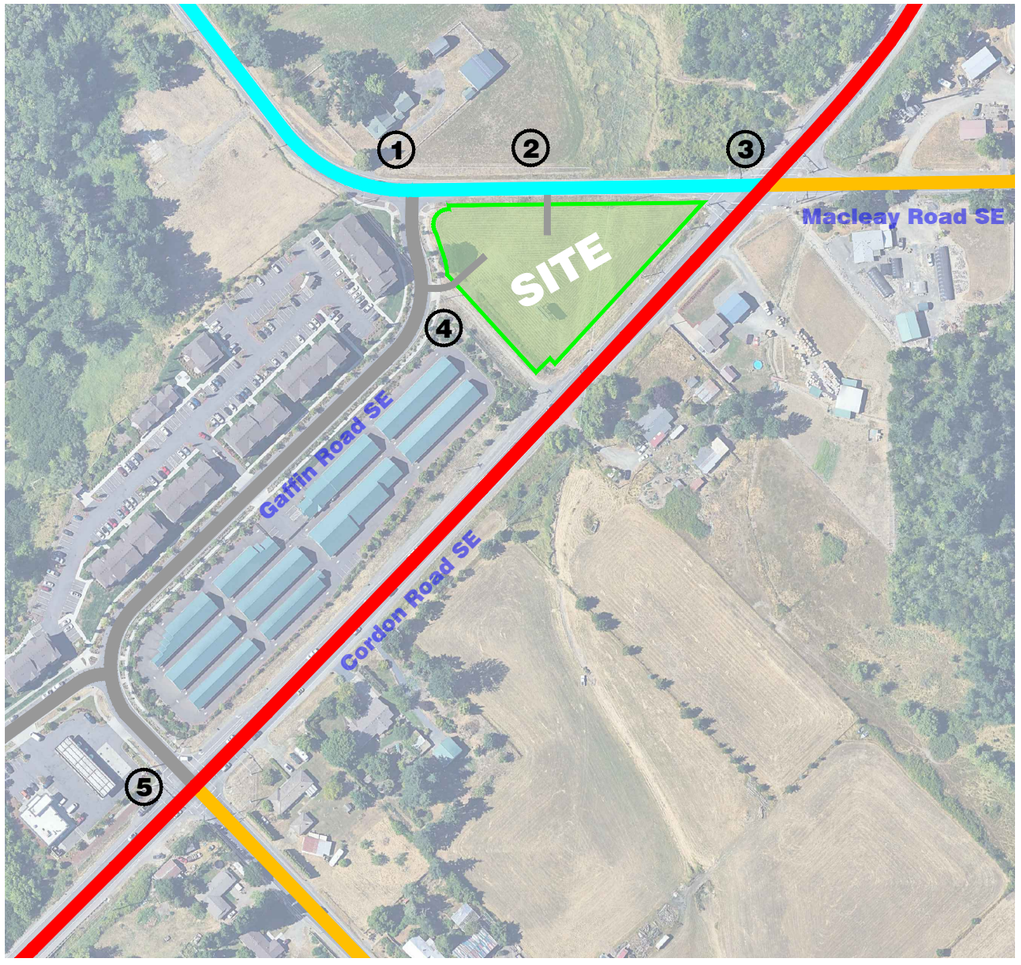
AM DEVELOPMENT TRIPS

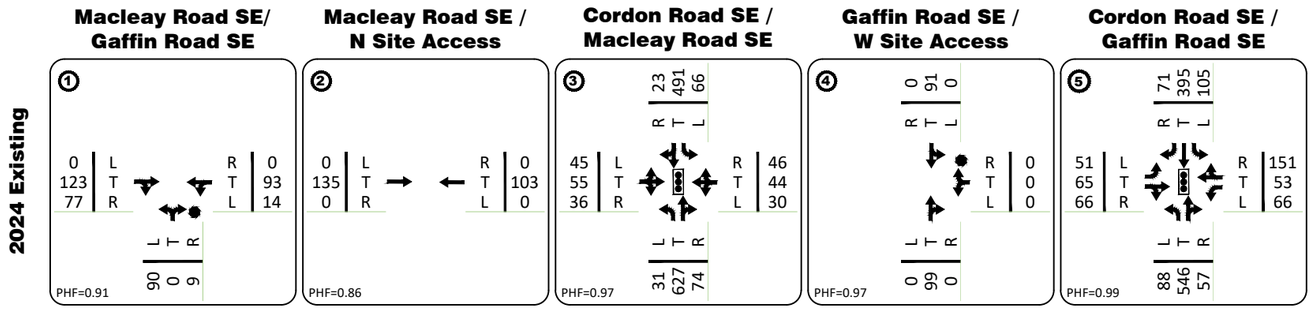
Convenience Store and Gas Station TIA - Macleay Road - Salem, Oregon

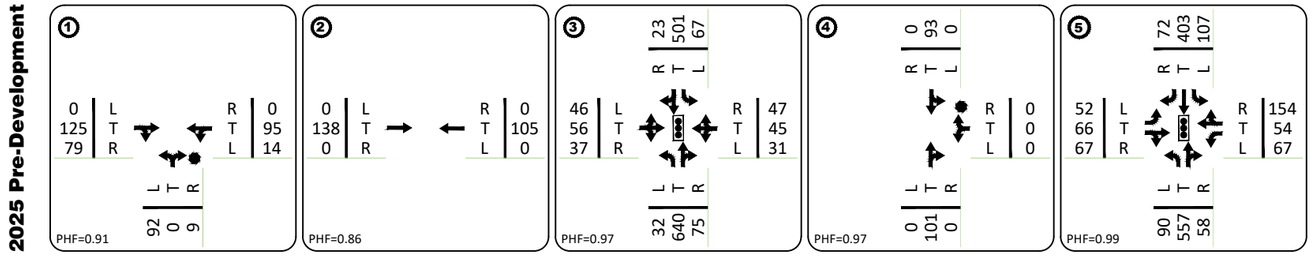
C&A Project No. 20240302.00

FIGURE

3







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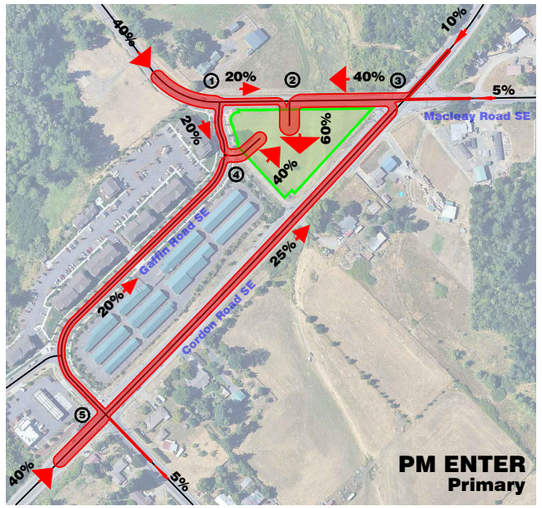
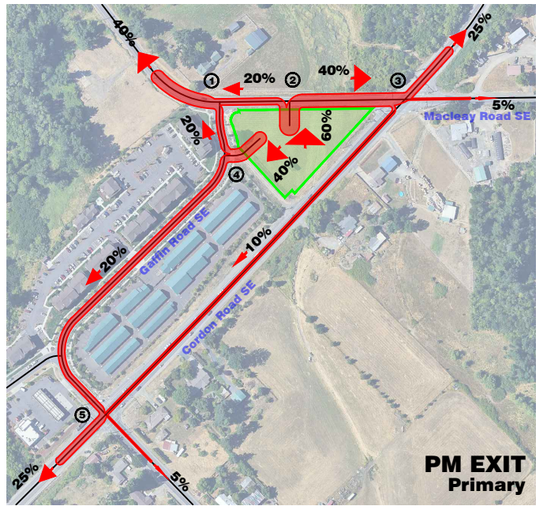
PM PRE-DEVELOPMENT VOLUMES

Convenience Store and Gas Station TIA - Macleay Road - Salem, Oregon

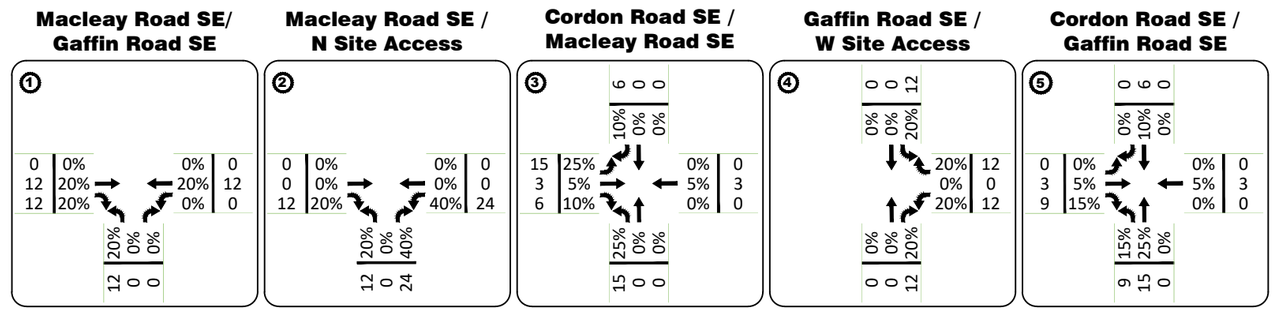
C&A Project No. 20240302.00

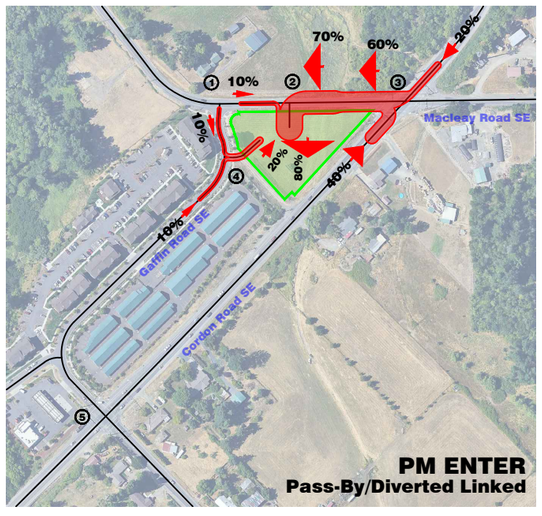
FIGURE 4

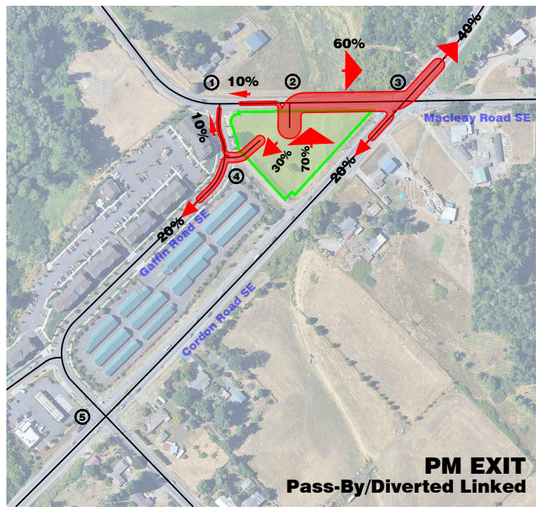




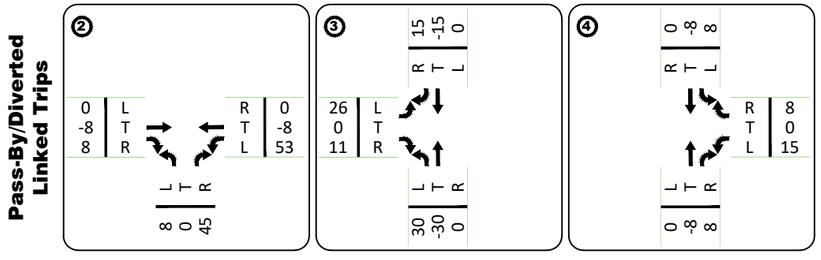
Primary Trips







Pass-By/Diverted Linked Trips



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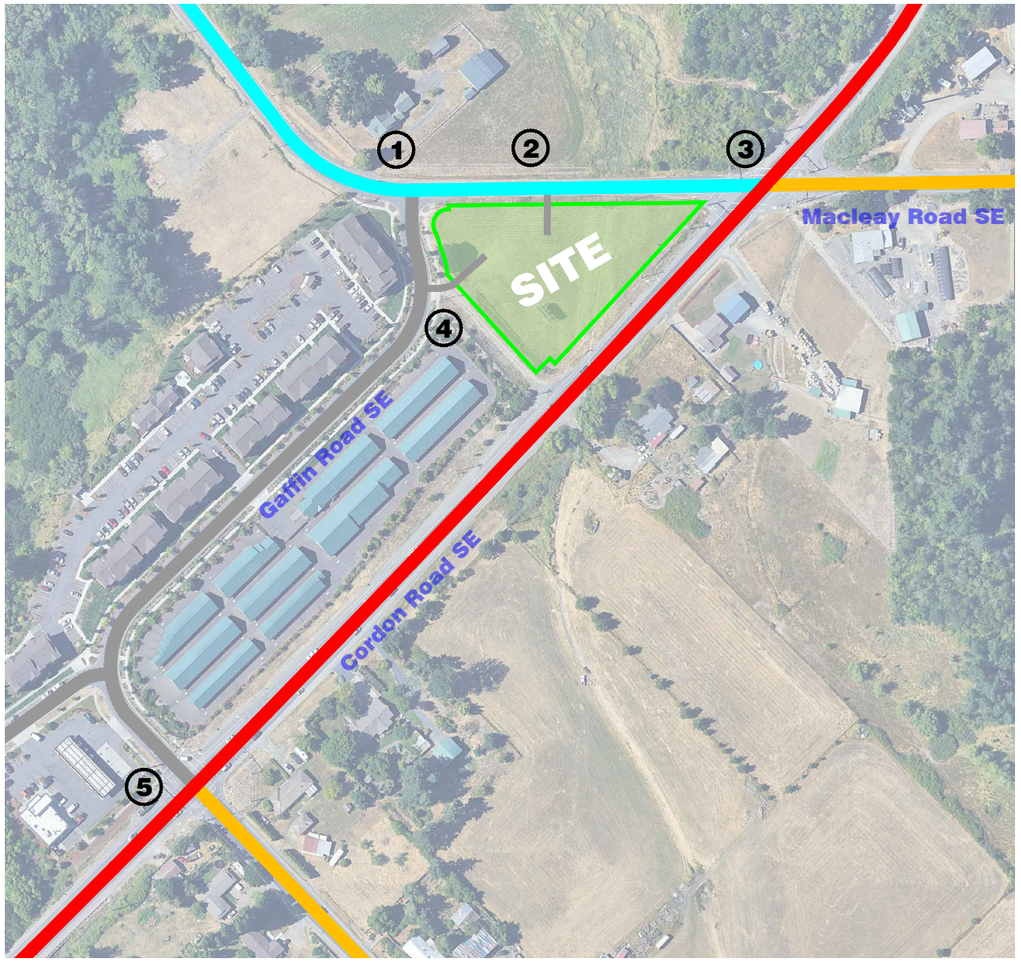
PM DEVELOPMENT TRIPS

Convenience Store and Gas Station TIA - Macleay Road - Salem, Oregon

C&A Project No. 20240302.00

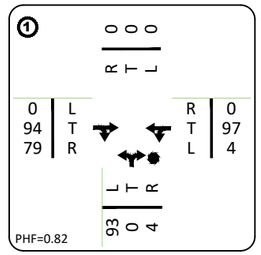
FIGURE

5

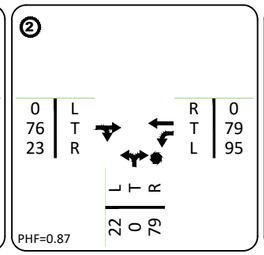


2025 AM Post-Development

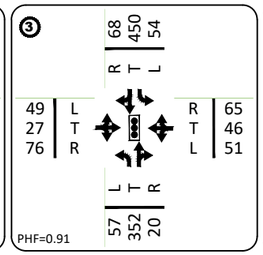
Macleay Road SE/ Gaffin Road SE



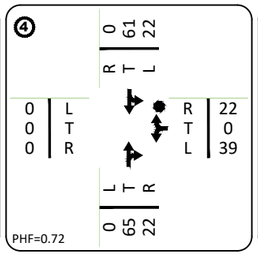
Macleay Road SE / N Site Access



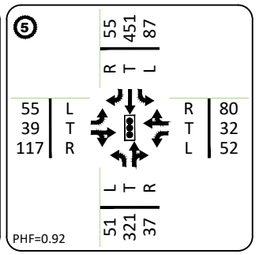
Cordon Road SE / Macleay Road SE



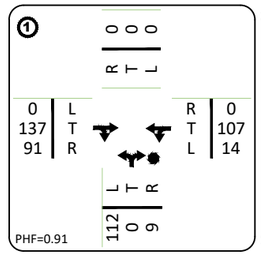
Gaffin Road SE / W Site Access

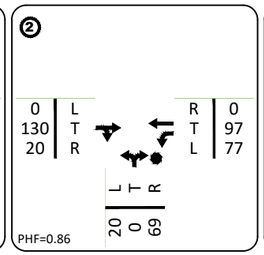


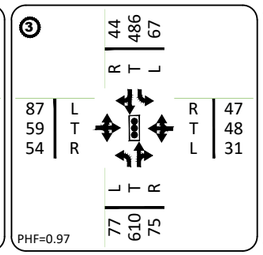
Cordon Road SE / Gaffin Road SE

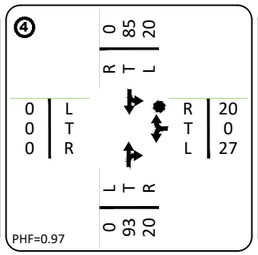


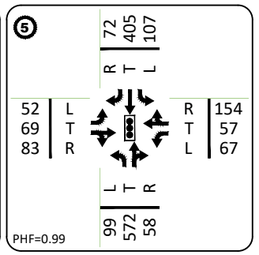
2025 PM Post-Development











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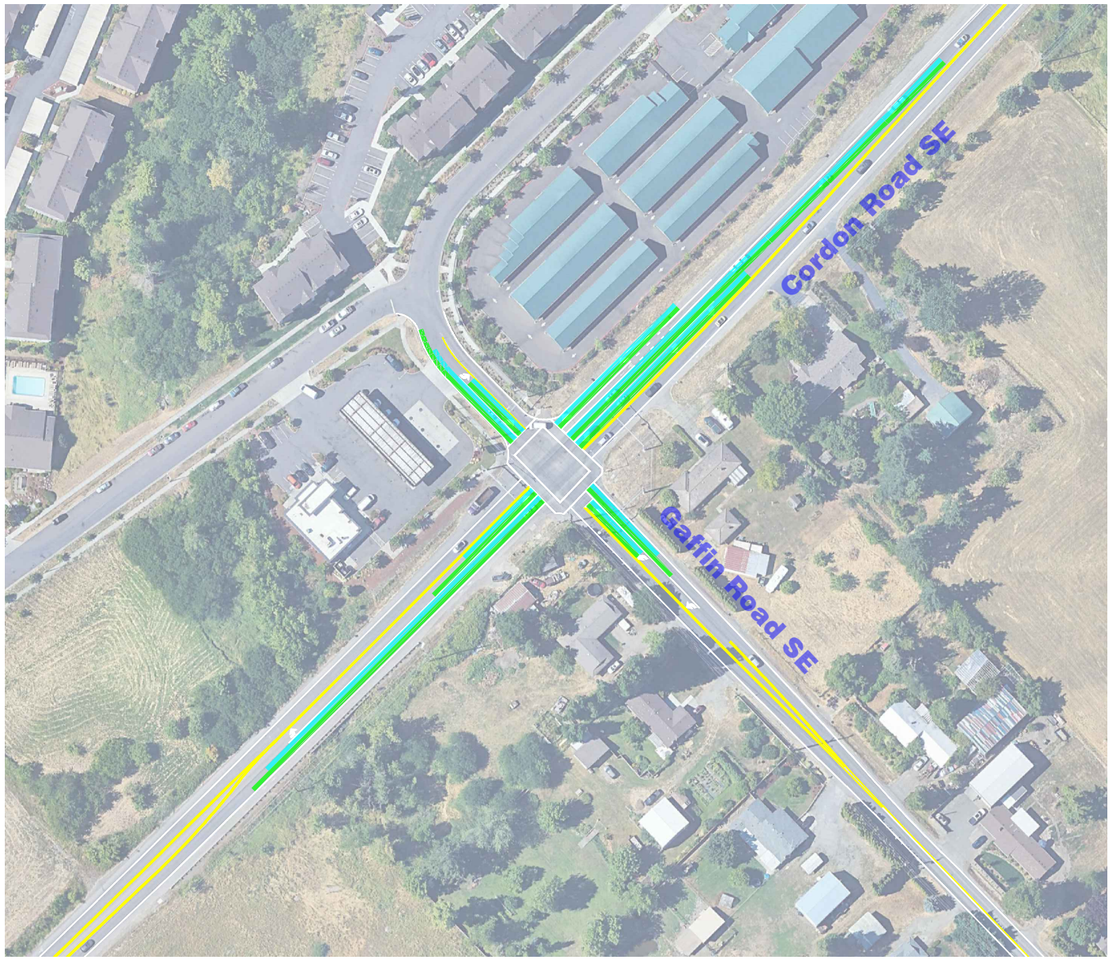
POST-DEVELOPMENT VOLUMES

Convenience Store and Gas Station TIA - Macleay Road - Salem, Oregon

C&A Project No. 20240302.00

FIGURE 6



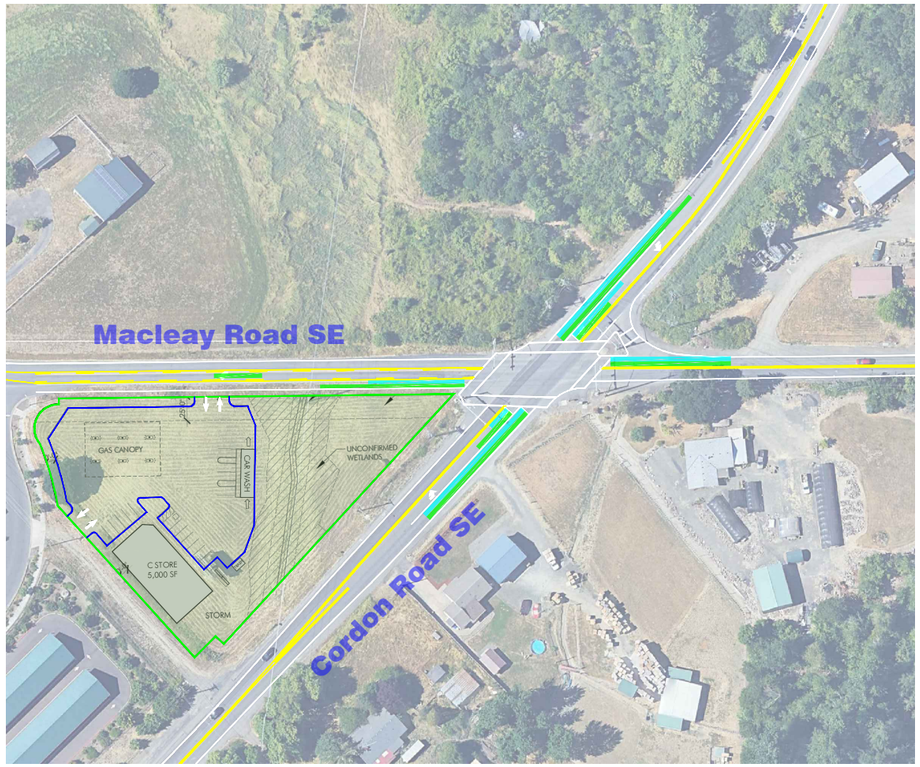


TABLE 7 – INTERSECTION QUEUING ANALYSIS

Intersection	Critical Movement Lane Group	Queue Storage Available (Feet)[1]	95th Percentile Queue Length (Feet)					
			AM Peak Hour			PM Peak Hour		
			2024 Existing	2025 Pre-Development	2025 Post-Development	2024 Existing	2025 Pre-Development	2025 Post-Development
Macleay Road SE / Gaffin Road SE	NB L/R	500+	75	75	75	75	75	75
	WB L/T	450	25	25	25	25	25	25
Macleay Road SE / North Site Access	NB L/R	50	—	—	75	—	—	75
	WB L	210	—	—	50	—	—	50
Cordon Road SE / Macleay Road SE	NB L	150	25	25	50	50	25	125
	NB T/R	1,000+	150	150	150	250	275	350
	SB L	150	50	75	50	75	75	125
	SB T/R	1,000+	150	175	200	175	175	275
	EB L/T/R	450	75	100	150	150	150	200
	WB L/T/R	850	125	125	125	100	100	125
Gaffin Road SE / West Site Access	SB L/T	110	—	—	50	—	—	50
	WB L/R	50	—	—	25	—	—	25
Cordon Road SE / Gaffin Road SE	NB L	350	75	100	150	275	250	225
	NB T/R	1,000+	400	400	425	650	650	600
	SB L	200	250	250	250	200	200	250
	SB T	1,000+	550	550	550	450	400	500
	SB R	100	200	175	175	175	175	175
	EB L	100	75	75	75	75	100	100
	EB T/R	175	125	125	150	150	150	175
	WB L	175	75	75	75	125	125	100
	WB T/R	1,000+	100	100	125	250	225	225

[1] Available queue storage is measured to the nearest upstream intersection for continuous lanes between intersections and to the end of full-width storage for turn lanes. For freeway off-ramps, it is the total ramp length minus the deceleration ramp length.

