



LSC TRANSPORTATION CONSULTANTS, INC.

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September 24, 2020

Mr. Derek Guarascio
ModernWest Properties, LLC
6185 Brigadoon Court
Longmont, CO 80503

Re: ModernWest
Longmont, CO
LSC #200030

Dear Mr. Guarascio:

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the proposed ModernWest development. As shown on Figure 1, the site is located north of Nelson Road and east of Airport Road in Longmont, Colorado.

REPORT CONTENTS

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the existing weekday peak-hour traffic volumes; the existing daily traffic volumes in the area; the typical weekday site-generated traffic volume projections for the site; the assignment of the projected traffic volumes to the area roadways; the projected long-term background and resulting total traffic volumes on the area roadways; the site's projected traffic impacts; and any recommended roadway improvements to mitigate the site's traffic impacts or the impacts from growth in background traffic. The scope of work is based on the attached scoping form approved by City staff.

LAND USE AND ACCESS

The site is proposed to include about 29 townhome dwelling units, about 156 apartment dwelling units, about 21 tiny homes, about 153,940 square feet of light industrial space, about 20,620 square feet of retail space, and about 38,860 square feet of office space. Access is proposed from several locations as shown in the conceptual site plan in Figure 2.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The major roadways in the site's vicinity are shown on Figure 1 and are described below. The City of Longmont *Roadway System Plan* from Appendix C of the *Envision Longmont Plan* is attached for reference.

- **Nelson Road** is an east-west, two-lane principal arterial roadway south of the site. It is planned to be widened to four lanes over time which includes improvements to the Airport Road intersection. The intersection with Airport Road is signalized with auxiliary turn lanes and the intersection with S. Anderson Street is stop-sign controlled. The posted speed limit in the vicinity of the site is 35 mph.
- **Airport Road** is a north-south, four-lane principal arterial roadway west of the site. The intersection with Nelson Road is signalized with auxiliary lanes and the intersection with Rogers Road is stop-sign controlled with auxiliary lanes. The posted speed limit in the vicinity of the site is 45 mph.
- **S. Anderson Street** is a north-south, two-lane local roadway east of the site. The intersection with Nelson Road is stop-sign controlled. No speed limit is posted in the vicinity of the site. It is planned as a future collector roadway connecting Nelson Road to Rogers Road as part of a future collector roadway network in the area.
- **Rogers Road** is an east-west, two-lane collector roadway north of the site. The intersection with Airport Road is stop-sign controlled and planned to be signalized when warranted. The posed speed limit is 35 mph in the vicinity of the site.

Existing Traffic Conditions

Figure 3 shows the existing lane geometries, traffic controls, posted speed limits, and traffic volumes in the site's vicinity on a typical weekday. The weekday peak-hour traffic volumes are from the attached traffic counts conducted by Counter Measures in February, 2020. The daily volume/speed/classification count on Nelson Road is based on the attached traffic counts conducted by Counter Measures in September, 2020.

2025 and 2040 Background Traffic

Figure 4a shows the estimated 2025 background traffic and Figure 5a shows the estimated 2040 background traffic which assumes annual growth rates of about one percent per the *Longmont Roadway Plan*. The 2040 background traffic assumes the collector street network is completed between Airport Road and Hover Street and between Nelson Road and Rogers Road.

Figures 4b and 5b show the 2025 and 2040 background lane geometry and traffic control.

Existing, 2025, and 2040 Background Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for signalized and unsignalized intersections.

The intersections in Figures 3 through 5b were analyzed as appropriate to determine the existing, 2025 background, and 2040 background levels of service using Synchro. Table 1 shows the level of service analysis results. The level of service reports are attached.

1. **Airport Road/Rogers Road:** All movements at this stop-sign controlled intersection currently operate at LOS "D" or better during both morning and afternoon peak-hours and

are expected to do so through 2025 with the following exceptions: The eastbound left-turn movement and the westbound left-turn and through movements operate at LOS “E” or “F” in one or both peak-hours and are expected to do so through 2025. In 2040, this intersection is expected to be signalized and as such is expected to operate at LOS “B” during the morning peak-hour and LOS “A” during the afternoon peak-hour.

2. **Rogers Road/Local Collector:** All movements at this future stop-sign controlled intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2040.
3. **Local Collector/Local Street:** All movements at this future stop-sign controlled intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2040.
6. **Anderson Street/Local Collector:** All movements at this future stop-sign controlled intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2040.
11. **Airport Road/Nelson Road:** This signalized intersection currently operates at an overall LOS “C” during both morning and afternoon peak-hours. By 2025, the morning peak-hour is expected to operate at LOS “D” and the afternoon peak-hour is expected to operate at LOS “C” and do so through 2040.
12. **Nelson Road/Local Street:** All movements at this future stop-sign controlled intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2040 with the following exceptions: The northbound and southbound approaches are expected to operate at LOS “E” during the morning peak-hour and LOS “F” during the afternoon peak-hour by 2040.
13. **Nelson Road/Anderson Road:** All movements at this stop-sign controlled intersection currently operate at LOS “B” or better during both morning and afternoon peak-hours and are expected to do so through 2040 with the following exceptions. The northbound and southbound approaches are expected to operate at LOS “E” or “F” during one or both peak-hours through 2040.

TRIP GENERATION

Table 2 shows the estimated average weekday, morning peak-hour, and afternoon peak-hour trip generation for the proposed site based on the rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE).

The site is projected to generate about 4,064 external vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 179 vehicles would enter and about 97 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 168 vehicles would enter and about 247 vehicles would exit.

This assumes 25 percent passby trips for retail trips and an internal trip reduction of 5 percent for commercial and office uses consistent with the assumptions of the attached scoping form

approved by City staff. The percentages to/from the south on Airport Road and to/from the west on Nelson Road were modified from those shown in the base assumptions form based on the existing traffic counts.

TRIP DISTRIBUTION

Figure 6 shows the estimated directional distribution of the site-generated traffic volumes on the area roadways. The estimates were based on the location of the site with respect to the regional population, employment, and activity centers; the site's proposed land use; and coordination with City staff.

TRIP ASSIGNMENT

Figure 7a shows the estimated 2025 primary site-generated traffic volumes based on the primary trip generation estimate (from Table 2) and the directional distribution in Figure 6.

Figure 7b show the estimated 2025 passby site-generated traffic volumes.

Figure 8a shows the estimated 2040 primary site-generated traffic volumes based on the primary trip generation estimate (from Table 2) and the directional distribution in Figure 6.

Figure 8b show the estimated 2040 passby site-generated traffic volumes.

2025 AND 2040 TOTAL TRAFFIC

Figure 9a shows the 2025 total traffic which is the sum of 2025 background traffic volumes (from Figure 4a) and the site-generated traffic volumes (from Figures 7a and 7b). Figure 9b shows the recommended lane geometry and traffic control.

Figure 10a shows the 2040 total traffic which is the sum of 2040 background traffic volumes (from Figure 5a) and the site-generated traffic volumes (from Figures 8a and 8b). Figure 10b shows the 2040 recommended lane geometry and traffic control.

PROJECTED LEVELS OF SERVICE

The intersections in Figures 9a through 10b were analyzed to determine the 2025 and 2040 - total traffic levels of service. Table 1 shows the level of service analysis results. The level of service reports are attached.

- 1. Airport Road/Rogers Road:** Several movements at this stop-sign controlled intersection are expected to operate at LOS "E" or "F" during one or both peak-hours in 2025. By 2040, this intersection is expected to be signalized and as such is expected to operate at LOS "B" during both peak-hours.
- 2. Rogers Road/Local Collector:** All movements at this stop-sign controlled intersection are expected to operate at LOS "B" or better during both morning and afternoon peak-hours through 2040.

3. **Local Collector/Local Street:** All movements at this stop-sign controlled intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2040.
4. **Local Collector/Northwest Site Access:** All movements at this stop-sign controlled intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2040.
5. **Local Collector/Northeast Site Access:** All movements at this stop-sign controlled intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2040.
6. **Anderson Street/Local Collector:** All movements at this stop-sign controlled intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2040.
7. **Local Street/West Site Access #1:** All movements at this stop-sign controlled intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2040.
8. **Local Street/West Site Access #2:** All movements at this stop-sign controlled intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2040.
9. **Local Street/West Site Access #3:** All movements at this stop-sign controlled intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2040.
10. **Local Street/West Site Access #4:** All movements at this stop-sign controlled intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2040.
11. **Airport Road/Nelson Road:** This signalized intersection is expected to operate at an overall LOS “D” during both morning and afternoon peak-hours through 2040.
12. **Nelson Road/Local Street:** All movements at this stop-sign controlled intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2040 with the following exceptions: The northbound and southbound approaches are expected to operate at LOS “E” or “F” during one or both peak-hours.
13. **Nelson Road/Anderson Road:** All movements at this stop-sign controlled intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2040 with the following exceptions: The northbound and southbound approaches are expected to operate at LOS “E” or “F” during one or both peak-hours.

TRAFFIC SIGNAL WARRANT ANALYSIS

Table 3 shows a traffic signal warrant analysis for the Airport Road/Rogers Road intersection. It shows a traffic signal warrant could be met by 2025 and will likely be met between 2025 and

2040. The City has indicated the applicant will be required to make a contribution towards future traffic signal costs.

PLANNED OR RECOMMENDED IMPROVEMENTS

Table 4 shows the planned or recommended improvements.

BYCYCLE/PEDESTRIAN ACCOMMODATIONS

The site will connect to the existing and/or planned sidewalk and trail network identified in the City of Longmont *Multimodal Transportation Improvements* from Appendix C of the *Envision Longmont Plan* which is attached for reference. New bicycle facilities are planned in the area with an east-west connection planned on the north site of the site.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

1. The site is projected to generate about 4,064 external vehicle-trips on the average week-day, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 179 vehicles would enter and about 97 vehicles would exit the site. During the afternoon peak-hour, about 168 vehicles would enter and about 247 vehicles would exit.

This assumes 25 percent passby trips for retail trips and an internal trip reduction of 5 percent for commercial and office consistent with the assumptions of the attached scoping form approved by City staff.

Projected Levels of Service

2. The signalized Nelson Road/Airport Road intersection is expected to operate at an overall LOS "D" or better during both morning and afternoon peak-hours through 2040.
3. The Airport Road/Rogers Road intersection is expected to be signalized by 2040 and is expected to operate at LOS "B" during both peak-hours. The eastbound and westbound approaches will have considerable peak-hour delay until traffic signal control is warranted and implemented.
4. All movements at the unsignalized intersections are expected to operate at LOS "B" or better through 2040 with the following exceptions: The northbound and southbound approaches at the Nelson Road/Local Street and Nelson Road/Anderson Road intersections are expected to operate at LOS "E" or "F" in one or both peak-hours through 2040. LOS "E" or "F" violates the City's benchmark level of service requirements and requires potential mitigation to be identified. One or both of these intersections may need to be converted to three-quarter movement or require traffic signal control over time. This may not be necessary if the proposed collector street system is completed between Airport Road and Hover Street and between Nelson Road and Rogers Road which will give multiple options to avoid left-turn movements onto one of these relatively busy streets.

Recommendations

5. The planned or recommended improvements are shown in Figures 9b and 10b and summarized in Table 4.

* * * * *

We trust our findings will assist you in gaining approval of the proposed ModernWest development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By

Christopher S. McGranahan, PE, PTOE
Principal

CSM/lwc



Enclosures: Tables 1 - 4
Figures 1 - 10b
Scoping Form
Traffic Count Reports
Level of Service Definitions
Level of Service Reports
Envision Longmont Plan - Appendix C: City of Longmont Roadway System Plan
Envision Longmont Plan - Appendix C: City of Longmont Multimodal Transportation Improvements

Table 1 (Page 1 of 2)
Intersection Levels of Service Analysis
ModernWest
Longmont, CO
LSC #200030; September, 2020

Intersection No. & Location	Traffic Control	Existing Traffic		2025 Background		2025 Total		2025 Total Mitigated		2040 Background		2040 Total	
		Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1) <u>Airport Road/Rogers Road</u>	TWSC												
NB Left		B	A	B	A	B	A			--	--	--	--
EB Left		F	E	F	E	F	F			--	--	--	--
EB Through/Right		D	C	D	C	F	E			--	--	--	--
WB Left		F	F	F	F	F	F			--	--	--	--
WB Through		F	A	F	F	F	F			--	--	--	--
WB Right		B	B	B	B	B	B			--	--	--	--
SB Left		A	B	A	B	A	B			--	--	--	--
Critical Movement Delay		102.5	196.3	124.8	>240	>240	>240			--	--	--	--
	Signalized												
EB Left								C	D	D	D	C	D
EB Through								C	C	C	C	C	C
WB Left								D	D	D	D	D	D
WB Through								D	D	D	D	D	D
WB Right								A	A	A	A	A	A
NB Left								A	A	A	A	B	A
NB Through								A	A	B	A	B	A
NB Right								A	A	A	A	A	A
SB Left								A	A	A	B	A	C
SB Through								B	A	B	A	B	A
SB Right								A	A	A	A	A	A
Entire Intersection Delay (sec /veh)		--	--	--	--	--	--	12.0	9.8	14.0	9.8	15.8	11.8
Entire Intersection LOS		--	--	--	--	--	--	B	A	B	A	B	B
2) <u>Rogers Road/Local Collector</u>	TWSC												
NWB Approach		--	--	A	A	B	B			B	B	B	B
WB Left		--	--	A	A	A	A			A	A	A	A
Critical Movement Delay		--	--	9.2	9.5	10.3	11.9			10.5	11.5	11.1	13.0
3) <u>Local Collector/Local Street</u>													
NB Approach		--	--	--	--	--	--			A	A	A	B
WB Approach		--	--	--	--	--	--			A	A	A	A
Critical Movement Delay		--	--	--	--	--	--			9.2	9.4	9.8	10.2
4) <u>Local Collector/Northwest Site Access</u>	TWSC												
NB Approach		--	--	--	--	A	B			--	--	A	A
WB Approach		--	--	--	--	A	A			--	--	A	A
Critical Movement Delay		--	--	--	--	9.7	10.2			--	--	9.2	9.9
5) <u>Local Collector/Northeast Site Access</u>	TWSC												
NB Approach		--	--	--	--	A	A			--	--	A	A
WB Approach		--	--	--	--	A	A			--	--	A	A
Critical Movement Delay		--	--	--	--	9.3	9.5			--	--	9.7	9.9
6) <u>Anderson Street/Local Collector</u>	TWSC												
NB Approach		--	--	--	--	--	--			B	B	B	B
EB Approach		--	--	--	--	--	--			A	A	A	A
WB Approach		--	--	--	--	--	--			A	A	A	A
SB Approach		--	--	--	--	--	--			B	B	B	B
Critical Movement Delay		--	--	--	--	--	--			10.7	10.9	11.6	11.9
7) <u>Local Street/West Site Access #1</u>	TWSC												
WB Approach		--	--	--	--	--	--			--	--	A	A
SB Approach		--	--	--	--	--	--			--	--	A	A
Critical Movement Delay		--	--	--	--	--	--			--	--	9.1	9.5
8) <u>Local Street/West Site Access #2</u>	TWSC												
WB Approach		--	--	--	--	--	--			--	--	A	A
SB Approach		--	--	--	--	--	--			--	--	A	A
Critical Movement Delay		--	--	--	--	--	--			--	--	9.4	9.7

Table 1 (Page 2 of 2)
Intersection Levels of Service Analysis
ModernWest
Longmont, CO
LSC #200030; September, 2020

Intersection Location	Traffic Control	Existing Traffic		2025 Background		2025 Total		2025 Total Mitigated		2040 Background		2040 Total	
		Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM
9) <u>Local Street/West Site Access #3</u>	TWSC	--	--	--	--	--	--			--	--	A	A
WB Approach		--	--	--	--	--	--			--	--	A	A
SB Approach		--	--	--	--	--	--			--	--	A	A
Critical Movement Delay		--	--	--	--	--	--			--	--	9.5	9.9
10) <u>Local Street/West Site Access #4</u>	TWSC	--	--	--	--	--	--			--	--	A	B
WB Approach		--	--	--	--	--	--			--	--	A	A
SB Approach		--	--	--	--	--	--			--	--	A	A
Critical Movement Delay		--	--	--	--	--	--			--	--	9.3	10.1
11) <u>Airport Road/Nelson Road</u>	Signalized	D	C	D	C	E	D			E	D	E	D
EB Left		D	D	D	D	D	D			C	C	C	C
EB Through		A	A	A	A	A	A			A	B	A	B
EB Right		C	C	C	C	C	D			B	D	C	D
WB Left		D	D	D	D	D	D			D	D	D	D
WB Through		A	A	A	A	A	A			A	A	A	A
WB Right		C	C	C	C	C	C			D	C	D	C
NB Left		C	D	C	D	C	D			C	D	C	D
NB Through		A	A	A	A	A	A			A	A	A	A
NB Right		B	C	B	D	B	D			C	D	C	D
SB Left		C	C	D	C	D	D			D	D	D	D
SB Through		D	A	E	A	E	A			E	A	E	A
SB Right		32.2	30.3	38.1	31.6	38.9	35.1			40.7	34.4	41.3	34.7
Entire Intersection Delay (sec /veh)		C	C	D	C	D	D			D	C	D	C
Entire Intersection LOS													
12) <u>Nelson Road/Local Street⁽¹⁾</u>	TWSC	--	--	--	--	--	--			E	F	E	F
NB Approach		--	--	--	--	--	--			B	B	B	B
EB Left		--	--	--	--	--	--			B	B	B	B
WB Left		--	--	--	--	--	--			E	F	F	F
SB Approach		--	--	--	--	--	--			46.7	111.6	139.8	>240
Critical Movement Delay		--	--	--	--	--	--						
13) <u>Nelson Road/Anderson Road⁽¹⁾</u>	TWSC	E	D	E	E	F	E			F	F	F	F
NB Approach		A	A	A	A	B	B			B	B	B	B
EB Left		A	B	A	B	A	B			B	B	B	B
WB Left		F	E	E	F	F	F			F	F	F	F
SB Approach		58.0	49.1	47.3	57.5	160.4	>240			60.8	102.2	103.7	>240
Critical Movement Delay													

Note:

- (1) One or both of these intersections could eventually warrant traffic signal control. Traffic signal control may not be necessary if the proposed collector street system is completed between Airport Road and Hover Street and between Nelson Road and Rogers Road which will give multiple options to avoid left-turn movements onto one of these relatively busy streets.

Table 2
ESTIMATED TRIP GENERATION
ModernWest
Longmont, CO
LSC #200030; September, 2020

Land Use	Gross Floor Area	Average Daily Traffic	Generation Rates per Unit ⁽¹⁾				Vehicle-Trips Generated				
			Morning Peak-Hour		Evening Peak-Hour		Average Weekday Traffic	Morning Peak-Hour		Evening Peak-Hour	
			AM In	AM Out	PM In	PM Out		AM In	AM Out	PM In	PM Out
Light Industrial ⁽²⁾	153.94 KSF ⁽³⁾	4.96 *	0.616	0.084	0.082	0.548	764	95	13	13	84
Commercial ⁽⁴⁾	20.62 KSF	99.64	0.583	0.357	3.932	4.260	2,055	12	7	81	88
Office ⁽⁵⁾	38.86 KSF	10.92	1.395	0.227	0.191	1.003	424	54	9	7	39
Townhomes ⁽⁶⁾	29 DU ⁽⁷⁾	7.32	0.106	0.354	0.353	0.207	212	3	10	10	6
Apartments ⁽⁶⁾	156 DU	7.32	0.106	0.354	0.353	0.207	1,142	17	55	55	32
Tiny Homes ⁽⁸⁾	21 DU	5.00	0.081	0.179	0.285	0.175	105	2	4	6	4
Total =							4,702	182	98	172	253
Passby Trips ⁽⁹⁾ =							514	2	2	21	21
Internal Trips ⁽¹⁰⁾ =							124	3	1	4	6
Net External Trips =							4,064	177	95	147	226

Notes:

- (1) Source: *Trip Generation*, Institute of Transportation Engineers, 10th Edition, 2017.
- (2) ITE Land Use No. 110 - General Light Industrial; average rates
- (3) KSF = 1,000 square feet
- (4) ITE Land Use No. 820 - Shopping Center; formula rates used for Daily and PM Peak and average rates used for AM Peak
- (5) ITE Land Use No. 710 - General Office Building; formula rates
- (6) ITE Land Use No. 220 - Multifamily Housing (Low-Rise)
- (7) DU = dwelling units
- (8) ITE Land Use No. 240 - Mobile Home Park
- (9) Passby trips for the commercial use was assumed to be 25% per the approved scoping form.
- (10) 5% of the commercial and office trips were assumed to be internal to the site per the approved scoping form.