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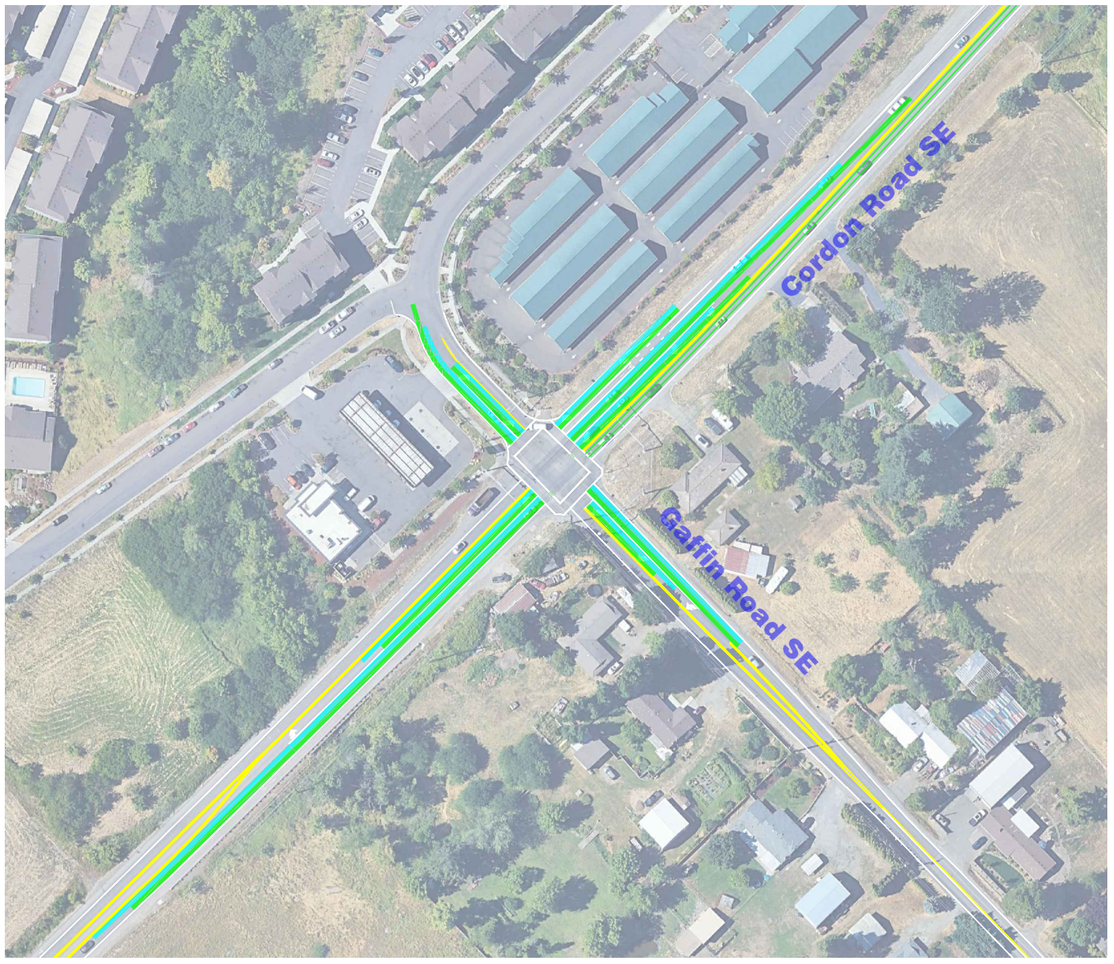
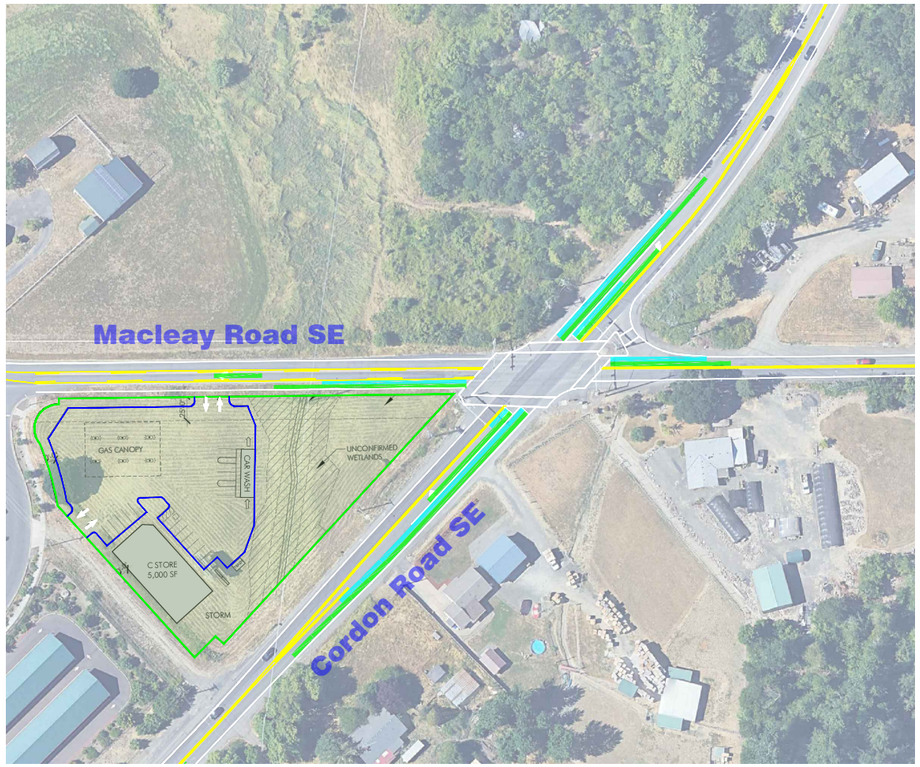
2025 AM 95th-PERCENTILE QUEUE LENGTHS

Convenience Store and Gas Station TIA - Macleay Road - Salem, Oregon

C&A Project No. 20240302.00

FIGURE 7





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Macleay Road SE / Gaffin Road SE	NB L/R	500+	75	75	75	75	75	75
	WB L/T	450	25	25	25	25	25	25
Macleay Road SE / North Site Access	NB L/R	50	—	—	75	—	—	75
	WB L	210	—	—	50	—	—	50
Cordon Road SE / Macleay Road SE	NB L	150	25	25	50	50	25	125
	NB T/R	1,000+	150	150	150	250	275	350
	SB L	150	50	75	50	75	75	125
	SB T/R	1,000+	150	175	200	175	175	275
	EB L/T/R	450	75	100	150	150	150	200
	WB L/T/R	850	125	125	125	100	100	125
Gaffin Road SE / West Site Access	SB L/T	110	—	—	50	—	—	50
	WB L/R	50	—	—	25	—	—	25
Cordon Road SE / Gaffin Road SE	NB L	350	75	100	150	275	250	225
	NB T/R	1,000+	400	400	425	650	650	600
	SB L	200	250	250	250	200	200	250
	SB T	1,000+	550	550	550	450	400	500
	SB R	100	200	175	175	175	175	175
	EB L	100	75	75	75	75	100	100
	EB T/R	175	125	125	150	150	150	175
	WB L	175	75	75	75	125	125	100
	WB T/R	1,000+	100	100	125	250	225	225

[1] Available queue storage is measured to the nearest upstream intersection for continuous lanes between intersections and to the end of full-width storage for turn lanes. For freeway off-ramps, it is the total ramp length minus the deceleration ramp length.

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2025 PM 95th-PERCENTILE QUEUE LENGTHS

Convenience Store and Gas Station TIA - Macleay Road - Salem, Oregon

C&A Project No. 20240302.00

FIGURE 8

Appendix B

Gmail Chris Clemow <cclemow@clemow-associates.com>

RE: Transportation Analysis - Salem Case No. PRE-AP24-0 / 24-102461-PA - 5100 Block Macleay Road SE - Gas station, car wash, and convenience store development.

1 message

Eric Destival <EDestival@cityofsalem.net> Thu, Apr 4, 2024 at 1:31 PM
To: Tony Martin <TMartin@cityofsalem.net>, Chris Clemow <cclemow@clemow-associates.com>
Cc: Gene Bolante <Gene@studio3architecture.com>, Laurel Christian <LChristian@cityofsalem.net>

Chris,

Here are the timing plans and some traffic signal drawings for your traffic study. If you need anything else please let me know.

Thanks,

Eric

Eric Destival, P.E.

Assistant City Signal Engineer

City of Salem | Public Works Department

555 Liberty St SE, Suite 325, Salem OR 97301-3513

edestival@cityofsalem.net | 503-588-6211

Facebook | Twitter |YouTube| CityofSalem.net

From: Tony Martin <TMartin@cityofsalem.net>
Sent: Thursday, April 4, 2024 11:46 AM
To: Chris Clemow <cclemow@clemow-associates.com>; Eric Destival <EDestival@cityofsalem.net>
Cc: Gene Bolante <Gene@studio3architecture.com>; Laurel Christian <LChristian@cityofsalem.net>
Subject: RE: Transportation Analysis - Salem Case No. PRE-AP24-0 / 24-102461-PA - 5100 Block Macleay Road SE - Gas station, car wash, and convenience store development.

Chris,

I did some checking to see what development is going on right now in the vicinity. There are some small projects in the works, but no work has started yet and none of them were significant enough to require a TIA. There is no need to include those small projects.

Eric Desival can provide you the signal timing information for the Macleay/Cordon and Gaffin/Cordon intersections. I have included him in the email.

Best Regards,

-tony

| Office: 503-588-6211 x7339

| Mobile: 503-910-4828

From: Chris Clemow <cclemow@clemow-associates.com>
Sent: Friday, March 29, 2024 11:10 AM
To: Tony Martin <TMartin@cityofsalem.net>
Cc: Gene Bolante <Gene@studio3architecture.com>; Laurel Christian <LChristian@cityofsalem.net>
Subject: Re: Transportation Analysis - Salem Case No. PRE-AP24-0 / 24-102461-PA - 5100 Block Macleay Road SE - Gas station, car wash, and convenience store development.

Tony,

Two items that we need the City to provide to facilitate TIA preparation:

- In-process traffic volumes in the project area that we need to account for, and
- The signal timing and coordination for the Cordon/Macleay and Cordon/Gaffin intersections.

Thank you,
Chris

Christopher M. Clemow PE, PTOE

Transportation Engineer

cclemow@clemow-associates.com

541-579-8315

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On Tue, Mar 19, 2024 at 3:43 PM Tony Martin <TMartin@cityofsalem.net> wrote:

> Chris,
>
> The City's TIA standards can be found at this link under "Administrative Rule 109-001 to 109-007 Public Works Design Standards", Chapter 6.33.
>
> https://www.cityofsalem.net/business/building-in-salem/helpful-resources/engineering-and-technical-resources/standard-plans-construction-specifications-and-public-works-design-standards/-folder-330
>
> I have tried to answer your questions below in RED.
>
> Best Regards,
>
> **Tony C. Martin, PE**
>
> *Assistant City Traffic Engineer*
>
> City of Salem | Public Works Department
>
> 555 Liberty St SE, Suite 325, Salem OR 97301-3515
>
> tmartin@cityofsalem.net
> Office: 503-588-6211 x7339| Cell: 503-910-4828
>
> Facebook | Twitter |YouTube| CityofSalem.net

From: Chris Clemow <cclemow@clemow-associates.com>
Sent: Wednesday, March 6, 2024 12:01 PM
To: Tony Martin <TMartin@cityofsalem.net>
Cc: Gene Bolante <Gene@studio3architecture.com>; Laurel Christian <LChristian@cityofsalem.net>
Subject: Transportation Analysis - Salem Case No. PRE-AP24-0 / 24-102461-PA - 5100 Block Macleay Road SE - Gas station, car wash, and convenience store development.

Tony,

We are in the process of developing a traffic impact analysis (TIA) scope of work for the applicant and I would like to confirm several items based on the City's pre-application conference notes. Following receipt of your email responses we will prepare and submit a formal TIA scope of work letter for your review/comment/approval.

Questions/Comments:

- For the applicant's development to have direct access to Macleay Road SE, we have to demonstrate that the development cannot be feasibly served by access onto a *Local* or *Collector* roadway (Gaffin Road). As part of this work effort, we will also have to demonstrate that access to Macleay Road will operate safely and efficiently - which will require analysis of the adjacent Macleay/Gaffin and Macleay/Cordon intersections, correct?
  Correct. You will need a Class 2 driveway permit and an adjustment to the spacing standards for the second driveway to Macleay.

- Apart from the site access(es), will any other intersections require analysis?
  Cordon/Macleay
  Cordon/Gaffin
  Macleay/Gaffin
  Proposed Driveway Connections

- What future year analyses are necessary - build year only, or something else?
  Year of opening is sufficient.

- What periods should be analyzed in addition to the PM peak hour?
  AM + PM (See the TIA Standards)

- The TIA will present development trip generation estimates. For information purposes, our preliminary assessment finds that a 5 KSF C-store with 12 VFPs generates a TOTAL of 3,086 trips. Of this total, approximately 50% are NET NEW trips and 50% are PASS-BY. As such, the proposed development will not exceed the established trip cap of 3,522 NEW trips.
  The proposal is for a 3,500 SF Convenience Market with 12 Fueling Positions + 1,500 Drive-Thru restaurant + Car Wash.
  ITE 945 does NOT include any discussion about the inclusion of a drive-thru restaurants as part of the Convenience Market building.
  The Fast-Food must be calculated separately and included in the total trips.

  IMPORTANT NOTE: 50% NET NEW + 50% PASS-BY = 100% of the trips to the site. The trip cap placed on the property is a condition from a CPC/ZC and that ADT is the

MAXIMUM number of vehicles allowed to access the site. You will need to adjust the size of the development to get below the trip cap.

- The City is requiring that the applicant dedicate a half-width right-of-way of up to 36 feet on the development side of Macleay Road (a *Minor Arterial* roadway) and construct up to a three-quarter street improvement. This results in a 46-foot-wide roadway that includes a full-width, center two-way left-turn lane (TWTL) along the entire property frontage - which is the entire length of Macleay between Gaffin and Cordon. The City's notes further state, *"The applicant's traffic impact analysis should identify if a full center turn lane along Macleay Road SE is necessary for the development."* It appears that the only reason a TWTL is "necessary" is because it is required to meet the *Minor Arterial* roadway standard and/or it is needed to accommodate a westbound left-turn movement at the applicant's desired access location, correct? As such, if the applicant's future Class 2 adjustment (requesting direct access to Macleay) is not approved there will be no operational necessity for the TWTL (that is precipitated by the proposed development), correct?
  The standard for a minor arterial street is two travel lanes, a center turn lane, and two bike lanes for a total of 46 feet. A "half-street" improvement would be 23 feet. The "three-quarter street" improvement would be 23 feet + a minimum 12-foot travel lane opposite centerline.

  If your development wishes to have a left turn from Macleay into the site, then you would be required to widen the street beyond the minimum three-quarter street improvement. If there is no need to accommodate the left turns into the site from Macleay, then a raised median will be required to prohibit that movement.

  Even if the driveway request was denied or was restricted to right-in/right-out, the ¾-street improvement is still a requirement of development.

- If the widening of Macleay is required to be constructed which includes a full-width TWTL, I assume this lane would become a dedicated eastbound left-turn lane at the Macleay/Cordon intersection, correct? Who will be responsible for the necessary intersection and signal improvements?
  Yes, but there may be enough room between the driveway and Cordon Road to accommodate back-to-back left turn movements. Additionally, there will need to be some widening on the east side of Cordon Road to accommodate the westbound left turn lane on the Marion County side of Cordon Road. If these are TIA requirements, the development is responsible to mitigate their impacts, including moving the traffic signal poles.

Thank you,

Chris

Christopher M. Clemow PE, PTOE

Transportation Engineer

cclemow@clemow-associates.com

541-579-8315

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4 attachments

TS277 AS-BUILT.pdf
2607K

262 cordon and macleay signal plan.pdf
732K

277 Cordon and Gaffin.xls
508K

Timing Report - INT262 Cordon and Macleay.pdf
1066K

Appendix C

January 1, 2018 through December 31, 2022

INTERSECTION CRASH RATES

Intersection	Crashes						PM Entering Volume	ADT (10xPM)	AADT (365xADT)	Annual Crashes	Crash Rate (crashes/MEV)	Reference Population	90th%ile Crash Rate	Over or Under Crash
	2018	2019	2020	2021	2022	Total								
Macleay Road SE / Gaffin Road SE	1	0	0	1	0	2	414	4,140	1,511,100	0.40	0.265	Urban 3ST	0.293	Under
Cordon Road SE / Macleay Road SE	2	0	3	4	2	11	1,600	16,000	5,840,000	2.20	0.377	Urban 4SG	0.860	Under
Cordon Road SE / Gaffin Road SE	3	4	1	1	2	11	1,747	17,470	6,376,550	2.20	0.345	Urban 4SG	0.860	Under

Intersection crash rates also need to be compared to the published statewide 90th percentile intersection crash rates in Exhibit 4-1. Any rates close to or over the 90th percentile rates need to be flagged for further analysis. The intersection crash rate is calculated by the following formula:

$$Intersection\ Crash\ Rate\ per\ MEV = \frac{Annual\ Number\ of\ Crashes\ x\ 10^6}{(AADT)x\ (365\ days/year)}$$

The values shown in Exhibit 4-1 represent the 90th percentile crash rates from a study of 500 intersections in Oregon. The crash rates are grouped by rural/urban, signalized/unsignalized, and three-leg/four-leg intersections. Intersections with crash rates that exceed the 90th percentile values shown in the table should be flagged for further analysis. For more information on crash rates and using this table, see Section 4.3.4 Critical Crash Rate.

Exhibit 4-1: Intersection Crash Rates per MEV by Land Type and Traffic Control

	Rural				Urban			
	3SG	3ST	4SG	4ST	3SG	3ST	4SG	4ST
No. of Intersections	7	115	20	60	55	77	106	60
Mean Crash Rate	**0.226**	**0.196**	**0.324**	**0.434**	**0.275**	**0.131**	**0.477**	**0.198**
Median Crash Rate	0.163	0.092	0.320	0.267	0.252	0.105	0.420	0.145
Standard Deviation	0.185	0.314	0.223	0.534	0.155	0.121	0.273	0.176
Coefficient of Variation	0.819	1.602	0.688	1.230	0.564	0.924	0.572	0.889
90th Percentile Rate	**0.464**	**0.475**	**0.579**	**1.080**	**0.509**	**0.293**	**0.860**	**0.408**

Source: Assessment of Statewide Intersection Safety Performance, FHWA-OR-RD-18, Portland State University and Oregon State University, June 2011, Table 4.1, p. 47.

Note: Traffic control types include
3SG (three-leg signalized),
3ST (three-leg minor stop-control),
4SG (four-leg signalized),
4ST (four-leg minor stop-control).

For intersections other than the configurations shown in Exhibit 4-1, there are usually too few locations with that intersection configuration to provide statewide statistics. There are some stop controlled intersection configurations that could be approximated as indicated in Exhibit 4-2 and Exhibit 4-3 below. Any other intersection configurations not in Exhibit 4-1, Exhibit 4-2, or Exhibit 4-3 should by default be flagged for further analysis, since the unusual configuration is likely to warrant a closer look at the crashes.

CITY OF SALEM, MARION COUNTY

MACLEAY RD at OLD MACLEAY RD, City of Salem, Marion County, 01/01/2018 to 12/31/2022

1 - 2 of 2 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J N S	S H V	W O R L	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
04819	Y	N	N	N			12/27/2021	16	MACLEAY RD SE	INTER	3-LEG	N	Y	SNOW	FIX OBJ	01	NONE 9	STRGHT										040,054	01
CITY							MO	0	OLD MACLEAY RD SE	E		STOP SIGN	N	SNO	FIX		N/A	W -E									000		00
N							1A			05	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							44 54 49.32	-122 57 23.31																UNK					
03058	Y	Y	N	N	N	N	08/18/2018	16	MACLEAY RD SE	INTER	3-LEG	N	Y	CLR	FIX OBJ	01	NONE 0	STRGHT									079,010	33,01
CITY							SA	0	OLD MACLEAY RD SE	W		STOP SIGN	N	DRY	FIX		PRVTE	W -E								000	079,010	00
N							12P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	29	M	OR-Y		051,047,079	000		33,01
N							44 54 49.31	-122 57 23.3																OR<25					

CITY OF SALEM, MARION COUNTY

CORDON RD at MACLEAY RD, City of Salem, Marion County, 01/01/2018 to 12/31/2022

1 - 4 of 11 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R G	J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01586	N	N	N	N			05/12/2022	14	CORDON RD SE	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											29
CITY							TH	0	MACLEAY RD SE	NE		TRF SIGNAL	N	WET	REAR		PRVTE	NE-SW									000		00
N							4P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	33	M	OR-Y		026	000		29
N							44 54 49.24	-122 57 14.34																OR<25					
																02	NONE 0	STOP									011		00
																	PRVTE	NE-SW											
																	PSNGR CAR		01	DRVR	INJC	52	F	OR-Y		000	000		00
																								OR<25					
02323	N	N	N	N			07/12/2022	14	CORDON RD SE	INTER	CROSS	N	N	CLR	S-STRGHT	01	NONE 9	STRGHT											13
NONE							TU	0	MACLEAY RD SE	NE		TRF SIGNAL	N	DRY	SS-O		N/A	NE-SW									000		00
N							4P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							44 54 49.24	-122 57 14.34																UNK					
																02	NONE 9	STRGHT									000		00
																	N/A	NE-SW											
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																								UNK					
01223	N	N	N	N			04/11/2018	14	CORDON RD SE	INTER	CROSS	N	N	RAIN	S-STRGHT	01	NONE 0	STRGHT											29
NO RPT							WE	0	MACLEAY RD SE	SW		TRF SIGNAL	N	WET	REAR		PRVTE	NE-SW									000		00
N							4P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	16	M	OR-Y		042	000		29
N							44 54 49.24	-122 57 14.34																OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	NE-SW									000		00
																	PSNGR CAR		01	DRVR	INJB	67	F	OR-Y		000	000		00
																								OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	NE-SW									000		00
																	PSNGR CAR		02	PSNG	INJB	61	F			000	000		00
02869	N	N	N	N			07/09/2021	16	CORDON RD SE	INTER	CROSS	N	Y	CLR	FIX OBJ	01	NONE 0	STRGHT										055		10
CITY							FR	0	MACLEAY RD SE	W		TRF SIGNAL	N	DRY	FIX		PRVTE	UN-UN									000	055	00
N							11A			05	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	55	M	OR-Y		081	000		10
N							44 54 49.24	-122 57 14.35																OR<25					
00781	N	N	N	N	N	N	03/06/2018	14	CORDON RD SE	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L											02
CITY							TU	0	MACLEAY RD SE	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW-W									000		00
N							4P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	15	M	OR-Y		028,004	000		02
N							44 54 49.24	-122 57 14.35																OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	NE-SW									000		00
																	PSNGR CAR		01	DRVR	INJC	32	M	OR-Y		000	000		00
																								OR<25					

CITY OF SALEM, MARION COUNTY

CORDON RD at MACLEAY RD, City of Salem, Marion County, 01/01/2018 to 12/31/2022

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J N S	I H V	C O R L	W DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																02	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW									000 000	00 00
																02	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	03	PSNG	INJB	08	M			000	000	00 00
03055	N	N	N	N	N	N	10/09/2020	14	CORDON RD SE	INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY							FR	0	MACLEAY RD SE	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW-W								000		00
N N							10P 44 54 49.23	-122 57 14.34		01	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	34	M	OR-Y OR<25		028,004	000		02
																02	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	40	F	OR-Y OR>25		000	000		00 00
																02	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	02	PSNG	INJC	19	M			000	000		00 00
03091	N	N	N	N			10/13/2020	14	CORDON RD SE	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										04
NO RPT							TU	0	MACLEAY RD SE	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	SW-NE								000		00
N N							12P 44 54 49.25	-122 57 14.34		04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	74	F	OR-Y OR<25		020	000		04
																02	NONE 0 PRVTE PSNGR CAR	STRGHT W -E	01	DRVR	INJC	44	M	OR-Y OR<25		000	000		00 00
00158	N	N	N	N			01/11/2020	14	CORDON RD SE	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT										04
NONE							SA	0	MACLEAY RD SE	CN		TRF SIGNAL	N	DRY	ANGL		N/A	W -E								000		00
N N							11A 44 54 49.26	-122 57 14.37		03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK UNK		000	000		00
																02	NONE 9 N/A PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	00	Unk	UNK UNK		000	000		00 00
02677	N	N	N	N	N	N	08/08/2021	14	CORDON RD SE	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										04,27
CITY							SU	0	MACLEAY RD SE	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	W -E								000		00
N N							4P 44 54 49.24	-122 57 14.32		03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	75	F	OR-Y OR<25		016,020	038		04,27

CITY OF SALEM, MARION COUNTY

CORDON RD at MACLEAY RD, City of Salem, Marion County, 01/01/2018 to 12/31/2022

9 - 11 of 11 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D A L C	M R G S	J U N V	S I H L	W C O R	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																02	NONE 0	STRGHT										
																	PRVTE	NE-SW									000	00
																	PSNGR CAR		01	DRVR	INJB	68	M	OR-Y		000	000	00
																								OR<25				
																02	NONE 0	STRGHT										
																	PRVTE	NE-SW									000	00
																	PSNGR CAR		02	PSNG	INJB	67	F			000	000	00
00447	N	N	N	N			02/14/2021	14	CORDON RD SE	INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 9	STRGHT										02
NONE							SU	0	MACLEAY RD SE	CN		TRF SIGNAL	N	WET	TURN		N/A	E -W									000	00
N							5P			02	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							44 54 49.25	-122 57 14.33																UNK				
																02	NONE 9	TURN-L										
																	N/A	W -NE									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
04218	N	N	N	N			11/22/2021	14	CORDON RD SE	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 9	TURN-L										04
NO RPT							MO	0	MACLEAY RD SE	CN		TRF SIGNAL	N	WET	TURN		N/A	E -SW									000	00
N							7P			02	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							44 54 49.24	-122 57 14.36																UNK				
																02	NONE 9	STRGHT										
																	N/A	SW-NE									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				

CITY OF SALEM, MARION COUNTY

CORDON RD at MACLEAY RD, City of Salem, Marion County, 01/01/2018 to 12/31/2022

CITY OF SALEM, MARION COUNTY

CORDON RD at GAFFIN RD, City of Salem, Marion County, 01/01/2018 to 12/31/2022

1 - 4 of 11 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R J U G N S	I H V	S O R K	W	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01691	N	N	N	N			05/18/2018	14	CORDON RD SE	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE							FR	0	GAFFIN RD SE	SW		STOP SIGN	N	DRY	REAR		PRVTE	SW-NE									000	00
N							3P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	22	M	OR-Y		026	000	29
N							44 54 39.93	-122 57 26.77																OR<25				
																02	NONE 0	STOP										
																	PRVTE	SW-NE									011	00
																	PSNGR CAR		01	DRVR	INJC	52	F	OR-Y		000	000	00
																								OR<25				
03127	N	N	N	N			08/22/2018	14	CORDON RD SE	INTER	CROSS	N	N	CLR	ANGL-STP	01	NONE 9	TURN-R										08
NONE							WE	0	GAFFIN RD SE	SW		TRF SIGNAL	N	DRY	TURN		N/A	NW-SW									000	00
N							UNK			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							44 54 39.92	-122 57 26.78																UNK				
																02	NONE 9	STOP										
																	N/A	SW-NE									012	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
04545	N	N	N	N	N	N	11/28/2018	14	CORDON RD SE	INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE 9	STRGHT										04
COUNTY							WE	0	GAFFIN RD SE	CN		TRF SIGNAL	N	DRY	ANGL		N/A	SW-NE									000	00
N							12P			02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							44 54 39.92	-122 57 26.78																UNK				
																02	NONE 9	STRGHT										
																	N/A	SE-NW									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
03042	N	N	N	N			08/11/2019	14	CORDON RD SE	INTER	CROSS	N	N	CLR	S-1TURN	01	NONE 0	STRGHT									010	29
NO RPT							SU	0	GAFFIN RD SE	CN		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE									000	00
N							9A			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	39	F	OR-Y		042	000	29
N							44 54 39.93	-122 57 26.8																OR<25				
																02	NONE 1	TURN-R										
																	PRVTE	SW-SE									000	010 00
																	PSNGR CAR		01	DRVR	INJC	37	F	OR-Y		000	000	00
																								OR<25				
																02	NONE 1	TURN-R										
																	PRVTE	SW-SE									000	010 00
																	PSNGR CAR		02	PSNG	INJC	43	F			000	000	00
																02	NONE 1	TURN-R										
																	PRVTE	SW-SE									000	010 00
																	PSNGR CAR		03	PSNG	INJC	16	F			000	000	00

CITY OF SALEM, MARION COUNTY

CORDON RD at GAFFIN RD, City of Salem, Marion County, 01/01/2018 to 12/31/2022

CITY OF SALEM, MARION COUNTY

CORDON RD at GAFFIN RD, City of Salem, Marion County, 01/01/2018 to 12/31/2022

5 - 7 of 11 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R J U G S V	I N H L	S C O R K	W	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
04697	N	Y	N	N	N	N	11/24/2019	14	CORDON RD SE	INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE 0	STRGHT										04,27
CITY			SU					0	GAFFIN RD SE	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	NE-SW									000		00
N			6P							01	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	INJC	32	M	OR-Y		000	000		00
N			44 54 39.94					-122 57 26.78																OR<25					
																02	NONE 0	TURN-L											
																	PRVTE	SE-SW									000		00
																	PSNGR CAR		01	DRVR	NONE	32	F	OR-Y		020,016	038		04,27
																								OR<25					
05076	N	N	N	N	N	N	12/18/2019	14	CORDON RD SE	INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 0	TURN-L										087	02
CITY			WE					0	GAFFIN RD SE	CN		TRF SIGNAL	N	WET	TURN		PRVTE	NE-SE									000	087	00
N			8P							04	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJB	19	F	OR-Y		028,004	000		02
N			44 54 39.94					-122 57 26.79																OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	SW-NE									000	087	00
																	PSNGR CAR		01	DRVR	INJC	68	F	OR-Y		000	000		00
																								OR<25					
02776	N	N	N	N			07/23/2019	14	CORDON RD SE	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT											04
NONE			TU					0	GAFFIN RD SE	CN		TRF SIGNAL	N	DRY	ANGL		N/A	NE-SW									000		00
N			6P							01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			44 54 39.94					-122 57 26.85																UNK					
																02	NONE 9	STRGHT											
																	N/A	SE-NW									000		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																								UNK					
00459	N	N	N	N			02/04/2020	14	CORDON RD SE	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
NONE			TU					0	GAFFIN RD SE	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	SE-NW									000		00
N			12P							01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	73	M	OR-Y		020	000		04
N			44 54 39.93					-122 57 26.78																OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	NE-SW									000		00
																	PSNGR CAR		01	DRVR	INJC	28	F	OR-Y		000	000		00
																								OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	NE-SW									000		00
																	PSNGR CAR		02	PSNG	INJC	01	M			000	000		00
																02	NONE 0	STRGHT											
																	PRVTE	NE-SW									000		00
																	PSNGR CAR		03	PSNG	INJC	04	F			000	000		00

CITY OF SALEM, MARION COUNTY

CORDON RD at GAFFIN RD, City of Salem, Marion County, 01/01/2018 to 12/31/2022

CITY OF SALEM, MARION COUNTY

CORDON RD at GAFFIN RD, City of Salem, Marion County, 01/01/2018 to 12/31/2022

8 - 11 of 11 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R J U G S	I N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																02	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	04	PSNG	INJC	03	F			000	000		00 00
02604 NONE N N	N	N	N	N			07/18/2021 SU 11A 44 54 39.93	14 0 -122 57 26.8	CORDON RD SE GAFFIN RD SE	INTER CN 01	CROSS 0	N TRF SIGNAL	N N	CLR DRY DAY	O-OTHER TURN PDO	01	NONE 9 N/A PSNGR CAR	TURN-R NE-NW	01	DRVR	NONE	00	Unk	UNK UNK		000	000		02 00 00
																02	NONE 9 N/A PSNGR CAR	TURN-L SW-NW	01	DRVR	NONE	00	Unk	UNK UNK		000	000		00 00
00750 NO RPT N N	N	N	N	N			03/07/2022 MO 4P 44 54 39.92	14 0 -122 57 26.76	CORDON RD SE GAFFIN RD SE	INTER CN 03	CROSS 0	N TRF SIGNAL	N N	CLR DRY DAY	ANGL-OTH ANGL INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	01	DRVR	INJC	40	F	OR-Y OR<25		097	000		04 00 00
																01	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	02	PSNG	INJC	04	F			000	000		00 00
																02	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	51	M	OR-Y OR<25	097	000		00 00
01114 CITY N N	N	N	N	N	N	N	04/09/2022 SA 2P 44 54 39.94	14 0 -122 57 26.78	CORDON RD SE GAFFIN RD SE 03	INTER CN 0	CROSS TRF SIGNAL	N N N	N CLR DRY DAY	ANGL-OTH ANGL INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	21	M	OR-Y OR>25		020	087 000 026		04,40 00 04,40
																02	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	01	DRVR	NONE	68	M	OR-Y OR>25	000	000 022	087	00 00
																02	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	02	PSNG	INJC	55	M		000	000 000	087	00 00

CITY OF SALEM, MARION COUNTY

CORDON RD at GAFFIN RD, City of Salem, Marion County, 01/01/2018 to 12/31/2022

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN,ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED
4	EXP	EXPIRED
8	N-VAL	OTHER NON-VALID LICENSE
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	PARTICIPANT UNINJURED, OVER THE AGE OF 4

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY
9	PARKNG	PARKING MANEUVER

NON-MOTORIST LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING
095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

Appendix D

Master Intersection List

	Roadway 1	Roadway 2	
Intersection 1	Macleay Road SE	Gaffin Road SE	Future Year Vs
Intersection 2	Macleay Road SE	N Site Access	
Intersection 3	Macleay Road SE	Cordon Road SE	
Intersection 4	Gaffin Road SE	W Site Access	
Intersection 5	Gaffin Road SE	Cordon Road SE	
Intersection 6	Macleay Road SE	Gaffin Road SE	Base Year Vs
Intersection 7	Macleay Road SE	N Site Access	
Intersection 8	Macleay Road SE	Cordon Road SE	
Intersection 9	Gaffin Road SE	W Site Access	
Intersection 10	Gaffin Road SE	Cordon Road SE	
Intersection 11			
Intersection 12			
Intersection 13			
Intersection 14			
Intersection 15			

Intersection 1	Macleay Road SE			Gaffin Road SE			System AM peak hour 7:15-8:15AM								
ALL-VEHICLE VOLUMES				PHF =	0.82									Hourly	All
Time Period	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Totals	Ints
7:00 AM	16	0	1	0	0	0	0	15	6	2	12	0	52	183	2108
7:15 AM	11	0	0	0	0	0	0	17	14	2	30	0	74	220	2408
7:30 AM	28	0	0	0	0	0	0	25	21	1	18	0	93	268	2632
7:45 AM	16	0	2	0	0	0	0	27	23	0	20	0	88	307	3103
8:00 AM	15	0	2	0	0	0	0	10	8	1	15	0	51	306	3115
8:15 AM	11	0	3	0	0	0	0	14	11	0	9	0	48	280	2954
8:30 AM	10	0	0	0	0	0	0	18	3	1	7	0	39	226	2672
8:45 AM	13	0	0	0	0	0	0	18	11	5	12	0	59	197	2445
Base Year AM Vs	70	0	4	0	0	0	0	79	66	4	83	0			2024 Traffic Count Base Year
Backgound Growth	1	0	0	0	0	0	0	2	1	0	2	0			2.0% Background Growth Rate
Pre-Dev AM Vs	71	0	4	0	0	0	0	81	67	4	85	0			2025 Pre-Development Year
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR			
Total Net New Dev Vs	12							13	12		12				312 Entering Intersection Volume
% of Net New Dev	20%							20%	20%		20%				49 Development Trips
P-B/D-L V	10										0				16% Trip Volume Increase
Post-Dev AM Vs	93	0	4	0	0	0	0	94	79	4	97	0			

Intersection 2	Macleay Road SE			N Site Access			System AM peak hour 7:15-8:15AM								
ALL-VEHICLE VOLUMES				PHF =	0.87									Hourly	
Time Period	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Totals	
7:00 AM								16			14		30		
7:15 AM								18			31		49		
7:30 AM								25			20		45		
7:45 AM								28			20		48	172	
8:00 AM								13			16		29	171	
8:15 AM								16			10		26	148	
8:30 AM								18			9		27	130	
8:45 AM								18			15		33	115	
Base Year AM Vs	0	0	0	0	0	0	0	84	0	0	87	0			2024 Traffic Count Base Year
Backgound Growth	0	0	0	0	0	0	0	2	0	0	2	0			2.0% Background Growth Rate
Pre-Dev AM Vs	0	0	0	0	0	0	0	86	0	0	89	0			2025 Pre-Development Year
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR			
Total Net New Dev Vs	12		19						13	25					175 Entering Intersection Volume
% of Net New Dev	20%		30%						20%	40%					69 Development Trips
P-B/D-L V	10		60					-10	10	70	-10				39% Trip Volume Increase
Post-Dev AM Vs	22	0	79	0	0	0	0	76	23	95	79	0			

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Intersection 3	Macleay Road SE			Cordon Road SE			System AM peak hour 7:15-8:15AM								
ALL-VEHICLE VOLUMES				PHF =	0.91									Hourly	
Time Period	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Totals	Cells shaded this color have manual inp
7:00 AM	7	79	4	9	112	1	4	4	8	5	5	3	241	884	
7:15 AM	12	64	4	13	138	6	3	7	8	9	11	20	295	1024	
7:30 AM	7	99	5	11	125	3	8	5	11	13	10	18	315	1112	
7:45 AM	7	100	7	17	127	0	9	8	9	16	12	17	329	1180	
8:00 AM	4	102	4	12	90	3	7	4	2	12	9	9	258	1197	
8:15 AM	6	97	7	6	82	1	8	3	4	13	3	9	239	1141	
8:30 AM	1	60	7	4	114	4	4	8	6	7	5	9	229	1055	
8:45 AM	3	77	8	13	87	4	4	5	9	9	5	8	232	958	
Base Year AM Vs	30	365	20	53	480	12	27	24	30	50	42	64			2024 Traffic Count Base Year
Backgound Growth	1	7	0	1	10	0	1	0	1	1	1	1			2.0% Background Growth Rate
Pre-Dev AM Vs	31	372	20	54	490	12	28	24	31	51	43	65			2025 Pre-Development Year
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR			
Total Net New Dev Vs	6					16	6	3	10		3				1221 Entering Intersection Volume
% of Net New Dev	10%					25%	10%	5%	15%		5%				44 Development Trips
P-B/D-L V	20	-20			-40	40	15		35						4% Trip Volume Increase
Post-Dev AM Vs	57	352	20	54	450	68	49	27	76	51	46	65			

Intersection 4	Gaffin Road SE			W Site Access			System AM peak hour 7:15-8:15AM								
ALL-VEHICLE VOLUMES				PHF =	0.72									Hourly	
Time Period	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Totals	Cells shaded this color have manual inp
7:00 AM		17			8								25		
7:15 AM		11			16								27		
7:30 AM		28			22								50		
7:45 AM		18			23								41	143	
8:00 AM		17			9								26	144	
8:15 AM		14			11								25	142	
8:30 AM		10			4								14	106	
8:45 AM		13			16								29	94	
Base Year AM Vs	0	74	0	0	70	0	0	0	0	0	0	0			2024 Traffic Count Base Year
Backgound Growth	0	1	0	0	1	0	0	0	0	0	0	0			2.0% Background Growth Rate
Pre-Dev AM Vs	0	75	0	0	71	0	0	0	0	0	0	0			2025 Pre-Development Year
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR			
Total Net New Dev Vs			12	12						19		12			146 Entering Intersection Volume
% of Net New Dev			20%	20%						30%		20%			55 Development Trips
P-B/D-L V		-10	10	10	-10					20		10			38% Trip Volume Increase
Post-Dev AM Vs	0	65	22	22	61	0	0	0	0	39	0	22			

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Intersection 5	Gaffin Road SE			Cordon Road SE			System AM peak hour 7:15-8:15AM								
ALL-VEHICLE VOLUMES				PHF =	0.92									Hourly	
Time Period	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Totals	Cells shaded this color have manual inp
7:00 AM	11	78	2	19	96	9	6	6	22	16	12	20	297	1041	
7:15 AM	8	52	7	31	115	14	11	7	17	15	7	22	306	1164	
7:30 AM	9	93	5	20	114	20	15	11	30	7	5	15	344	1252	
7:45 AM	14	82	11	24	117	12	13	11	24	20	7	19	354	1301	
8:00 AM	10	82	13	10	91	8	15	6	18	9	9	22	293	1297	
8:15 AM	9	74	5	14	75	7	12	7	10	9	6	24	252	1243	
8:30 AM	5	57	8	20	102	7	8	3	11	17	9	9	256	1155	
8:45 AM	12	66	16	20	87	5	8	4	19	7	9	27	280	1081	
Base Year AM Vs	41	309	36	85	437	54	54	35	89	51	28	78			2024 Traffic Count Base Year
Backgound Growth	1	6	1	2	9	1	1	1	2	1	1	2			2.0% Background Growth Rate
Pre-Dev AM Vs	42	315	37	87	446	55	55	36	91	52	29	80			2025 Pre-Development Year
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR			
Total Net New Dev Vs	9	6			10			3	16		3				1325 Entering Intersection Volume
% of Net New Dev	15%	10%			15%			5%	25%		5%				47 Development Trips
P-B/D-L V					-5				10						4% Trip Volume Increase
Post-Dev AM Vs	51	321	37	87	451	55	55	39	117	52	32	80			

Intersection 1	Macleay Road SE			Gaffin Road SE			System PM peak hour	4:45-5:45								
ALL-VEHICLE VOLUMES					PHF =	0.91								Hourly	All	
Time Period	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Totals	Ints	Cells shaded this color have manual inp
4:00 PM	22	0	1	0	0	0	0	47	17	6	20	0	113	401	3468	
4:15 PM	20	0	2	0	0	0	0	37	20	6	27	0	112	433	3530	
4:30 PM	22	0	3	0	0	0	0	31	21	1	21	0	100	433	3471	
4:45 PM	19	0	3	0	0	0	0	34	23	4	28	0	111	436	3971	
5:00 PM	24	0	1	0	0	0	0	32	16	5	20	0	98	421	3998	
5:15 PM	26	0	2	0	0	0	0	36	18	0	20	0	102	411	4039	
5:30 PM	21	0	3	0	0	0	0	21	20	5	25	0	95	406	4116	
5:45 PM	15	0	0	0	0	0	0	27	13	2	21	0	78	373	3882	
Base Year PM Vs	90	0	9	0	0	0	0	123	77	14	93	0			2024	Traffic Count Base Year
Backgound Growth	2	0	0	0	0	0	0	2	2	0	2	0			2.0%	Background Growth Rate
Pre-Dev PM Vs	92	0	9	0	0	0	0	125	79	14	95	0			2025	Pre-Development Year
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR				
Total Net New Dev Vs	12							12	12		12				414	Entering Intersection Volume
% of Net New Dev	20%							20%	20%		20%				48	Development Trips
P-B/D-L V	8										0				12%	Trip Volume Increase
Post-Dev PM Vs	112	0	9	0	0	0	0	137	91	14	107	0				

Intersection 2	Macleay Road SE			N Site Access			System PM peak hour	4:45-5:45								
ALL-VEHICLE VOLUMES					PHF =	0.86								Hourly		
Time Period	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Totals		Cells shaded this color have manual inp
4:00 PM								49			27		76			
4:15 PM								41			32		73			
4:30 PM								33			22		55			
4:45 PM								39			30		69	273		
5:00 PM								34			24		58	255		
5:15 PM								37			20		57	239		
5:30 PM								25			29		54	238		
5:45 PM								28			22		50	219		
Base Year PM Vs	0	0	0	0	0	0	0	135	0	0	103	0			2024	Traffic Count Base Year
Backgound Growth	0	0	0	0	0	0	0	3	0	0	2	0			2.0%	Background Growth Rate
Pre-Dev PM Vs	0	0	0	0	0	0	0	138	0	0	105	0			2025	Pre-Development Year
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR				
Total Net New Dev Vs	12		24						12	24					243	Entering Intersection Volume
% of Net New Dev	20%		40%						20%	40%					72	Development Trips
P-B/D-L V	8		45					-8	8	53	-8				30%	Trip Volume Increase
Post-Dev PM Vs	20	0	69	0	0	0	0	130	20	77	97	0				

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Intersection 3	Macleay Road SE			Cordon Road SE			System PM peak hour	4:45-5:45							
ALL-VEHICLE VOLUMES				PHF =	0.97									Hourly	
Time Period	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Totals	Cells shaded this color have manual inp
4:00 PM	4	120	13	12	126	11	17	18	14	11	12	14	372	1491	
4:15 PM	8	136	12	13	110	6	12	22	9	4	16	15	363	1512	
4:30 PM	9	134	9	18	121	10	12	11	9	11	3	13	360	1486	
4:45 PM	5	150	24	11	135	6	16	18	6	7	17	9	404	1499	
5:00 PM	8	157	15	17	115	8	10	8	16	5	7	13	379	1506	
5:15 PM	10	158	21	19	112	3	10	20	6	9	7	14	389	1532	
5:30 PM	8	162	14	19	129	6	9	9	8	9	13	10	396	1568	
5:45 PM	6	137	20	9	90	7	10	8	10	6	7	6	316	1480	
Base Year PM Vs	31	627	74	66	491	23	45	55	36	30	44	46			2024 Traffic Count Base Year
Backgound Growth	1	13	1	1	10	0	1	1	1	1	1	1			2.0% Background Growth Rate
Pre-Dev PM Vs	32	640	75	67	501	23	46	56	37	31	45	47			2025 Pre-Development Year
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR			
Total Net New Dev Vs	15					6	15	3	6		3				1600 Entering Intersection Volume
% of Net New Dev	25%					10%	25%	5%	10%		5%				48 Development Trips
P-B/D-L V	30	-30			-15	15	26		11						3% Trip Volume Increase
Post-Dev PM Vs	77	610	75	67	486	44	87	59	54	31	48	47			

Intersection 4	Gaffin Road SE			W Site Access			System PM peak hour	4:45-5:45							
ALL-VEHICLE VOLUMES				PHF =	0.97									Hourly	
Time Period	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Totals	Cells shaded this color have manual inp
4:00 PM		23			23								46		
4:15 PM		22			26								48		
4:30 PM		25			22								47		
4:45 PM		22			27								49	190	
5:00 PM		25			21								46	190	
5:15 PM		28			18								46	188	
5:30 PM		24			25								49	190	
5:45 PM		15			15								30	171	
Base Year PM Vs	0	99	0	0	91	0	0	0	0	0	0	0			2024 Traffic Count Base Year
Backgound Growth	0	2	0	0	2	0	0	0	0	0	0	0			2.0% Background Growth Rate
Pre-Dev PM Vs	0	101	0	0	93	0	0	0	0	0	0	0			2025 Pre-Development Year
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR			
Total Net New Dev Vs			12	12						12		12			194 Entering Intersection Volume
% of Net New Dev			20%	20%						20%		20%			48 Development Trips
P-B/D-L V		-8	8	8	-8					15		8			25% Trip Volume Increase
Post-Dev PM Vs	0	93	20	20	85	0	0	0	0	27	0	20			

FUTURE YEAR VOLU

Intersection 5		Gaffin Road SE			Cordon Road SE			System PM peak hour	4:45-5:45							
ALL-VEHICLE VOLUMES					PHF =	0.99									Hourly	
Time Period		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Totals	Cells shaded this color have manual inp
	4:00 PM	24	112	5	23	115	16	17	15	12	10	16	15	380	1576	
	4:15 PM	25	122	11	25	86	16	14	9	10	10	9	32	369	1585	
	4:30 PM	19	117	14	29	90	16	13	13	18	19	14	27	389	1552	
	4:45 PM	15	131	22	36	101	16	11	26	15	14	11	37	435	1573	
	5:00 PM	25	135	13	24	106	16	16	11	14	25	13	35	433	1626	
	5:15 PM	21	143	13	21	93	15	8	15	14	15	15	39	412	1669	
	5:30 PM	27	137	9	24	95	24	16	13	23	12	14	40	434	1714	
	5:45 PM	17	125	10	15	83	19	13	6	16	11	12	33	360	1639	
Base Year PM Vs		88	546	57	105	395	71	51	65	66	66	53	151			2024 Traffic Count Base Year
Backgound Growth		2	11	1	2	8	1	1	1	1	1	1	3			2.0% Background Growth Rate
Pre-Dev PM Vs		90	557	58	107	403	72	52	66	67	67	54	154			2025 Pre-Development Year
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR			
Total Net New Dev Vs		9	15			6			3	9		3				1747 Entering Intersection Volume
% of Net New Dev		15%	25%			10%			5%	15%		5%				45 Development Trips
P-B/D-L V						-4				7						3% Trip Volume Increase
Post-Dev PM Vs		99	572	58	107	405	72	52	69	83	67	57	154			

Appendix E

Project: Salem Gas and Convenience Store
Analysis Scenario: 2024 AM Existing
Intersection: Cordon Road SE / Macleay Road SE

Intersection v/c Ratio Calculation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total	NOTES
v/s Ratio Prot							0.00	c0.24		0.00	c0.31			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
v/s Ratio Perm		0.06			c0.08	0.00	0.04			0.06				From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Is the movement critical? If 'yes' then "Y", if 'no' then blank					Y					Y	Y			From Synchro HCM 2000 - critical movements are marked with a "c"
Adj Flow Rate, veh/h	30	26	33	55	46	0	33	401	22	58	527	13		From Synchro HCM 2010 Signalized Intersection Summary
Sat Flow, veh/h	403	586	583	729	714	1500	1681	1658	91	1681	1715	42		From Synchro HCM 2010 Signalized Intersection Summary
Critical Movement Flow Ratio	0.0000	0.0000	0.0000	0.0000	0.0644	0.0000	0.0000	0.0000	0.0000	0.0345	0.3073	0.0000	0.4062	Adjusted Flow Rate / Saturated Flow Rate for critical movements
Intersection Cycle Length (C) in seconds													130	Assumed Cycle Length (User input in Synchro software)
Total Lost Time [All movements] in seconds		5			5	5	4	6		4	6			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Total Lost Time [Critical Movements] (L) in seconds	0	0	0	0	5	0	0	0	0	4	6	0	15	Lost Time for Critical Movements Only
												Critical Intersection v/c Ratio	0.46	HCM 6 equation: Xc = Sum of critical flow ratios * C/(C-L)
												HCM 2000 Volume to Capacity ratio (for comparison purposes only)	0.45	From Synchro HCM 2000 Signalized Intersection Capacity Analysis

Project: Salem Gas and Convenience Store
Analysis Scenario: 2024 AM Pre-Development
Intersection: Cordon Road SE / Macleay Road SE

Intersection v/c Ratio Calculation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total	NOTES
v/s Ratio Prot							0.00	c0.25		0.00	c0.31			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
v/s Ratio Perm		0.06			c0.08	0.00	0.04			0.06				From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Is the movement critical? If 'yes' then "Y", if 'no' then blank					Y					Y	Y			From Synchro HCM 2000 - critical movements are marked with a "c"
Adj Flow Rate, veh/h	31	26	34	56	47	0	34	409	22	59	538	13		From Synchro HCM 2010 Signalized Intersection Summary
Sat Flow, veh/h	407	573	584	724	710	1500	1681	1660	89	1681	1716	41		From Synchro HCM 2010 Signalized Intersection Summary
Critical Movement Flow Ratio	0.0000	0.0000	0.0000	0.0000	0.0662	0.0000	0.0000	0.0000	0.0000	0.0351	0.3135	0.0000	0.4148	Adjusted Flow Rate / Saturated Flow Rate for critical movements
Intersection Cycle Length (C) in seconds													130	Assumed Cycle Length (User input in Synchro software)
Total Lost Time [All movements] in seconds		5			5	5	4	6		4	6			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Total Lost Time [Critical Movements] (L) in seconds	0	0	0	0	5	0	0	0	0	4	6	0	15	Lost Time for Critical Movements Only
												Critical Intersection v/c Ratio	0.47	HCM 6 equation: Xc = Sum of critical flow ratios * C/(C-L)
												HCM 2000 Volume to Capacity ratio (for comparison purposes only)	0.46	From Synchro HCM 2000 Signalized Intersection Capacity Analysis

Project: Salem Gas and Convenience Store
Analysis Scenario: 2024 AM Post-Development
Intersection: Cordon Road SE / Macleay Road SE