Table 3
Traffic Signal Warrant Analysis - Airport Road/Rogers Road (Intersection #1)
ModernWest
Longmont, CO
LSC #200030; September, 2020

Hour	Traffic Volumes			Warrant Analysis ⁽¹⁾													
				Warrant 1, Eight Hour Vehicular Volume Evaluation								Warrant 2, Four Hour Vehicular Volume Evaluation			Warrant 3, Peak Hour Vehicular Volume Evaluation		
				Warrant Thresholds				Warrant Threshold Met?					Warrant Threshold Met?			Warrant Threshold Met?	
Minor			Condition A (70%)		Condition B (70%)		West Leg		East Leg		70% Warrant Threshold Minor Minimum	West Leg	East Leg	70% Warrant Threshold Minor Minimum	West Leg	East Leg	
Major ⁽²⁾	West ⁽³⁾	East ⁽⁴⁾															Major
AM Peak	2009	15	62	420	105	630	53	No	No	No	Yes	80	No	No	100	No	No
PM Peak	1813	55	54	420	105	630	53	No	Yes	No	Yes	80	No	No	100	No	No

- (1) Thresholds are based on 2 or more lanes on the major approach and 1 lane on the minor approach with the 70% factor used.
- (2) The major street traffic includes all northbound and southbound movements (left, through and right) on Airport Road.
- (3) The west leg minor street traffic includes all eastbound left and through traffic and 50% of right-turn traffic from Rogers Road.
- (4) The east leg minor street traffic includes all westbound left and through traffic and no right-turn traffic from Rogers Road because there is a dedicated westbound right-turn lane.

Source: LSC Transportation Consultants, Inc.

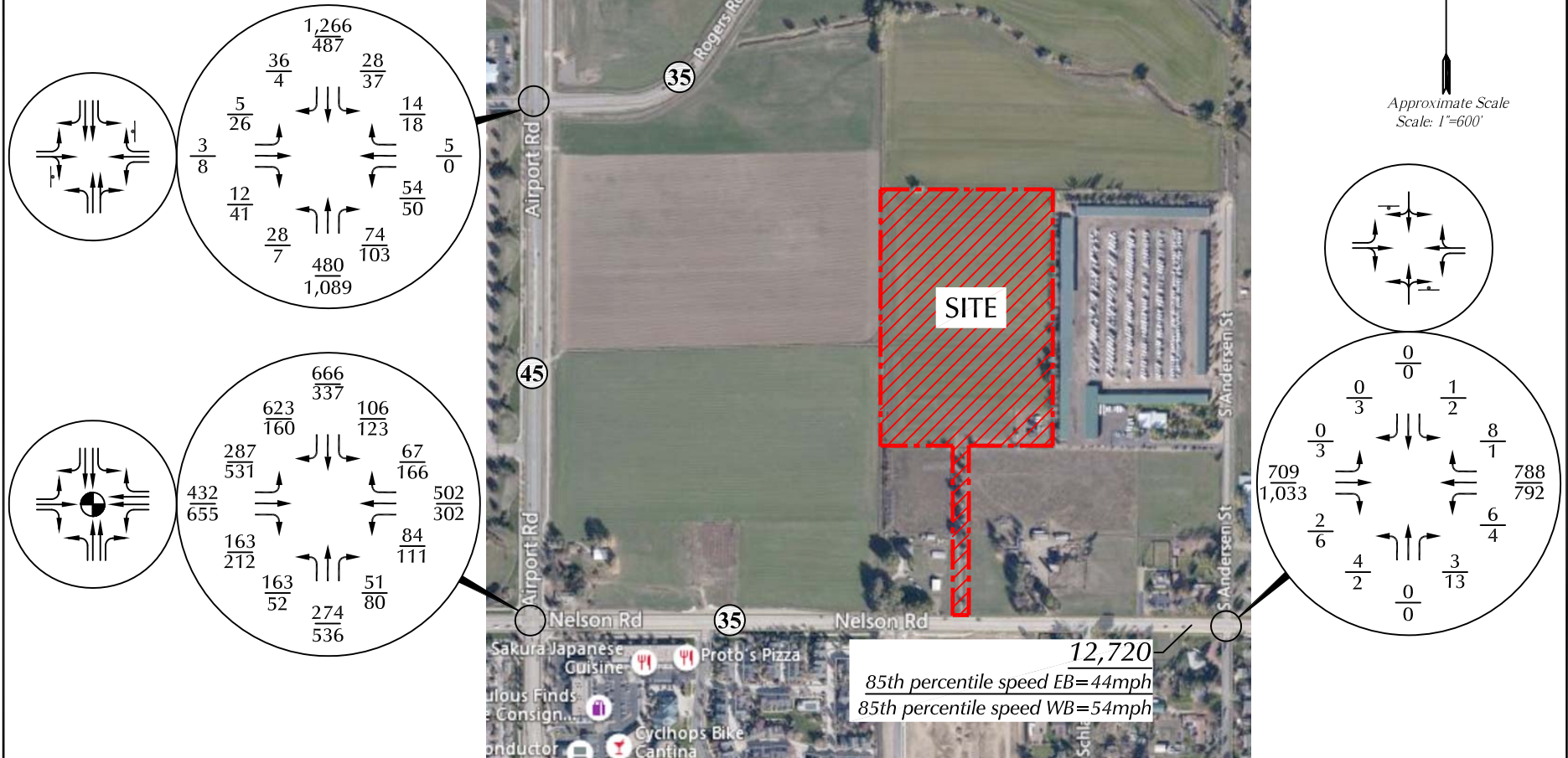
Table 4
Summary of Planned or Recommended Improvements
ModernWest
Longmont, CO
LSC #200030; September, 2020

Intersection No. & Location		2025	Site Traffic Percentage	2040	Site Traffic Percentage
#1	Airport Road/Rogers Road	NB RT = 273 feet + 162-foot transition taper	11%	Traffic Signal Control - possible by 2025 but likely between 2025 and 2040	21% of side road volume
#2	Rogers Road/Local Collector	WB LT = 225 feet (190 feet for deceleration + 35 feet for vehicle storage) + 120-foot transition taper	0%		
#11	Airport Road/Nelson Road			Expand EB LT from single lane to dual lane per Longmont Roadway Plan	1%
				Expand EB Through Lane from single lane to dual lane per Longmont Roadway Plan	2%
	Mountain Brook Drive (Local Collector)	Applicant to construct Mountain Brook Drive west to Rogers Road and east to Anderson Street			





ModernWest (LSC #200030)



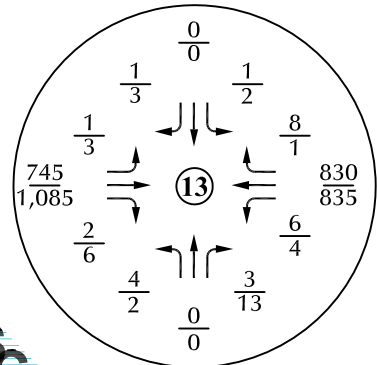
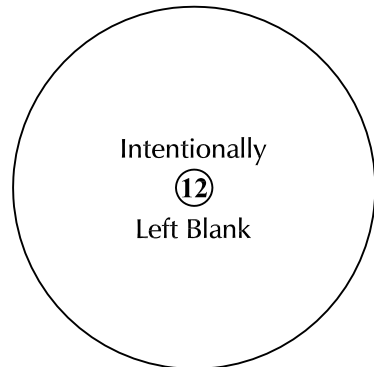
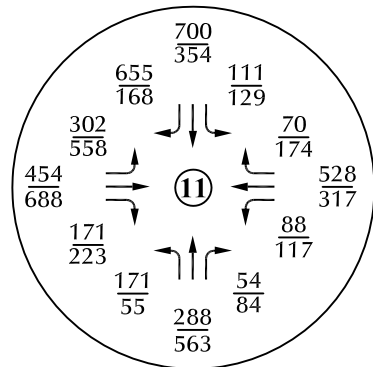
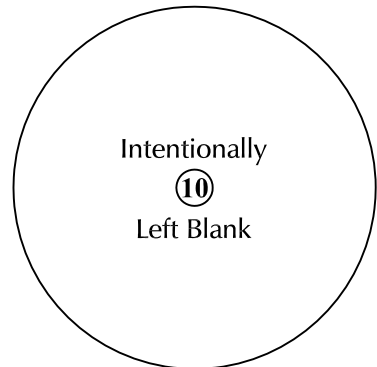
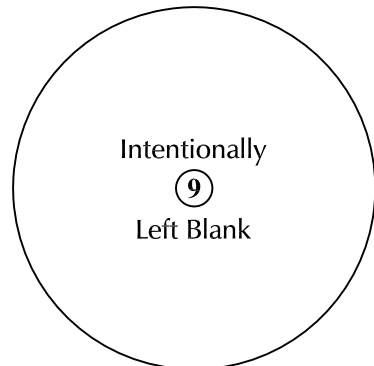
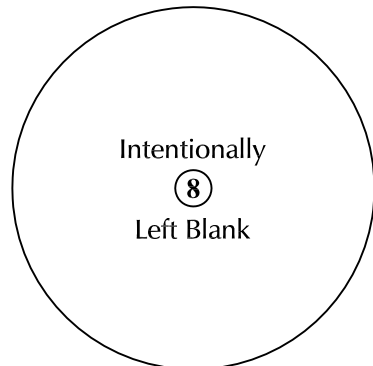
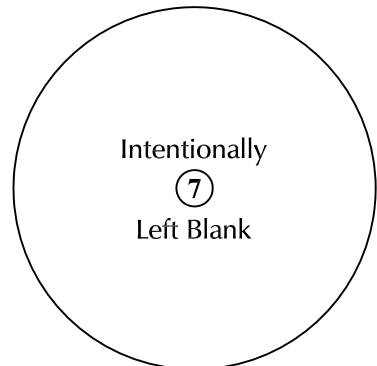
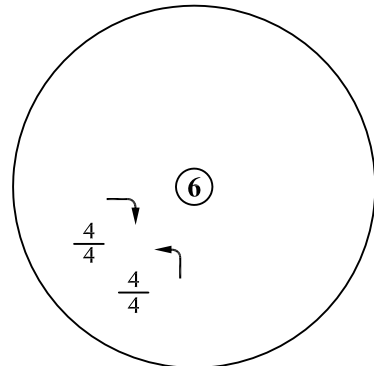
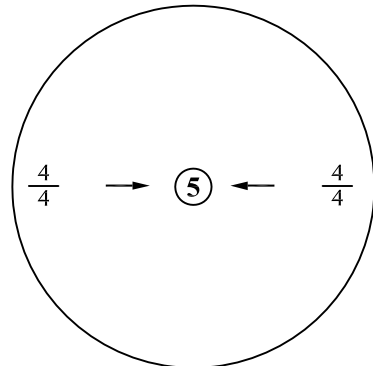
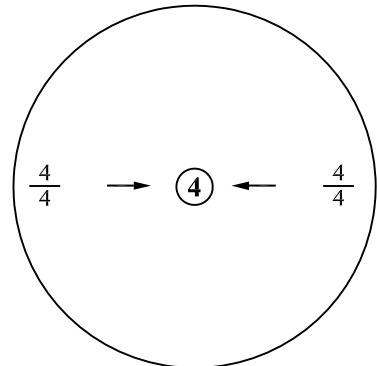
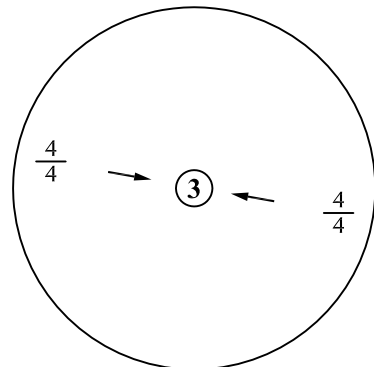
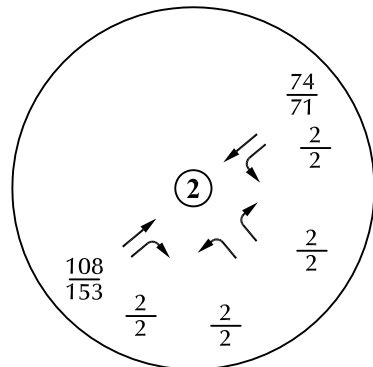
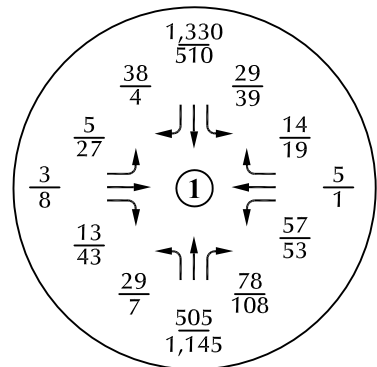
LEGEND:

- ⌋ = Stop Sign
- ⦿ = Traffic Signal
- (35) = Speed Limit
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- 2,500 = Average Daily Traffic

Figure 3

Existing Traffic, Lane Geometry and Traffic Control

ModernWest (LSC #200030)



Notes: Assumes one percent annual growth based on the projections in the Longmont Roadway Plan Figures 2-1 and 2-2 plus the buildout of the Mountain Brook Residential site to the east (August 1, 2019 TIA by Permontes Group).

LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic
 $\frac{35}{26}$ = PM Peak Hour Traffic
 2,500 = Average Daily Traffic

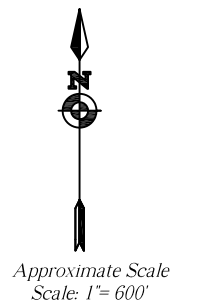
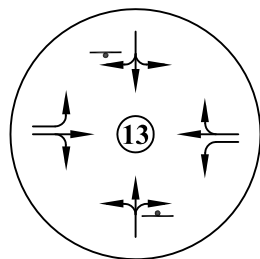
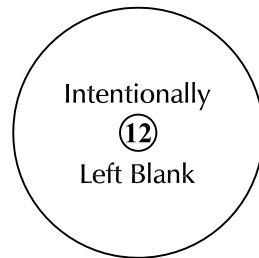
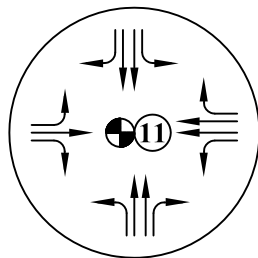
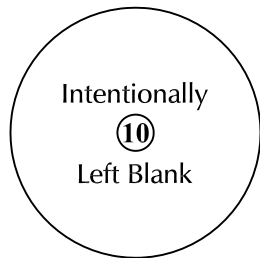
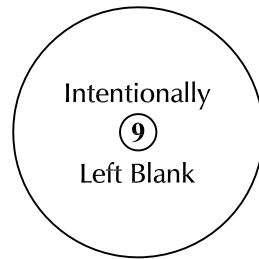
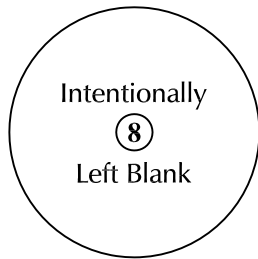
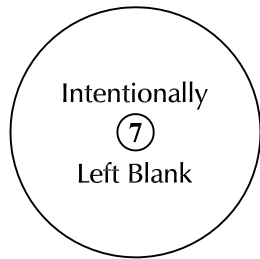
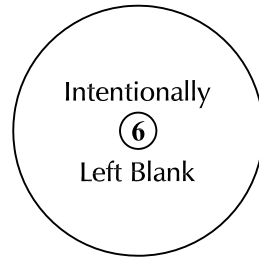
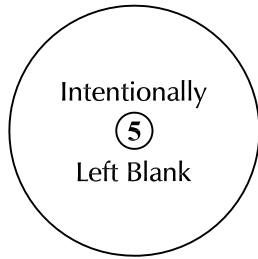
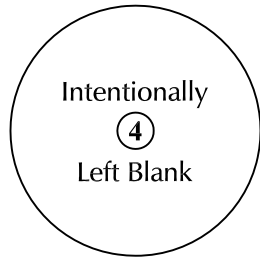
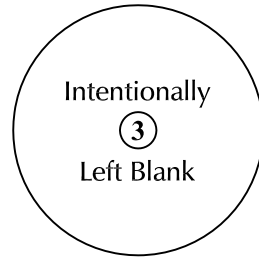
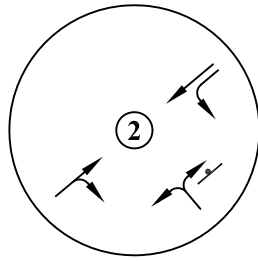
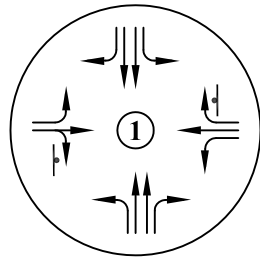


Figure 4a

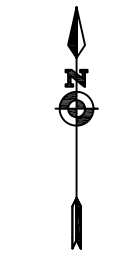
Year 2025 Background Traffic

ModernWest (LSC #200030)



LEGEND:

- ⌄ = Stop Sign
- ⦿ = Traffic Signal



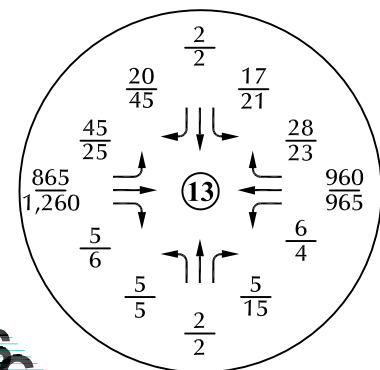
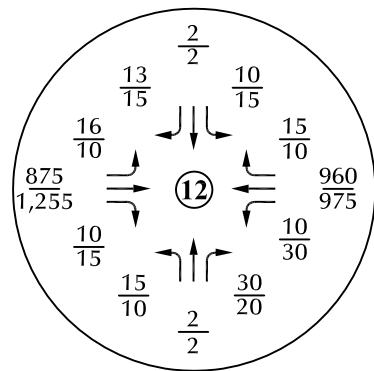
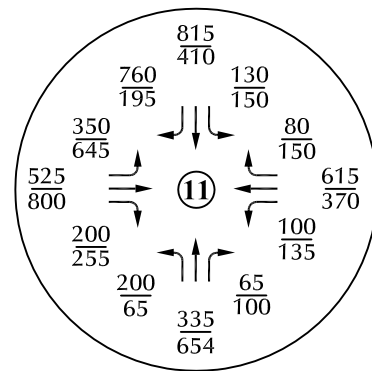
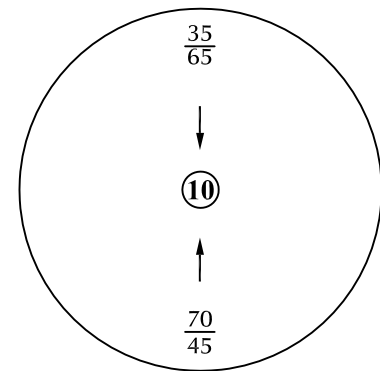
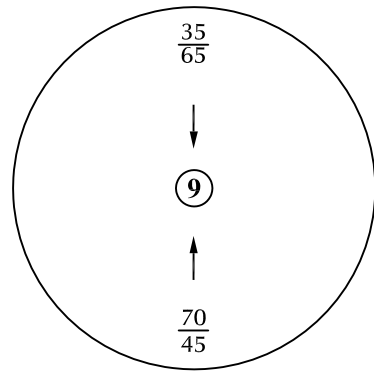
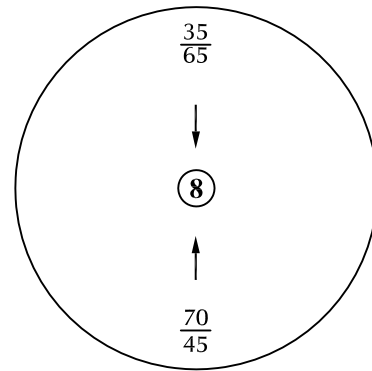
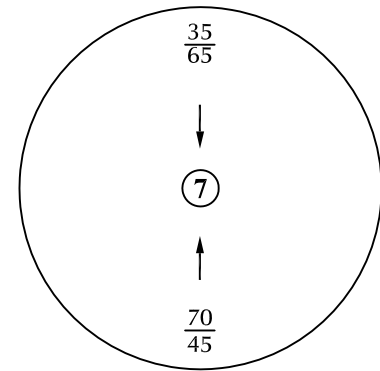
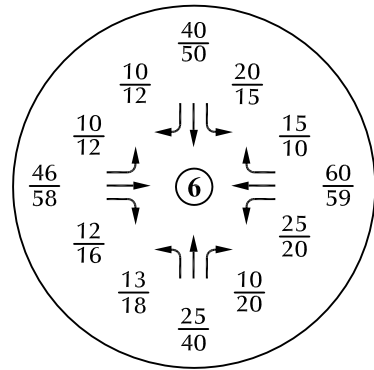
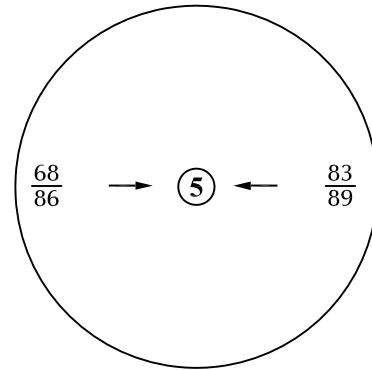
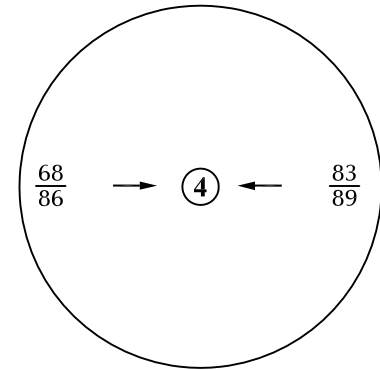
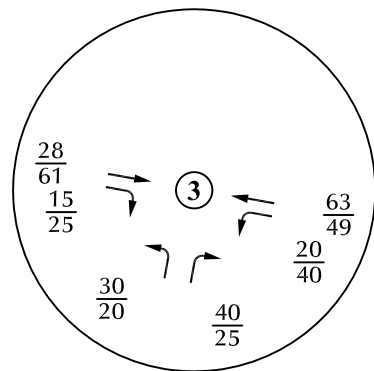
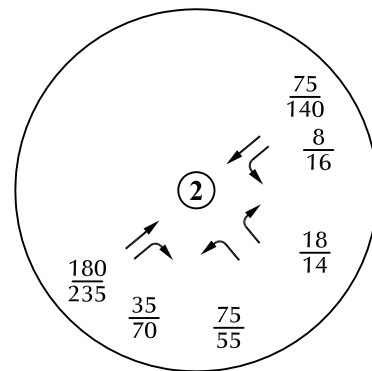
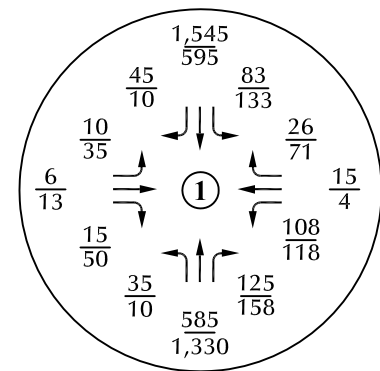
Approximate Scale
Scale: 1" = 600'



Figure 4b

Year 2025 Background Lane Geometry and Traffic Control

ModernWest (LSC #200030)



Notes: Assumes one percent annual growth based on the projections in the Longmont Roadway Plan Figures 2-1 and 2-2 plus the buildout of the Mountain Brook Residential site to the east (August 1, 2019 TIA by Permontes Group).

LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic
 $\frac{35}{26}$ = PM Peak Hour Traffic
 2,500 = Average Daily Traffic

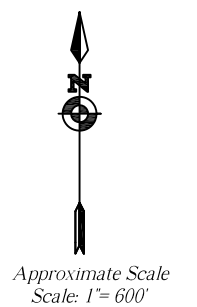
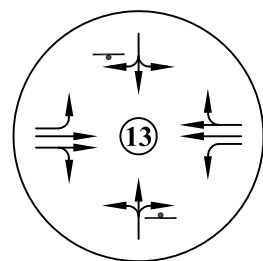
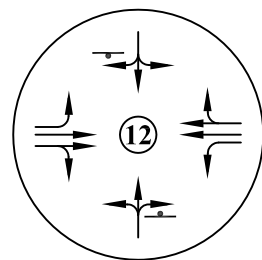
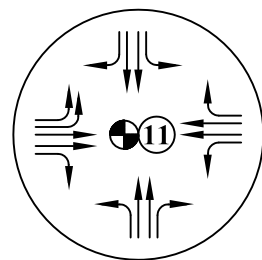
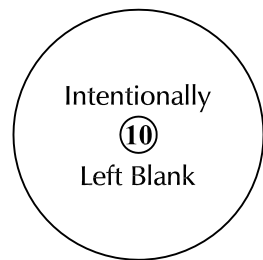
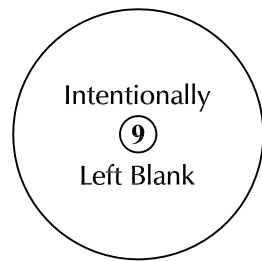
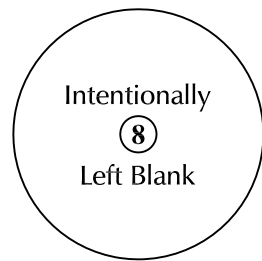
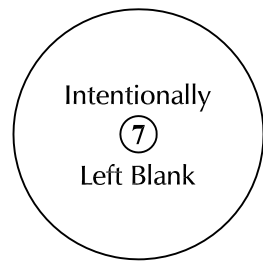
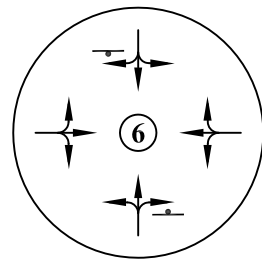
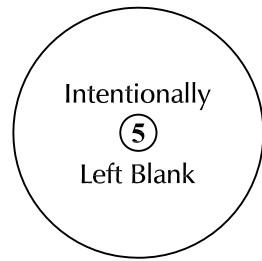
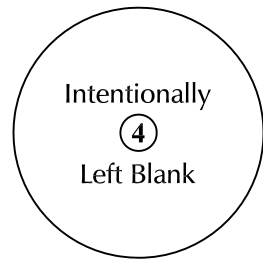
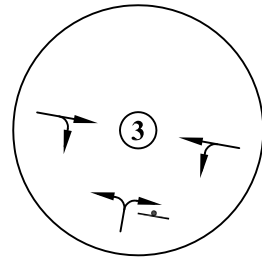
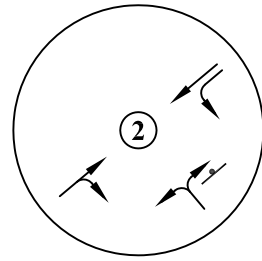
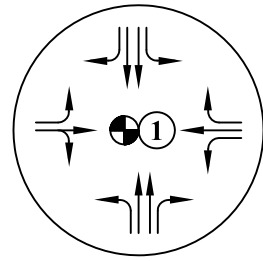


Figure 5a
Year 2040
Background Traffic
 ModernWest (LSC #200030)



LEGEND:

- ⊥ = Stop Sign
- ⦿ = Traffic Signal



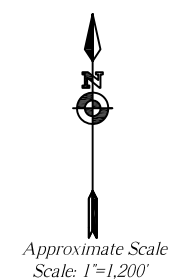
Approximate Scale
Scale: 1" = 600'



Figure 5b

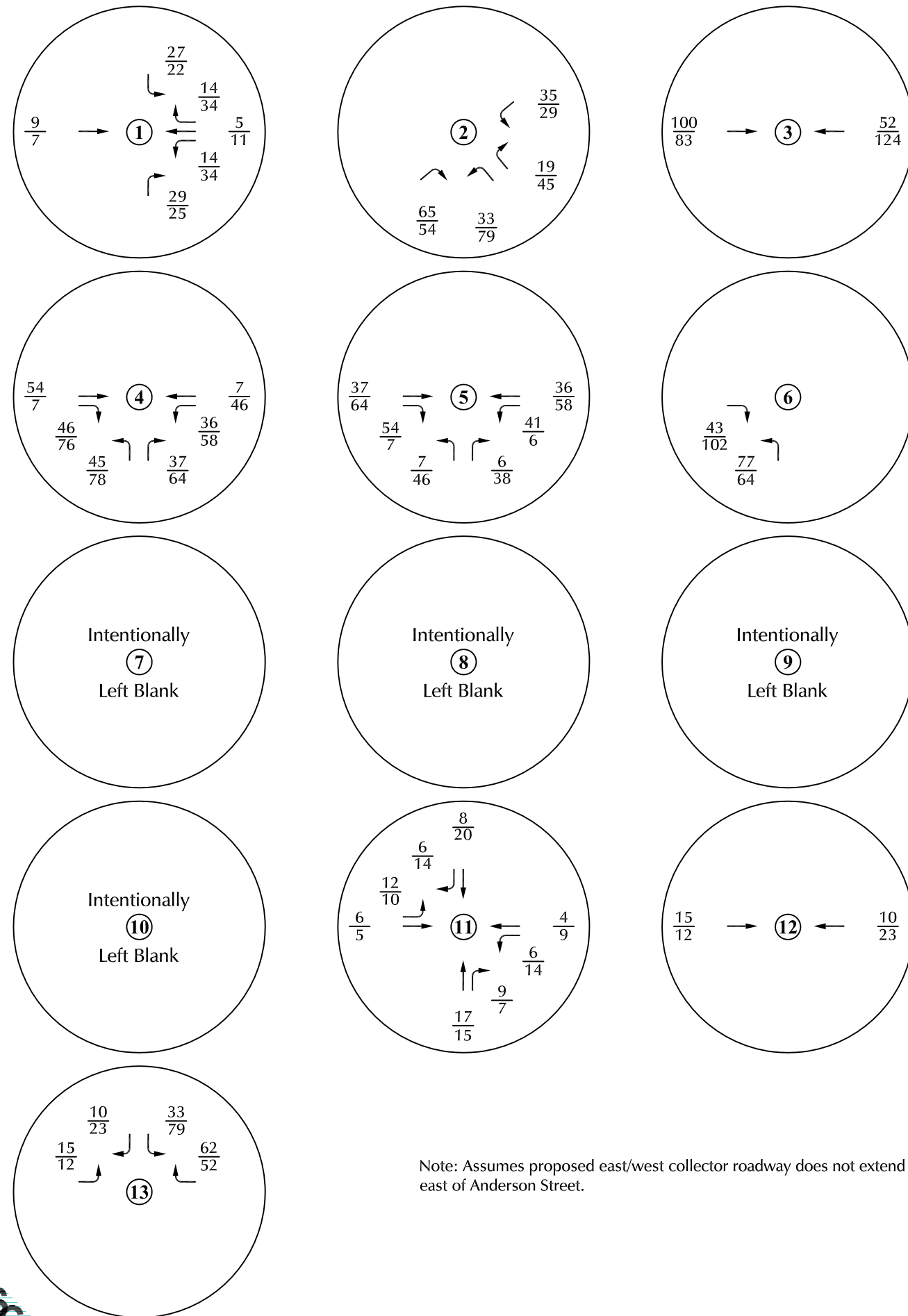
Year 2040 Background Lane Geometry and Traffic Control

ModernWest (LSC #200030)



LEGEND:
 = Percent Directional Distribution

Figure 6
*Directional Distribution
of Site-Generated Traffic*
ModernWest (LSC #200030)



Note: Assumes proposed east/west collector roadway does not extend east of Anderson Street.

LEGEND:
 $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
 2,500 = Average Daily Traffic

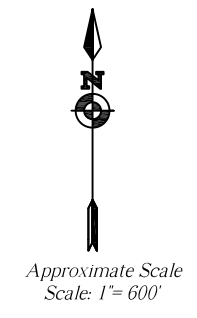
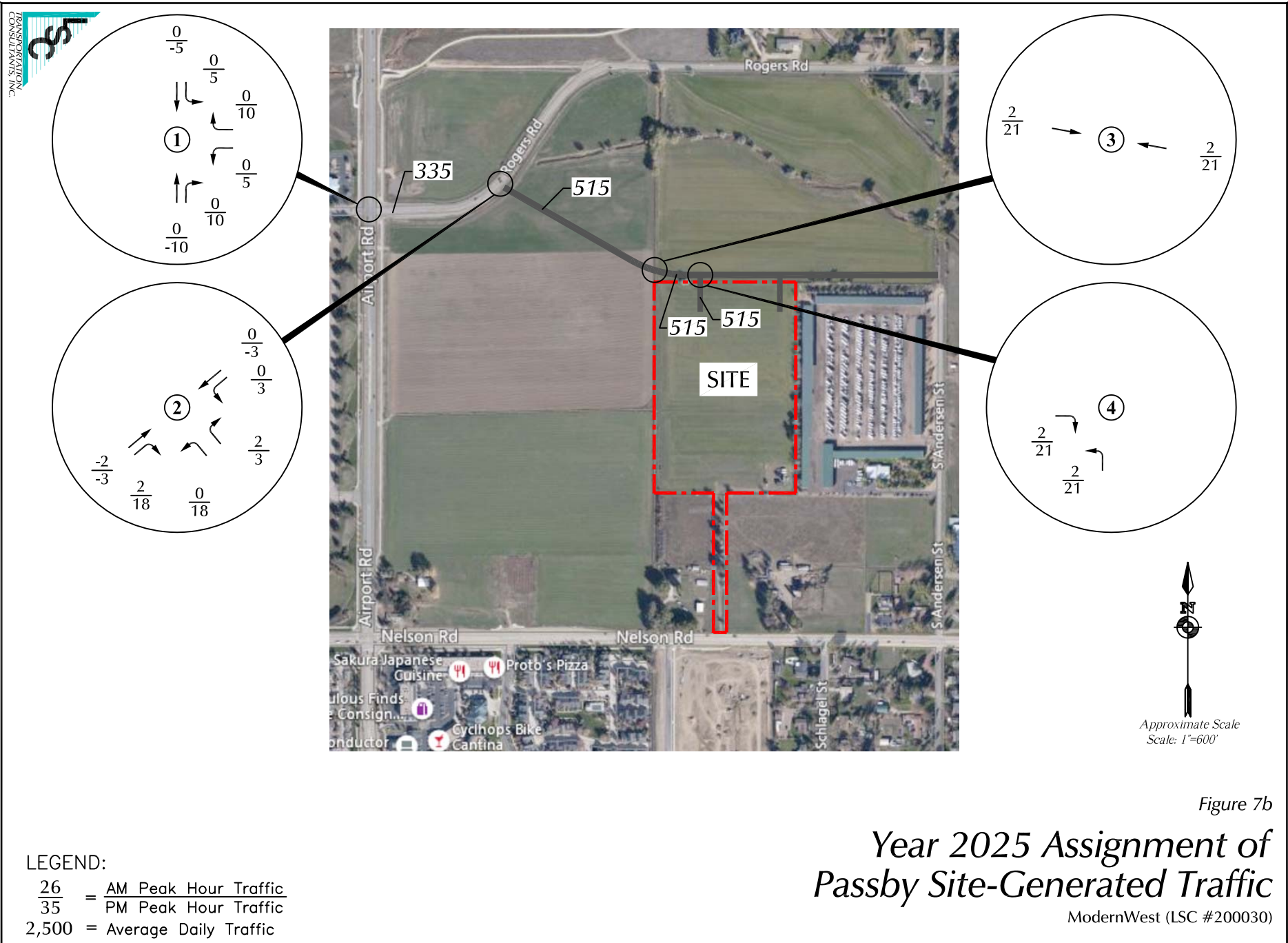
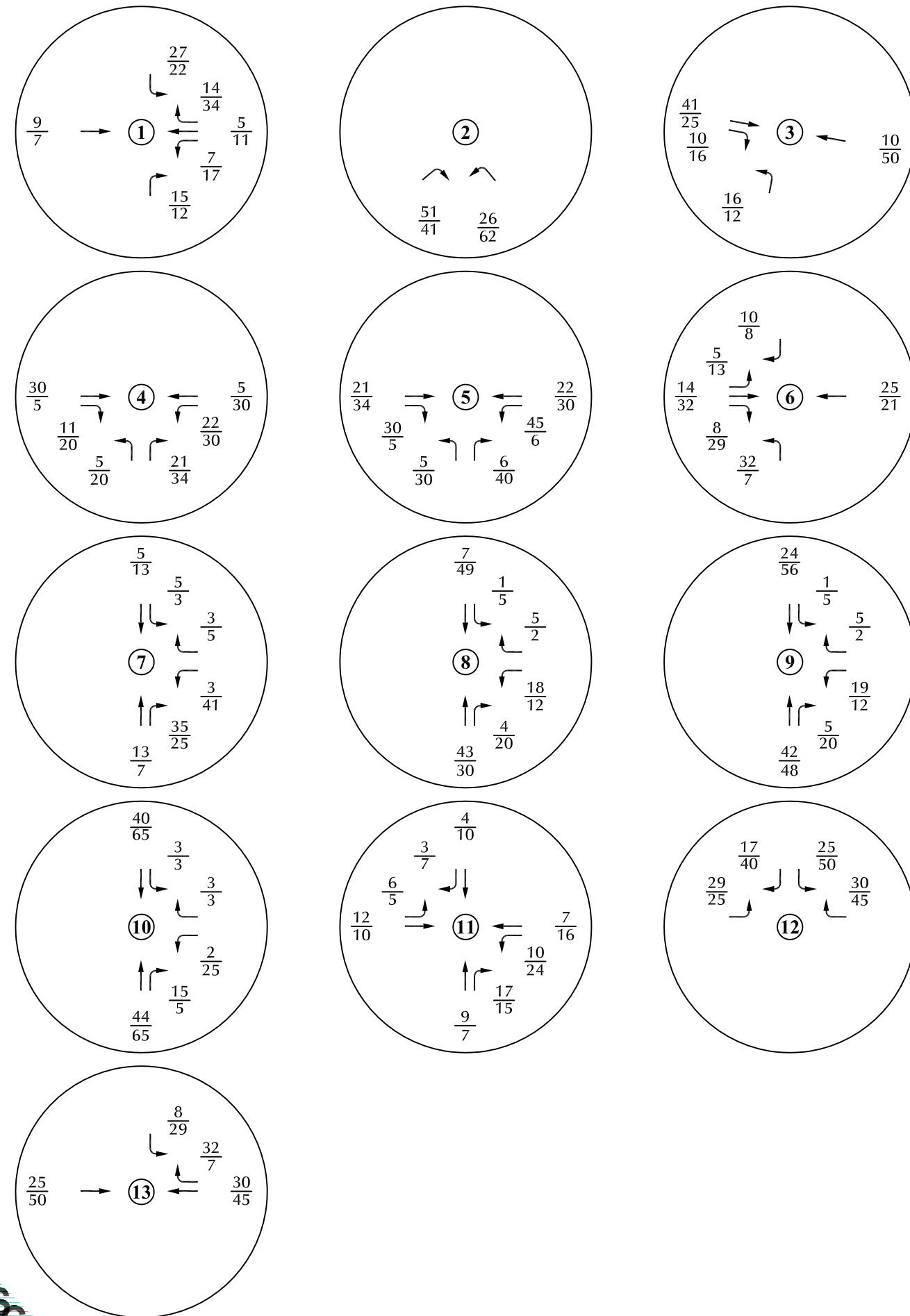


Figure 7a
 Year 2025 Assignment of
 Primary Site-Generated Traffic
 ModernWest (LSC #200030)





LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic
 $\frac{35}{25}$ = PM Peak Hour Traffic
 2,500 = Average Daily Traffic

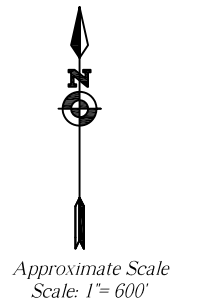
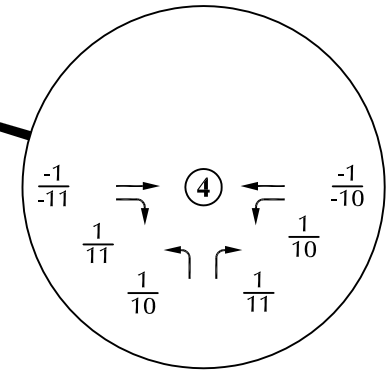
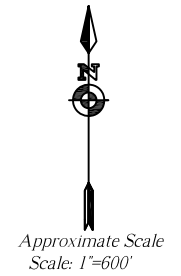


Figure 8a

Year 2040 Assignment of
 Primary Site-Generated Traffic

ModernWest (LSC #200030)