Intersection v/c Ratio Calculation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total	NOTES
v/s Ratio Prot							0.00	c0.23		0.00	c0.33			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
v/s Ratio Perm		c0.11			0.10	0.01	0.07			0.06				From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Is the movement critical? If 'yes' then "Y", if 'no' then blank		Y								Y	Y			From Synchro HCM 2000 - critical movements are marked with a "c"
Adj Flow Rate, veh/h	54	30	84	56	51	0	63	387	22	59	495	75		From Synchro HCM 2010 Signalized Intersection Summary
Sat Flow, veh/h	404	347	751	523	668	1500	1681	1654	94	1681	1498	227		From Synchro HCM 2010 Signalized Intersection Summary
Critical Movement Flow Ratio	0.0000	0.0865	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0351	0.3304	0.0000	0.4520	Adjusted Flow Rate / Saturated Flow Rate for critical movements
Intersection Cycle Length (C) in seconds													130	Assumed Cycle Length (User input in Synchro software)
Total Lost Time [All movements] in seconds		5			5	5	4	6		4	6			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Total Lost Time [Critical Movements] (L) in seconds	0	5	0	0	0	0	0	0	0	4	6	0	15	Lost Time for Critical Movements Only
												Critical Intersection v/c Ratio	0.51	HCM 6 equation: Xc = Sum of critical flow ratios * C/(C-L)
												HCM 2000 Volume to Capacity ratio (for comparison purposes only)	0.51	From Synchro HCM 2000 Signalized Intersection Capacity Analysis

AM Scenarios - Cordon Road SE / Macleay Road SE

AM Scenarios - Cordon Road SE / Gaffin Road SE

Project: Salem Gas and Convenience Store
Analysis Scenario: 2024 Existing
Intersection: Cordon Road SE / Gaffin Road SE

Intersection v/c Ratio Calculation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total	NOTES
v/s Ratio Prot	c0.00	c0.06		0.00	0.04		0.01	0.21		c0.03	c0.27			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
v/s Ratio Perm	0.04			0.04			0.07			0.11		0.01		From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Is the movement critical? If 'yes' then "Y", if 'no' then blank	Y	Y								Y	Y			From Synchro HCM 2000 - critical movements are marked with a "c"
Adj Flow Rate, veh/h	59	38	97	55	30	85	45	336	39	92	475	59		From Synchro HCM 2010 Signalized Intersection Summary
Sat Flow, veh/h	1688	442	1127	1688	408	1156	1688	1558	181	1688	1772	1502		From Synchro HCM 2010 Signalized Intersection Summary
Critical Movement Flow Ratio	0.0350	0.0860	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0545	0.2681	0.0000	0.4435	Adjusted Flow Rate / Saturated Flow Rate for critical movements
Intersection Cycle Length (C) in seconds													130	Assumed Cycle Length (User input in Synchro software)
Total Lost Time [All movements] in seconds	4	6		4	6		4	4		4	4	4		From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Total Lost Time [Critical Movements] (L) in seconds	4	6	0	0	0	0	0	0	0	4	4	0	18	Lost Time for Critical Movements Only
												Critical Intersection v/c Ratio	0.51	HCM 6 equation: Xc = Sum of critical flow ratios * C/(C-L)
												HCM 2000 Volume to Capacity ratio (for comparison purposes only)	0.40	From Synchro HCM 2000 Signalized Intersection Capacity Analysis

Project: Salem Gas and Convenience Store
Analysis Scenario: 2024 AM Pre-Development
Intersection: Cordon Road SE / Gaffin Road SE

Intersection v/c Ratio Calculation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total	NOTES
v/s Ratio Prot	c0.00	c0.06		0.00	0.04		0.01	0.22		c0.03	c0.27			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
v/s Ratio Perm	0.04			0.04			0.08			0.12		0.01		From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Is the movement critical? If 'yes' then "Y", if 'no' then blank	Y	Y								Y	Y			From Synchro HCM 2000 - critical movements are marked with a "c"
Adj Flow Rate, veh/h	60	39	99	57	32	87	46	342	40	95	485	60		From Synchro HCM 2010 Signalized Intersection Summary
Sat Flow, veh/h	1688	443	1126	1688	421	1145	1688	1557	182	1688	1772	1502		From Synchro HCM 2010 Signalized Intersection Summary
Critical Movement Flow Ratio	0.0355	0.0880	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0563	0.2737	0.0000	0.4536	Adjusted Flow Rate / Saturated Flow Rate for critical movements
Intersection Cycle Length (C) in seconds													130	Assumed Cycle Length (User input in Synchro software)
Total Lost Time [All movements] in seconds	4	6		4	6		4	4		4	4	4		From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Total Lost Time [Critical Movements] (L) in seconds	4	6	0	0	0	0	0	0	0	4	4	0	18	Lost Time for Critical Movements Only
												Critical Intersection v/c Ratio	0.53	HCM 6 equation: Xc = Sum of critical flow ratios * C/(C-L)
												HCM 2000 Volume to Capacity ratio (for comparison purposes only)	0.41	From Synchro HCM 2000 Signalized Intersection Capacity Analysis

Project: Salem Gas and Convenience Store
Analysis Scenario: 2024 AM Post-Development
Intersection: Cordon Road SE / Gaffin Road SE

Intersection v/c Ratio Calculation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total	NOTES
v/s Ratio Prot	c0.00	c0.07		0.00	0.05		0.01	0.22		c0.03	c0.28			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
v/s Ratio Perm	0.04			0.05			0.09			0.12		0.01		From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Is the movement critical? If 'yes' then "Y", if 'no' then blank	Y	Y								Y	Y			From Synchro HCM 2000 - critical movements are marked with a "c"
Adj Flow Rate, veh/h	60	42	127	57	35	87	55	349	40	95	490	60		From Synchro HCM 2010 Signalized Intersection Summary
Sat Flow, veh/h	1688	388	1173	1688	451	1120	1688	1561	179	1688	1772	1502		From Synchro HCM 2010 Signalized Intersection Summary
Critical Movement Flow Ratio	0.0355	0.1082	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0563	0.2765	0.0000	0.4766	Adjusted Flow Rate / Saturated Flow Rate for critical movements
Intersection Cycle Length (C) in seconds													130	Assumed Cycle Length (User input in Synchro software)
Total Lost Time [All movements] in seconds	4	6		4	6		4	4		4	4	4		From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Total Lost Time [Critical Movements] (L) in seconds	4	6	0	0	0	0	0	0	0	4	4	0	18	Lost Time for Critical Movements Only
												Critical Intersection v/c Ratio	0.55	HCM 6 equation: Xc = Sum of critical flow ratios * C/(C-L)
												HCM 2000 Volume to Capacity ratio (for comparison purposes only)	0.43	From Synchro HCM 2000 Signalized Intersection Capacity Analysis

Project: Salem Gas and Convenience Store
Analysis Scenario: 2024 PM Existing
Intersection: Cordon Road SE / Macleay Road SE

Intersection v/c Ratio Calculation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total	NOTES
v/s Ratio Prot							0.00	c0.41		c0.01	0.30			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
v/s Ratio Perm		c0.09			0.06	0.00	0.04			0.11				From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Is the movement critical? If 'yes' then "Y", if 'no' then blank		Y						Y		Y				From Synchro HCM 2000 - critical movements are marked with a "c"
Adj Flow Rate, veh/h	46	57	37	31	45	0	32	646	76	68	506	24		From Synchro HCM 2010 Signalized Intersection Summary
Sat Flow, veh/h	445	744	427	442	1015	1500	1681	1550	182	1681	1671	79		From Synchro HCM 2010 Signalized Intersection Summary
Critical Movement Flow Ratio	0.0000	0.0766	0.0000	0.0000	0.0000	0.0000	0.0000	0.4168	0.0000	0.0405	0.0000	0.0000	0.5338	Adjusted Flow Rate / Saturated Flow Rate for critical movements
Intersection Cycle Length (C) in seconds													130	Assumed Cycle Length (User input in Synchro software)
Total Lost Time [All movements] in seconds		5			5	5	4	6		4	6			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Total Lost Time [Critical Movements] (L) in seconds	0	5	0	0	0	0	0	6	0	4	0	0	15	Lost Time for Critical Movements Only
												Critical Intersection v/c Ratio	0.60	HCM 6 equation: Xc = Sum of critical flow ratios * C/(C-L)
												HCM 2000 Volume to Capacity ratio (for comparison purposes only)	0.57	From Synchro HCM 2000 Signalized Intersection Capacity Analysis

Project: Salem Gas and Convenience Store
Analysis Scenario: 2024 PM Pre-Development
Intersection: Cordon Road SE / Macleay Road SE

Intersection v/c Ratio Calculation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total	NOTES
v/s Ratio Prot							0.00	c0.42		c0.01	0.31			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
v/s Ratio Perm		c0.09			0.06	0.00	0.04			0.11				From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Is the movement critical? If 'yes' then "Y", if 'no' then blank		Y						Y		Y				From Synchro HCM 2000 - critical movements are marked with a "c"
Adj Flow Rate, veh/h	47	58	38	32	46	0	33	660	77	69	516	24		From Synchro HCM 2010 Signalized Intersection Summary
Sat Flow, veh/h	444	738	428	442	999	1500	1681	1552	181	1681	1673	78		From Synchro HCM 2010 Signalized Intersection Summary
Critical Movement Flow Ratio	0.0000	0.0786	0.0000	0.0000	0.0000	0.0000	0.0000	0.4253	0.0000	0.0410	0.0000	0.0000	0.5449	Adjusted Flow Rate / Saturated Flow Rate for critical movements
Intersection Cycle Length (C) in seconds													130	Assumed Cycle Length (User input in Synchro software)
Total Lost Time [All movements] in seconds		5			5	5	4	6		4	6			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Total Lost Time [Critical Movements] (L) in seconds	0	5	0	0	0	0	0	6	0	4	0	0	15	Lost Time for Critical Movements Only
												Critical Intersection v/c Ratio	0.62	HCM 6 equation: Xc = Sum of critical flow ratios * C/(C-L)
												HCM 2000 Volume to Capacity ratio (for comparison purposes only)	0.59	From Synchro HCM 2000 Signalized Intersection Capacity Analysis

Project: Salem Gas and Convenience Store
Analysis Scenario: 2024 PM Post-Development
Intersection: Cordon Road SE / Macleay Road SE

Intersection v/c Ratio Calculation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total	NOTES
v/s Ratio Prot							c0.01	c0.41		0.01	0.31			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
v/s Ratio Perm		c0.14			0.06	0.01	0.09			0.11				From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Is the movement critical? If 'yes' then "Y", if 'no' then blank		Y					Y	Y						From Synchro HCM 2000 - critical movements are marked with a "c"
Adj Flow Rate, veh/h	90	61	56	32	49	0	79	629	77	69	501	45		From Synchro HCM 2010 Signalized Intersection Summary
Sat Flow, veh/h	617	496	413	431	931	1500	1681	1543	189	1681	1596	143		From Synchro HCM 2010 Signalized Intersection Summary
Critical Movement Flow Ratio	0.0000	0.1230	0.0000	0.0000	0.0000	0.0000	0.0470	0.4076	0.0000	0.0000	0.0000	0.0000	0.5776	Adjusted Flow Rate / Saturated Flow Rate for critical movements
Intersection Cycle Length (C) in seconds													130	Assumed Cycle Length (User input in Synchro software)
Total Lost Time [All movements] in seconds		5			5	5	4	6		4	6			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Total Lost Time [Critical Movements] (L) in seconds	0	5	0	0	0	0	4	6	0	0	0	0	15	Lost Time for Critical Movements Only
												Critical Intersection v/c Ratio	0.65	HCM 6 equation: Xc = Sum of critical flow ratios * C/(C-L)
												HCM 2000 Volume to Capacity ratio (for comparison purposes only)	0.63	From Synchro HCM 2000 Signalized Intersection Capacity Analysis

PM Scenarios - Cordon Road SE / Macleay Road SE

Project: Salem Gas and Convenience Store
Analysis Scenario: 2024 Existing
Intersection: Cordon Road SE / Gaffin Road SE

Intersection v/c Ratio Calculation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total	NOTES
v/s Ratio Prot	0.00	0.07		c0.01	c0.09		0.02	c0.35		c0.03	0.23			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
v/s Ratio Perm	0.05			0.05			0.10			0.19		0.02		From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Is the movement critical? If 'yes' then "Y", if 'no' then blank				Y	Y			Y		Y				From Synchro HCM 2000 - critical movements are marked with a "c"
Adj Flow Rate, veh/h	52	66	67	67	54	153	89	552	58	106	399	72		From Synchro HCM 2010 Signalized Intersection Summary
Sat Flow, veh/h	1688	806	818	1688	408	1156	1688	1576	166	1688	1772	1502		From Synchro HCM 2010 Signalized Intersection Summary
Critical Movement Flow Ratio	0.0000	0.0000	0.0000	0.0397	0.1324	0.0000	0.0000	0.3503	0.0000	0.0628	0.0000	0.0000	0.5851	Adjusted Flow Rate / Saturated Flow Rate for critical movements
Intersection Cycle Length (C) in seconds													130	Assumed Cycle Length (User input in Synchro software)
Total Lost Time [All movements] in seconds	4	6		4	6		4	4		4	4	4		From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Total Lost Time [Critical Movements] (L) in seconds	0	0	0	4	6	0	0	4	0	4	0	0	18	Lost Time for Critical Movements Only
												Critical Intersection v/c Ratio	0.68	HCM 6 equation: Xc = Sum of critical flow ratios * C/(C-L)
												HCM 2000 Volume to Capacity ratio (for comparison purposes only)	0.56	From Synchro HCM 2000 Signalized Intersection Capacity Analysis

Project: Salem Gas and Convenience Store
Analysis Scenario: 2024 PM Pre-Development
Intersection: Cordon Road SE / Gaffin Road SE

Intersection v/c Ratio Calculation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total	NOTES
v/s Ratio Prot	0.00	0.07		c0.01	c0.09		0.02	c0.36		c0.03	0.23			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
v/s Ratio Perm	0.05			0.05			0.10			0.20		0.02		From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Is the movement critical? If 'yes' then "Y", if 'no' then blank				Y	Y			Y		Y				From Synchro HCM 2000 - critical movements are marked with a "c"
Adj Flow Rate, veh/h	53	67	68	68	55	156	91	563	59	108	407	73		From Synchro HCM 2010 Signalized Intersection Summary
Sat Flow, veh/h	1681	804	816	1681	407	1154	1681	1571	165	1681	1765	1500		From Synchro HCM 2010 Signalized Intersection Summary
Critical Movement Flow Ratio	0.0000	0.0000	0.0000	0.0405	0.1351	0.0000	0.0000	0.3584	0.0000	0.0642	0.0000	0.0000	0.5982	Adjusted Flow Rate / Saturated Flow Rate for critical movements
Intersection Cycle Length (C) in seconds													130	Assumed Cycle Length (User input in Synchro software)
Total Lost Time [All movements] in seconds	4	6		4	6		4	4		4	4	4		From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Total Lost Time [Critical Movements] (L) in seconds	0	0	0	4	6	0	0	4	0	4	0	0	18	Lost Time for Critical Movements Only
												Critical Intersection v/c Ratio	0.69	HCM 6 equation: Xc = Sum of critical flow ratios * C/(C-L)
												HCM 2000 Volume to Capacity ratio (for comparison purposes only)	0.57	From Synchro HCM 2000 Signalized Intersection Capacity Analysis

Project: Salem Gas and Convenience Store
Analysis Scenario: 2024 PM Post-Development
Intersection: Cordon Road SE / Gaffin Road SE

Intersection v/c Ratio Calculation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total	NOTES
v/s Ratio Prot	0.01	0.08		c0.01	c0.09		0.02	c0.36		c0.03	0.23			From Synchro HCM 2000 Signalized Intersection Capacity Analysis
v/s Ratio Perm	0.04			0.05			0.11			0.20		0.02		From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Is the movement critical? If 'yes' then "Y", if 'no' then blank				Y	Y			Y		Y				From Synchro HCM 2000 - critical movements are marked with a "c"
Adj Flow Rate, veh/h	53	70	84	68	58	156	100	578	59	108	409	73		From Synchro HCM 2010 Signalized Intersection Summary
Sat Flow, veh/h	1681	732	878	1681	424	1140	1681	1576	161	1681	1765	1500		From Synchro HCM 2010 Signalized Intersection Summary
Critical Movement Flow Ratio	0.0000	0.0000	0.0000	0.0405	0.1368	0.0000	0.0000	0.3668	0.0000	0.0642	0.0000	0.0000	0.6082	Adjusted Flow Rate / Saturated Flow Rate for critical movements
Intersection Cycle Length (C) in seconds													130	Assumed Cycle Length (User input in Synchro software)
Total Lost Time [All movements] in seconds	4	6		4	6		4	4		4	4	4		From Synchro HCM 2000 Signalized Intersection Capacity Analysis
Total Lost Time [Critical Movements] (L) in seconds	0	0	0	4	6	0	0	4	0	4	0	0	18	Lost Time for Critical Movements Only
												Critical Intersection v/c Ratio	0.71	HCM 6 equation: Xc = Sum of critical flow ratios * C/(C-L)
												HCM 2000 Volume to Capacity ratio (for comparison purposes only)	0.58	From Synchro HCM 2000 Signalized Intersection Capacity Analysis

PM Scenarios - Cordon Road SE / Gaffin Road SE

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	79	66	4	83	70	4
Future Vol, veh/h	79	66	4	83	70	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	80	5	101	85	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	176	0	247	136
Stage 1	-	-	-	-	136	-
Stage 2	-	-	-	-	111	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1400	-	741	913
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	914	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1400	-	738	913
Mov Cap-2 Maneuver	-	-	-	-	738	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	910	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	746	-	-	1400	-
HCM Lane V/C Ratio	0.121	-	-	0.003	-
HCM Control Delay (s)	10.5	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

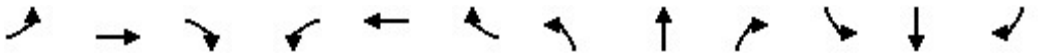
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	84	0	0	87	0	0
Future Vol, veh/h	84	0	0	87	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	0	0	100	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	97	0	197	97
Stage 1	-	-	-	-	97	-
Stage 2	-	-	-	-	100	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1496	-	792	959
Stage 1	-	-	-	-	927	-
Stage 2	-	-	-	-	924	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1496	-	792	959
Mov Cap-2 Maneuver	-	-	-	-	792	-
Stage 1	-	-	-	-	927	-
Stage 2	-	-	-	-	924	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1496	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	24	30	50	42	64	30	365	20	53	480	12
Future Volume (vph)	27	24	30	50	42	64	30	365	20	53	480	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0	5.0	4.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1649			1718	1500	1676	1751		1676	1758	
Flt Permitted		0.78			0.72	1.00	0.46	1.00		0.47	1.00	
Satd. Flow (perm)		1309			1277	1500	817	1751		826	1758	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	30	26	33	55	46	70	33	401	22	58	527	13
RTOR Reduction (vph)	0	19	0	0	0	62	0	1	0	0	0	0
Lane Group Flow (vph)	0	70	0	0	101	8	33	422	0	58	540	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		14.0			14.0	14.0	97.8	95.8		97.6	97.6	
Effective Green, g (s)		14.0			14.0	14.0	97.8	95.8		97.6	97.6	
Actuated g/C Ratio		0.11			0.11	0.11	0.75	0.74		0.75	0.75	
Clearance Time (s)		5.0			5.0	5.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		140			137	161	637	1290		654	1319	
v/s Ratio Prot							0.00	c0.24		0.00	c0.31	
v/s Ratio Perm		0.05			c0.08	0.01	0.04			0.06		
v/c Ratio		0.50			0.74	0.05	0.05	0.33		0.09	0.41	
Uniform Delay, d1		54.7			56.2	52.0	4.2	5.9		4.5	5.8	
Progression Factor		1.00			1.00	1.00	0.25	0.21		1.00	1.00	
Incremental Delay, d2		2.1			17.6	0.1	0.0	0.6		0.0	0.9	
Delay (s)		56.8			73.8	52.1	1.1	1.9		4.5	6.8	
Level of Service		E			E	D	A	A		A	A	
Approach Delay (s)		56.8			64.9			1.8			6.6	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

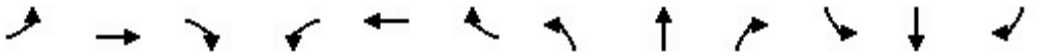
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	24	30	50	42	64	30	365	20	53	480	12
Future Volume (veh/h)	27	24	30	50	42	64	30	365	20	53	480	12
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1800	1765	1800	1800	1765	1765	1765	1765	1800	1765	1765	1800
Adj Flow Rate, veh/h	30	26	33	55	46	0	33	401	22	58	527	13
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	51	51	106	62	130	831	1264	69	295	565	14
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.00	0.45	0.76	0.76	0.04	0.33	0.33
Sat Flow, veh/h	403	586	583	729	714	1500	1681	1658	91	1681	1715	42
Grp Volume(v), veh/h	89	0	0	101	0	0	33	0	423	58	0	540
Grp Sat Flow(s),veh/h/ln	1572	0	0	1443	0	1500	1681	0	1749	1681	0	1757
Q Serve(g_s), s	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	9.8	3.2	0.0	38.7
Cycle Q Clear(g_c), s	7.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	9.8	3.2	0.0	38.7
Prop In Lane	0.34		0.37	0.54		1.00	1.00		0.05	1.00		0.02
Lane Grp Cap(c), veh/h	173	0	0	168	0	130	831	0	1333	295	0	579
V/C Ratio(X)	0.51	0.00	0.00	0.60	0.00	0.00	0.04	0.00	0.32	0.20	0.00	0.93
Avail Cap(c_a), veh/h	356	0	0	350	0	312	831	0	1333	378	0	1054
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.73	0.00	0.73	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.4	0.0	0.0	58.3	0.0	0.0	19.0	0.0	4.8	32.2	0.0	42.2
Incr Delay (d2), s/veh	1.7	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.5	0.2	0.0	24.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	3.7	0.0	0.0	0.7	0.0	4.9	1.5	0.0	22.6
LnGrp Delay(d),s/veh	59.1	0.0	0.0	60.9	0.0	0.0	19.0	0.0	5.3	32.5	0.0	66.2
LnGrp LOS	E			E			B		A	C		E
Approach Vol, veh/h		89			101			456			598	
Approach Delay, s/veh		59.1			60.9			6.3			62.9	
Approach LOS		E			E			A			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	64.9	48.8		16.3	8.6	105.1		16.3
Change Period (Y+Rc), s	6.0	* 6		5.0	4.0	6.0		5.0
Max Green Setting (Gmax), s	10.0	* 78		27.0	11.0	77.0		27.0
Max Q Clear Time (g_c+I1), s	2.0	40.7		11.0	5.2	11.8		9.0
Green Ext Time (p_c), s	0.0	2.2		0.3	0.0	1.6		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	41.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	24	30	50	42	64	30	365	20	53	480	12
Future Volume (veh/h)	27	24	30	50	42	64	30	365	20	53	480	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	30	26	33	55	46	0	33	401	22	58	527	13
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	51	51	106	62		837	1270	70	295	565	14
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.00	0.45	0.76	0.76	0.04	0.33	0.33
Sat Flow, veh/h	405	588	585	733	717	1502	1688	1664	91	1688	1722	42
Grp Volume(v), veh/h	89	0	0	101	0	0	33	0	423	58	0	540
Grp Sat Flow(s),veh/h/ln	1578	0	0	1450	0	1502	1688	0	1755	1688	0	1764
Q Serve(g_s), s	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	9.8	3.2	0.0	38.5
Cycle Q Clear(g_c), s	7.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	9.8	3.2	0.0	38.5
Prop In Lane	0.34		0.37	0.54		1.00	1.00		0.05	1.00		0.02
Lane Grp Cap(c), veh/h	173	0	0	168	0		837	0	1339	295	0	579
V/C Ratio(X)	0.51	0.00	0.00	0.60	0.00		0.04	0.00	0.32	0.20	0.00	0.93
Avail Cap(c_a), veh/h	357	0	0	351	0		837	0	1339	379	0	1059
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.73	0.00	0.73	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.4	0.0	0.0	58.3	0.0	0.0	18.9	0.0	4.8	32.3	0.0	42.3
Incr Delay (d2), s/veh	1.7	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.5	0.2	0.0	23.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.0	3.4	0.0	0.0	0.5	0.0	3.0	1.3	0.0	20.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.1	0.0	0.0	60.9	0.0	0.0	18.9	0.0	5.3	32.6	0.0	66.2
LnGrp LOS	E	A	A	E	A		B	A	A	C	A	E
Approach Vol, veh/h		89			101			456			598	
Approach Delay, s/veh		59.1			60.9			6.2			62.9	
Approach LOS		E			E			A			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	65.1	48.7		16.2	8.6	105.2		16.2				
Change Period (Y+Rc), s	6.0	* 6		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s	10.0	* 78		27.0	11.0	77.0		27.0				
Max Q Clear Time (g_c+I1), s	2.0	40.5		11.0	5.2	11.8		9.0				
Green Ext Time (p_c), s	0.0	2.2		0.3	0.0	1.6		0.2				

Intersection Summary		
HCM 6th Ctrl Delay	41.7	
HCM 6th LOS	D	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

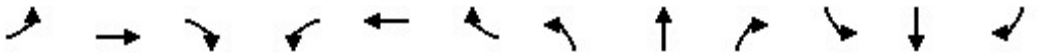
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	74	0	0	70
Future Vol, veh/h	0	0	74	0	0	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	103	0	0	97

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	200	103	0	0	103	0
Stage 1	103	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	789	952	-	-	1489	-
Stage 1	921	-	-	-	-	-
Stage 2	927	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	789	952	-	-	1489	-
Mov Cap-2 Maneuver	789	-	-	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	927	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1489	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	35	89	51	28	78	41	309	36	85	437	54
Future Volume (vph)	54	35	89	51	28	78	41	309	36	85	437	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.89		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1676	1575		1676	1569		1676	1737		1676	1765	1500
Flt Permitted	0.68	1.00		0.67	1.00		0.20	1.00		0.25	1.00	1.00
Satd. Flow (perm)	1205	1575		1184	1569		358	1737		434	1765	1500
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)	59	38	97	55	30	85	45	336	39	92	475	59
RTOR Reduction (vph)	0	48	0	0	47	0	0	4	0	0	0	39
Lane Group Flow (vph)	59	87	0	55	68	0	45	371	0	92	475	20
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	63.2	58.4		61.8	57.7		45.7	39.6		53.3	43.4	43.4
Effective Green, g (s)	63.2	58.4		61.8	57.7		45.7	39.6		53.3	43.4	43.4
Actuated g/C Ratio	0.49	0.45		0.48	0.44		0.35	0.30		0.41	0.33	0.33
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	603	707		578	696		187	529		272	589	500
v/s Ratio Prot	c0.00	c0.05		0.00	0.04		0.01	0.21		c0.03	c0.27	
v/s Ratio Perm	0.04			0.04			0.07			0.11		0.01
v/c Ratio	0.10	0.12		0.10	0.10		0.24	0.70		0.34	0.81	0.04
Uniform Delay, d1	18.0	20.9		18.8	21.0		30.3	40.0		26.3	39.5	29.2
Progression Factor	1.01	1.00		1.00	1.00		1.00	1.00		0.87	0.79	0.19
Incremental Delay, d2	0.1	0.4		0.1	0.3		0.5	3.9		0.5	7.3	0.0
Delay (s)	18.3	21.3		18.8	21.3		30.8	43.8		23.3	38.4	5.7
Level of Service	B	C		B	C		C	D		C	D	A
Approach Delay (s)		20.4			20.5			42.4			33.1	
Approach LOS		C			C			D			C	