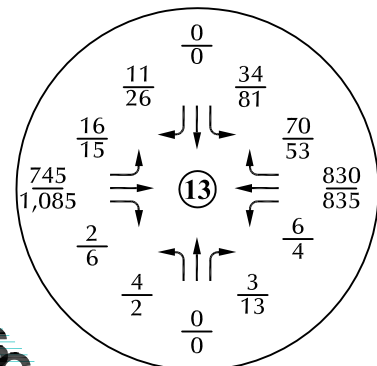
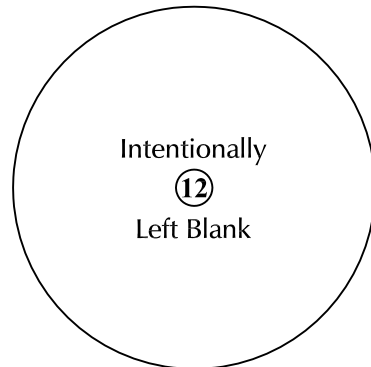
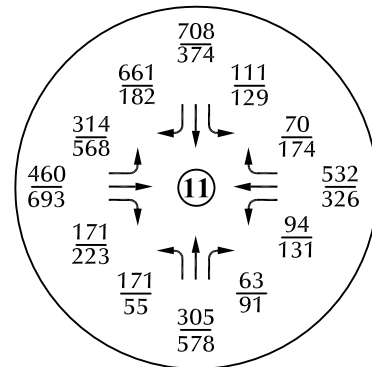
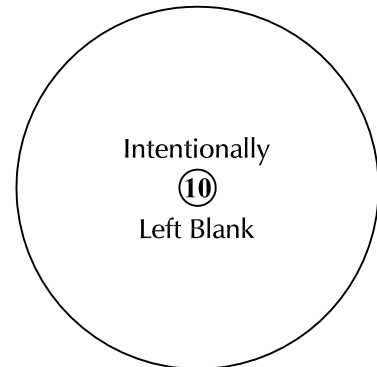
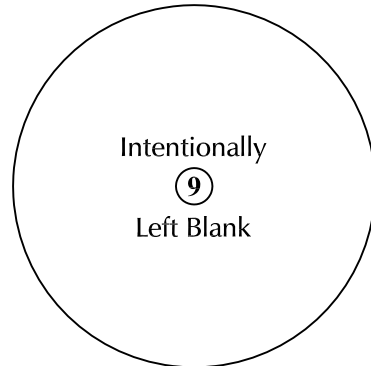
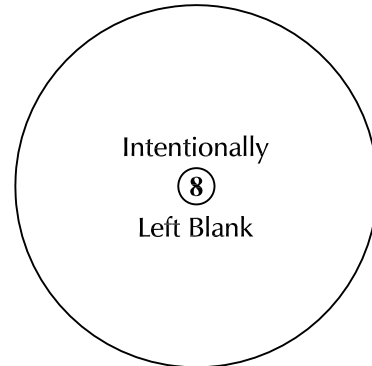
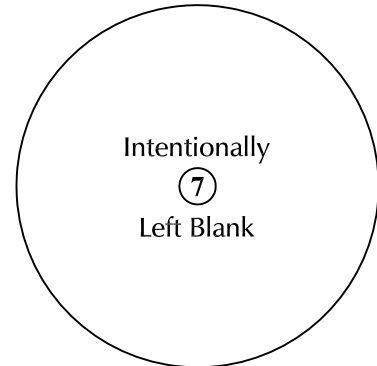
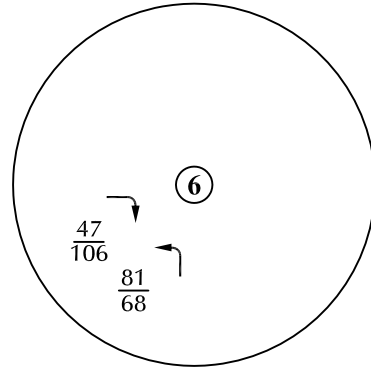
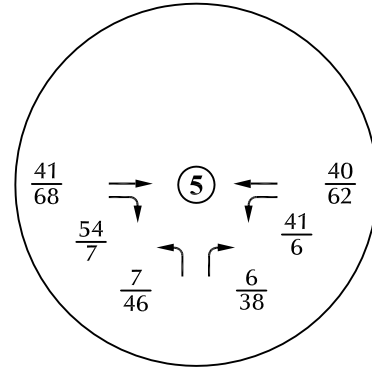
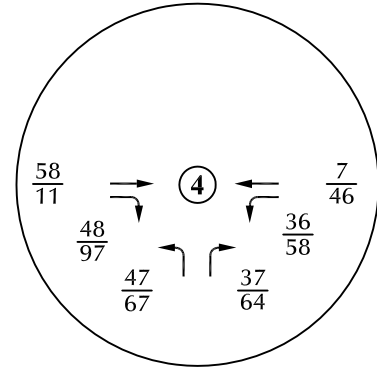
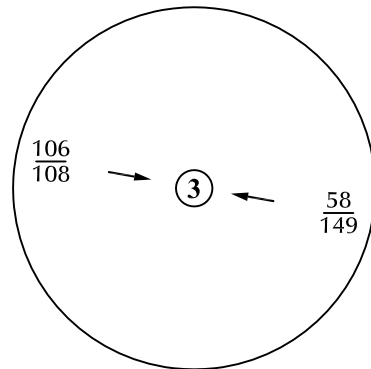
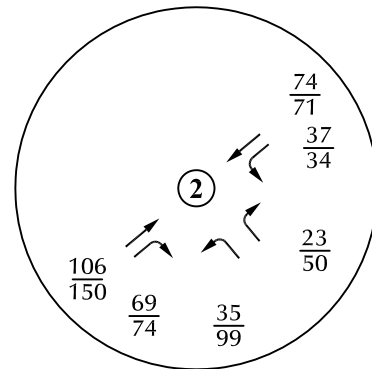
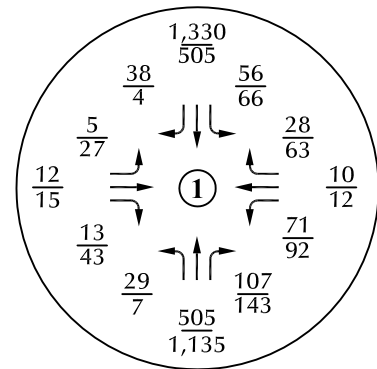
LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic
 $\frac{35}{2,500}$ = PM Peak Hour Traffic
 2,500 = Average Daily Traffic

Year 2040 Assignment of
 Passby Site-Generated Traffic

ModernWest (LSC #200030)

Figure 8b



LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic
 $\frac{35}{26}$ = PM Peak Hour Traffic
 2,500 = Average Daily Traffic

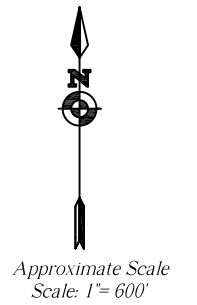
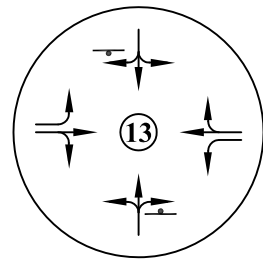
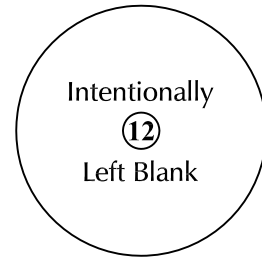
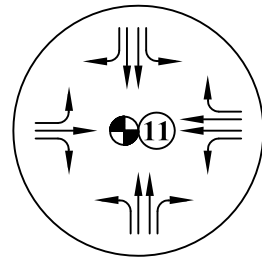
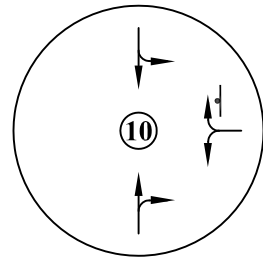
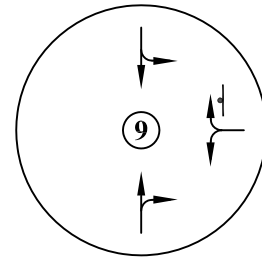
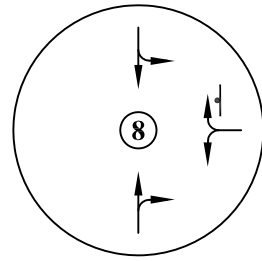
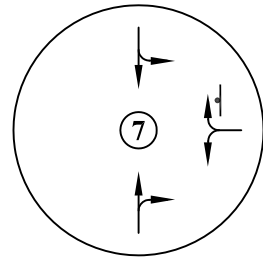
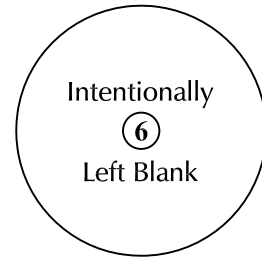
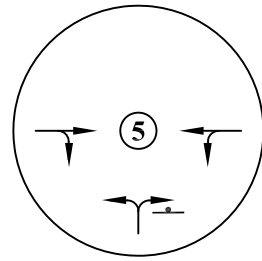
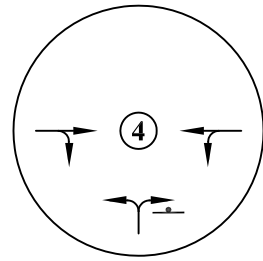
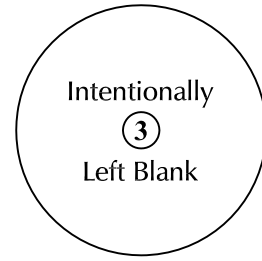
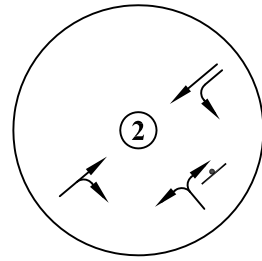
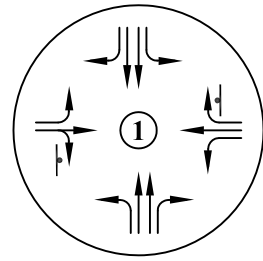


Figure 9a

**Year 2025
Total Traffic**

ModernWest (LSC #200030)



LEGEND:

- ⌄ = Stop Sign
- ⦿ = Traffic Signal



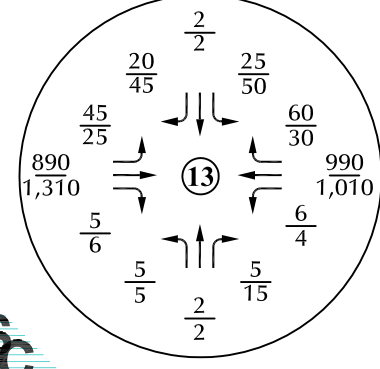
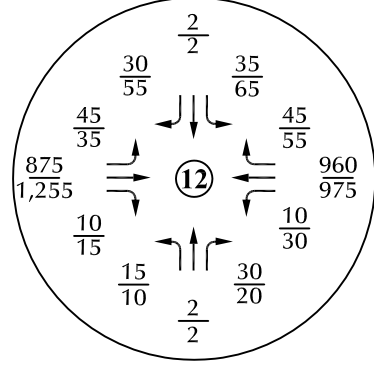
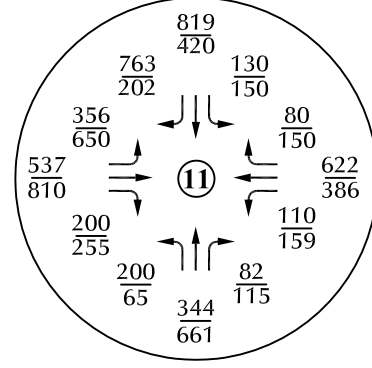
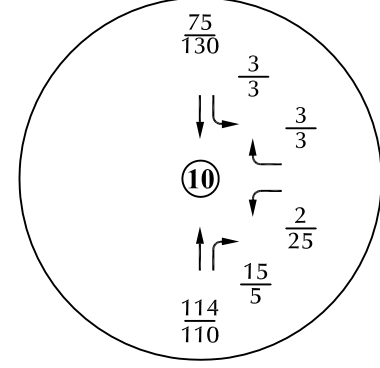
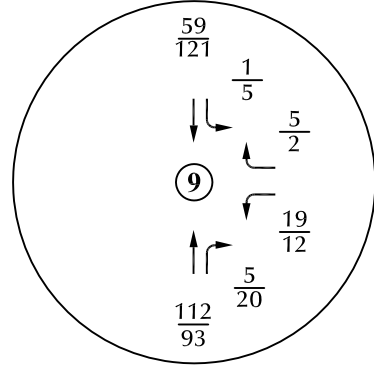
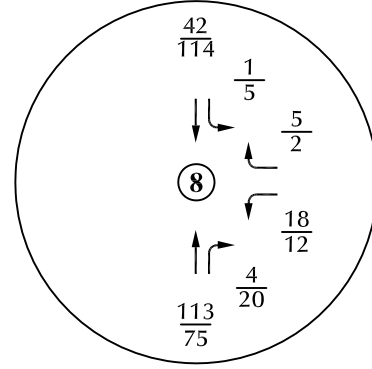
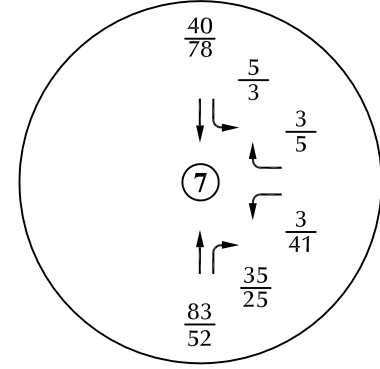
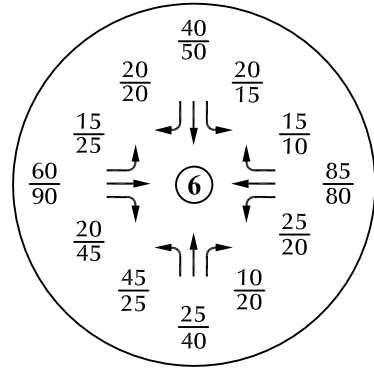
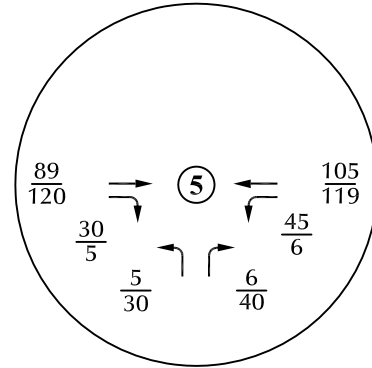
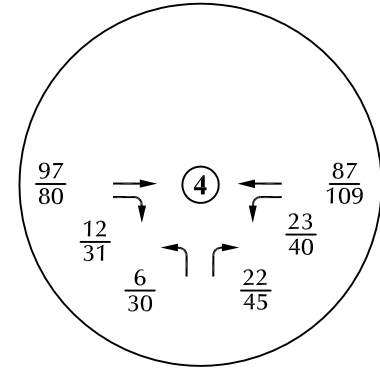
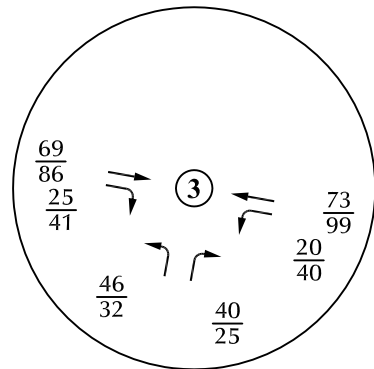
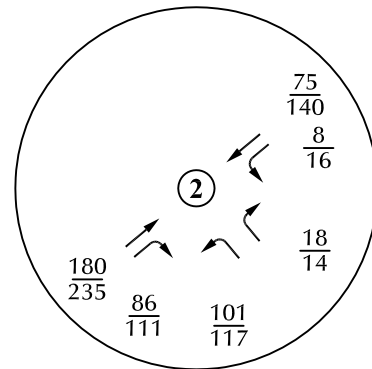
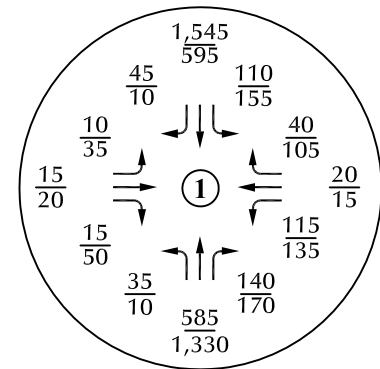
Approximate Scale
Scale: 1" = 600'



Figure 9b

Year 2025 Total Lane Geometry and Traffic Control

ModernWest (LSC #200030)



LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic
 $\frac{35}{26}$ = PM Peak Hour Traffic
 2,500 = Average Daily Traffic

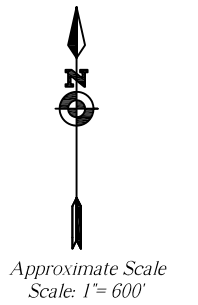
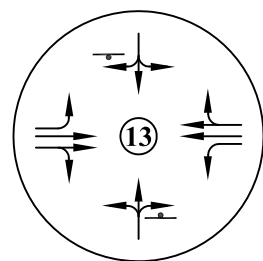
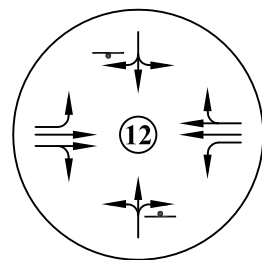
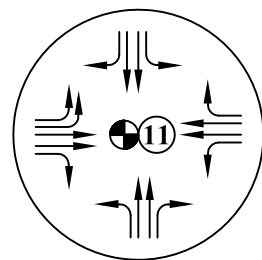
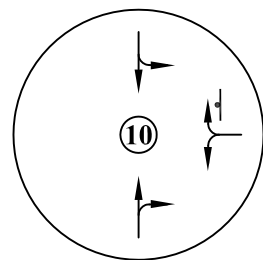
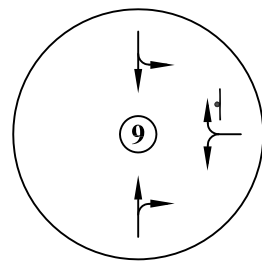
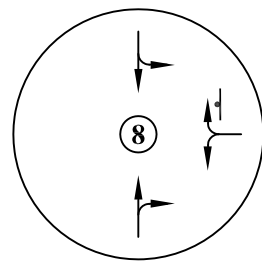
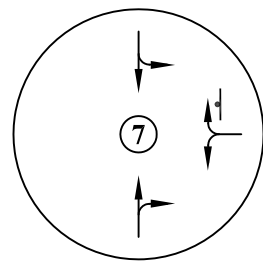
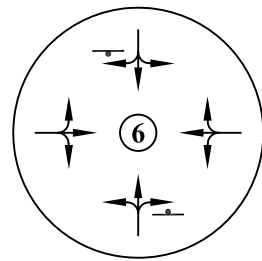
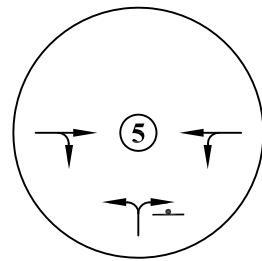
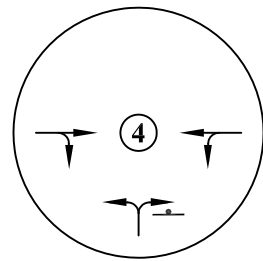
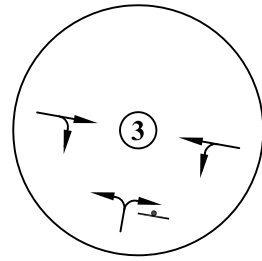
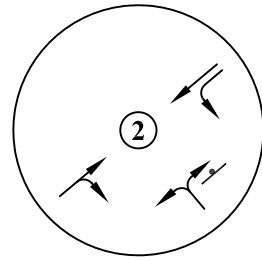
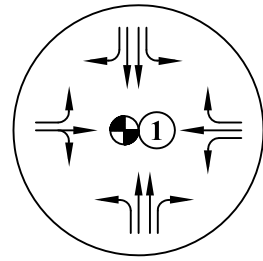


Figure 10a

**Year 2040
Total Traffic**

ModernWest (LSC #200030)



LEGEND:

- ⌄ = Stop Sign
- ⦿ = Traffic Signal



Approximate Scale
Scale: 1" = 600'



Figure 10b

**Year 2040 Total Lane
Geometry and Traffic Control**

ModernWest (LSC #200030)



TRAFFIC IMPACT STUDY (TIS) Scoping Form

The applicant is responsible for completing and submitting this form to the City of Longmont at least three (3) business days prior to the scoping meeting. If a completed form is not received by this deadline, the scoping meeting may be postponed. If traffic study is submitted more than 6 months after the scoping meeting is held, City staff may require another scoping meeting.