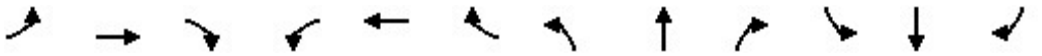
Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	35	89	51	28	78	41	309	36	85	437	54
Future Volume (veh/h)	54	35	89	51	28	78	41	309	36	85	437	54
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1765	1765	1800	1765	1765	1800	1765	1765	1800	1765	1765	1765
Adj Flow Rate, veh/h	59	38	97	55	30	85	45	336	39	92	475	59
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	828	45	116	791	37	104	129	423	49	215	524	445
Arrive On Green	0.45	0.10	0.10	0.43	0.09	0.09	0.03	0.27	0.27	0.02	0.10	0.10
Sat Flow, veh/h	1681	441	1125	1681	407	1154	1681	1553	180	1681	1765	1500
Grp Volume(v), veh/h	59	0	135	55	0	115	45	0	375	92	475	59
Grp Sat Flow(s),veh/h/ln	1681	0	1566	1681	0	1561	1681	0	1733	1681	1765	1500
Q Serve(g_s), s	0.0	0.0	11.0	0.0	0.0	9.4	2.5	0.0	26.1	5.0	34.6	1.3
Cycle Q Clear(g_c), s	0.0	0.0	11.0	0.0	0.0	9.4	2.5	0.0	26.1	5.0	34.6	1.3
Prop In Lane	1.00		0.72	1.00		0.74	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	828	0	161	791	0	141	129	0	472	215	524	445
V/C Ratio(X)	0.07	0.00	0.84	0.07	0.00	0.82	0.35	0.00	0.79	0.43	0.91	0.13
Avail Cap(c_a), veh/h	828	0	301	791	0	300	224	0	866	269	882	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	19.5	0.0	57.2	20.8	0.0	58.1	36.7	0.0	43.9	34.9	56.9	3.3
Incr Delay (d2), s/veh	0.0	0.0	37.9	0.0	0.0	38.6	1.2	0.0	2.3	0.9	6.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	6.5	1.1	0.0	5.6	1.2	0.0	12.8	2.4	17.9	1.9
LnGrp Delay(d),s/veh	19.5	0.0	95.2	20.8	0.0	96.7	37.9	0.0	46.2	35.8	62.9	3.4
LnGrp LOS	B		F	C		F	D		D	D	E	A
Approach Vol, veh/h		194			170			420			626	
Approach Delay, s/veh		72.1			72.2			45.3			53.3	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	62.0	17.7	10.8	39.4	60.4	19.4	7.6	42.6
Change Period (Y+Rc), s	4.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	25.0	11.0	65.0	11.0	25.0	11.0	65.0
Max Q Clear Time (g_c+I1), s	2.0	11.4	7.0	28.1	2.0	13.0	4.5	36.6
Green Ext Time (p_c), s	0.1	0.3	0.1	1.4	0.1	0.4	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	55.8
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	35	89	51	28	78	41	309	36	85	437	54
Future Volume (veh/h)	54	35	89	51	28	78	41	309	36	85	437	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	59	38	97	55	30	85	45	336	39	92	475	59
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	834	45	116	797	37	104	129	423	49	215	524	444
Arrive On Green	0.45	0.10	0.10	0.44	0.09	0.09	0.03	0.27	0.27	0.02	0.10	0.10
Sat Flow, veh/h	1688	442	1127	1688	408	1156	1688	1558	181	1688	1772	1502
Grp Volume(v), veh/h	59	0	135	55	0	115	45	0	375	92	475	59
Grp Sat Flow(s),veh/h/ln	1688	0	1569	1688	0	1564	1688	0	1739	1688	1772	1502
Q Serve(g_s), s	0.0	0.0	11.0	0.0	0.0	9.4	2.5	0.0	26.0	5.0	34.5	1.3
Cycle Q Clear(g_c), s	0.0	0.0	11.0	0.0	0.0	9.4	2.5	0.0	26.0	5.0	34.5	1.3
Prop In Lane	1.00		0.72	1.00		0.74	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	834	0	161	797	0	141	129	0	472	215	524	444
V/C Ratio(X)	0.07	0.00	0.84	0.07	0.00	0.82	0.35	0.00	0.79	0.43	0.91	0.13
Avail Cap(c_a), veh/h	834	0	302	797	0	301	225	0	870	270	886	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	19.4	0.0	57.3	20.7	0.0	58.1	36.8	0.0	44.0	35.0	56.9	3.3
Incr Delay (d2), s/veh	0.0	0.0	37.8	0.0	0.0	38.6	1.2	0.0	2.3	0.9	5.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	6.1	1.0	0.0	5.3	1.0	0.0	11.2	2.1	17.2	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	0.0	95.1	20.7	0.0	96.7	38.0	0.0	46.3	35.9	62.8	3.4
LnGrp LOS	B	A	F	C	A	F	D	A	D	D	E	A
Approach Vol, veh/h		194			170			420			626	
Approach Delay, s/veh		72.1			72.1			45.4			53.3	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	62.2	17.7	10.8	39.3	60.6	19.4	7.6	42.4
Change Period (Y+Rc), s	4.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	25.0	11.0	65.0	11.0	25.0	11.0	65.0
Max Q Clear Time (g_c+I1), s	2.0	11.4	7.0	28.0	2.0	13.0	4.5	36.5
Green Ext Time (p_c), s	0.1	0.3	0.1	1.4	0.1	0.4	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	55.8
HCM 6th LOS	E

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	81	67	4	85	71	4
Future Vol, veh/h	81	67	4	85	71	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	82	5	104	87	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	181	0	254	140
Stage 1	-	-	-	-	140	-
Stage 2	-	-	-	-	114	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1394	-	735	908
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1394	-	732	908
Mov Cap-2 Maneuver	-	-	-	-	732	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	907	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	740	-	-	1394	-
HCM Lane V/C Ratio	0.124	-	-	0.003	-
HCM Control Delay (s)	10.6	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

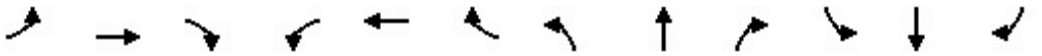
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	86	0	0	89	0	0
Future Vol, veh/h	86	0	0	89	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	0	0	102	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	99	0	201	99
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	102	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1494	-	788	957
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	922	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1494	-	788	957
Mov Cap-2 Maneuver	-	-	-	-	788	-
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	922	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1494	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	24	31	51	43	65	31	372	20	54	490	12
Future Volume (vph)	28	24	31	51	43	65	31	372	20	54	490	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0	5.0	4.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1648			1718	1500	1676	1751		1676	1758	
Flt Permitted		0.77			0.72	1.00	0.46	1.00		0.46	1.00	
Satd. Flow (perm)		1297			1273	1500	808	1751		816	1758	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	31	26	34	56	47	71	34	409	22	59	538	13
RTOR Reduction (vph)	0	19	0	0	0	63	0	1	0	0	1	0
Lane Group Flow (vph)	0	72	0	0	103	8	34	430	0	59	550	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		14.3			14.3	14.3	97.5	95.5		97.4	97.4	
Effective Green, g (s)		14.3			14.3	14.3	97.5	95.5		97.4	97.4	
Actuated g/C Ratio		0.11			0.11	0.11	0.75	0.73		0.75	0.75	
Clearance Time (s)		5.0			5.0	5.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		142			140	165	628	1286		645	1317	
v/s Ratio Prot							0.00	c0.25		0.00	c0.31	
v/s Ratio Perm		0.06			c0.08	0.01	0.04			0.06		
v/c Ratio		0.51			0.74	0.05	0.05	0.33		0.09	0.42	
Uniform Delay, d1		54.5			56.0	51.8	4.2	6.1		4.6	6.0	
Progression Factor		1.00			1.00	1.00	0.24	0.21		1.00	1.00	
Incremental Delay, d2		2.1			17.1	0.1	0.0	0.7		0.0	1.0	
Delay (s)		56.6			73.2	51.8	1.1	1.9		4.6	6.9	
Level of Service		E			E	D	A	A		A	A	
Approach Delay (s)		56.6			64.5			1.9			6.7	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

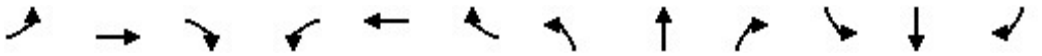
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	24	31	51	43	65	31	372	20	54	490	12
Future Volume (veh/h)	28	24	31	51	43	65	31	372	20	54	490	12
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1800	1765	1800	1800	1765	1765	1765	1765	1800	1765	1765	1800
Adj Flow Rate, veh/h	31	26	34	56	47	0	34	409	22	59	538	13
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	51	52	107	63	133	817	1262	68	297	576	14
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.00	0.44	0.76	0.76	0.04	0.34	0.34
Sat Flow, veh/h	407	573	584	724	710	1500	1681	1660	89	1681	1716	41
Grp Volume(v), veh/h	91	0	0	103	0	0	34	0	431	59	0	551
Grp Sat Flow(s),veh/h/ln	1564	0	0	1434	0	1500	1681	0	1749	1681	0	1757
Q Serve(g_s), s	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	10.2	3.2	0.0	39.4
Cycle Q Clear(g_c), s	7.2	0.0	0.0	9.3	0.0	0.0	0.0	0.0	10.2	3.2	0.0	39.4
Prop In Lane	0.34		0.37	0.54		1.00	1.00		0.05	1.00		0.02
Lane Grp Cap(c), veh/h	176	0	0	170	0	133	817	0	1330	297	0	590
V/C Ratio(X)	0.52	0.00	0.00	0.61	0.00	0.00	0.04	0.00	0.32	0.20	0.00	0.93
Avail Cap(c_a), veh/h	344	0	0	337	0	300	817	0	1330	380	0	1081
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.73	0.00	0.73	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.2	0.0	0.0	58.2	0.0	0.0	19.6	0.0	5.0	31.7	0.0	41.8
Incr Delay (d2), s/veh	1.7	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.5	0.2	0.0	23.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	3.8	0.0	0.0	0.7	0.0	5.1	1.5	0.0	23.0
LnGrp Delay(d),s/veh	59.0	0.0	0.0	60.8	0.0	0.0	19.6	0.0	5.4	31.9	0.0	65.6
LnGrp LOS	E			E			B		A	C		E
Approach Vol, veh/h		91			103			465			610	
Approach Delay, s/veh		59.0			60.8			6.5			62.3	
Approach LOS		E			E			A			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	63.8	49.7		16.5	8.6	104.8		16.5
Change Period (Y+Rc), s	6.0	* 6		5.0	4.0	6.0		5.0
Max Green Setting (Gmax), s	9.0	* 80		26.0	11.0	78.0		26.0
Max Q Clear Time (g_c+I1), s	2.0	41.4		11.3	5.2	12.2		9.2
Green Ext Time (p_c), s	0.0	2.2		0.2	0.0	1.7		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	41.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	24	31	51	43	65	31	372	20	54	490	12
Future Volume (veh/h)	28	24	31	51	43	65	31	372	20	54	490	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	31	26	34	56	47	0	34	409	22	59	538	13
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	51	52	107	63		823	1267	68	298	577	14
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.00	0.45	0.76	0.76	0.04	0.33	0.33
Sat Flow, veh/h	409	575	587	728	713	1502	1688	1666	90	1688	1723	42
Grp Volume(v), veh/h	91	0	0	103	0	0	34	0	431	59	0	551
Grp Sat Flow(s),veh/h/ln	1570	0	0	1440	0	1502	1688	0	1756	1688	0	1764
Q Serve(g_s), s	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	10.1	3.2	0.0	39.3
Cycle Q Clear(g_c), s	7.2	0.0	0.0	9.2	0.0	0.0	0.0	0.0	10.1	3.2	0.0	39.3
Prop In Lane	0.34		0.37	0.54		1.00	1.00		0.05	1.00		0.02
Lane Grp Cap(c), veh/h	176	0	0	170	0		823	0	1336	298	0	591
V/C Ratio(X)	0.52	0.00	0.00	0.61	0.00		0.04	0.00	0.32	0.20	0.00	0.93
Avail Cap(c_a), veh/h	345	0	0	339	0		823	0	1336	380	0	1086
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.73	0.00	0.73	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.2	0.0	0.0	58.2	0.0	0.0	19.4	0.0	4.9	31.8	0.0	41.8
Incr Delay (d2), s/veh	1.7	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.5	0.2	0.0	23.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	3.4	0.0	0.0	0.6	0.0	3.1	1.3	0.0	20.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	0.0	0.0	60.8	0.0	0.0	19.5	0.0	5.4	32.0	0.0	65.6
LnGrp LOS	E	A	A	E	A		B	A	A	C	A	E
Approach Vol, veh/h		91			103			465			610	
Approach Delay, s/veh		59.0			60.8			6.4			62.3	
Approach LOS		E			E			A			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	64.0	49.5		16.5	8.6	104.9		16.5				
Change Period (Y+Rc), s	6.0	* 6		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s	9.0	* 80		26.0	11.0	78.0		26.0				
Max Q Clear Time (g_c+I1), s	2.0	41.3		11.2	5.2	12.1		9.2				
Green Ext Time (p_c), s	0.0	2.2		0.2	0.0	1.7		0.2				

Intersection Summary		
HCM 6th Ctrl Delay	41.5	
HCM 6th LOS	D	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

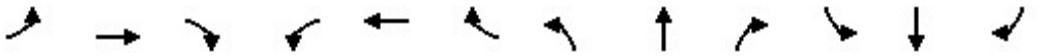
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	75	0	0	71
Future Vol, veh/h	0	0	75	0	0	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	104	0	0	99

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	203	104	0	0	104	0
Stage 1	104	-	-	-	-	-
Stage 2	99	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	786	951	-	-	1488	-
Stage 1	920	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	786	951	-	-	1488	-
Mov Cap-2 Maneuver	786	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	925	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1488	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	36	91	52	29	80	42	315	37	87	446	55
Future Volume (vph)	55	36	91	52	29	80	42	315	37	87	446	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.89		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1676	1575		1676	1571		1676	1737		1676	1765	1500
Flt Permitted	0.68	1.00		0.67	1.00		0.20	1.00		0.24	1.00	1.00
Satd. Flow (perm)	1201	1575		1180	1571		350	1737		431	1765	1500
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)	60	39	99	57	32	87	46	342	40	95	485	60
RTOR Reduction (vph)	0	48	0	0	49	0	0	4	0	0	0	40
Lane Group Flow (vph)	60	90	0	57	70	0	46	378	0	95	485	20
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	62.5	57.6		60.9	56.8		46.5	40.3		54.1	44.1	44.1
Effective Green, g (s)	62.5	57.6		60.9	56.8		46.5	40.3		54.1	44.1	44.1
Actuated g/C Ratio	0.48	0.44		0.47	0.44		0.36	0.31		0.42	0.34	0.34
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	595	697		568	686		188	538		275	598	508
v/s Ratio Prot	c0.00	c0.06		0.00	0.04		0.01	0.22		c0.03	c0.27	
v/s Ratio Perm	0.04			0.04			0.08			0.12		0.01
v/c Ratio	0.10	0.13		0.10	0.10		0.24	0.70		0.35	0.81	0.04
Uniform Delay, d1	18.4	21.4		19.3	21.6		29.9	39.6		25.9	39.2	28.8
Progression Factor	1.01	1.01		1.00	1.00		1.00	1.00		0.86	0.79	0.18
Incremental Delay, d2	0.1	0.4		0.1	0.3		0.5	3.8		0.5	7.5	0.0
Delay (s)	18.7	21.9		19.4	21.9		30.4	43.4		22.9	38.4	5.3
Level of Service	B	C		B	C		C	D		C	D	A
Approach Delay (s)		20.9			21.1			42.0			33.0	
Approach LOS		C			C			D			C	

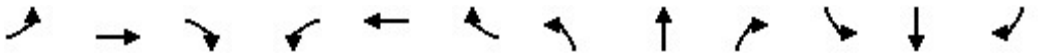
Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	36	91	52	29	80	42	315	37	87	446	55
Future Volume (veh/h)	55	36	91	52	29	80	42	315	37	87	446	55
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1765	1765	1800	1765	1765	1800	1765	1765	1800	1765	1765	1765
Adj Flow Rate, veh/h	60	39	99	57	32	87	46	342	40	95	485	60
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	814	46	118	778	39	106	130	431	50	219	534	454
Arrive On Green	0.44	0.10	0.10	0.43	0.09	0.09	0.03	0.28	0.28	0.02	0.10	0.10
Sat Flow, veh/h	1681	443	1124	1681	420	1143	1681	1551	181	1681	1765	1500
Grp Volume(v), veh/h	60	0	138	57	0	119	46	0	382	95	485	60
Grp Sat Flow(s),veh/h/ln	1681	0	1566	1681	0	1563	1681	0	1733	1681	1765	1500
Q Serve(g_s), s	0.0	0.0	11.2	0.0	0.0	9.7	2.5	0.0	26.6	5.1	35.4	1.3
Cycle Q Clear(g_c), s	0.0	0.0	11.2	0.0	0.0	9.7	2.5	0.0	26.6	5.1	35.4	1.3
Prop In Lane	1.00		0.72	1.00		0.73	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	814	0	164	778	0	145	130	0	481	219	534	454
V/C Ratio(X)	0.07	0.00	0.84	0.07	0.00	0.82	0.35	0.00	0.79	0.43	0.91	0.13
Avail Cap(c_a), veh/h	814	0	301	778	0	301	224	0	866	271	882	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	20.1	0.0	57.1	21.4	0.0	57.9	36.4	0.0	43.5	34.5	56.7	3.5
Incr Delay (d2), s/veh	0.0	0.0	37.8	0.0	0.0	38.5	1.2	0.0	2.3	0.9	6.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	6.6	1.2	0.0	5.7	1.2	0.0	13.0	2.4	18.3	1.9
LnGrp Delay(d),s/veh	20.1	0.0	94.9	21.4	0.0	96.4	37.6	0.0	45.8	35.4	63.1	3.6
LnGrp LOS	C		F	C		F	D		D	D	E	A
Approach Vol, veh/h		198			176			428			640	
Approach Delay, s/veh		72.3			72.1			44.9			53.4	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	60.9	18.1	11.0	40.1	59.3	19.6	7.7	43.4
Change Period (Y+Rc), s	4.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	25.0	11.0	65.0	11.0	25.0	11.0	65.0
Max Q Clear Time (g_c+I1), s	2.0	11.7	7.1	28.6	2.0	13.2	4.5	37.4
Green Ext Time (p_c), s	0.1	0.3	0.1	1.4	0.1	0.4	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	55.8
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	36	91	52	29	80	42	315	37	87	446	55
Future Volume (veh/h)	55	36	91	52	29	80	42	315	37	87	446	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	60	39	99	57	32	87	46	342	40	95	485	60
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	819	46	118	783	39	106	130	431	50	219	534	453
Arrive On Green	0.44	0.10	0.10	0.43	0.09	0.09	0.03	0.28	0.28	0.02	0.10	0.10
Sat Flow, veh/h	1688	443	1126	1688	421	1145	1688	1557	182	1688	1772	1502
Grp Volume(v), veh/h	60	0	138	57	0	119	46	0	382	95	485	60
Grp Sat Flow(s),veh/h/ln	1688	0	1569	1688	0	1566	1688	0	1739	1688	1772	1502
Q Serve(g_s), s	0.0	0.0	11.2	0.0	0.0	9.7	2.5	0.0	26.5	5.1	35.2	1.3
Cycle Q Clear(g_c), s	0.0	0.0	11.2	0.0	0.0	9.7	2.5	0.0	26.5	5.1	35.2	1.3
Prop In Lane	1.00		0.72	1.00		0.73	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	819	0	164	783	0	145	130	0	481	219	534	453
V/C Ratio(X)	0.07	0.00	0.84	0.07	0.00	0.82	0.35	0.00	0.79	0.43	0.91	0.13
Avail Cap(c_a), veh/h	819	0	302	783	0	301	225	0	870	271	886	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	20.0	0.0	57.1	21.3	0.0	57.9	36.4	0.0	43.6	34.6	56.7	3.5
Incr Delay (d2), s/veh	0.0	0.0	37.7	0.0	0.0	38.4	1.2	0.0	2.3	0.9	6.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	6.2	1.0	0.0	5.4	1.1	0.0	11.3	2.2	17.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	0.0	94.9	21.3	0.0	96.3	37.6	0.0	45.8	35.5	63.1	3.5
LnGrp LOS	C	A	F	C	A	F	D	A	D	D	E	A
Approach Vol, veh/h		198			176			428			640	
Approach Delay, s/veh		72.2			72.0			45.0			53.4	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	61.0	18.0	11.0	40.0	59.5	19.6	7.7	43.2
Change Period (Y+Rc), s	4.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	25.0	11.0	65.0	11.0	25.0	11.0	65.0
Max Q Clear Time (g_c+I1), s	2.0	11.7	7.1	28.5	2.0	13.2	4.5	37.2
Green Ext Time (p_c), s	0.1	0.3	0.1	1.4	0.1	0.4	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	55.7
HCM 6th LOS	E

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	94	79	4	97	93	4
Future Vol, veh/h	94	79	4	97	93	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	115	96	5	118	113	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	211	0	291	163
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	128	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1360	-	700	882
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	898	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1360	-	697	882
Mov Cap-2 Maneuver	-	-	-	-	697	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	894	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	703	-	-	1360	-
HCM Lane V/C Ratio	0.168	-	-	0.004	-
HCM Control Delay (s)	11.2	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

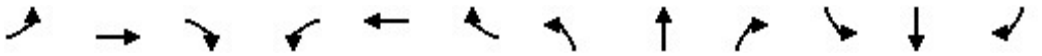
Intersection	
Int Delay, s/veh	4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	76	23	95	79	22	79
Future Vol, veh/h	76	23	95	79	22	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	26	109	91	25	91

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	113	0	409	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	309	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1476	-	599	956
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	745	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1476	-	555	956
Mov Cap-2 Maneuver	-	-	-	-	555	-
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	690	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.2	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	826	-	-	1476	-
HCM Lane V/C Ratio	0.141	-	-	0.074	-
HCM Control Delay (s)	10.1	-	-	7.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	27	76	51	46	65	57	352	20	54	450	68
Future Volume (vph)	49	27	76	51	46	65	57	352	20	54	450	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0	5.0	4.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.93			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.98			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1620			1720	1500	1676	1750		1676	1730	
Flt Permitted		0.75			0.59	1.00	0.44	1.00		0.47	1.00	
Satd. Flow (perm)		1228			1039	1500	782	1750		827	1730	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	54	30	84	56	51	71	63	387	22	59	495	75
RTOR Reduction (vph)	0	31	0	0	0	62	0	1	0	0	3	0
Lane Group Flow (vph)	0	137	0	0	107	9	63	408	0	59	567	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		17.2			17.2	17.2	94.4	92.4		93.7	93.7	
Effective Green, g (s)		17.2			17.2	17.2	94.4	92.4		93.7	93.7	
Actuated g/C Ratio		0.13			0.13	0.13	0.73	0.71		0.72	0.72	
Clearance Time (s)		5.0			5.0	5.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		162			137	198	596	1243		631	1246	
v/s Ratio Prot							0.00	c0.23		0.00	c0.33	
v/s Ratio Perm		c0.11			0.10	0.01	0.07			0.06		
v/c Ratio		0.84			0.78	0.05	0.11	0.33		0.09	0.46	
Uniform Delay, d1		55.1			54.6	49.2	5.7	7.1		5.6	7.5	
Progression Factor		1.00			1.00	1.00	0.26	0.22		1.00	1.00	
Incremental Delay, d2		30.7			23.7	0.1	0.1	0.7		0.0	1.2	
Delay (s)		85.8			78.3	49.3	1.5	2.2		5.6	8.7	
Level of Service		F			E	D	A	A		A	A	
Approach Delay (s)		85.8			66.7			2.1			8.5	
Approach LOS		F			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