Contact Information

Consultant Name:	LSC Transportation Consultants, Inc. - Chris McGranahan
Tele:	303-333-1105
E-mail:	chris@lsctrans.com
Developer/Owner Name:	ModernWest Properties, LLC

Project Information *(Attach proposed Site Plan)*

Project Name:	ModernWest				
Project Location:	Southeast of Airport Road/Rogers Road				
Project Description: Application type (rezoning, subdivision), acreage, new or re-development, etc.	Commercial Industrial Office Residential				
Existing / <u>Proposed</u> Land Uses	ITE Code	#units or Size	Existing / Proposed Land Uses	ITE Code	#units or Size
Light Industrial	110	153,940 SF	Commercial	820	20,620 SF
Office	710	38,860 SF	Residential	220/240	206 DU

Please attach Trip Generation Summary table for large or mixed use projects

Assumptions

Study Horizons	Current Year: <u>2020</u>	Build-out : <u>2025</u>	Long Term : <u>2040</u>
Study Area Boundaries <i>(Attach map if needed)</i>	North: Rogers Road	South: Nelson Road	
	East: S. Hover Street	West: Airport Road	
Intersections and Road Segments to be Evaluated <i>(Attach map if needed)</i>	1. All Site entrances		5.
	2. Airport Road/Rogers Road		6.
	3. Nelson Road/Airport Road		7.
	4. Nelson Road/S. Anderson Street		8.
Trip Distribution	<i>See Attached Sketch</i>		



Assumptions (continued)				
Trip Reductions (include in Trip Generation table if provided)	Internal Capture	Use: Commercial _____ 5 % Use: Office _____ 5 %	Pass By	Use: Commercial _____ 25 % Use: _____ %
Anticipated Future Traffic Growth Rates (Describe methodology)	Consistent with the 2040 projections in the June, 2016 City Transportation Plan		Study Time Periods (circle all that apply)	AM (7-9) PM (4-6) SAT (noon) Other
Other Factors proposed/assumed transp. improvements, other studies, nearby proposed developments, etc.				
Analysis Methods & Issues (check all that apply)	<input checked="" type="checkbox"/> Synchro <input type="checkbox"/> HCS <input type="checkbox"/> aaSidra or Rodel <input checked="" type="checkbox"/> Intersections <input type="checkbox"/> Roadway Sections <input checked="" type="checkbox"/> Signal Warrants <input type="checkbox"/> Safety/Sight Distance <input type="checkbox"/> Queuing & Storage <input type="checkbox"/> CDOT (Access Permit, other) <input checked="" type="checkbox"/> Identify Bicycle, Pedestrian & Transit Accommodations <input type="checkbox"/> TDM <input type="checkbox"/> Neighborhood Impacts <input type="checkbox"/> Other _____			

ATTACHMENTS, NOTES, & other ASSUMPTIONS:

TIS will follow methodology and parameters described in City of Longmont Traffic Impact Study Requirements.

Applicant will submit electronic copy all analysis data files (HCS, Synchro .syn, etc.). (such as PDF) of TIS report, and

Signal warrant analysis at Airport Road/Rogers Road

Daily volume/speed/classification count on Nelson Road east of the site access

SIGNED: _____

Applicant or Consultant

PRINT NAME: Christopher S. McGranahan

Applicant or Consultant

City of Longmont Contacts:

Transportation Planner: 303-651-8335

Civil Engineer (Traffic): 303-651-8737

Transportation Engineer: 303-651-8323

DATE: February 5, 2020

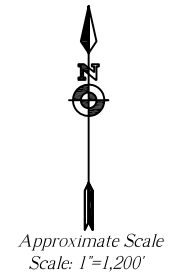
Table 2
ESTIMATED TRIP GENERATION
ModernWest
Longmont, CO
LSC #200030; January, 2020

Land Use	Gross Floor Area		Generation Rates per Unit ⁽¹⁾						Vehicle-Trips Generated				
			Average Daily Traffic	Morning		Evening		Average Weekday Traffic	Morning		Evening		
				Peak-Hour		Peak-Hour			Peak-Hour		Peak-Hour		
				AM In	AM Out	PM In	PM Out		AM In	AM Out	PM In	PM Out	
Light Industrial ⁽²⁾	153.94	KSF ⁽³⁾	4.96	*	0.616	0.084	0.082	0.548	764	95	13	13	84
Commercial ⁽⁴⁾	20.62	KSF	99.64		0.583	0.357	3.932	4.260	2,055	12	7	81	88
Office ⁽⁵⁾	38.86	KSF	10.92		1.395	0.227	0.191	1.003	424	54	9	7	39
Townhomes ⁽⁶⁾	29.00	DU ⁽⁷⁾	7.32		0.106	0.354	0.353	0.207	212	3	10	10	6
Apartments ⁽⁶⁾	156.00	DU	7.32		0.106	0.354	0.353	0.207	1,142	17	55	55	32
Tiny Homes ⁽⁸⁾	21.00	DU	5.00		0.081	0.179	0.285	0.175	105	2	4	6	4
Total =									4,702	182	98	172	253

Notes:

- (1) Source: *Trip Generation*, Institute of Transportation Engineers, 10th Edition, 2017.
- (2) ITE Land Use No. 110 - General Light Industrial; average rates
- (3) KSF = 1,000 square feet
- (4) ITE Land Use No. 820 - Shopping Center; formula rates used for Daily and PM Peak and average rates used for AM Peak
- (5) ITE Land Use No. 710 - General Office Building; formula rates
- (6) ITE Land Use No. 220 - Multifamily Housing (Low-Rise)
- (7) DU = dwelling units
- (8) ITE Land Use No. 240 - Mobile Home Park





Directional Distribution of Site-Generated Traffic

ModernWest (LSC #200030)

65%

Percent Directional Distribution

MODERN WEST PROPERTY

LOCATED IN THE NORTHWEST QUARTER OF
SECTION 8, TOWNSHIP 2 NORTH, RANGE 69 WEST
OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF
COLORADO

PROPERTY DESCRIPTION
PARCEL I:

THAT PARCEL OF LAND DESCRIBED AS PARCEL I IN THAT WARRANTY DEED RECORDED ON FILM 972, AT RECEPTION NO. 1720957 OF THE BOULDER COUNTY RECORDS, LOCATED IN THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 2 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO, BASED ON A MONUMENTED LAND SURVEY SAID PARCEL I IS MORE SPECIFICALLY DESCRIBED AS FOLLOWS:

CONSIDERING THE SOUTH LINE OF THE WEST ONE-HALF OF THE NORTHWEST QUARTER OF SAID SECTION 8 TO BEAR SOUTH 89°29'46" EAST, 1326.83 FEET BETWEEN THE WEST QUARTER CORNER, A FOUND 3.25" ALLOY CAP LS 37946 IN MONUMENT BOX, AND THE CENTER WEST 16TH CORNER, A FOUND 3.25" ALLOY CAP PLS 25636 IN MONUMENT BOX, WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

COMMENCING AT THE WEST QUARTER CORNER OF SAID SECTION 8;
THENCE SOUTH 89°29'46" EAST ALONG SAID SOUTH LINE, 269.99 FEET;
THENCE DEPARTING SAID SOUTH LINE NORTH 00°09'59" EAST ALONG THE EAST LINE OF THAT PARCEL OF LAND AS
DESCRIBED IN RECEPTION NO. 3235662 OF THE BOULDER COUNTY RECORDS, 659.99 FEET TO THE NORTHEAST CORNER
THEREOF AND THE POINT OF BEGINNING;
THENCE NORTH 89°28'16" WEST ALONG THE NORTH LINE OF SAID PARCEL, 269.69 FEET TO THE NORTHWEST CORNER
THEREOF, SAID CORNER LYING ON THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 8;
THENCE NORTH 00°04'46" EAST ALONG SAID WEST LINE AND ALONG THE EAST LINE OF THAT PARCEL OF LAND AS
DESCRIBED IN RECEPTION NO. 3124634 OF THE BOULDER COUNTY RECORDS, 389.20 FEET TO THE NORTHEAST CORNER
THEREOF;
THENCE NORTH 00°09'10" EAST CONTINUING ALONG THE WEST LINE OF SAID NORTHWEST QUARTER AND ALONG THE
EAST LINE OF THAT PARCEL OF LAND AS DESCRIBED IN RECEPTION NO. 1758539 OF THE BOULDER COUNTY RECORDS,
600.81 FEET TO THE SOUTHWEST CORNER OF THAT PARCEL OF LAND AS DESCRIBED IN RECEPTION NO. 1980729 OF
THE BOULDER COUNTY RECORDS;
THENCE SOUTH 89°32'22" EAST ALONG THE SOUTH LINE OF SAID PARCEL, 665.96 FEET TO THE NORTHWEST CORNER OF
THAT PARCEL OF LAND AS DESCRIBED IN RECEPTION NO. 3516367 OF THE BOULDER COUNTY RECORDS;
THENCE SOUTH 00°17'21" WEST ALONG THE WEST LINE OF SAID PARCEL, 989.88 FEET TO THE SOUTHWEST CORNER
THEREOF;
THENCE NORTH 89°36'08" WEST ALONG THE NORTH LINE OF THAT PARCEL OF LAND AS DESCRIBED IN RECEPTION NO.
2901046 OF THE BOULDER COUNTY RECORDS, 333.42 FEET TO THE NORTHWEST CORNER THEREOF;
THENCE CONTINUING NORTH 89°36'08" WEST, 60.00 FEET TO THE POINT OF BEGINNING.

TOGETHER WITH

PARCEL II:

THAT PARCEL OF LAND DESCRIBED AS PARCEL II IN THAT WARRANTY DEED RECORDED ON FILM 972, AT RECEPTION NO. 1720957 OF THE BOULDER COUNTY RECORDS, LOCATED IN THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 2 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO. BASED ON A MONUMENTED LAND SURVEY SAID PARCEL II IS MORE SPECIFICALLY DESCRIBED AS FOLLOWS:

CONSIDERING THE SOUTH LINE OF THE WEST ONE-HALF OF THE NORTHWEST QUARTER OF SAID SECTION 8 TO BEAR SOUTH 89°29'46" EAST, 1326.83 FEET BETWEEN THE WEST QUARTER CORNER, A FOUND 3.25" ALLOY CAP (ILLEGIBLE) IN MONUMENT BOX, AND THE CENTER WEST 16TH CORNER, A FOUND 3.25" ALLOY CAP (ILLEGIBLE) IN MONUMENT BOX, WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

COMMENCING AT THE WEST QUARTER CORNER OF SAID SECTION 8;
THENCE SOUTH 89°29'46" EAST ALONG SAID SOUTH LINE, 269.99 FEET TO THE POINT OF BEGINNING;
THENCE DEPARTING SAID SOUTH LINE NORTH 00°09'59" EAST ALONG THE EAST LINE OF THAT PARCEL
OF LAND AS DESCRIBED IN RECEPTION NO. 3235662 OF THE BOULDER
COUNTY RECORDS, 659.99 FEET TO THE NORTHEAST CORNER THEREOF;
THENCE SOUTH 89°36'08" EAST, 60.00 FEET TO THE NORTHWEST
CORNER OF THAT PARCEL OF LAND AS DESCRIBED IN RECEPTION
NO. 2901046 OF THE BOULDER COUNTY RECORDS;
THENCE SOUTH 00°10'00" WEST ALONG THE WEST LINE OF SAID PARCEL,
660.10 FEET TO THE SOUTHWEST CORNER THEREOF, SAID CORNER ALSO
BEING A POINT ON THE SOUTH LINE OF THE WEST ONE-HALF OF SAID
NORTHWEST QUARTER OF SECTION 8;
THENCE NORTH 89°29'46" WEST ALONG SAID SOUTH LINE, 60.00 FEET
TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED PARCELS OF LAND CONTAINS A TOTAL OF 697,716 SQ.FT. (16.017 ACRES), AS SURVEYED, AND ARE SUBJECT TO A RIGHT-OF-WAY FOR NELSON ROAD (COUNTY ROAD 20).

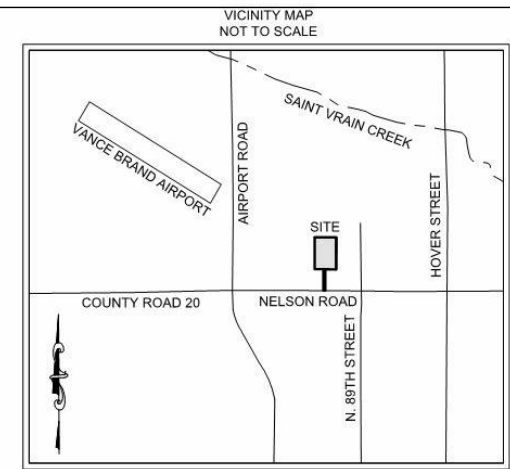
FOR ANNEXATION PURPOSES: ALL OF THE ABOVE DESCRIBED LESS THAT PORTION THEREOF LYING WITHIN NELSON ROAD (COUNTY ROAD 20).

STANDARD NOTES

1. THIS PROPERTY IS SUBJECT TO AN ANNEXATION AGREEMENT WITH THE CITY OF LONGMONT.
2. ALL FUTURE DEVELOPMENT OF PROPERTY WILL CONFORM TO THE APPROVED CONCEPT PLAN UNLESS AMENDED BY THE CITY COUNCIL.
3. THE PROPERTY WILL COMPLY WITH ALL APPLICABLE DEVELOPMENT CODE REQUIREMENTS.
4. THE PROPERTY WILL COMPLY WITH THE CITY OF LONGMONT'S REQUIREMENTS FOR DRAINAGE.

PLAN NOTES

1. THE PURPOSE OF THIS MAP IS FOR USE AS THE MODERN WEST ANNEXATION CONCEPT PLAN BASE SHEET AS PREPARED BY SOPHER SPARN ARCHITECTS.
2. THIS CONCEPT PLAN IS NOT A LAND SURVEY PLAT OR AN IMPROVEMENT SURVEY PLAT IN ACCORDANCE WITH SSA.



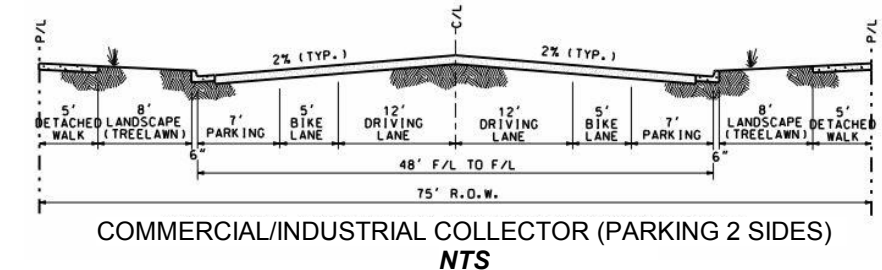
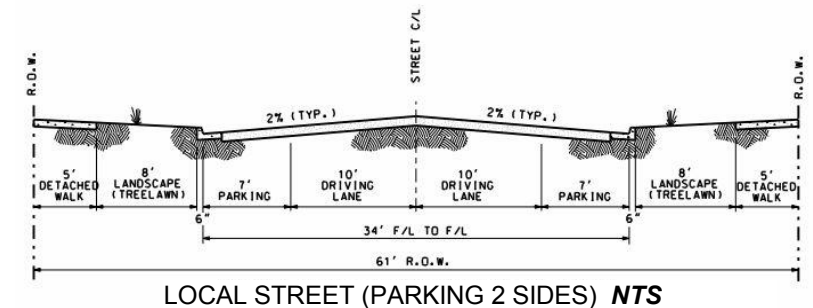
EXISTING ZONING: MU-E

GENERAL NOTES

1. ARTERIAL RIGHTS-OF-WAY SHALL BE DEDICATED TO THE CITY AT THE TIME OF FINAL PLATTING AND SHALL BE CONSTRUCTED BY THE DEVELOPER ACCORDING TO CITY LANDSCAPE REGULATIONS REQUIREMENTS IN EFFECT AT THE TIME OF CONSTRUCTION. MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE HOMEOWNERS ASSOCIATION OR CITY (AS APPLICABLE) AFTER FINAL ACCEPTANCE OF PUBLIC IMPROVEMENTS IS OBTAINED PER OF THE MUNICIPAL CODE.
2. SPECIFIC REQUIREMENTS FOR ACCESS TO LOCAL STREETS WILL BE DETERMINED AT THE TIME OF DEVELOPMENT.
3. ALL LANDSCAPING WILL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH CITY OF LONGMONT LANDSCAPE DESIGN STANDARDS AND THE LONGMONT LAND DEVELOPMENT CODE IN EFFECT AT THE TIME OF DEVELOPMENT.
4. A TRAFFIC STUDY FOR THE ENTIRE PROPERTY SHALL BE REQUIRED WITH THE FIRST PHASE OF DEVELOPMENT ON THE PROPERTY.
5. FUTURE DEVELOPMENT WILL COMPLY WITH CITY OF LONGMONT DESIGN STANDARDS AND OPEN SPACE REQUIREMENTS IN PLACE AT THE TIME OF DEVELOPMENT.

FLOOD PLAIN INFORMATION:

SUBJECT PROPERTY IS LOCATED IN ZONE XS, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS DEFINED BY FEMA. SEE COMMUNITY PANEL NOS. 08013C0269J AND 08013C0267J BOTH DATED DECEMBER 18TH, 2012. FLOOD INFORMATION IS SUBJECT TO CHANGE.



ModernWest_Annexation Concept Plan

BOULDER, COLORADO 80302

Annexation Concept Plan

ESB	
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17050

02/20/17

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N/S STREET: AIRPORT RD
E/W STREET: ROGERS RD
CITY: LONGMONT
COUNTY: BOULDER

File Name : AIRPROGER
Site Code : 00000020
Start Date : 2/26/2020
Page No : 1

Groups Printed- VEHICLES

Start Time	AIRPORT RD Southbound				ROGERS RD Westbound				AIRPORT RD Northbound				ROGERS RD Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	2	169	7	1	11	0	5	0	7	62	5	0	0	1	1	0	271
07:15 AM	5	327	5	0	6	1	1	0	7	102	7	2	0	0	0	0	463
07:30 AM	2	345	9	1	6	0	2	0	4	139	25	1	0	0	1	0	535
07:45 AM	5	337	14	0	17	2	7	0	9	131	22	0	1	0	3	0	548
Total	14	1178	35	2	40	3	15	0	27	434	59	3	1	1	5	0	1817
08:00 AM	11	304	3	3	18	3	3	0	11	103	12	0	1	1	3	0	476
08:15 AM	10	280	10	0	13	0	2	1	4	107	15	2	3	2	5	0	454
08:30 AM	3	213	4	0	7	2	6	0	7	92	9	0	1	1	2	0	347
08:45 AM	10	195	2	2	7	2	6	0	6	126	18	0	1	2	4	0	381
Total	34	992	19	5	45	7	17	1	28	428	54	2	6	6	14	0	1658
04:00 PM	13	121	4	2	17	0	7	0	2	248	21	0	8	3	10	0	456
04:15 PM	10	95	4	0	11	2	8	0	3	217	31	3	11	2	13	0	410
04:30 PM	7	122	3	1	12	0	4	0	4	269	25	1	7	1	22	0	478
04:45 PM	9	103	1	0	13	0	3	0	2	248	19	2	7	1	15	0	423
Total	39	441	12	3	53	2	22	0	11	982	96	6	33	7	60	0	1767
05:00 PM	11	122	1	2	13	0	4	0	5	287	23	0	7	2	12	0	489
05:15 PM	9	113	2	1	12	0	6	0	0	266	34	0	9	5	8	0	465
05:30 PM	8	149	0	3	12	0	5	0	0	288	27	0	3	0	6	0	501
05:45 PM	3	146	0	0	17	0	8	0	0	259	21	1	6	1	6	0	468
Total	31	530	3	6	54	0	23	0	5	1100	105	1	25	8	32	0	1923
Grand Total	118	3141	69	16	192	12	77	1	71	2944	314	12	65	22	111	0	7165
Apprch %	3.5	93.9	2.1	0.5	68.1	4.3	27.3	0.4	2.1	88.1	9.4	0.4	32.8	11.1	56.1	0.0	
Total %	1.6	43.8	1.0	0.2	2.7	0.2	1.1	0.0	1.0	41.1	4.4	0.2	0.9	0.3	1.5	0.0	