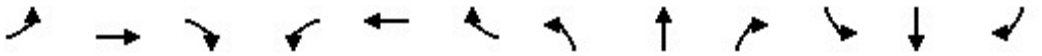
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	27	76	51	46	65	57	352	20	54	450	68
Future Volume (veh/h)	49	27	76	51	46	65	57	352	20	54	450	68
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1800	1765	1800	1800	1765	1765	1765	1765	1800	1765	1765	1800
Adj Flow Rate, veh/h	54	30	84	56	51	0	63	387	22	59	495	75
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	45	97	110	86	193	722	1192	68	311	529	80
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.00	0.39	0.72	0.72	0.04	0.35	0.35
Sat Flow, veh/h	404	347	751	523	668	1500	1681	1654	94	1681	1498	227
Grp Volume(v), veh/h	168	0	0	107	0	0	63	0	409	59	0	570
Grp Sat Flow(s),veh/h/ln	1502	0	0	1192	0	1500	1681	0	1748	1681	0	1725
Q Serve(g_s), s	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.1	3.1	0.0	41.5
Cycle Q Clear(g_c), s	14.2	0.0	0.0	11.5	0.0	0.0	0.0	0.0	11.1	3.1	0.0	41.5
Prop In Lane	0.32		0.50	0.52		1.00	1.00		0.05	1.00		0.13
Lane Grp Cap(c), veh/h	230	0	0	196	0	193	722	0	1260	311	0	609
V/C Ratio(X)	0.73	0.00	0.00	0.55	0.00	0.00	0.09	0.00	0.32	0.19	0.00	0.94
Avail Cap(c_a), veh/h	393	0	0	357	0	358	722	0	1260	381	0	982
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.73	0.00	0.73	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.4	0.0	0.0	53.9	0.0	0.0	24.1	0.0	6.6	30.3	0.0	40.6
Incr Delay (d2), s/veh	3.3	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.5	0.2	0.0	23.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	0.0	3.8	0.0	0.0	1.4	0.0	5.5	1.5	0.0	23.8
LnGrp Delay(d),s/veh	58.7	0.0	0.0	55.6	0.0	0.0	24.1	0.0	7.1	30.5	0.0	64.4
LnGrp LOS	E			E			C		A	C		E
Approach Vol, veh/h		168			107			472			629	
Approach Delay, s/veh		58.7			55.6			9.4			61.2	
Approach LOS		E			E			A			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	56.4	51.9		21.7	8.6	99.7		21.7
Change Period (Y+Rc), s	6.0	* 6		5.0	4.0	6.0		5.0
Max Green Setting (Gmax), s	10.0	* 74		31.0	10.0	74.0		31.0
Max Q Clear Time (g_c+I1), s	2.0	43.5		13.5	5.1	13.1		16.2
Green Ext Time (p_c), s	0.1	2.4		0.3	0.0	1.6		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	42.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	27	76	51	46	65	57	352	20	54	450	68
Future Volume (veh/h)	49	27	76	51	46	65	57	352	20	54	450	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	54	30	84	56	51	0	63	387	22	59	495	75
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	45	97	110	86		727	1198	68	311	529	80
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.00	0.39	0.72	0.72	0.04	0.35	0.35
Sat Flow, veh/h	406	348	754	526	672	1502	1688	1661	94	1688	1503	228
Grp Volume(v), veh/h	168	0	0	107	0	0	63	0	409	59	0	570
Grp Sat Flow(s),veh/h/ln	1507	0	0	1198	0	1502	1688	0	1755	1688	0	1731
Q Serve(g_s), s	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	3.1	0.0	41.4
Cycle Q Clear(g_c), s	14.2	0.0	0.0	11.4	0.0	0.0	0.0	0.0	11.0	3.1	0.0	41.4
Prop In Lane	0.32		0.50	0.52		1.00	1.00		0.05	1.00		0.13
Lane Grp Cap(c), veh/h	230	0	0	196	0		727	0	1266	311	0	609
V/C Ratio(X)	0.73	0.00	0.00	0.55	0.00		0.09	0.00	0.32	0.19	0.00	0.94
Avail Cap(c_a), veh/h	394	0	0	358	0		727	0	1266	382	0	985
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.73	0.00	0.73	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.5	0.0	0.0	53.9	0.0	0.0	24.0	0.0	6.6	30.4	0.0	40.7
Incr Delay (d2), s/veh	3.3	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.5	0.2	0.0	23.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	0.0	3.4	0.0	0.0	1.2	0.0	3.7	1.3	0.0	20.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	0.0	0.0	55.6	0.0	0.0	24.0	0.0	7.1	30.6	0.0	64.4
LnGrp LOS	E	A	A	E	A		C	A	A	C	A	E
Approach Vol, veh/h		168			107			472			629	
Approach Delay, s/veh		58.8			55.6			9.3			61.2	
Approach LOS		E			E			A			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	56.6	51.7		21.7	8.6	99.8		21.7				
Change Period (Y+Rc), s	6.0	* 6		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s	10.0	* 74		31.0	10.0	74.0		31.0				
Max Q Clear Time (g_c+I1), s	2.0	43.4		13.4	5.1	13.0		16.2				
Green Ext Time (p_c), s	0.1	2.4		0.3	0.0	1.6		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		42.7
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

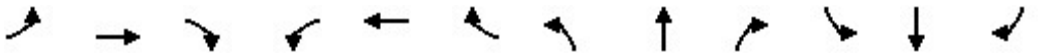
Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	22	65	22	22	61
Future Vol, veh/h	39	22	65	22	22	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	31	90	31	31	85

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	253	106	0	0	121	0
Stage 1	106	-	-	-	-	-
Stage 2	147	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	736	948	-	-	1467	-
Stage 1	918	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	720	948	-	-	1467	-
Mov Cap-2 Maneuver	720	-	-	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	861	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	788	1467	-
HCM Lane V/C Ratio	-	-	0.108	0.021	-
HCM Control Delay (s)	-	-	10.1	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	39	117	52	32	80	51	321	37	87	451	55
Future Volume (vph)	55	39	117	52	32	80	51	321	37	87	451	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.89		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1676	1566		1676	1576		1676	1737		1676	1765	1500
Flt Permitted	0.68	1.00		0.63	1.00		0.19	1.00		0.24	1.00	1.00
Satd. Flow (perm)	1198	1566		1115	1576		343	1737		430	1765	1500
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)	60	42	127	57	35	87	55	349	40	95	490	60
RTOR Reduction (vph)	0	60	0	0	50	0	0	4	0	0	0	40
Lane Group Flow (vph)	60	109	0	57	72	0	55	385	0	95	490	20
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	62.4	56.9		59.8	55.6		47.4	40.9		54.4	44.4	44.4
Effective Green, g (s)	62.4	56.9		59.8	55.6		47.4	40.9		54.4	44.4	44.4
Actuated g/C Ratio	0.48	0.44		0.46	0.43		0.36	0.31		0.42	0.34	0.34
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	595	685		531	674		191	546		275	602	512
v/s Ratio Prot	c0.00	c0.07		0.00	0.05		0.01	0.22		c0.03	c0.28	
v/s Ratio Perm	0.04			0.05			0.09			0.12		0.01
v/c Ratio	0.10	0.16		0.11	0.11		0.29	0.70		0.35	0.81	0.04
Uniform Delay, d1	18.5	22.1		20.8	22.3		29.6	39.2		25.8	39.0	28.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.77	0.76	0.09
Incremental Delay, d2	0.1	0.5		0.1	0.3		0.6	3.8		0.5	7.4	0.0
Delay (s)	18.6	22.6		20.9	22.6		30.2	43.1		20.3	37.0	2.7
Level of Service	B	C		C	C		C	D		C	D	A
Approach Delay (s)		21.5			22.1			41.5			31.4	
Approach LOS		C			C			D			C	

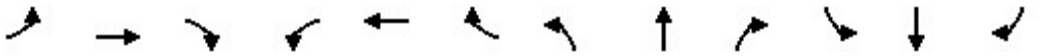
Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	39	117	52	32	80	51	321	37	87	451	55
Future Volume (veh/h)	55	39	117	52	32	80	51	321	37	87	451	55
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1765	1765	1800	1765	1765	1800	1765	1765	1800	1765	1765	1765
Adj Flow Rate, veh/h	60	42	127	57	35	87	55	349	40	95	490	60
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	797	49	147	722	43	106	138	444	51	223	539	458
Arrive On Green	0.43	0.13	0.13	0.40	0.09	0.09	0.03	0.29	0.29	0.02	0.10	0.10
Sat Flow, veh/h	1681	387	1171	1681	450	1118	1681	1555	178	1681	1765	1500
Grp Volume(v), veh/h	60	0	169	57	0	122	55	0	389	95	490	60
Grp Sat Flow(s),veh/h/ln	1681	0	1558	1681	0	1567	1681	0	1733	1681	1765	1500
Q Serve(g_s), s	0.0	0.0	13.8	0.0	0.0	9.9	3.0	0.0	26.9	5.1	35.7	4.7
Cycle Q Clear(g_c), s	0.0	0.0	13.8	0.0	0.0	9.9	3.0	0.0	26.9	5.1	35.7	4.7
Prop In Lane	1.00		0.75	1.00		0.71	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	797	0	196	722	0	148	138	0	495	223	539	458
V/C Ratio(X)	0.08	0.00	0.86	0.08	0.00	0.82	0.40	0.00	0.79	0.43	0.91	0.13
Avail Cap(c_a), veh/h	797	0	324	722	0	326	211	0	840	276	869	738
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89
Uniform Delay (d), s/veh	20.8	0.0	55.7	23.6	0.0	57.8	35.7	0.0	42.8	34.1	56.6	42.7
Incr Delay (d2), s/veh	0.0	0.0	36.6	0.0	0.0	38.0	1.4	0.0	2.1	0.9	6.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	7.9	1.2	0.0	5.9	1.4	0.0	13.1	2.4	18.5	2.0
LnGrp Delay(d),s/veh	20.9	0.0	92.3	23.7	0.0	95.7	37.1	0.0	44.9	35.0	63.4	42.8
LnGrp LOS	C		F	C		F	D		D	C	E	D
Approach Vol, veh/h		229			179			444			645	
Approach Delay, s/veh		73.6			72.8			43.9			57.3	
Approach LOS		E			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	59.6	18.3	10.9	41.1	55.6	22.3	8.3	43.7
Change Period (Y+Rc), s	4.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	27.0	11.0	63.0	11.0	27.0	10.0	64.0
Max Q Clear Time (g_c+I1), s	2.0	11.9	7.1	28.9	2.0	15.8	5.0	37.7
Green Ext Time (p_c), s	0.1	0.4	0.1	1.5	0.1	0.5	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.7
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	39	117	52	32	80	51	321	37	87	451	55
Future Volume (veh/h)	55	39	117	52	32	80	51	321	37	87	451	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	60	42	127	57	35	87	55	349	40	95	490	60
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	803	49	147	727	43	106	138	444	51	223	540	457
Arrive On Green	0.43	0.13	0.13	0.40	0.09	0.09	0.03	0.28	0.28	0.02	0.10	0.10
Sat Flow, veh/h	1688	388	1173	1688	451	1120	1688	1561	179	1688	1772	1502
Grp Volume(v), veh/h	60	0	169	57	0	122	55	0	389	95	490	60
Grp Sat Flow(s),veh/h/ln	1688	0	1561	1688	0	1570	1688	0	1740	1688	1772	1502
Q Serve(g_s), s	0.0	0.0	13.8	0.0	0.0	9.9	3.0	0.0	26.8	5.1	35.6	1.4
Cycle Q Clear(g_c), s	0.0	0.0	13.8	0.0	0.0	9.9	3.0	0.0	26.8	5.1	35.6	1.4
Prop In Lane	1.00		0.75	1.00		0.71	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	803	0	196	727	0	149	138	0	495	223	540	457
V/C Ratio(X)	0.07	0.00	0.86	0.08	0.00	0.82	0.40	0.00	0.79	0.43	0.91	0.13
Avail Cap(c_a), veh/h	803	0	324	727	0	326	212	0	843	276	872	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89
Uniform Delay (d), s/veh	20.7	0.0	55.8	23.5	0.0	57.8	35.7	0.0	42.9	34.2	56.7	3.7
Incr Delay (d2), s/veh	0.0	0.0	36.5	0.0	0.0	37.9	1.4	0.0	2.1	0.8	6.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	7.5	1.1	0.0	5.5	1.2	0.0	11.4	2.2	17.9	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	0.0	92.3	23.6	0.0	95.7	37.1	0.0	44.9	35.1	63.3	3.8
LnGrp LOS	C	A	F	C	A	F	D	A	D	D	E	A
Approach Vol, veh/h		229			179			444			645	
Approach Delay, s/veh		73.5			72.7			44.0			53.6	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	59.8	18.3	10.9	41.0	55.8	22.3	8.3	43.6
Change Period (Y+Rc), s	4.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	27.0	11.0	63.0	11.0	27.0	10.0	64.0
Max Q Clear Time (g_c+I1), s	2.0	11.9	7.1	28.8	2.0	15.8	5.0	37.6
Green Ext Time (p_c), s	0.1	0.4	0.1	1.5	0.1	0.5	0.0	2.0

Intersection Summary			
HCM 6th Ctrl Delay		56.1	
HCM 6th LOS		E	

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	123	77	14	93	90	9
Future Vol, veh/h	123	77	14	93	90	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	135	85	15	102	99	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	220	0	310	178
Stage 1	-	-	-	-	178	-
Stage 2	-	-	-	-	132	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1349	-	682	865
Stage 1	-	-	-	-	853	-
Stage 2	-	-	-	-	894	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1349	-	674	865
Mov Cap-2 Maneuver	-	-	-	-	674	-
Stage 1	-	-	-	-	853	-
Stage 2	-	-	-	-	883	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	688	-	-	1349	-
HCM Lane V/C Ratio	0.158	-	-	0.011	-
HCM Control Delay (s)	11.2	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

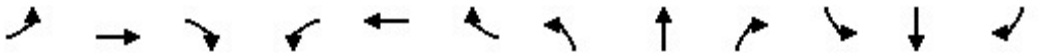
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	135	0	0	103	0	0
Future Vol, veh/h	135	0	0	103	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	157	0	0	120	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	157	0	277	157
Stage 1	-	-	-	-	157	-
Stage 2	-	-	-	-	120	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1423	-	713	889
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	905	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1423	-	713	889
Mov Cap-2 Maneuver	-	-	-	-	713	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	905	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1423	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	55	36	30	44	46	31	627	74	66	491	23
Future Volume (vph)	45	55	36	30	44	46	31	627	74	66	491	23
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0	5.0	4.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.96			1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected		0.98			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1674			1729	1500	1676	1737		1676	1753	
Flt Permitted		0.86			0.73	1.00	0.43	1.00		0.31	1.00	
Satd. Flow (perm)		1463			1282	1500	765	1737		547	1753	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	57	37	31	45	47	32	646	76	68	506	24
RTOR Reduction (vph)	0	11	0	0	0	41	0	2	0	0	1	0
Lane Group Flow (vph)	0	129	0	0	76	6	32	720	0	68	529	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		16.0			16.0	16.0	97.4	93.9		100.6	95.5	
Effective Green, g (s)		16.0			16.0	16.0	97.4	93.9		100.6	95.5	
Actuated g/C Ratio		0.12			0.12	0.12	0.75	0.72		0.77	0.73	
Clearance Time (s)		5.0			5.0	5.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		180			157	184	597	1254		467	1287	
v/s Ratio Prot							0.00	c0.41		c0.01	0.30	
v/s Ratio Perm		c0.09			0.06	0.00	0.04			0.11		
v/c Ratio		0.72			0.48	0.03	0.05	0.57		0.15	0.41	
Uniform Delay, d1		54.8			53.2	50.2	4.4	8.6		5.1	6.6	
Progression Factor		1.00			1.00	1.00	0.24	0.17		1.00	1.00	
Incremental Delay, d2		12.1			1.7	0.1	0.0	1.6		0.1	1.0	
Delay (s)		66.9			54.9	50.2	1.1	3.0		5.2	7.5	
Level of Service		E			D	D	A	A		A	A	
Approach Delay (s)		66.9			53.1			3.0			7.3	
Approach LOS		E			D			A			A	

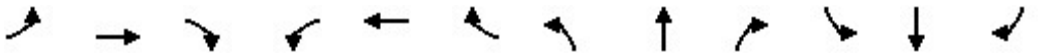
Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	55	36	30	44	46	31	627	74	66	491	23
Future Volume (veh/h)	45	55	36	30	44	46	31	627	74	66	491	23
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1800	1765	1800	1800	1765	1765	1765	1765	1800	1765	1765	1800
Adj Flow Rate, veh/h	46	57	37	31	45	0	32	646	76	68	506	24
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	76	44	84	104	153	663	1169	138	524	1273	60
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.00	0.02	0.75	0.75	0.03	0.76	0.76
Sat Flow, veh/h	445	744	427	442	1015	1500	1681	1550	182	1681	1671	79
Grp Volume(v), veh/h	140	0	0	76	0	0	32	0	722	68	0	530
Grp Sat Flow(s),veh/h/ln	1616	0	0	1457	0	1500	1681	0	1733	1681	0	1751
Q Serve(g_s), s	4.8	0.0	0.0	0.0	0.0	0.0	0.6	0.0	22.8	1.2	0.0	13.5
Cycle Q Clear(g_c), s	11.0	0.0	0.0	6.1	0.0	0.0	0.6	0.0	22.8	1.2	0.0	13.5
Prop In Lane	0.33		0.26	0.41		1.00	1.00		0.11	1.00		0.05
Lane Grp Cap(c), veh/h	202	0	0	188	0	153	663	0	1307	524	0	1333
V/C Ratio(X)	0.69	0.00	0.00	0.40	0.00	0.00	0.05	0.00	0.55	0.13	0.00	0.40
Avail Cap(c_a), veh/h	329	0	0	315	0	277	744	0	1307	593	0	1333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.51	0.00	0.51	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.2	0.0	0.0	54.9	0.0	0.0	4.0	0.0	6.7	5.4	0.0	5.3
Incr Delay (d2), s/veh	3.2	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.9	0.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	0.0	2.6	0.0	0.0	0.3	0.0	11.1	0.5	0.0	6.8
LnGrp Delay(d),s/veh	60.4	0.0	0.0	56.0	0.0	0.0	4.0	0.0	7.6	5.5	0.0	6.2
LnGrp LOS	E			E			A		A	A		A
Approach Vol, veh/h		140			76			754			598	
Approach Delay, s/veh		60.4			56.0			7.4			6.1	
Approach LOS		E			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.7	105.0		18.3	7.7	104.1		18.3
Change Period (Y+Rc), s	4.0	6.0		5.0	4.0	6.0		5.0
Max Green Setting (Gmax), s	9.0	82.0		24.0	9.0	82.0		24.0
Max Q Clear Time (g_c+I1), s	2.6	15.5		8.1	3.2	24.8		13.0
Green Ext Time (p_c), s	0.0	2.2		0.2	0.1	3.4		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	55	36	30	44	46	31	627	74	66	491	23
Future Volume (veh/h)	45	55	36	30	44	46	31	627	74	66	491	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	46	57	37	31	45	0	32	646	76	68	506	24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	76	44	84	104		667	1174	138	527	1278	61
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.00	0.02	0.75	0.75	0.03	0.76	0.76
Sat Flow, veh/h	447	747	429	444	1021	1502	1688	1556	183	1688	1678	80
Grp Volume(v), veh/h	140	0	0	76	0	0	32	0	722	68	0	530
Grp Sat Flow(s),veh/h/ln	1622	0	0	1465	0	1502	1688	0	1739	1688	0	1758
Q Serve(g_s), s	4.8	0.0	0.0	0.0	0.0	0.0	0.6	0.0	22.6	1.2	0.0	13.4
Cycle Q Clear(g_c), s	10.9	0.0	0.0	6.1	0.0	0.0	0.6	0.0	22.6	1.2	0.0	13.4
Prop In Lane	0.33		0.26	0.41		1.00	1.00		0.11	1.00		0.05
Lane Grp Cap(c), veh/h	202	0	0	188	0		667	0	1312	527	0	1339
V/C Ratio(X)	0.69	0.00	0.00	0.40	0.00		0.05	0.00	0.55	0.13	0.00	0.40
Avail Cap(c_a), veh/h	330	0	0	316	0		748	0	1312	597	0	1339
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.51	0.00	0.51	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.2	0.0	0.0	55.0	0.0	0.0	4.0	0.0	6.7	5.4	0.0	5.3
Incr Delay (d2), s/veh	3.2	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.9	0.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.0	2.4	0.0	0.0	0.1	0.0	6.8	0.3	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	0.0	0.0	56.0	0.0	0.0	4.0	0.0	7.5	5.4	0.0	6.2
LnGrp LOS	E	A	A	E	A		A	A	A	A	A	A
Approach Vol, veh/h		140			76			754			598	
Approach Delay, s/veh		60.4			56.0			7.4			6.1	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	105.0		18.2	7.7	104.1		18.2				
Change Period (Y+Rc), s	4.0	6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s	9.0	82.0		24.0	9.0	82.0		24.0				
Max Q Clear Time (g_c+I1), s	2.6	15.4		8.1	3.2	24.6		12.9				
Green Ext Time (p_c), s	0.0	2.2		0.2	0.1	3.4		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

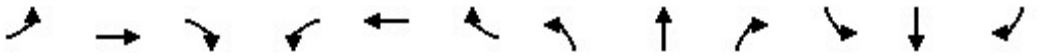
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	99	0	0	91
Future Vol, veh/h	0	0	99	0	0	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	102	0	0	94

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	196	102	0	0	102	0
Stage 1	102	-	-	-	-	-
Stage 2	94	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	793	953	-	-	1490	-
Stage 1	922	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	793	953	-	-	1490	-
Mov Cap-2 Maneuver	793	-	-	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1490	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	65	66	66	53	151	88	546	57	105	395	71
Future Volume (vph)	51	65	66	66	53	151	88	546	57	105	395	71
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.89		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1676	1631		1676	1569		1676	1740		1676	1765	1500
Flt Permitted	0.56	1.00		0.66	1.00		0.37	1.00		0.14	1.00	1.00
Satd. Flow (perm)	980	1631		1162	1569		653	1740		253	1765	1500
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	52	66	67	67	54	153	89	552	58	106	399	72
RTOR Reduction (vph)	0	24	0	0	66	0	0	4	0	0	0	42
Lane Group Flow (vph)	52	109	0	67	141	0	89	606	0	106	399	30
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	47.7	43.6		50.1	44.8		61.6	53.4		64.6	54.9	54.9
Effective Green, g (s)	47.7	43.6		50.1	44.8		61.6	53.4		64.6	54.9	54.9
Actuated g/C Ratio	0.37	0.34		0.39	0.34		0.47	0.41		0.50	0.42	0.42
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	381	547		468	540		373	714		231	745	633
v/s Ratio Prot	0.00	0.07		c0.01	c0.09		0.02	c0.35		c0.03	0.23	
v/s Ratio Perm	0.05			0.05			0.10			0.19		0.02
v/c Ratio	0.14	0.20		0.14	0.26		0.24	0.85		0.46	0.54	0.05
Uniform Delay, d1	30.8	30.8		26.6	30.7		20.1	34.7		23.6	28.0	22.1
Progression Factor	1.02	1.01		1.00	1.00		1.00	1.00		1.21	0.84	0.53
Incremental Delay, d2	0.1	0.8		0.1	1.2		0.2	9.2		1.0	0.5	0.0
Delay (s)	31.5	31.8		26.7	31.9		20.3	43.8		29.4	24.0	11.8
Level of Service	C	C		C	C		C	D		C	C	B
Approach Delay (s)		31.8			30.6			40.8			23.5	
Approach LOS		C			C			D			C	

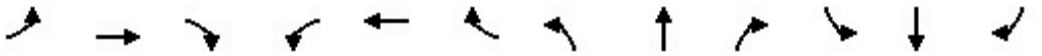
Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	65	66	66	53	151	88	546	57	105	395	71
Future Volume (veh/h)	51	65	66	66	53	151	88	546	57	105	395	71
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1765	1765	1800	1765	1765	1800	1765	1765	1800	1765	1765	1765
Adj Flow Rate, veh/h	52	66	67	67	54	153	89	552	58	106	399	72
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	535	80	81	624	61	173	300	587	62	172	671	570
Arrive On Green	0.29	0.10	0.10	0.34	0.15	0.15	0.05	0.37	0.37	0.04	0.25	0.25
Sat Flow, veh/h	1681	804	816	1681	407	1154	1681	1571	165	1681	1765	1500
Grp Volume(v), veh/h	52	0	133	67	0	207	89	0	610	106	399	72
Grp Sat Flow(s),veh/h/ln	1681	0	1621	1681	0	1561	1681	0	1736	1681	1765	1500
Q Serve(g_s), s	0.0	0.0	10.5	0.0	0.0	16.9	4.2	0.0	44.1	5.0	25.8	4.8
Cycle Q Clear(g_c), s	0.0	0.0	10.5	0.0	0.0	16.9	4.2	0.0	44.1	5.0	25.8	4.8
Prop In Lane	1.00		0.50	1.00		0.74	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	535	0	161	624	0	234	300	0	648	172	671	570
V/C Ratio(X)	0.10	0.00	0.83	0.11	0.00	0.89	0.30	0.00	0.94	0.62	0.59	0.13
Avail Cap(c_a), veh/h	535	0	349	624	0	336	339	0	881	199	896	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	33.2	0.0	57.5	28.7	0.0	54.2	25.8	0.0	39.3	31.9	39.6	31.8
Incr Delay (d2), s/veh	0.1	0.0	36.6	0.1	0.0	35.3	0.4	0.0	14.0	3.3	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	6.3	1.6	0.0	9.6	2.0	0.0	23.7	2.5	12.7	2.0
LnGrp Delay(d),s/veh	33.3	0.0	94.0	28.7	0.0	89.5	26.2	0.0	53.4	35.2	40.2	31.9
LnGrp LOS	C		F	C		F	C		D	D	D	C
Approach Vol, veh/h		185			274			699			577	
Approach Delay, s/veh		77.0			74.6			49.9			38.3	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.1	25.5	10.9	52.5	47.7	18.9	10.0	53.4
Change Period (Y+Rc), s	4.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	28.0	9.0	66.0	9.0	28.0	9.0	66.0
Max Q Clear Time (g_c+I1), s	2.0	18.9	7.0	46.1	2.0	12.5	6.2	27.8
Green Ext Time (p_c), s	0.1	0.6	0.0	2.4	0.1	0.4	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	52.8
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	65	66	66	53	151	88	546	57	105	395	71
Future Volume (veh/h)	51	65	66	66	53	151	88	546	57	105	395	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	52	66	67	67	54	153	89	552	58	106	399	72
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	539	80	81	629	61	173	300	587	62	172	671	569
Arrive On Green	0.29	0.10	0.10	0.34	0.15	0.15	0.05	0.37	0.37	0.04	0.25	0.25
Sat Flow, veh/h	1688	806	818	1688	408	1156	1688	1576	166	1688	1772	1502
Grp Volume(v), veh/h	52	0	133	67	0	207	89	0	610	106	399	72
Grp Sat Flow(s),veh/h/ln	1688	0	1625	1688	0	1564	1688	0	1742	1688	1772	1502
Q Serve(g_s), s	0.0	0.0	10.4	0.0	0.0	16.9	4.2	0.0	44.0	5.0	25.7	2.1
Cycle Q Clear(g_c), s	0.0	0.0	10.4	0.0	0.0	16.9	4.2	0.0	44.0	5.0	25.7	2.1
Prop In Lane	1.00		0.50	1.00		0.74	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	539	0	161	629	0	234	300	0	648	172	671	569
V/C Ratio(X)	0.10	0.00	0.83	0.11	0.00	0.89	0.30	0.00	0.94	0.62	0.59	0.13
Avail Cap(c_a), veh/h	539	0	350	629	0	337	339	0	884	200	900	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	33.1	0.0	57.5	28.5	0.0	54.2	25.8	0.0	39.4	31.9	39.7	6.2
Incr Delay (d2), s/veh	0.1	0.0	36.5	0.1	0.0	35.3	0.4	0.0	13.9	3.2	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	6.0	1.4	0.0	9.0	1.7	0.0	20.5	2.1	11.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.1	0.0	94.0	28.6	0.0	89.5	26.2	0.0	53.3	35.1	40.3	6.2
LnGrp LOS	C	A	F	C	A	F	C	A	D	D	D	A
Approach Vol, veh/h		185			274			699			577	
Approach Delay, s/veh		76.9			74.6			49.9			35.1	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.3	25.4	10.9	52.4	47.9	18.9	10.0	53.3
Change Period (Y+Rc), s	4.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	28.0	9.0	66.0	9.0	28.0	9.0	66.0
Max Q Clear Time (g_c+I1), s	2.0	18.9	7.0	46.0	2.0	12.4	6.2	27.7
Green Ext Time (p_c), s	0.1	0.6	0.0	2.4	0.1	0.4	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	51.7
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	125	79	14	95	92	9
Future Vol, veh/h	125	79	14	95	92	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	137	87	15	104	101	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	224	0	315	181
Stage 1	-	-	-	-	181	-
Stage 2	-	-	-	-	134	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1345	-	678	862
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	892	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1345	-	670	862
Mov Cap-2 Maneuver	-	-	-	-	670	-
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	881	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	684	-	-	1345	-
HCM Lane V/C Ratio	0.162	-	-	0.011	-
HCM Control Delay (s)	11.3	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