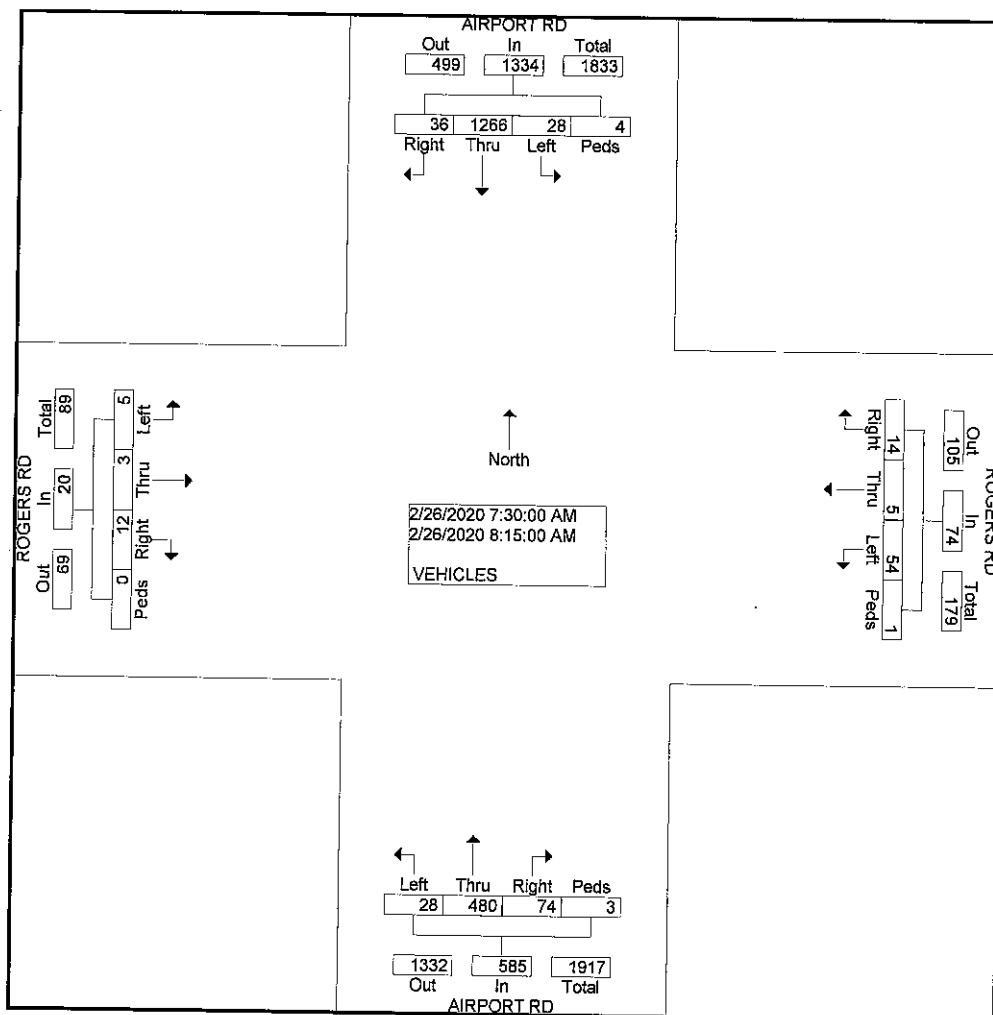
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: AIRPORT RD
E/W STREET: ROGERS RD
CITY: LONGMONT
COUNTY: BOULDER

File Name : AIRPROGER
Site Code : 00000020
Start Date : 2/26/2020
Page No : 2

	AIRPORT RD Southbound					ROGERS RD Westbound					AIRPORT RD Northbound					ROGERS RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour	From 07:30 AM to 08:15 AM - Peak 1 of 1																				
Intersection	07:30 AM																				
Volume	28	126	36	4	1334	54	5	14	1	74	28	480	74	3	585	5	3	12	0	20	2013
Percent	2.1	94.9	2.7	0.3		73.0	6.8	18.9	1.4		4.8	82.1	12.6	0.5		25.0	15.0	60.0	0.0		
07:45 Volume	5	337	14	0	356	17	2	7	0	26	9	131	22	0	162	1	0	3	0	4	548
Peak Factor																					0.918
High Int.	07:30 AM					07:45 AM					07:30 AM					08:15 AM					
Volume	2	345	9	1	357	17	2	7	0	26	4	139	25	1	169	3	2	5	0	10	
Peak																					
Factor	0.93					0.71					0.86					0.50					
	4					2					5					0					



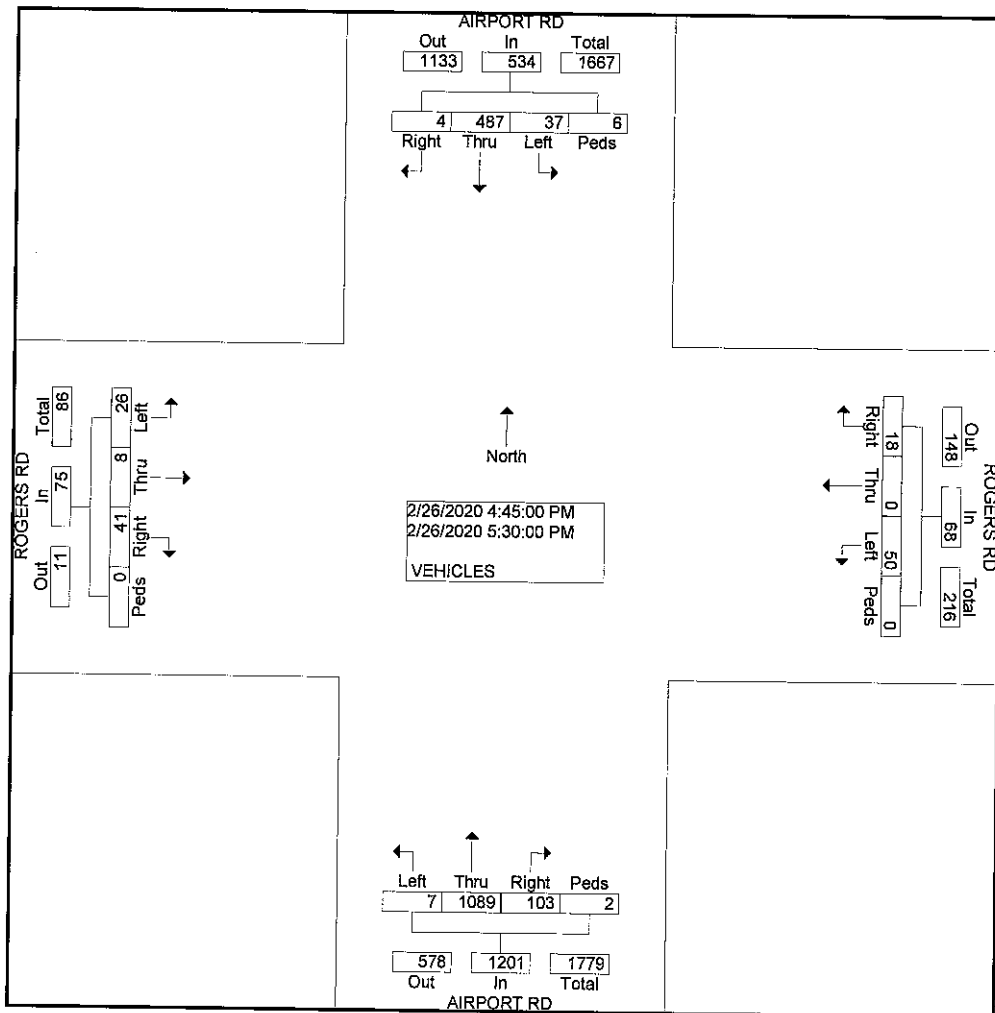
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: AIRPORT RD
E/W STREET: ROGERS RD
CITY: LONGMONT
COUNTY: BOULDER

File Name : AIRPROGER
Site Code : 00000020
Start Date : 2/26/2020
Page No : 2

	AIRPORT RD Southbound					ROGERS RD Westbound					AIRPORT RD Northbound					ROGERS RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Intersection	04:45 PM																				
Volume	37	487	4	6	534	50	0	18	0	68	7	1089	103	2	1201	26	8	41	0	75	1878
Percent	6.9	91.2	0.7	1.1		73.5	0.0	26.5	0.0		0.6	90.7	8.6	0.2		34.7	10.7	54.7	0.0		
05:30 Volume	8	149	0	3	160	12	0	5	0	17	0	288	27	0	315	3	0	6	0	9	501
Peak Factor																					0.937
High Int. Volume	05:30 PM					05:15 PM					05:00 PM					04:45 PM					
Peak Factor	8	149	0	3	160	12	0	6	0	18	5	287	23	0	315	7	1	15	0	23	
	0.83					0.94					0.95					0.81					5
	4					4					3										



COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: AIRPORT RD
E/W STREET: NELSON RD
CITY: LONGMONT
COUNTY: BOULDER

File Name : AIRPNELS 2-26-20
Site Code : 00000014
Start Date : 2/26/2020
Page No : 1

Groups Printed- VEHICLES

Start Time	AIRPORT RD Southbound				NELSON RD Westbound				AIRPORT RD Northbound				NELSON RD Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	13	98	67	1	9	59	16	0	19	42	5	0	21	51	16	1	418
07:15 AM	18	166	156	0	9	101	15	0	36	62	2	3	47	64	21	1	701
07:30 AM	24	151	193	1	12	133	15	0	52	71	13	0	88	117	51	0	921
07:45 AM	29	184	172	0	28	118	24	1	46	91	10	0	61	90	22	1	877
Total	84	599	588	2	58	411	70	1	153	266	30	3	217	322	110	3	2917
08:00 AM	28	162	136	1	24	132	14	1	39	55	13	0	74	103	39	1	822
08:15 AM	25	169	122	1	20	119	14	0	26	57	15	2	64	122	51	0	807
08:30 AM	33	111	87	0	16	95	18	0	43	62	12	0	40	81	26	0	624
08:45 AM	18	91	103	3	11	121	17	1	35	104	21	1	44	100	32	1	703
Total	104	533	448	5	71	467	63	2	143	278	61	3	222	406	148	2	2956
04:00 PM	36	74	46	3	27	80	23	2	19	167	20	0	83	143	36	1	760
04:15 PM	26	83	32	0	27	76	40	0	15	127	18	3	97	148	20	3	715
04:30 PM	43	86	53	1	15	73	46	0	21	146	22	1	113	141	61	1	823
04:45 PM	34	77	43	0	24	77	34	0	19	128	28	2	127	170	49	1	813
Total	139	320	174	4	93	306	143	2	74	568	88	6	420	602	166	6	3111
05:00 PM	25	76	32	1	32	80	41	2	6	134	10	1	135	192	63	2	832
05:15 PM	34	81	38	2	24	69	42	0	18	125	18	0	135	174	49	0	809
05:30 PM	30	103	47	3	31	76	49	0	9	149	24	0	134	119	51	3	828
05:45 PM	31	102	55	0	31	70	44	1	16	147	18	0	109	119	44	2	789
Total	120	362	172	6	118	295	176	3	49	555	70	1	513	604	207	7	3258
Grand Total	447	1814	1382	17	340	1479	452	8	419	1667	249	13	1372	1934	631	18	12242
Apprch %	12.2	49.6	37.8	0.5	14.9	64.9	19.8	0.4	17.8	71.0	10.6	0.6	34.7	48.9	16.0	0.5	
Total %	3.7	14.8	11.3	0.1	2.8	12.1	3.7	0.1	3.4	13.6	2.0	0.1	11.2	15.8	5.2	0.1	

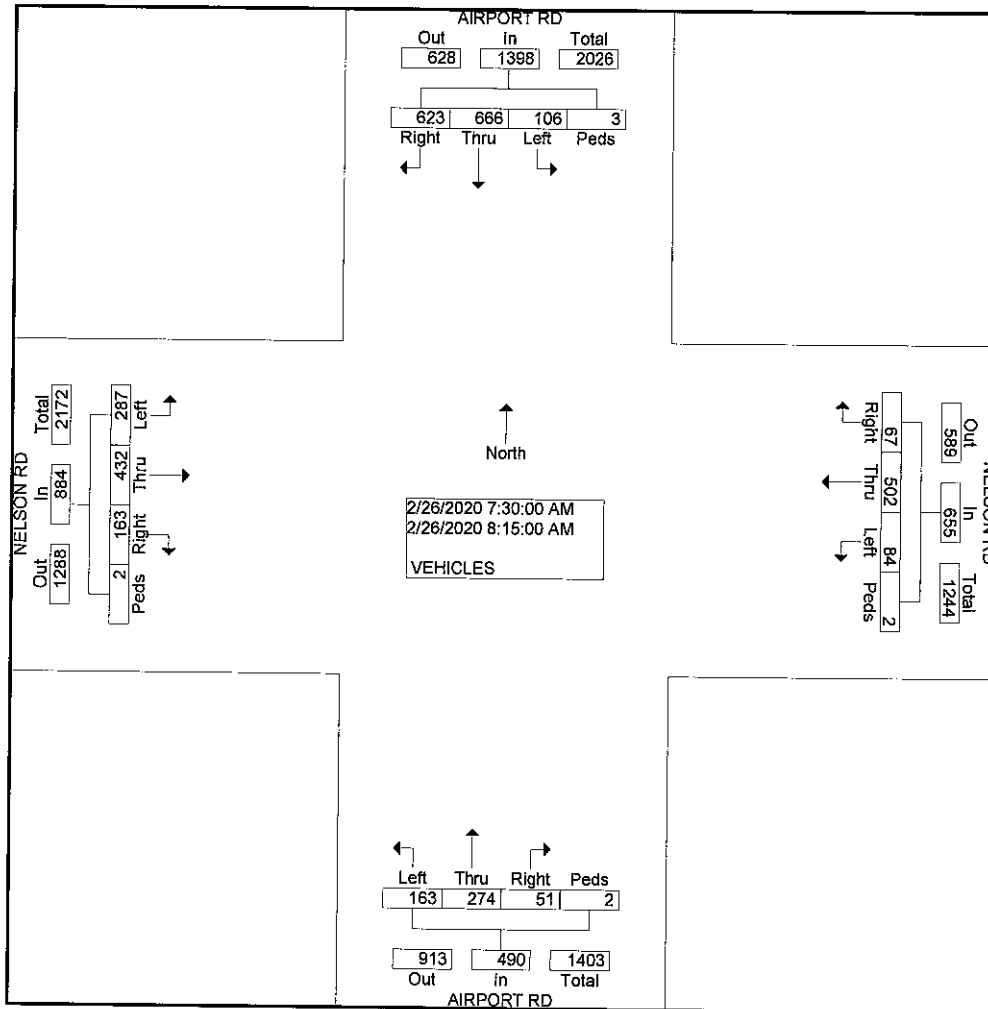
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: AIRPORT RD
E/W STREET: NELSON RD
CITY: LONGMONT
COUNTY: BOULDER

File Name : AIRPNELS 2-26-20
Site Code : 00000014
Start Date : 2/26/2020
Page No : 2

	AIRPORT RD Southbound					NELSON RD Westbound					AIRPORT RD Northbound					NELSON RD Eastbound														
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total									
Peak Hour	From 07:00 AM to 09:00 AM - Peak 1 of 1																													
Intersection	07:30 AM																													
Volume	106	666	623	3	1398	84	502	67	2	655	163	274	51	2	490	287	432	163	2	884	3427									
Percent	7.6	47.6	44.6	0.2		12.8	76.6	10.2	0.3		33.3	55.9	10.4	0.4		32.5	48.9	18.4	0.2											
07:30 Volume	24	151	193	1	369	12	133	15	0	160	52	71	13	0	136	88	117	51	0	256	921									
Peak Factor																					0.930									
High Int.	07:45 AM										07:45 AM										07:30 AM									
Volume	29	184	172	0	385	28	118	24	1	171	46	91	10	0	147	88	117	51	0	256										
Peak Factor	0.908					0.958					0.833					0.863														



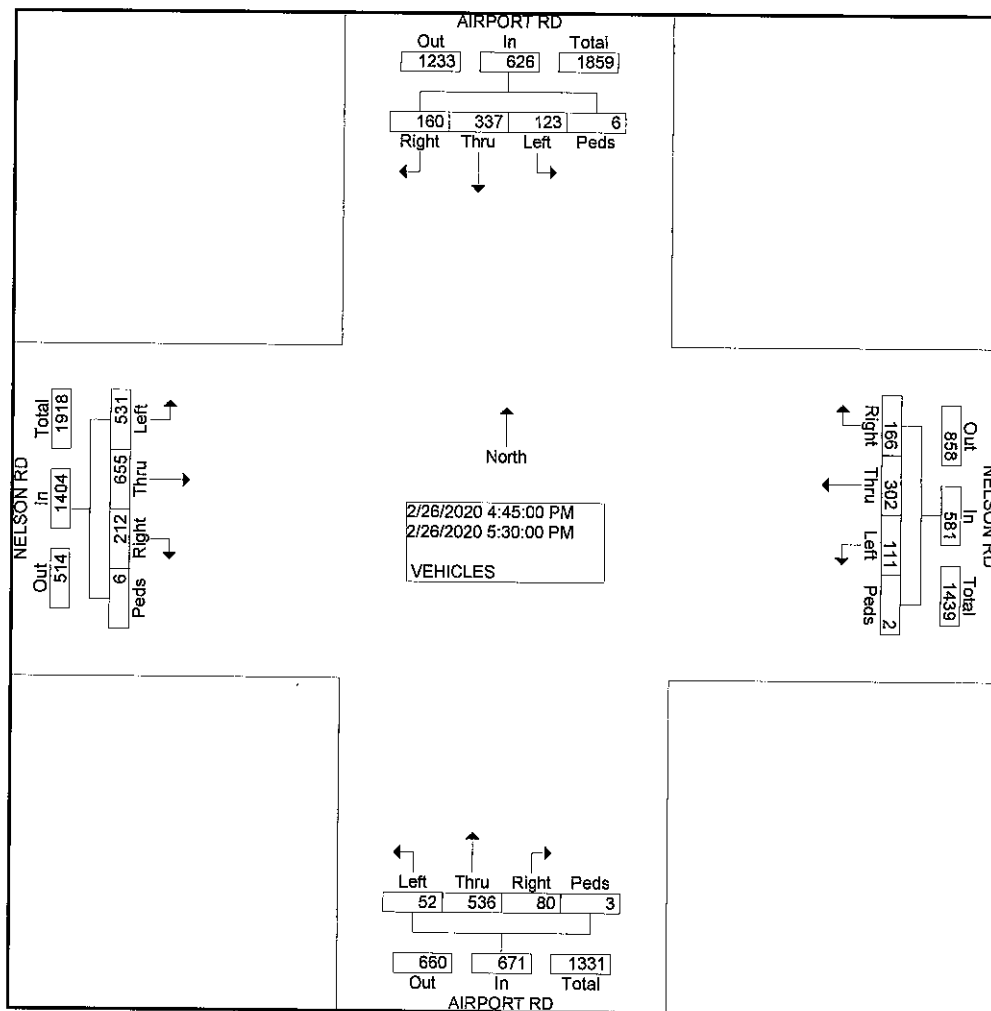
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: AIRPORT RD
E/W STREET: NELSON RD
CITY: LONGMONT
COUNTY: BOULDER

File Name : AIRPNELS 2-26-20
Site Code : 00000014
Start Date : 2/26/2020
Page No : 2

	AIRPORT RD Southbound					NELSON RD Westbound					AIRPORT RD Northbound					NELSON RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:45 PM																				
Volume	123	337	160	6	626	111	302	166	2	581	52	536	80	3	671	531	655	212	6	1404	3282
Percent	19.6	53.8	25.6	1.0		19.1	52.0	28.6	0.3		7.7	79.9	11.9	0.4		37.8	46.7	15.1	0.4		
05:00	25	76	32	1	134	32	80	41	2	155	6	134	10	1	151	135	192	63	2	392	832
Volume																					
Peak Factor																					0.986
High Int.	05:30 PM					05:30 PM					05:30 PM					05:00 PM					
Volume	30	103	47	3	183	31	76	49	0	156	9	149	24	0	182	135	192	63	2	392	
Peak Factor					0.85					0.93					0.92					0.89	
					5					1					2					5	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: ANDERSEN ST / 89TH ST
E/W STREET: NELSON RD
CITY: LONGMONT
COUNTY: BOULDER

File Name : ANDERNELSO
Site Code : 00000025
Start Date : 2/26/2020
Page No : 1

Groups Printed- VEHICLES

	ANDERSEN ST Southbound				NELSON RD Westbound				89TH ST Northbound				NELSON RD Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	0	0	0	0	0	103	0	1	0	0	1	0	1	89	0	1	196
07:15 AM	0	0	0	1	0	130	0	0	1	0	0	0	0	101	1	0	234
07:30 AM	0	0	0	0	0	173	0	0	1	0	0	0	0	139	0	0	313
07:45 AM	0	0	0	0	1	218	5	1	0	0	2	0	0	154	0	0	381
Total	0	0	0	1	1	624	5	2	2	0	3	0	1	483	1	1	1124
08:00 AM	0	0	0	0	1	206	0	4	3	0	0	0	0	182	2	0	398
08:15 AM	1	0	0	0	4	191	3	0	0	0	1	0	0	234	0	0	434
08:30 AM	1	0	0	0	3	158	0	0	0	0	0	0	20	132	0	0	314
08:45 AM	0	0	0	0	4	183	0	0	0	0	4	0	0	151	4	3	349
Total	2	0	0	0	12	738	3	4	3	0	5	0	20	699	6	3	1495
04:00 PM	1	0	0	0	2	184	2	0	1	0	5	0	0	244	5	0	444
04:15 PM	1	0	0	0	2	231	0	0	1	0	5	0	2	259	11	2	514
04:30 PM	0	0	0	0	5	186	0	0	3	0	2	0	0	271	5	0	472
04:45 PM	1	0	0	0	0	197	0	2	1	0	6	0	0	295	1	2	505
Total	3	0	0	0	9	798	2	2	6	0	18	0	2	1069	22	4	1935
05:00 PM	1	0	0	0	1	199	1	0	0	0	4	0	2	301	0	0	509
05:15 PM	0	0	0	0	0	210	0	0	0	0	1	0	1	247	2	0	461
05:30 PM	0	0	3	0	3	186	0	0	1	0	2	0	0	190	3	1	389
05:45 PM	1	0	0	0	3	209	4	0	3	0	1	0	1	212	1	0	435
Total	2	0	3	0	7	804	5	0	4	0	8	0	4	950	6	1	1794
Grand Total	7	0	3	1	29	2964	15	8	15	0	34	0	27	3201	35	9	6348
Apprch %	63.6	0.0	27.3	9.1	1.0	98.3	0.5	0.3	30.6	0.0	69.4	0.0	0.8	97.8	1.1	0.3	
Total %	0.1	0.0	0.0	0.0	0.5	46.7	0.2	0.1	0.2	0.0	0.5	0.0	0.4	50.4	0.6	0.1	