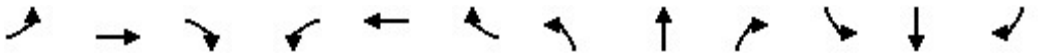
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	138	0	0	105	0	0
Future Vol, veh/h	138	0	0	105	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	160	0	0	122	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	160	0	282	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	122	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1419	-	708	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	903	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1419	-	708	885
Mov Cap-2 Maneuver	-	-	-	-	708	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	903	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1419	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	56	37	31	45	47	32	640	75	67	501	23
Future Volume (vph)	46	56	37	31	45	47	32	640	75	67	501	23
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0	5.0	4.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.96			1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected		0.98			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1674			1729	1500	1676	1737		1676	1753	
Flt Permitted		0.85			0.72	1.00	0.43	1.00		0.30	1.00	
Satd. Flow (perm)		1450			1274	1500	754	1737		530	1753	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	47	58	38	32	46	48	33	660	77	69	516	24
RTOR Reduction (vph)	0	10	0	0	0	42	0	3	0	0	1	0
Lane Group Flow (vph)	0	133	0	0	78	6	33	734	0	69	539	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		16.3			16.3	16.3	97.0	93.5		100.4	95.2	
Effective Green, g (s)		16.3			16.3	16.3	97.0	93.5		100.4	95.2	
Actuated g/C Ratio		0.13			0.13	0.13	0.75	0.72		0.77	0.73	
Clearance Time (s)		5.0			5.0	5.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		181			159	188	587	1249		455	1283	
v/s Ratio Prot							0.00	c0.42		c0.01	0.31	
v/s Ratio Perm		c0.09			0.06	0.00	0.04			0.11		
v/c Ratio		0.73			0.49	0.03	0.06	0.59		0.15	0.42	
Uniform Delay, d1		54.7			53.0	49.9	4.5	8.9		5.4	6.7	
Progression Factor		1.00			1.00	1.00	0.29	0.20		1.00	1.00	
Incremental Delay, d2		13.4			1.7	0.1	0.0	1.7		0.1	1.0	
Delay (s)		68.1			54.7	50.0	1.3	3.5		5.5	7.7	
Level of Service		E			D	D	A	A		A	A	
Approach Delay (s)		68.1			52.9			3.4			7.5	
Approach LOS		E			D			A			A	

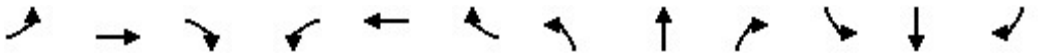
Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	56	37	31	45	47	32	640	75	67	501	23
Future Volume (veh/h)	46	56	37	31	45	47	32	640	75	67	501	23
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1800	1765	1800	1800	1765	1765	1765	1765	1800	1765	1765	1800
Adj Flow Rate, veh/h	47	58	38	32	46	0	33	660	77	69	516	24
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	77	45	85	104	157	653	1167	136	511	1270	59
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.00	0.02	0.75	0.75	0.03	0.76	0.76
Sat Flow, veh/h	444	738	428	442	999	1500	1681	1552	181	1681	1673	78
Grp Volume(v), veh/h	143	0	0	78	0	0	33	0	737	69	0	540
Grp Sat Flow(s),veh/h/ln	1610	0	0	1442	0	1500	1681	0	1733	1681	0	1751
Q Serve(g_s), s	4.9	0.0	0.0	0.0	0.0	0.0	0.6	0.0	23.9	1.2	0.0	14.0
Cycle Q Clear(g_c), s	11.2	0.0	0.0	6.3	0.0	0.0	0.6	0.0	23.9	1.2	0.0	14.0
Prop In Lane	0.33		0.27	0.41		1.00	1.00		0.10	1.00		0.04
Lane Grp Cap(c), veh/h	205	0	0	190	0	157	653	0	1303	511	0	1329
V/C Ratio(X)	0.70	0.00	0.00	0.41	0.00	0.00	0.05	0.00	0.57	0.14	0.00	0.41
Avail Cap(c_a), veh/h	328	0	0	313	0	277	733	0	1303	580	0	1329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.50	0.00	0.50	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.1	0.0	0.0	54.8	0.0	0.0	4.1	0.0	7.0	5.7	0.0	5.5
Incr Delay (d2), s/veh	3.2	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.9	0.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	0.0	2.7	0.0	0.0	0.3	0.0	11.6	0.6	0.0	6.9
LnGrp Delay(d),s/veh	60.2	0.0	0.0	55.8	0.0	0.0	4.1	0.0	7.9	5.8	0.0	6.4
LnGrp LOS	E			E			A		A	A		A
Approach Vol, veh/h		143			78			770			609	
Approach Delay, s/veh		60.2			55.8			7.7			6.3	
Approach LOS		E			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	104.6		18.6	7.7	103.8		18.6
Change Period (Y+Rc), s	4.0	6.0		5.0	4.0	6.0		5.0
Max Green Setting (Gmax), s	9.0	82.0		24.0	9.0	82.0		24.0
Max Q Clear Time (g_c+I1), s	2.6	16.0		8.3	3.2	25.9		13.2
Green Ext Time (p_c), s	0.0	2.2		0.2	0.1	3.5		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	56	37	31	45	47	32	640	75	67	501	23
Future Volume (veh/h)	46	56	37	31	45	47	32	640	75	67	501	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	47	58	38	32	46	0	33	660	77	69	516	24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	77	45	85	105		656	1172	137	514	1275	59
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.00	0.02	0.75	0.75	0.03	0.76	0.76
Sat Flow, veh/h	446	741	429	445	1005	1502	1688	1558	182	1688	1680	78
Grp Volume(v), veh/h	143	0	0	78	0	0	33	0	737	69	0	540
Grp Sat Flow(s),veh/h/ln	1616	0	0	1450	0	1502	1688	0	1739	1688	0	1758
Q Serve(g_s), s	4.9	0.0	0.0	0.0	0.0	0.0	0.6	0.0	23.7	1.2	0.0	13.9
Cycle Q Clear(g_c), s	11.2	0.0	0.0	6.3	0.0	0.0	0.6	0.0	23.7	1.2	0.0	13.9
Prop In Lane	0.33		0.27	0.41		1.00	1.00		0.10	1.00		0.04
Lane Grp Cap(c), veh/h	205	0	0	190	0		656	0	1309	514	0	1335
V/C Ratio(X)	0.70	0.00	0.00	0.41	0.00		0.05	0.00	0.56	0.13	0.00	0.40
Avail Cap(c_a), veh/h	329	0	0	314	0		737	0	1309	583	0	1335
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.50	0.00	0.50	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.1	0.0	0.0	54.8	0.0	0.0	4.1	0.0	6.9	5.6	0.0	5.4
Incr Delay (d2), s/veh	3.2	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.9	0.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	0.0	2.5	0.0	0.0	0.2	0.0	7.2	0.3	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.3	0.0	0.0	55.8	0.0	0.0	4.1	0.0	7.8	5.7	0.0	6.4
LnGrp LOS	E	A	A	E	A		A	A	A	A	A	A
Approach Vol, veh/h		143			78			770			609	
Approach Delay, s/veh		60.3			55.8			7.6			6.3	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	104.7		18.5	7.7	103.8		18.5				
Change Period (Y+Rc), s	4.0	6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s	9.0	82.0		24.0	9.0	82.0		24.0				
Max Q Clear Time (g_c+I1), s	2.6	15.9		8.3	3.2	25.7		13.2				
Green Ext Time (p_c), s	0.0	2.2		0.2	0.1	3.5		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		14.2
HCM 6th LOS		B

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

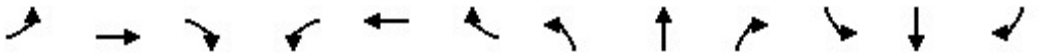
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	101	0	0	93
Future Vol, veh/h	0	0	101	0	0	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	104	0	0	96

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	200	104	0	0	104	0
Stage 1	104	-	-	-	-	-
Stage 2	96	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	789	951	-	-	1488	-
Stage 1	920	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	789	951	-	-	1488	-
Mov Cap-2 Maneuver	789	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	928	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1488	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	66	67	67	54	154	90	557	58	107	403	72
Future Volume (vph)	52	66	67	67	54	154	90	557	58	107	403	72
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.89		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1676	1631		1676	1569		1676	1740		1676	1765	1500
Flt Permitted	0.55	1.00		0.65	1.00		0.37	1.00		0.14	1.00	1.00
Satd. Flow (perm)	964	1631		1154	1569		645	1740		247	1765	1500
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	53	67	68	68	55	156	91	563	59	108	407	73
RTOR Reduction (vph)	0	24	0	0	66	0	0	3	0	0	0	42
Lane Group Flow (vph)	53	111	0	68	145	0	91	619	0	108	407	31
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	46.8	42.6		49.4	43.9		62.5	54.2		65.3	55.6	55.6
Effective Green, g (s)	46.8	42.6		49.4	43.9		62.5	54.2		65.3	55.6	55.6
Actuated g/C Ratio	0.36	0.33		0.38	0.34		0.48	0.42		0.50	0.43	0.43
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	370	534		460	529		375	725		230	754	641
v/s Ratio Prot	0.00	0.07		c0.01	c0.09		0.02	c0.36		c0.03	0.23	
v/s Ratio Perm	0.05			0.05			0.10			0.20		0.02
v/c Ratio	0.14	0.21		0.15	0.27		0.24	0.85		0.47	0.54	0.05
Uniform Delay, d1	31.7	31.5		27.2	31.4		19.7	34.3		23.5	27.7	21.7
Progression Factor	1.02	1.01		1.00	1.00		1.00	1.00		1.24	0.83	0.52
Incremental Delay, d2	0.1	0.9		0.1	1.3		0.2	9.5		1.0	0.5	0.0
Delay (s)	32.5	32.7		27.3	32.7		19.9	43.8		30.1	23.6	11.3
Level of Service	C	C		C	C		B	D		C	C	B
Approach Delay (s)		32.6			31.4			40.7			23.3	
Approach LOS		C			C			D			C	

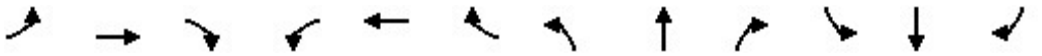
Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	66	67	67	54	154	90	557	58	107	403	72
Future Volume (veh/h)	52	66	67	67	54	154	90	557	58	107	403	72
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1765	1765	1800	1765	1765	1800	1765	1765	1800	1765	1765	1765
Adj Flow Rate, veh/h	53	67	68	68	55	156	91	563	59	108	407	73
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	519	81	82	610	62	176	302	597	63	172	683	580
Arrive On Green	0.28	0.10	0.10	0.33	0.15	0.15	0.05	0.38	0.38	0.04	0.26	0.26
Sat Flow, veh/h	1681	804	816	1681	407	1154	1681	1571	165	1681	1765	1500
Grp Volume(v), veh/h	53	0	135	68	0	211	91	0	622	108	407	73
Grp Sat Flow(s),veh/h/ln	1681	0	1621	1681	0	1561	1681	0	1736	1681	1765	1500
Q Serve(g_s), s	0.0	0.0	10.6	0.0	0.0	17.2	4.3	0.0	45.0	5.0	26.3	4.8
Cycle Q Clear(g_c), s	0.0	0.0	10.6	0.0	0.0	17.2	4.3	0.0	45.0	5.0	26.3	4.8
Prop In Lane	1.00		0.50	1.00		0.74	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	519	0	163	610	0	238	302	0	660	172	683	580
V/C Ratio(X)	0.10	0.00	0.83	0.11	0.00	0.89	0.30	0.00	0.94	0.63	0.60	0.13
Avail Cap(c_a), veh/h	519	0	349	610	0	336	340	0	881	199	896	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	34.1	0.0	57.4	29.4	0.0	54.0	25.3	0.0	38.9	31.7	39.2	31.3
Incr Delay (d2), s/veh	0.1	0.0	36.5	0.1	0.0	35.3	0.4	0.0	14.5	3.6	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	6.4	1.7	0.0	9.8	2.0	0.0	24.3	2.5	12.9	2.0
LnGrp Delay(d),s/veh	34.2	0.0	93.9	29.4	0.0	89.3	25.7	0.0	53.4	35.3	39.8	31.4
LnGrp LOS	C		F	C		F	C		D	D	D	C
Approach Vol, veh/h		188			279			713			588	
Approach Delay, s/veh		77.1			74.7			49.8			37.9	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.8	25.8	10.9	53.4	46.6	19.1	10.1	54.3
Change Period (Y+Rc), s	4.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	28.0	9.0	66.0	9.0	28.0	9.0	66.0
Max Q Clear Time (g_c+I1), s	2.0	19.2	7.0	47.0	2.0	12.6	6.3	28.3
Green Ext Time (p_c), s	0.1	0.6	0.0	2.4	0.1	0.4	0.1	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	52.7
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	66	67	67	54	154	90	557	58	107	403	72
Future Volume (veh/h)	52	66	67	67	54	154	90	557	58	107	403	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	53	67	68	68	55	156	91	563	59	108	407	73
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	523	81	82	615	62	176	303	598	63	173	683	579
Arrive On Green	0.28	0.10	0.10	0.33	0.15	0.15	0.05	0.38	0.38	0.04	0.26	0.26
Sat Flow, veh/h	1688	806	818	1688	408	1156	1688	1577	165	1688	1772	1502
Grp Volume(v), veh/h	53	0	135	68	0	211	91	0	622	108	407	73
Grp Sat Flow(s),veh/h/ln	1688	0	1625	1688	0	1564	1688	0	1742	1688	1772	1502
Q Serve(g_s), s	0.0	0.0	10.6	0.0	0.0	17.2	4.3	0.0	44.8	5.0	26.2	2.2
Cycle Q Clear(g_c), s	0.0	0.0	10.6	0.0	0.0	17.2	4.3	0.0	44.8	5.0	26.2	2.2
Prop In Lane	1.00		0.50	1.00		0.74	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	523	0	163	615	0	238	303	0	660	173	683	579
V/C Ratio(X)	0.10	0.00	0.83	0.11	0.00	0.89	0.30	0.00	0.94	0.62	0.60	0.13
Avail Cap(c_a), veh/h	523	0	350	615	0	337	341	0	884	200	900	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	34.0	0.0	57.4	29.3	0.0	54.0	25.4	0.0	39.0	31.7	39.3	6.3
Incr Delay (d2), s/veh	0.1	0.0	36.4	0.1	0.0	35.2	0.4	0.0	14.3	3.5	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	6.0	1.5	0.0	9.1	1.7	0.0	20.9	2.2	11.8	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	0.0	93.8	29.3	0.0	89.2	25.8	0.0	53.3	35.3	39.9	6.4
LnGrp LOS	C	A	F	C	A	F	C	A	D	D	D	A
Approach Vol, veh/h		188			279			713			588	
Approach Delay, s/veh		77.0			74.6			49.8			34.9	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.0	25.8	10.9	53.3	46.8	19.0	10.1	54.1
Change Period (Y+Rc), s	4.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	28.0	9.0	66.0	9.0	28.0	9.0	66.0
Max Q Clear Time (g_c+I1), s	2.0	19.2	7.0	46.8	2.0	12.6	6.3	28.2
Green Ext Time (p_c), s	0.1	0.6	0.0	2.4	0.1	0.4	0.1	1.7

Intersection Summary	
HCM 6th Ctrl Delay	51.6
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	137	91	14	107	112	9
Future Vol, veh/h	137	91	14	107	112	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	151	100	15	118	123	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	251	0	349	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	148	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1314	-	648	840
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	880	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1314	-	640	840
Mov Cap-2 Maneuver	-	-	-	-	640	-
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	869	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	652	-	-	1314	-
HCM Lane V/C Ratio	0.204	-	-	0.012	-
HCM Control Delay (s)	11.9	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0	-

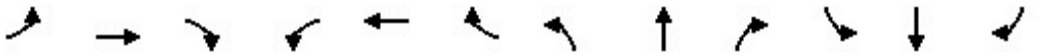
Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	20	77	97	20	69
Future Vol, veh/h	130	20	77	97	20	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	151	23	90	113	23	80

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	174	0	456	163
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	293	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1403	-	562	882
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	757	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1403	-	526	882
Mov Cap-2 Maneuver	-	-	-	-	526	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	709	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	766	-	-	1403	-
HCM Lane V/C Ratio	0.135	-	-	0.064	-
HCM Control Delay (s)	10.4	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	59	54	31	48	47	77	610	75	67	486	44
Future Volume (vph)	87	59	54	31	48	47	77	610	75	67	486	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0	5.0	4.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.96			1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected		0.98			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1664			1731	1500	1676	1736		1676	1743	
Flt Permitted		0.82			0.78	1.00	0.39	1.00		0.30	1.00	
Satd. Flow (perm)		1394			1374	1500	683	1736		523	1743	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	90	61	56	32	49	48	79	629	77	69	501	45
RTOR Reduction (vph)	0	12	0	0	0	40	0	3	0	0	2	0
Lane Group Flow (vph)	0	195	0	0	81	8	79	703	0	69	544	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		22.9			22.9	22.9	95.8	87.8		88.4	84.1	
Effective Green, g (s)		22.9			22.9	22.9	95.8	87.8		88.4	84.1	
Actuated g/C Ratio		0.18			0.18	0.18	0.74	0.68		0.68	0.65	
Clearance Time (s)		5.0			5.0	5.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		245			242	264	564	1172		393	1127	
v/s Ratio Prot							c0.01	c0.41		0.01	0.31	
v/s Ratio Perm		c0.14			0.06	0.01	0.09			0.11		
v/c Ratio		0.80			0.33	0.03	0.14	0.60		0.18	0.48	
Uniform Delay, d1		51.3			46.9	44.4	9.9	11.5		16.8	11.8	
Progression Factor		1.00			1.00	1.00	0.60	0.49		1.00	1.00	
Incremental Delay, d2		15.9			0.6	0.0	0.1	1.8		0.2	1.5	
Delay (s)		67.2			47.5	44.4	6.0	7.4		17.0	13.3	
Level of Service		E			D	D	A	A		B	B	
Approach Delay (s)		67.2			46.3			7.3			13.7	
Approach LOS		E			D			A			B	

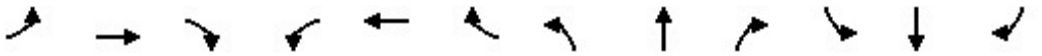
Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	59	54	31	48	47	77	610	75	67	486	44
Future Volume (veh/h)	87	59	54	31	48	47	77	610	75	67	486	44
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1800	1765	1800	1800	1765	1765	1765	1765	1800	1765	1765	1800
Adj Flow Rate, veh/h	90	61	56	32	49	0	79	629	77	69	501	45
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	76	63	104	142	229	735	664	81	562	537	48
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.00	0.40	0.43	0.43	0.30	0.34	0.34
Sat Flow, veh/h	617	496	413	431	931	1500	1681	1543	189	1681	1596	143
Grp Volume(v), veh/h	207	0	0	81	0	0	79	0	706	69	0	546
Grp Sat Flow(s),veh/h/ln	1526	0	0	1362	0	1500	1681	0	1731	1681	0	1739
Q Serve(g_s), s	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.0	0.0	0.0	39.5
Cycle Q Clear(g_c), s	17.2	0.0	0.0	6.3	0.0	0.0	0.0	0.0	51.0	0.0	0.0	39.5
Prop In Lane	0.43		0.27	0.40		1.00	1.00		0.11	1.00		0.08
Lane Grp Cap(c), veh/h	272	0	0	246	0	229	735	0	745	562	0	585
V/C Ratio(X)	0.76	0.00	0.00	0.33	0.00	0.00	0.11	0.00	0.95	0.12	0.00	0.93
Avail Cap(c_a), veh/h	412	0	0	390	0	369	735	0	986	562	0	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.50	0.00	0.50	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.8	0.0	0.0	49.1	0.0	0.0	23.5	0.0	35.6	31.7	0.0	41.7
Incr Delay (d2), s/veh	3.3	0.0	0.0	0.6	0.0	0.0	0.0	0.0	13.8	0.1	0.0	24.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	0.0	2.6	0.0	0.0	1.7	0.0	27.2	1.7	0.0	22.9
LnGrp Delay(d),s/veh	57.2	0.0	0.0	49.7	0.0	0.0	23.5	0.0	49.4	31.8	0.0	65.8
LnGrp LOS	E			D			C		D	C		E
Approach Vol, veh/h		207			81			785			615	
Approach Delay, s/veh		57.2			49.7			46.8			62.0	
Approach LOS		E			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	55.5	49.7		24.8	43.2	62.0		24.8
Change Period (Y+Rc), s	4.0	6.0		5.0	4.0	6.0		5.0
Max Green Setting (Gmax), s	9.0	74.0		32.0	9.0	74.0		32.0
Max Q Clear Time (g_c+I1), s	2.0	41.5		8.3	2.0	53.0		19.2
Green Ext Time (p_c), s	0.1	2.2		0.2	0.1	3.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	53.7
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	59	54	31	48	47	77	610	75	67	486	44
Future Volume (veh/h)	87	59	54	31	48	47	77	610	75	67	486	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	90	61	56	32	49	0	79	629	77	69	501	45
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	76	63	104	142		741	664	81	568	537	48
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.00	0.40	0.43	0.43	0.30	0.34	0.34
Sat Flow, veh/h	620	498	414	433	936	1502	1688	1548	190	1688	1602	144
Grp Volume(v), veh/h	207	0	0	81	0	0	79	0	706	69	0	546
Grp Sat Flow(s),veh/h/ln	1532	0	0	1369	0	1502	1688	0	1738	1688	0	1746
Q Serve(g_s), s	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.8	0.0	0.0	39.3
Cycle Q Clear(g_c), s	17.2	0.0	0.0	6.3	0.0	0.0	0.0	0.0	50.8	0.0	0.0	39.3
Prop In Lane	0.43		0.27	0.40		1.00	1.00		0.11	1.00		0.08
Lane Grp Cap(c), veh/h	273	0	0	247	0		741	0	746	568	0	585
V/C Ratio(X)	0.76	0.00	0.00	0.33	0.00		0.11	0.00	0.95	0.12	0.00	0.93
Avail Cap(c_a), veh/h	414	0	0	391	0		741	0	989	568	0	994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.50	0.00	0.50	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.9	0.0	0.0	49.2	0.0	0.0	23.4	0.0	35.7	31.5	0.0	41.8
Incr Delay (d2), s/veh	3.3	0.0	0.0	0.6	0.0	0.0	0.0	0.0	13.7	0.1	0.0	24.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	0.0	2.4	0.0	0.0	1.4	0.0	23.1	1.5	0.0	20.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.1	0.0	0.0	49.7	0.0	0.0	23.4	0.0	49.4	31.6	0.0	65.8
LnGrp LOS	E	A	A	D	A		C	A	D	C	A	E
Approach Vol, veh/h		207			81			785			615	
Approach Delay, s/veh		57.1			49.7			46.7			61.9	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	55.7	49.6		24.8	43.5	61.8		24.8				
Change Period (Y+Rc), s	4.0	6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s	9.0	74.0		32.0	9.0	74.0		32.0				
Max Q Clear Time (g_c+I1), s	2.0	41.3		8.3	2.0	52.8		19.2				
Green Ext Time (p_c), s	0.1	2.2		0.2	0.1	3.0		0.6				

Intersection Summary												
HCM 6th Ctrl Delay			53.7									
HCM 6th LOS			D									

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

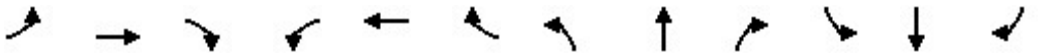
Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	20	93	20	20	85
Future Vol, veh/h	27	20	93	20	20	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	21	96	21	21	88

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	237	107	0	0	117	0
Stage 1	107	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	751	947	-	-	1471	-
Stage 1	917	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	740	947	-	-	1471	-
Mov Cap-2 Maneuver	740	-	-	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	883	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	1.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	816	1471	-
HCM Lane V/C Ratio	-	-	0.059	0.014	-
HCM Control Delay (s)	-	-	9.7	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	69	83	67	57	154	99	572	58	107	405	72
Future Volume (vph)	52	69	83	67	57	154	99	572	58	107	405	72
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.89		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1676	1620		1676	1572		1676	1740		1676	1765	1500
Flt Permitted	0.54	1.00		0.61	1.00		0.37	1.00		0.14	1.00	1.00
Satd. Flow (perm)	947	1620		1074	1572		647	1740		249	1765	1500
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	53	70	84	68	58	156	100	578	59	108	409	73
RTOR Reduction (vph)	0	29	0	0	65	0	0	3	0	0	0	41
Lane Group Flow (vph)	53	125	0	68	149	0	100	634	0	108	409	32
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	46.2	39.5		47.4	40.1		64.2	55.6		66.2	56.6	56.6
Effective Green, g (s)	46.2	39.5		47.4	40.1		64.2	55.6		66.2	56.6	56.6
Actuated g/C Ratio	0.36	0.30		0.36	0.31		0.49	0.43		0.51	0.44	0.44
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	374	492		425	484		387	744		232	768	653
v/s Ratio Prot	0.01	0.08		c0.01	c0.09		0.02	c0.36		c0.03	0.23	
v/s Ratio Perm	0.04			0.05			0.11			0.20		0.02
v/c Ratio	0.14	0.25		0.16	0.31		0.26	0.85		0.47	0.53	0.05
Uniform Delay, d1	28.0	34.1		27.4	34.3		18.9	33.5		23.1	27.0	21.2
Progression Factor	1.01	1.00		1.00	1.00		1.00	1.00		1.18	0.69	0.22
Incremental Delay, d2	0.1	1.2		0.1	1.6		0.3	9.2		1.0	0.5	0.0
Delay (s)	28.3	35.4		27.5	36.0		19.2	42.6		28.3	19.1	4.8
Level of Service	C	D		C	D		B	D		C	B	A
Approach Delay (s)		33.5			33.9			39.5			19.0	
Approach LOS		C			C			D			B	

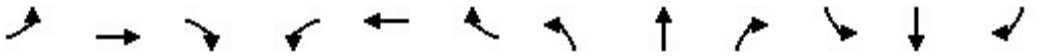
Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	69	83	67	57	154	99	572	58	107	405	72
Future Volume (veh/h)	52	69	83	67	57	154	99	572	58	107	405	72
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1765	1765	1800	1765	1765	1800	1765	1765	1800	1765	1765	1765
Adj Flow Rate, veh/h	53	70	84	68	58	156	100	578	59	108	409	73
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	446	280	336	507	165	444	412	613	63	173	693	589
Arrive On Green	0.03	0.38	0.38	0.04	0.39	0.39	0.05	0.39	0.39	0.11	0.78	0.78
Sat Flow, veh/h	1681	732	878	1681	424	1140	1681	1576	161	1681	1765	1500
Grp Volume(v), veh/h	53	0	154	68	0	214	100	0	637	108	409	73
Grp Sat Flow(s),veh/h/ln	1681	0	1610	1681	0	1564	1681	0	1736	1681	1765	1500
Q Serve(g_s), s	2.5	0.0	8.5	3.2	0.0	12.6	4.6	0.0	46.0	5.0	12.1	1.5
Cycle Q Clear(g_c), s	2.5	0.0	8.5	3.2	0.0	12.6	4.6	0.0	46.0	5.0	12.1	1.5
Prop In Lane	1.00		0.55	1.00		0.73	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	446	0	616	507	0	609	412	0	675	173	693	589
V/C Ratio(X)	0.12	0.00	0.25	0.13	0.00	0.35	0.24	0.00	0.94	0.63	0.59	0.12
Avail Cap(c_a), veh/h	512	0	616	561	0	609	444	0	895	199	910	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.87	0.87	0.87
Uniform Delay (d), s/veh	23.7	0.0	27.4	23.1	0.0	28.1	22.4	0.0	38.3	29.1	9.8	8.7
Incr Delay (d2), s/veh	0.1	0.0	1.0	0.1	0.0	1.6	0.2	0.0	14.6	3.5	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	3.9	1.5	0.0	5.7	2.2	0.0	24.7	2.4	5.8	0.6
LnGrp Delay(d),s/veh	23.8	0.0	28.4	23.2	0.0	29.7	22.6	0.0	52.9	32.6	10.3	8.7
LnGrp LOS	C		C	C		C	C		D	C	B	A
Approach Vol, veh/h		207			282			737			590	
Approach Delay, s/veh		27.2			28.1			48.8			14.2	
Approach LOS		C			C			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	56.6	10.9	54.6	8.8	55.7	10.5	55.0
Change Period (Y+Rc), s	4.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	27.0	9.0	67.0	9.0	27.0	9.0	67.0
Max Q Clear Time (g_c+I1), s	4.5	14.6	7.0	48.0	5.2	10.5	6.6	14.1
Green Ext Time (p_c), s	0.0	0.7	0.0	2.5	0.1	0.5	0.1	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	31.9
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	69	83	67	57	154	99	572	58	107	405	72
Future Volume (veh/h)	52	69	83	67	57	154	99	572	58	107	405	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	53	70	84	68	58	156	100	578	59	108	409	73
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	449	282	338	510	166	446	411	613	63	173	693	587
Arrive On Green	0.03	0.38	0.38	0.04	0.39	0.39	0.05	0.39	0.39	0.11	0.78	0.78
Sat Flow, veh/h	1688	733	880	1688	425	1142	1688	1581	161	1688	1772	1502
Grp Volume(v), veh/h	53	0	154	68	0	214	100	0	637	108	409	73
Grp Sat Flow(s),veh/h/ln	1688	0	1614	1688	0	1566	1688	0	1743	1688	1772	1502
Q Serve(g_s), s	2.5	0.0	8.5	3.2	0.0	12.5	4.6	0.0	45.9	5.0	12.1	1.5
Cycle Q Clear(g_c), s	2.5	0.0	8.5	3.2	0.0	12.5	4.6	0.0	45.9	5.0	12.1	1.5
Prop In Lane	1.00		0.55	1.00		0.73	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	449	0	619	510	0	612	411	0	676	173	693	587
V/C Ratio(X)	0.12	0.00	0.25	0.13	0.00	0.35	0.24	0.00	0.94	0.62	0.59	0.12
Avail Cap(c_a), veh/h	516	0	619	565	0	612	444	0	898	200	913	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.87	0.87	0.87
Uniform Delay (d), s/veh	23.6	0.0	27.3	23.0	0.0	27.9	22.5	0.0	38.4	29.1	9.9	8.8
Incr Delay (d2), s/veh	0.1	0.0	1.0	0.1	0.0	1.6	0.2	0.0	14.4	3.4	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	3.5	1.3	0.0	5.1	1.8	0.0	21.4	2.0	3.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.7	0.0	28.2	23.1	0.0	29.5	22.7	0.0	52.8	32.5	10.5	8.8
LnGrp LOS	C	A	C	C	A	C	C	A	D	C	B	A
Approach Vol, veh/h		207			282			737			590	
Approach Delay, s/veh		27.1			28.0			48.8			14.3	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	56.8	10.9	54.4	8.8	55.9	10.5	54.8
Change Period (Y+Rc), s	4.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	27.0	9.0	67.0	9.0	27.0	9.0	67.0
Max Q Clear Time (g_c+I1), s	4.5	14.5	7.0	47.9	5.2	10.5	6.6	14.1
Green Ext Time (p_c), s	0.0	0.7	0.0	2.5	0.1	0.5	0.1	1.7

Intersection Summary			
HCM 6th Ctrl Delay		31.9	
HCM 6th LOS		C	

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3
# of Recorded Intervals	2	2	2	2	2	2
Vehs Entered	1536	1550	1515	1592	1528	1542
Vehs Exited	1518	1549	1526	1577	1505	1536
Starting Vehs	26	45	51	42	46	43
Ending Vehs	44	46	40	57	69	54
Travel Distance (mi)	869	898	872	919	879	887
Travel Time (hr)	41.8	43.5	41.5	43.5	43.5	42.7
Total Delay (hr)	18.7	19.7	18.4	19.3	20.2	19.3
Total Stops	1429	1454	1397	1510	1470	1451
Fuel Used (gal)	37.1	38.0	36.7	38.8	37.2	37.5

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

Volumes adjusted by PHF, Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	5:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	413	432	439	413	415	421
Vehs Exited	383	436	427	411	421	415
Starting Vehs	26	45	51	42	46	43
Ending Vehs	56	41	63	44	40	49
Travel Distance (mi)	228	256	255	245	245	246
Travel Time (hr)	10.8	13.3	12.3	12.0	12.1	12.1
Total Delay (hr)	4.7	6.3	5.5	5.5	5.6	5.5
Total Stops	372	432	422	417	428	414
Fuel Used (gal)	9.5	10.8	10.5	10.4	10.0	10.2

Interval #2 Information Recording2

Start Time	5:15
End Time	6:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1123	1118	1076	1179	1113	1120
Vehs Exited	1135	1113	1099	1166	1084	1120
Starting Vehs	56	41	63	44	40	49
Ending Vehs	44	46	40	57	69	54
Travel Distance (mi)	641	642	617	674	634	642
Travel Time (hr)	31.0	30.2	29.2	31.5	31.4	30.7
Total Delay (hr)	14.1	13.4	12.9	13.8	14.6	13.8
Total Stops	1057	1022	975	1093	1042	1038
Fuel Used (gal)	27.6	27.2	26.1	28.4	27.1	27.3

Intersection: 1: Gaffin Road SE & Macleay Road SE

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	21	73
Average Queue (ft)	1	35
95th Queue (ft)	12	62
Link Distance (ft)	229	111
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: N Site Access & Macleay Road SE

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: Cordon Road SE & Macleay Road SE

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	105	159	59	40	187	55	168
Average Queue (ft)	39	54	1	6	48	17	73
95th Queue (ft)	79	114	21	22	135	44	148
Link Distance (ft)	185	1713			1196		1089
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			50	150		150	
Storage Blk Time (%)		16			0		1
Queuing Penalty (veh)		10			0		0

Intersection: 4: Gaffin Road SE & W Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: Cordon Road SE & Gaffin Road SE

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	101	155	101	112	89	452	299	618	200
Average Queue (ft)	32	47	31	42	35	245	98	325	63
95th Queue (ft)	78	110	75	87	79	399	239	553	193
Link Distance (ft)		903		905		817		1196	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	100		150		350		200		100
Storage Blk Time (%)	1	2		0		3		46	
Queuing Penalty (veh)	1	1		0		1		63	

Network Summary

Network wide Queuing Penalty: 77

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3
# of Recorded Intervals	2	2	2	2	2	2
Vehs Entered	1573	1559	1619	1571	1492	1565
Vehs Exited	1575	1553	1644	1567	1482	1564
Starting Vehs	31	48	64	38	38	41
Ending Vehs	29	54	39	42	48	40
Travel Distance (mi)	898	892	941	910	859	900
Travel Time (hr)	43.4	42.7	45.9	42.7	40.2	43.0
Total Delay (hr)	19.5	19.2	21.0	18.8	17.3	19.2
Total Stops	1523	1443	1553	1429	1352	1461
Fuel Used (gal)	38.0	38.0	39.8	38.2	36.1	38.0

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

Volumes adjusted by PHF, Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	5:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	438	435	465	429	396	431
Vehs Exited	417	431	480	421	388	427
Starting Vehs	31	48	64	38	38	41
Ending Vehs	52	52	49	46	46	47
Travel Distance (mi)	251	250	279	247	231	252
Travel Time (hr)	12.2	11.8	13.9	11.8	11.3	12.2
Total Delay (hr)	5.6	5.2	6.6	5.3	5.1	5.6
Total Stops	413	427	424	388	367	404
Fuel Used (gal)	10.3	10.6	11.6	10.5	10.0	10.6

Interval #2 Information Recording2

Start Time	5:15
End Time	6:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1135	1124	1154	1142	1096	1131
Vehs Exited	1158	1122	1164	1146	1094	1135
Starting Vehs	52	52	49	46	46	47
Ending Vehs	29	54	39	42	48	40
Travel Distance (mi)	647	642	662	662	629	649
Travel Time (hr)	31.2	30.8	32.0	30.9	28.9	30.7
Total Delay (hr)	14.0	14.0	14.5	13.5	12.2	13.6
Total Stops	1110	1016	1129	1041	985	1059
Fuel Used (gal)	27.6	27.4	28.2	27.7	26.1	27.4

Intersection: 1: Gaffin Road SE & Macleay Road SE

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	6	68
Average Queue (ft)	0	36
95th Queue (ft)	0	60
Link Distance (ft)	229	111
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: N Site Access & Macleay Road SE

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: Cordon Road SE & Macleay Road SE

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	128	134	60	46	251	96	230
Average Queue (ft)	44	56	2	9	50	21	71
95th Queue (ft)	91	114	31	30	155	63	169
Link Distance (ft)	185	1713			1196		1089
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			50	150		150	
Storage Blk Time (%)		15			1		1
Queuing Penalty (veh)		10			0		0

Intersection: 4: Gaffin Road SE & W Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: Cordon Road SE & Gaffin Road SE

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	84	166	95	130	159	434	300	634	200
Average Queue (ft)	27	52	31	43	38	244	104	330	57
95th Queue (ft)	70	122	73	97	106	397	257	545	180
Link Distance (ft)		903		905		817		1196	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	100		150		350		200		100
Storage Blk Time (%)	0	3	0	0		2	0	44	0
Queuing Penalty (veh)	1	2	0	0		1	1	62	0

Network Summary

Network wide Queuing Penalty: 77

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3
# of Recorded Intervals	2	2	2	2	2	2
Vehs Entered	1749	1834	1779	1830	1798	1797
Vehs Exited	1753	1829	1768	1837	1779	1794
Starting Vehs	50	47	51	52	40	43
Ending Vehs	46	52	62	45	59	52
Travel Distance (mi)	933	972	920	970	949	949
Travel Time (hr)	45.7	48.7	45.4	49.1	46.9	47.2
Total Delay (hr)	20.1	21.9	20.2	22.5	20.9	21.1
Total Stops	1747	1848	1751	1833	1827	1801
Fuel Used (gal)	40.0	41.3	39.4	41.9	40.7	40.7

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

Volumes adjusted by PHF, Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	5:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	501	514	489	501	496	500
Vehs Exited	497	522	494	499	477	499
Starting Vehs	50	47	51	52	40	43
Ending Vehs	54	39	46	54	59	50
Travel Distance (mi)	264	279	255	267	265	266
Travel Time (hr)	13.4	14.7	12.7	13.6	13.1	13.5
Total Delay (hr)	6.0	7.0	5.6	6.4	5.8	6.1
Total Stops	520	547	502	492	538	520
Fuel Used (gal)	11.4	12.0	10.9	11.6	11.4	11.5

Interval #2 Information Recording2

Start Time	5:15
End Time	6:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1248	1320	1290	1329	1302	1297
Vehs Exited	1256	1307	1274	1338	1302	1296
Starting Vehs	54	39	46	54	59	50
Ending Vehs	46	52	62	45	59	52
Travel Distance (mi)	669	693	666	703	684	683
Travel Time (hr)	32.4	34.0	32.7	35.5	33.8	33.7
Total Delay (hr)	14.1	14.9	14.6	16.1	15.1	15.0
Total Stops	1227	1301	1249	1341	1289	1281
Fuel Used (gal)	28.6	29.3	28.5	30.3	29.3	29.2

Intersection: 1: Gaffin Road SE & Macleay Road SE

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	12	74
Average Queue (ft)	0	40
95th Queue (ft)	6	62
Link Distance (ft)	229	111
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: N Site Access & Macleay Road SE

Movement	EB	WB	NB
Directions Served	TR	L	LR
Maximum Queue (ft)	7	50	95
Average Queue (ft)	0	11	42
95th Queue (ft)	5	40	71
Link Distance (ft)	229		97
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)		50	
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 3: Cordon Road SE & Macleay Road SE

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	166	131	30	107	224	93	276
Average Queue (ft)	71	58	1	16	45	18	105
95th Queue (ft)	136	114	21	59	148	58	208
Link Distance (ft)	185	1713			1196		1089
Upstream Blk Time (%)	0						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)			50	150		150	
Storage Blk Time (%)		18			1		3
Queuing Penalty (veh)		12			0		1

Intersection: 4: Gaffin Road SE & W Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	75	33
Average Queue (ft)	32	2
95th Queue (ft)	59	17
Link Distance (ft)	144	111
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Cordon Road SE & Gaffin Road SE

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	103	162	100	157	303	535	300	653	200
Average Queue (ft)	31	62	31	48	53	250	98	321	53
95th Queue (ft)	77	131	76	107	157	429	241	551	171
Link Distance (ft)		903		905		817		1196	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	100		150		350		200		100
Storage Blk Time (%)	1	3		0		3	0	45	
Queuing Penalty (veh)	1	2		0		2	1	63	

Network Summary

Network wide Queuing Penalty: 83

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3
# of Recorded Intervals	2	2	2	2	2	2
Vehs Entered	2026	2007	1967	1982	1995	1996
Vehs Exited	2038	1997	1964	1992	1999	1998
Starting Vehs	59	51	62	63	64	58
Ending Vehs	47	61	65	53	60	55
Travel Distance (mi)	1173	1158	1134	1141	1166	1155
Travel Time (hr)	57.7	54.9	53.8	55.4	57.1	55.8
Total Delay (hr)	26.6	24.2	23.4	24.9	26.3	25.1
Total Stops	1912	1837	1797	1819	1879	1851
Fuel Used (gal)	49.1	48.6	47.3	47.8	48.5	48.3

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

Volumes adjusted by PHF, Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	5:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	506	490	502	498	495	498
Vehs Exited	507	491	494	512	509	502
Starting Vehs	59	51	62	63	64	58
Ending Vehs	58	50	70	49	50	55
Travel Distance (mi)	293	286	290	291	294	291
Travel Time (hr)	14.3	13.7	14.1	13.8	14.0	14.0
Total Delay (hr)	6.6	6.1	6.3	5.9	6.1	6.2
Total Stops	480	463	474	472	464	472
Fuel Used (gal)	12.2	12.1	12.3	11.9	12.1	12.1

Interval #2 Information Recording2

Start Time	5:15
End Time	6:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1520	1517	1465	1484	1500	1496
Vehs Exited	1531	1506	1470	1480	1490	1496
Starting Vehs	58	50	70	49	50	55
Ending Vehs	47	61	65	53	60	55
Travel Distance (mi)	880	873	844	850	872	864
Travel Time (hr)	43.4	41.2	39.7	41.6	43.2	41.8
Total Delay (hr)	20.0	18.1	17.2	19.0	20.2	18.9
Total Stops	1432	1374	1323	1347	1415	1380
Fuel Used (gal)	36.9	36.5	35.0	35.9	36.4	36.1

Intersection: 1: Gaffin Road SE & Macleay Road SE

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	34	81
Average Queue (ft)	5	42
95th Queue (ft)	24	69
Link Distance (ft)	229	111
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: N Site Access & Macleay Road SE

Movement	EB
Directions Served	TR
Maximum Queue (ft)	20
Average Queue (ft)	0
95th Queue (ft)	7
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Cordon Road SE & Macleay Road SE

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	184	110	40	76	347	78	233
Average Queue (ft)	77	50	1	8	97	29	82
95th Queue (ft)	142	97	23	44	256	64	179
Link Distance (ft)	185	1713			1196		1089
Upstream Blk Time (%)	0						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)			50	150		150	
Storage Blk Time (%)		19	0		3		1
Queuing Penalty (veh)		9	0		1		1

Intersection: 4: Gaffin Road SE & W Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: Cordon Road SE & Gaffin Road SE

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	115	190	189	284	449	742	300	556	200
Average Queue (ft)	35	72	49	105	88	397	97	238	52
95th Queue (ft)	82	155	128	212	274	636	203	453	165
Link Distance (ft)		903		905		817		1196	
Upstream Blk Time (%)						0			
Queuing Penalty (veh)						0			
Storage Bay Dist (ft)	100		150		350		200		100
Storage Blk Time (%)	1	7	1	5		13	0	33	
Queuing Penalty (veh)	1	4	1	3		12	1	58	

Network Summary

Network wide Queuing Penalty: 90

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3
# of Recorded Intervals	2	2	2	2	2	2
Vehs Entered	2042	2024	2089	2051	2049	2051
Vehs Exited	2030	2022	2087	2039	2051	2045
Starting Vehs	56	51	55	56	76	54
Ending Vehs	68	53	57	68	74	63
Travel Distance (mi)	1184	1172	1206	1187	1189	1188
Travel Time (hr)	57.4	55.0	58.4	56.8	58.4	57.2
Total Delay (hr)	26.0	23.8	26.7	25.3	27.0	25.7
Total Stops	1867	1802	1890	1893	1915	1873
Fuel Used (gal)	49.3	47.9	50.5	49.3	49.9	49.4

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

Volumes adjusted by PHF, Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	5:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	535	539	541	535	490	531
Vehs Exited	516	531	539	544	515	529
Starting Vehs	56	51	55	56	76	54
Ending Vehs	75	59	57	47	51	58
Travel Distance (mi)	302	315	308	319	291	307
Travel Time (hr)	15.6	15.0	14.9	15.9	13.7	15.0
Total Delay (hr)	7.6	6.6	6.8	7.5	6.0	6.9
Total Stops	516	506	501	529	454	500
Fuel Used (gal)	12.9	12.8	12.9	13.4	12.0	12.8

Interval #2 Information Recording2

Start Time	5:15
End Time	6:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1507	1485	1548	1516	1559	1524
Vehs Exited	1514	1491	1548	1495	1536	1516
Starting Vehs	75	59	57	47	51	58
Ending Vehs	68	53	57	68	74	63
Travel Distance (mi)	882	857	898	869	897	881
Travel Time (hr)	41.8	40.0	43.5	40.9	44.7	42.2
Total Delay (hr)	18.5	17.2	19.9	17.8	21.0	18.9
Total Stops	1351	1296	1389	1364	1461	1374
Fuel Used (gal)	36.5	35.1	37.5	35.9	37.8	36.6

Intersection: 1: Gaffin Road SE & Macleay Road SE

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	33	74
Average Queue (ft)	3	40
95th Queue (ft)	18	63
Link Distance (ft)	229	111
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: N Site Access & Macleay Road SE

Movement	EB
Directions Served	TR
Maximum Queue (ft)	35
Average Queue (ft)	2
95th Queue (ft)	18
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Cordon Road SE & Macleay Road SE

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	174	119	42	37	403	123	235
Average Queue (ft)	83	50	1	8	106	33	87
95th Queue (ft)	154	98	23	23	271	72	182
Link Distance (ft)	185	1713			1196		1089
Upstream Blk Time (%)	2						
Queuing Penalty (veh)	2						
Storage Bay Dist (ft)			50	150		150	
Storage Blk Time (%)		18	0		4		1
Queuing Penalty (veh)		9	0		1		1

Intersection: 4: Gaffin Road SE & W Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: Cordon Road SE & Gaffin Road SE

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	106	173	181	263	381	772	299	496	200
Average Queue (ft)	40	73	57	115	75	400	96	203	55
95th Queue (ft)	87	146	120	214	248	659	206	393	170
Link Distance (ft)		903		905		817		1196	
Upstream Blk Time (%)						0			
Queuing Penalty (veh)						0			
Storage Bay Dist (ft)	100		150		350		200		100
Storage Blk Time (%)	1	6	0	6		13	0	27	0
Queuing Penalty (veh)	1	3	0	4		12	0	49	0

Network Summary

Network wide Queuing Penalty: 83

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3
# of Recorded Intervals	2	2	2	2	2	2
Vehs Entered	2186	2201	2166	2217	2267	2207
Vehs Exited	2183	2224	2163	2206	2269	2210
Starting Vehs	80	82	68	54	71	73
Ending Vehs	83	59	71	65	69	68
Travel Distance (mi)	1193	1206	1188	1218	1251	1211
Travel Time (hr)	61.2	61.5	63.2	64.3	65.3	63.1
Total Delay (hr)	28.9	29.0	30.9	31.3	31.4	30.3
Total Stops	2256	2263	2317	2361	2450	2330
Fuel Used (gal)	51.3	51.9	51.3	52.8	53.6	52.2

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

Volumes adjusted by PHF, Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	5:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	574	570	578	564	600	575
Vehs Exited	590	585	570	542	605	578
Starting Vehs	80	82	68	54	71	73
Ending Vehs	64	67	76	76	66	66
Travel Distance (mi)	311	313	312	301	327	313
Travel Time (hr)	15.9	16.7	17.6	15.6	17.4	16.6
Total Delay (hr)	7.5	8.3	9.1	7.4	8.5	8.2
Total Stops	562	604	663	589	677	619
Fuel Used (gal)	13.3	13.6	13.7	13.0	13.8	13.5

Interval #2 Information Recording2

Start Time	5:15
End Time	6:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1612	1631	1588	1653	1667	1631
Vehs Exited	1593	1639	1593	1664	1664	1631
Starting Vehs	64	67	76	76	66	66
Ending Vehs	83	59	71	65	69	68
Travel Distance (mi)	881	893	876	917	924	898
Travel Time (hr)	45.3	44.8	45.6	48.7	47.8	46.5
Total Delay (hr)	21.5	20.6	21.8	23.9	22.9	22.1
Total Stops	1694	1659	1654	1772	1773	1712
Fuel Used (gal)	38.1	38.3	37.6	39.8	39.8	38.7

Intersection: 1: Gaffin Road SE & Macleay Road SE

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	5	42	90
Average Queue (ft)	0	4	43
95th Queue (ft)	4	23	69
Link Distance (ft)	1077	229	111
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: N Site Access & Macleay Road SE

Movement	EB	WB	NB
Directions Served	TR	L	LR
Maximum Queue (ft)	62	79	92
Average Queue (ft)	6	15	40
95th Queue (ft)	39	52	71
Link Distance (ft)	229		97
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)		50	
Storage Blk Time (%)		1	
Queuing Penalty (veh)		1	

Intersection: 3: Cordon Road SE & Macleay Road SE

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	185	148	60	184	463	192	531
Average Queue (ft)	114	56	2	35	151	39	169
95th Queue (ft)	193	117	32	117	354	111	362
Link Distance (ft)	185	1713			1196		1089
Upstream Blk Time (%)	3						
Queuing Penalty (veh)	7						
Storage Bay Dist (ft)			50	150		150	
Storage Blk Time (%)		19	0		7		9
Queuing Penalty (veh)		9	0		6		6

Intersection: 4: Gaffin Road SE & W Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	73	38
Average Queue (ft)	30	2
95th Queue (ft)	58	17
Link Distance (ft)	144	111
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Cordon Road SE & Gaffin Road SE

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	136	213	157	248	264	687	299	626	200
Average Queue (ft)	36	82	46	110	74	390	109	259	55
95th Queue (ft)	88	162	102	210	213	603	245	502	170
Link Distance (ft)		903		905		817		1196	
Upstream Blk Time (%)						0			
Queuing Penalty (veh)						0			
Storage Bay Dist (ft)	100		150		350		200		100
Storage Blk Time (%)	0	9		7		13	0	33	0
Queuing Penalty (veh)	0	5		5		12	1	58	0

Network Summary

Network wide Queuing Penalty: 109