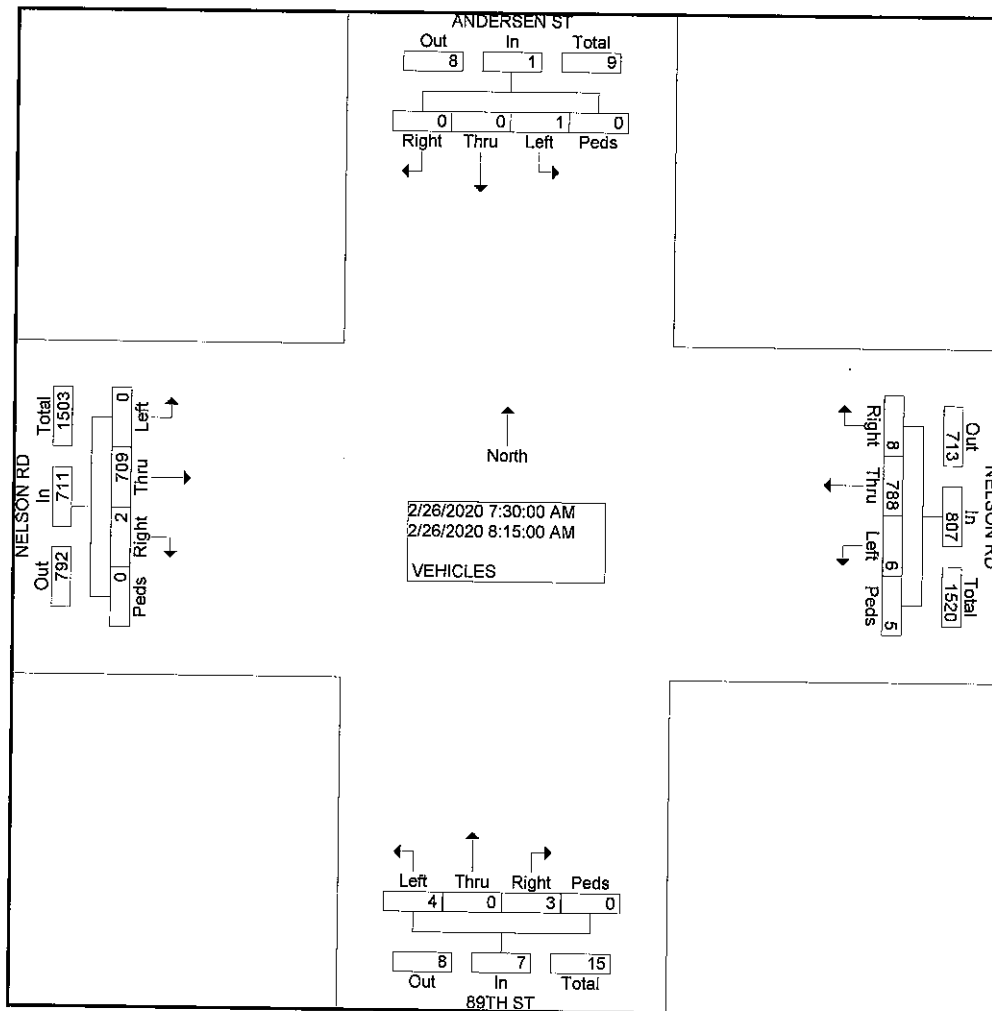
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: ANDERSEN ST / 89TH ST
E/W STREET: NELSON RD
CITY: LONGMONT
COUNTY: BOULDER

File Name : ANDERNELSO
Site Code : 00000025
Start Date : 2/26/2020
Page No : 2

	ANDERSEN ST Southbound					NELSON RD Westbound					89TH ST Northbound					NELSON RD Eastbound					
Start Time	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Int. Total
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersecti on	07:30 AM																				
Volume	1	0	0	0	1	6	788	8	5	807	4	0	3	0	7	0	709	2	0	711	1526
Percent	100	0.0	0.0	0.0		0.7	97.6	1.0	0.6		57.1	0.0	42.9	0.0		0.0	99.7	0.3	0.0		
08:15 Volume	1	0	0	0	1	4	191	3	0	198	0	0	1	0	1	0	234	0	0	234	434
Peak Factor																					0.879
High Int. Volume	08:15 AM					07:45 AM					08:00 AM					08:15 AM					
Peak Factor	1	0	0	0	1	1	218	5	1	225	3	0	0	0	3	0	234	0	0	234	
	0.25					0.89					0.58					0.76					
	0					7					3					0					



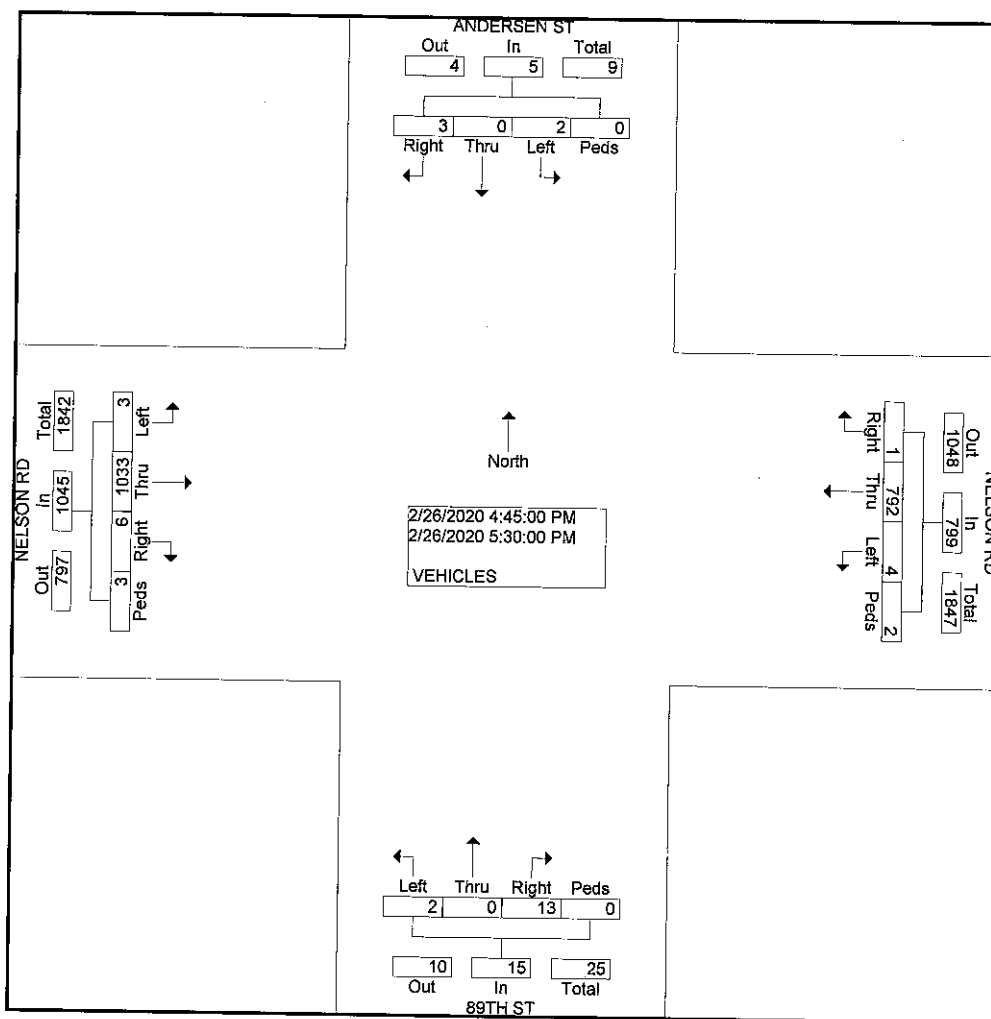
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: ANDERSEN ST / 89TH ST
E/W STREET: NELSON RD
CITY: LONGMONT
COUNTY: BOULDER

File Name : ANDERNELSO
Site Code : 00000025
Start Date : 2/26/2020
Page No : 2

	ANDERSEN ST Southbound					NELSON RD Westbound					89TH ST Northbound					NELSON RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Intersection	04:45 PM																				
Volume	2	0	3	0	5	4	792	1	2	799	2	0	13	0	15	3	103	6	3	1045	1864
Percent	40.0	0.0	60.0	0.0		0.5	99.1	0.1	0.3		13.3	0.0	86.7	0.0		0.3	98.9	0.6	0.3		
05:00 Volume	1	0	0	0	1	1	199	1	0	201	0	0	4	0	4	2	301	0	0	303	509
Peak Factor																					0.916
High Int. Volume	05:30 PM					05:15 PM					04:45 PM					05:00 PM					
Peak Factor	0	0	3	0	3	0	210	0	0	210	1	0	6	0	7	2	301	0	0	303	
	0.41					0.95					0.53					0.86					
	7					1					6					2					



Location: NELSON RD E-O SCHLAGE ST
 City: LONGMONT
 County: BOULDER
 Direction: EAST/WEST

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Site Code: 202119
 Station ID: 202119

Start Time	22-Sep-20 Tue	EASTBOUN	WESTBOUN	Total
12:00 AM		11	6	17
01:00		11	6	17
02:00		22	7	29
03:00		5	7	12
04:00		33	11	44
05:00		68	54	122
06:00		155	153	308
07:00		271	305	576
08:00		328	342	670
09:00		397	349	746
10:00		364	370	734
11:00		498	414	912
12:00 PM		443	516	959
01:00		461	463	924
02:00		474	526	1000
03:00		568	573	1141
04:00		613	601	1214
05:00		535	543	1078
06:00		362	456	818
07:00		289	338	627
08:00		119	237	356
09:00		79	130	209
10:00		53	76	129
11:00		41	36	77
Total		6200	6519	12719
Percent		48.7%	51.3%	
AM Peak	-	11:00	11:00	11:00
Vol.	-	498	414	912
PM Peak	-	16:00	16:00	16:00
Vol.	-	613	601	1214
Grand Total		6200	6519	12719
Percent		48.7%	51.3%	
ADT		ADT 12,719	AADT 12,719	

Location: NELSON RD E-O SCHLAGE ST
City: LONGMONT
County: BOULDER
Direction: EAST/WEST

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Site Code: 202119
Station ID: 202119

EASTBOUND

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
09/22/20	0	0	1	1	0	3	4	1	1	0	0	0	0	0	11
01:00	0	0	0	0	2	4	3	1	0	1	0	0	0	0	11
02:00	0	0	0	0	2	8	8	3	1	0	0	0	0	0	22
03:00	0	0	0	0	0	2	1	1	0	0	0	1	0	0	5
04:00	0	0	1	1	2	9	11	5	1	1	1	0	1	0	33
05:00	0	0	0	3	4	24	21	14	2	0	0	0	0	0	68
06:00	5	1	0	0	4	50	73	17	1	4	0	0	0	0	155
07:00	14	0	2	4	10	75	109	47	8	2	0	0	0	0	271
08:00	21	0	0	2	21	103	128	46	7	0	0	0	0	0	328
09:00	23	0	0	5	32	119	156	57	4	1	0	0	0	0	397
10:00	21	2	0	6	17	116	134	58	5	4	1	0	0	0	364
11:00	31	0	1	8	37	184	187	40	8	1	1	0	0	0	498
12 PM	45	0	0	4	25	131	171	57	8	2	0	0	0	0	443
13:00	43	1	1	9	40	171	148	44	2	2	0	0	0	0	461
14:00	60	0	1	4	20	179	154	46	10	0	0	0	0	0	474
15:00	63	0	2	3	44	179	207	62	7	1	0	0	0	0	568
16:00	66	3	6	15	54	215	206	44	4	0	0	0	0	0	613
17:00	49	0	0	2	36	188	191	62	5	2	0	0	0	0	535
18:00	14	0	0	2	30	142	124	40	9	1	0	0	0	0	362
19:00	12	1	3	0	28	118	98	22	7	0	0	0	0	0	289
20:00	8	0	1	2	8	49	37	14	0	0	0	0	0	0	119
21:00	1	0	0	1	5	33	25	14	0	0	0	0	0	0	79
22:00	0	0	0	0	7	19	16	8	3	0	0	0	0	0	53
23:00	1	0	0	0	3	13	14	2	5	2	0	1	0	0	41
Total	477	8	19	72	431	2134	2226	705	98	24	3	2	1	0	6200
Grand Total	477	8	19	72	431	2134	2226	705	98	24	3	2	1	0	6200

15th Percentile : 34 MPH
50th Percentile : 39 MPH
85th Percentile : 44 MPH
95th Percentile : 48 MPH

Statistics Mean Speed(Average) : 38 MPH
10 MPH Pace Speed : 36-45 MPH
Number in Pace : 4360
Percent in Pace : 70.3%
Number of Vehicles > 55 MPH : 30
Percent of Vehicles > 55 MPH : 0.5%

Location: NELSON RD E-O SCHLAGE ST
City: LONGMONT
County: BOULDER
Direction: EAST/WEST

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Site Code: 202119
Station ID: 202119

WESTBOUND

Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	
09/22/20	0	0	0	0	0	0	0	3	2	0	1	0	0	0	6
01:00	0	0	0	0	0	1	3	0	1	1	0	0	0	0	6
02:00	0	0	0	0	0	0	1	3	0	1	1	0	0	1	7
03:00	0	0	0	0	0	0	1	3	1	0	1	1	0	0	7
04:00	0	0	0	0	0	1	5	1	3	0	1	1	0	0	11
05:00	0	0	0	0	0	3	9	16	11	9	4	1	1	0	54
06:00	2	0	0	0	5	1	14	64	44	15	7	1	0	0	153
07:00	4	0	0	0	3	7	43	113	92	39	4	0	0	0	305
08:00	8	0	0	4	4	12	49	139	84	34	4	4	0	0	342
09:00	13	0	0	0	10	16	51	119	89	42	5	3	0	1	349
10:00	11	1	2	1	14	40	76	99	87	31	8	0	0	0	370
11:00	8	0	0	1	8	23	68	137	121	42	5	0	0	1	414
12 PM	18	0	0	8	6	18	127	183	104	44	3	1	3	1	516
13:00	17	0	0	3	16	37	92	164	96	33	4	1	0	0	463
14:00	29	0	0	11	29	20	120	193	88	28	7	1	0	0	526
15:00	29	0	0	3	4	14	130	232	115	38	7	1	0	0	573
16:00	22	0	0	0	4	36	148	209	129	46	7	0	0	0	601
17:00	17	0	1	2	3	18	61	214	162	50	15	0	0	0	543
18:00	8	0	0	2	1	13	81	168	113	60	9	1	0	0	456
19:00	3	0	0	0	2	7	71	151	72	26	5	1	0	0	338
20:00	3	0	0	1	1	6	60	94	52	15	3	2	0	0	237
21:00	2	0	0	0	0	2	21	48	34	20	3	0	0	0	130
22:00	0	0	0	1	1	2	25	25	10	10	1	0	1	0	76
23:00	0	0	0	0	0	0	4	20	3	6	1	1	0	1	36
Total	194	1	3	37	111	277	1260	2398	1513	590	106	19	5	5	6519
Grand Total	194	1	3	37	111	277	1260	2398	1513	590	106	19	5	5	6519

15th Percentile : 41 MPH
50th Percentile : 47 MPH
85th Percentile : 54 MPH
95th Percentile : 58 MPH

Statistics Mean Speed(Average) : 47 MPH
10 MPH Pace Speed : 46-55 MPH
Number in Pace : 3911
Percent in Pace : 60.0%
Number of Vehicles > 55 MPH : 725
Percent of Vehicles > 55 MPH : 11.1%

Location: NELSON RD E-O SCHLAGE ST
 City: LONGMONT
 County: BOULDER
 Direction: EAST/WEST

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Site Code: 202119
 Station ID: 202119

EASTBOUND

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
09/22/20	0	7	3	0	1	0	0	0	0	0	0	0	0	0	11
01:00	0	10	0	0	1	0	0	0	0	0	0	0	0	0	11
02:00	0	17	5	0	0	0	0	0	0	0	0	0	0	0	22
03:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
04:00	0	25	3	0	5	0	0	0	0	0	0	0	0	0	33
05:00	2	38	18	0	10	0	0	0	0	0	0	0	0	0	68
06:00	1	94	26	0	22	7	0	0	0	0	0	0	0	5	155
07:00	3	179	48	0	27	0	0	1	0	0	0	0	0	13	271
08:00	0	195	64	3	40	1	0	2	1	0	0	0	0	22	328
09:00	3	233	76	4	45	9	0	3	1	0	0	0	0	23	397
10:00	3	199	81	8	44	7	0	1	0	0	0	0	0	21	364
11:00	1	289	97	2	57	7	0	13	1	0	0	0	0	31	498
12 PM	0	250	79	2	59	4	0	4	0	0	0	0	0	45	443
13:00	4	256	88	4	60	3	0	4	1	0	0	0	0	41	461
14:00	3	247	98	5	51	6	0	3	1	0	0	0	0	60	474
15:00	0	322	112	5	59	1	0	5	1	0	0	0	0	63	568
16:00	3	361	111	3	59	3	0	9	0	0	0	0	0	64	613
17:00	3	316	107	2	51	2	0	5	0	0	0	0	0	49	535
18:00	3	254	59	0	31	1	0	0	0	0	0	0	0	14	362
19:00	2	203	54	0	16	1	0	1	0	0	0	0	0	12	289
20:00	0	76	22	0	13	0	0	0	0	0	0	0	0	8	119
21:00	0	54	14	0	10	0	0	0	0	0	0	0	0	1	79
22:00	0	42	9	0	2	0	0	0	0	0	0	0	0	0	53
23:00	1	30	6	1	2	0	0	0	0	0	0	0	0	1	41
Total	32	3701	1181	39	665	52	0	51	6	0	0	0	0	473	6200
Percent	0.5%	59.7%	19.0%	0.6%	10.7%	0.8%	0.0%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	7.6%	
AM Peak	07:00	11:00	11:00	10:00	11:00	09:00		11:00	08:00					11:00	
Vol.	3	289	97	8	57	9		13	1					31	
PM Peak	13:00	16:00	15:00	14:00	13:00	14:00		16:00	13:00					16:00	
Vol.	4	361	112	5	60	6		9	1					64	
Grand Total	32	3701	1181	39	665	52	0	51	6	0	0	0	0	473	6200
Percent	0.5%	59.7%	19.0%	0.6%	10.7%	0.8%	0.0%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	7.6%	

COUNTER MEASURES INC.
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Direction: EAST/WEST

Site Code: 202119
Station ID: 202119

WESTBOUND

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
09/22/20	0	0	5	0	1	0	0	0	0	0	0	0	0	0	6
01:00	0	0	5	0	1	0	0	0	0	0	0	0	0	0	6
02:00	0	0	6	0	1	0	0	0	0	0	0	0	0	0	7
03:00	0	0	7	0	0	0	0	0	0	0	0	0	0	0	7
04:00	0	0	9	0	2	0	0	0	0	0	0	0	0	0	11
05:00	0	1	36	0	17	0	0	0	0	0	0	0	0	0	54
06:00	0	4	86	5	54	1	0	1	0	0	0	0	0	2	153
07:00	2	3	184	6	96	2	0	7	1	0	0	0	0	4	305
08:00	1	5	201	7	109	3	0	8	0	0	0	0	0	8	342
09:00	0	8	212	9	95	4	0	5	3	0	0	0	0	13	349
10:00	0	6	238	8	92	7	0	8	0	0	0	0	0	11	370
11:00	2	10	277	6	106	1	0	5	0	0	0	0	0	7	414
12 PM	3	9	337	9	130	3	1	5	1	0	0	0	0	18	516
13:00	0	11	310	9	102	7	0	5	2	0	0	0	0	17	463
14:00	2	17	383	4	81	5	0	4	1	0	0	0	0	29	526
15:00	0	10	415	3	110	0	0	2	4	0	0	0	0	29	573
16:00	1	11	459	2	103	0	0	3	0	0	0	0	0	22	601
17:00	1	9	401	1	111	0	0	3	0	0	0	0	0	17	543
18:00	3	12	350	1	78	1	0	3	0	0	0	0	0	8	456
19:00	0	2	268	1	64	0	0	0	0	0	0	0	0	3	338
20:00	0	2	198	1	32	1	0	0	0	0	0	0	0	3	237
21:00	0	2	101	1	23	0	0	1	0	0	0	0	0	2	130
22:00	0	0	65	1	10	0	0	0	0	0	0	0	0	0	76
23:00	0	1	24	0	10	0	0	0	0	0	0	0	0	1	36
Total	15	123	4577	74	1428	35	1	60	12	0	0	0	0	194	6519
Percent	0.2%	1.9%	70.2%	1.1%	21.9%	0.5%	0.0%	0.9%	0.2%	0.0%	0.0%	0.0%	0.0%	3.0%	
AM Peak	07:00	11:00	11:00	09:00	08:00	10:00		08:00	09:00					09:00	
Vol.	2	10	277	9	109	7		8	3					13	
PM Peak	12:00	14:00	16:00	12:00	12:00	13:00	12:00	12:00	15:00					14:00	
Vol.	3	17	459	9	130	7	1	5	4					29	
Grand Total	15	123	4577	74	1428	35	1	60	12	0	0	0	0	194	6519
Percent	0.2%	1.9%	70.2%	1.1%	21.9%	0.5%	0.0%	0.9%	0.2%	0.0%	0.0%	0.0%	0.0%	3.0%	

LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

SIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

LOS	<u>Average Vehicle Delay</u> sec/vehicle	<u>Operational Characteristics</u>
A	<10 seconds	Describes operations with low control delay, up to 10 sec/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	10 to 20 seconds	Describes operations with control delay greater than 10 seconds and up to 20 sec/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	20 to 35 seconds	Describes operations with control delay greater than 20 and up to 35 sec/veh. These higher delays may result from only fair progression, longer cycle length, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	35 to 55 seconds	Describes operations with control delay greater than 35 and up to 55 sec/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55 to 80 seconds	Describes operations with control delay greater than 55 and up to 80 sec/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.
F	>80 seconds	Describes operations with control delay in excess of 80 sec/veh. This level, considered unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition











UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

Applicable to Two-Way Stop Control, All-Way Stop Control, and Roundabouts

LOS	Average Vehicle Control Delay	Operational Characteristics
A	<10 seconds	Normally, vehicles on the stop-controlled approach only have to wait up to 10 seconds before being able to clear the intersection. Left-turning vehicles on the uncontrolled street do not have to wait to make their turn.
B	10 to 15 seconds	Vehicles on the stop-controlled approach will experience delays before being able to clear the intersection. <u>The delay could be up to 15 seconds.</u> Left-turning vehicles on the uncontrolled street may have to wait to make their turn.
C	15 to 25 seconds	Vehicles on the stop-controlled approach can expect delays in the range of 15 to 25 seconds before clearing the intersection. Motorists may begin to take chances due to the long delays, thereby posing a safety risk to through traffic. <u>Left-turning vehicles on the uncontrolled street will now be required to wait to make their turn causing a queue to be created in the turn lane.</u>
D	25 to 35 seconds	<u>This is the point at which a traffic signal may be warranted for this intersection.</u> The delays for the stop-controlled intersection are not considered to be excessive. The length of the queue may begin to block other public and private access points.
E	35 to 50 seconds	The delays for all critical traffic movements are considered to be unacceptable. The length of the queues for the stop-controlled approaches as well as the left-turn movements are extremely long. <u>There is a high probability that this intersection will meet traffic signal warrants.</u> The ability to install a traffic signal is affected by the location of other existing traffic signals. Consideration may be given to restricting the accesses by eliminating the left-turn movements from and to the stop-controlled approach.
F	>50 seconds	The delay for the critical traffic movements are probably in excess of 100 seconds. The length of the queues are extremely long. Motorists are selecting alternative routes due to the long delays. <u>The only remedy for these long delays is installing a traffic signal or restricting the accesses.</u> The potential for accidents at this intersection are extremely high due to motorist taking more risky chances. If the median permits, motorists begin making two-stage left-turns.

HCM 6th TWSC
1: Airport Road & Rogers Road

























Existing Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	3	12	54	5	14	28	480	74	28	1266	36
Future Vol, veh/h	5	3	12	54	5	14	28	480	74	28	1266	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	100	-	-	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	3	13	59	5	15	30	522	80	30	1376	39
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1760	2098	688	1372	2097	301	1415	0	0	602	0	0
Stage 1	1436	1436	-	622	622	-	-	-	-	-	-	-
Stage 2	324	662	-	750	1475	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	54	51	389	105	51	695	478	-	-	971	-	-
Stage 1	140	197	-	441	477	-	-	-	-	-	-	-
Stage 2	662	457	-	369	189	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	45	46	389	89	46	695	478	-	-	971	-	-
Mov Cap-2 Maneuver	45	46	-	89	46	-	-	-	-	-	-	-
Stage 1	131	191	-	413	447	-	-	-	-	-	-	-
Stage 2	599	428	-	340	183	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	47		84.2		0.6		0.2					
HCM LOS	E		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR	
Capacity (veh/h)	478	-	-	45	156	89	46	695	971	-	-	
HCM Lane V/C Ratio	0.064	-	-	0.121	0.105	0.66	0.118	0.022	0.031	-	-	
HCM Control Delay (s)	13	-	-	95.7	30.8	102.5	93.5	10.3	8.8	-	-	
HCM Lane LOS	B	-	-	F	D	F	F	B	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.3	3.2	0.4	0.1	0.1	-	-	

Lanes, Volumes, Timings













11: Airport Road & Nelson Road

Existing Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	287	432	163	84	502	67	163	274	51	106	666	623
Future Volume (vph)	287	432	163	84	502	67	163	274	51	106	666	623
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		100	100		100	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.243			0.320			0.211			0.572		
Satd. Flow (perm)	453	1863	1583	596	3539	1583	393	3539	1583	1065	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			205			210			298
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		625			4100			575			5330	
Travel Time (s)		12.2			79.9			8.7			80.8	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	309	465	175	90	540	72	175	295	55	114	716	670
Shared Lane Traffic (%)												
Lane Group Flow (vph)	309	465	175	90	540	72	175	295	55	114	716	670
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings 11: Airport Road & Nelson Road

Existing Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.6	5.0	5.0
Minimum Split (s)	10.9	24.3	24.3	10.1	24.3	24.3	10.8	24.2	24.2	10.5	24.2	24.2
Total Split (s)	18.9	47.2	47.2	10.5	38.8	38.8	12.6	36.8	36.8	10.5	34.7	34.7
Total Split (%)	18.0%	45.0%	45.0%	10.0%	37.0%	37.0%	12.0%	35.0%	35.0%	10.0%	33.0%	33.0%
Maximum Green (s)	13.0	40.9	40.9	5.4	32.5	32.5	6.8	31.0	31.0	4.6	28.9	28.9
Yellow Time (s)	3.9	4.7	4.7	3.2	4.7	4.7	3.9	4.7	4.7	3.9	4.7	4.7
All-Red Time (s)	2.0	1.6	1.6	1.9	1.6	1.6	1.9	1.1	1.1	2.0	1.1	1.1
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.9	5.3	5.3	4.1	5.3	5.3	4.8	4.8	4.8	4.9	4.8	4.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	44.6	35.8	35.8	32.9	25.3	25.3	48.1	37.4	37.4	43.5	35.2	35.2
Actuated g/C Ratio	0.42	0.34	0.34	0.31	0.24	0.24	0.46	0.36	0.36	0.41	0.34	0.34
v/c Ratio	0.84	0.73	0.28	0.35	0.63	0.13	0.55	0.23	0.08	0.23	0.60	0.92
Control Delay	41.5	37.8	7.0	20.9	38.4	0.5	25.9	25.7	0.2	19.0	32.9	39.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	37.8	7.0	20.9	38.4	0.5	25.9	25.7	0.2	19.0	32.9	39.3
LOS	D	D	A	C	D	A	C	C	A	B	C	D
Approach Delay		33.3			32.3			23.1			34.7	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 105

Offset: 57.8 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 32.2

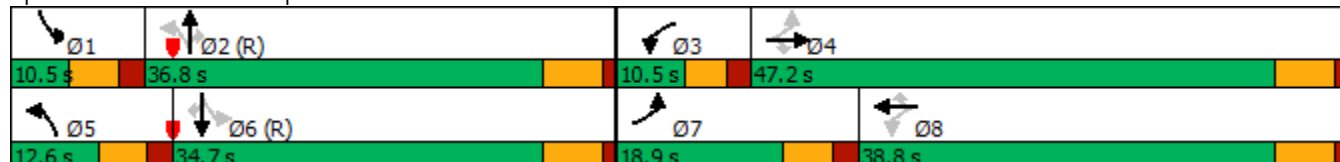
Intersection LOS: C

Intersection Capacity Utilization 73.9%

ICU Level of Service D







Analysis Period (min) 15

Splits and Phases: 11: Airport Road & Nelson Road



HCM 6th TWSC
13: Anderson Street & Nelson Road

Existing Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	709	2	6	788	8	4	0	3	1	0	0
Future Vol, veh/h	0	709	2	6	788	8	4	0	3	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	806	2	7	895	9	5	0	3	1	0	0











Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	904	0	0	808	0	0	1721	1725	807	1723	1722	900
Stage 1	-	-	-	-	-	-	807	807	-	914	914	-
Stage 2	-	-	-	-	-	-	914	918	-	809	808	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	752	-	-	817	-	-	70	89	381	70	89	337
Stage 1	-	-	-	-	-	-	375	394	-	327	352	-
Stage 2	-	-	-	-	-	-	327	350	-	374	394	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	752	-	-	817	-	-	70	88	381	69	88	337
Mov Cap-2 Maneuver	-	-	-	-	-	-	70	88	-	69	88	-
Stage 1	-	-	-	-	-	-	375	394	-	327	349	-
Stage 2	-	-	-	-	-	-	324	347	-	371	394	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			41			58		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	108	752	-	-	817	-	-	69
HCM Lane V/C Ratio	0.074	-	-	-	0.008	-	-	0.016
HCM Control Delay (s)	41	0	-	-	9.4	-	-	58
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

HCM 6th TWSC
1: Airport Road & Rogers Road

Existing Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	8	41	50	0	18	7	1089	103	37	487	4
Future Vol, veh/h	26	8	41	50	0	18	7	1089	103	37	487	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	100	-	-	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	9	44	53	0	19	7	1159	110	39	518	4

























Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1190	1879	259	1570	1828	635	522	0	0	1269	0	0
Stage 1	596	596	-	1228	1228	-	-	-	-	-	-	-
Stage 2	594	1283	-	342	600	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	143	71	740	75	76	421	1041	-	-	543	-	-
Stage 1	457	490	-	189	249	-	-	-	-	-	-	-
Stage 2	458	234	-	646	488	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	128	65	740	60	70	421	1041	-	-	543	-	-
Mov Cap-2 Maneuver	128	65	-	60	70	-	-	-	-	-	-	-
Stage 1	454	455	-	188	247	-	-	-	-	-	-	-
Stage 2	434	232	-	554	453	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	27.9		148		0		0.9	
HCM LOS	D		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1041	-	-	128	275	60	-	421	543	-	-
HCM Lane V/C Ratio	0.007	-	-	0.216	0.19	0.887	-	0.045	0.072	-	-
HCM Control Delay (s)	8.5	-	-	40.7	21.1	196.3	0	14	12.1	-	-
HCM Lane LOS	A	-	-	E	C	F	A	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.7	4.1	-	0.1	0.2	-	-

Lanes, Volumes, Timings
11: Airport Road & Nelson Road













Existing Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	531	655	212	111	302	166	52	536	80	123	337	160
Future Volume (vph)	531	655	212	111	302	166	52	536	80	123	337	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		100	100		100	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.412			0.218			0.509			0.282		
Satd. Flow (perm)	767	1863	1583	406	3539	1583	948	3539	1583	525	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			131			187			192			192
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		625			8388			575			5330	
Travel Time (s)		12.2			163.4			8.7			80.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	542	668	216	113	308	169	53	547	82	126	344	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	542	668	216	113	308	169	53	547	82	126	344	163
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings

11: Airport Road & Nelson Road

Existing Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.6	5.0	5.0	4.5	5.0	5.0
Minimum Split (s)	10.9	24.3	24.3	10.1	24.3	24.3	10.4	24.2	24.2	10.4	24.2	24.2
Total Split (s)	35.6	58.6	58.6	11.5	34.5	34.5	10.4	34.5	34.5	10.4	34.5	34.5
Total Split (%)	31.0%	51.0%	51.0%	10.0%	30.0%	30.0%	9.0%	30.0%	30.0%	9.0%	30.0%	30.0%
Maximum Green (s)	29.7	52.3	52.3	6.4	28.2	28.2	4.6	28.7	28.7	4.5	28.7	28.7
Yellow Time (s)	3.9	4.7	4.7	3.2	4.7	4.7	3.9	4.7	4.7	3.9	4.7	4.7
All-Red Time (s)	2.0	1.6	1.6	1.9	1.6	1.6	1.9	1.1	1.1	2.0	1.1	1.1
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.9	5.3	5.3	4.1	5.3	5.3	4.8	4.8	4.8	4.9	4.8	4.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	60.0	48.1	48.1	34.8	26.2	26.2	39.6	32.8	32.8	41.8	35.9	35.9
Actuated g/C Ratio	0.52	0.42	0.42	0.30	0.23	0.23	0.34	0.29	0.29	0.36	0.31	0.31
v/c Ratio	0.84	0.86	0.29	0.54	0.38	0.34	0.14	0.54	0.14	0.46	0.31	0.26
Control Delay	30.9	41.9	8.9	27.2	38.5	5.6	25.3	38.1	0.5	32.6	33.2	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.9	41.9	8.9	27.2	38.5	5.6	25.3	38.1	0.5	32.6	33.2	3.9
LOS	C	D	A	C	D	A	C	D	A	C	C	A
Approach Delay		32.7			26.9			32.6			25.5	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 23 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 30.3

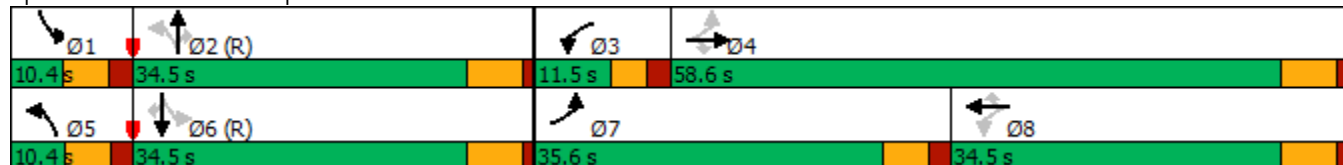
Intersection LOS: C

Intersection Capacity Utilization 78.2%

ICU Level of Service D







Analysis Period (min) 15

Splits and Phases: 11: Airport Road & Nelson Road



HCM 6th TWSC
13: Anderson Street & Nelson Road

Existing Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1033	6	4	792	1	2	0	13	2	0	3
Future Vol, veh/h	3	1033	6	4	792	1	2	0	13	2	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1123	7	4	861	1	2	0	14	2	0	3












Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	862	0	0	1130	0	0	2004	2003	1127	2010	2006	862
Stage 1	-	-	-	-	-	-	1133	1133	-	870	870	-
Stage 2	-	-	-	-	-	-	871	870	-	1140	1136	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	780	-	-	618	-	-	44	60	249	44	59	355
Stage 1	-	-	-	-	-	-	247	278	-	346	369	-
Stage 2	-	-	-	-	-	-	346	369	-	244	277	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	780	-	-	618	-	-	43	59	249	41	58	355
Mov Cap-2 Maneuver	-	-	-	-	-	-	43	59	-	41	58	-
Stage 1	-	-	-	-	-	-	246	277	-	345	367	-
Stage 2	-	-	-	-	-	-	341	367	-	229	276	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	31.5	49.1
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	152	780	-	-	618	-	-	87
HCM Lane V/C Ratio	0.107	0.004	-	-	0.007	-	-	0.062
HCM Control Delay (s)	31.5	9.6	-	-	10.9	-	-	49.1
HCM Lane LOS	D	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.2






HCM 6th TWSC
1: Airport Road & Rogers Road

2025 Background Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	3	13	57	5	14	29	505	78	29	1330	38
Future Vol, veh/h	5	3	13	57	5	14	29	505	78	29	1330	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	100	-	100	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	3	14	62	5	15	32	549	85	32	1446	41
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1851	2208	723	1402	2164	275	1487	0	0	634	0	0
Stage 1	1510	1510	-	613	613	-	-	-	-	-	-	-
Stage 2	341	698	-	789	1551	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	46	44	369	100	47	722	448	-	-	945	-	-
Stage 1	126	181	-	446	481	-	-	-	-	-	-	-
Stage 2	647	440	-	350	173	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	37	39	369	83	42	722	448	-	-	945	-	-
Mov Cap-2 Maneuver	37	39	-	83	42	-	-	-	-	-	-	-
Stage 1	117	175	-	414	447	-	-	-	-	-	-	-
Stage 2	581	409	-	319	167	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	53.8		102.2		0.6		0.2					
HCM LOS	F		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR	
Capacity (veh/h)	448	-	-	37	143	83	42	722	945	-	-	
HCM Lane V/C Ratio	0.07	-	-	0.147	0.122	0.746	0.129	0.021	0.033	-	-	
HCM Control Delay (s)	13.6	-	-	118.4	33.6	124.8	103.1	10.1	8.9	-	-	
HCM Lane LOS	B	-	-	F	D	F	F	B	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.4	3.7	0.4	0.1	0.1	-	-	

HCM 6th TWSC 2: Local Collector & Rogers Road

2025 Background Traffic
AM Peak Hour

























Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	108	2	2	74	2	2
Future Vol, veh/h	108	2	2	74	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	2	2	80	2	2
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	119	0	202	118
Stage 1	-	-	-	-	118	-
Stage 2	-	-	-	-	84	-
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	-	-	1469	-	787	934
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	939	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1469	-	786	934
Mov Cap-2 Maneuver	-	-	-	-	786	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	938	-
Approach	EB		WB		NW	
HCM Control Delay, s	0		0.2		9.2	
HCM LOS					A	
Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	854	-	-	1469	-	
HCM Lane V/C Ratio	0.005	-	-	0.001	-	
HCM Control Delay (s)	9.2	-	-	7.5	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Lanes, Volumes, Timings

11: Airport Road & Nelson Road

2025 Background Traffic

AM Peak Hour













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	454	171	88	528	70	171	288	54	111	700	655
Future Volume (vph)	302	454	171	88	528	70	171	288	54	111	700	655
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		100	100		100	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.230			0.291			0.171			0.562		
Satd. Flow (perm)	428	1863	1583	542	3539	1583	319	3539	1583	1047	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			205			210			281
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		625			4100			575			5330	
Travel Time (s)		12.2			79.9			8.7			80.8	
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
Adj. Flow (vph)	328	493	186	96	574	76	186	313	59	121	761	712
Shared Lane Traffic (%)												
Lane Group Flow (vph)	328	493	186	96	574	76	186	313	59	121	761	712
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

Synchro 10 Report

Lanes, Volumes, Timings

11: Airport Road & Nelson Road

2025 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.6	5.0	5.0
Minimum Split (s)	10.9	24.3	24.3	10.1	24.3	24.3	10.8	24.2	24.2	10.5	24.2	24.2
Total Split (s)	18.9	47.2	47.2	10.5	38.8	38.8	12.6	36.8	36.8	10.5	34.7	34.7
Total Split (%)	18.0%	45.0%	45.0%	10.0%	37.0%	37.0%	12.0%	35.0%	35.0%	10.0%	33.0%	33.0%
Maximum Green (s)	13.0	40.9	40.9	5.4	32.5	32.5	6.8	31.0	31.0	4.6	28.9	28.9
Yellow Time (s)	3.9	4.7	4.7	3.2	4.7	4.7	3.9	4.7	4.7	3.9	4.7	4.7
All-Red Time (s)	2.0	1.6	1.6	1.9	1.6	1.6	1.9	1.1	1.1	2.0	1.1	1.1
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.9	5.3	5.3	4.1	5.3	5.3	4.8	4.8	4.8	4.9	4.8	4.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	45.7	36.9	36.9	34.0	26.4	26.4	47.7	36.5	36.5	41.7	33.6	33.6
Actuated g/C Ratio	0.44	0.35	0.35	0.32	0.25	0.25	0.45	0.35	0.35	0.40	0.32	0.32
v/c Ratio	0.90	0.75	0.29	0.38	0.64	0.14	0.62	0.25	0.09	0.26	0.67	1.02
Control Delay	49.2	38.1	7.5	21.2	38.0	0.5	30.2	26.4	0.2	20.0	35.5	63.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	38.1	7.5	21.2	38.0	0.5	30.2	26.4	0.2	20.0	35.5	63.3
LOS	D	D	A	C	D	A	C	C	A	B	D	E
Approach Delay		36.0			32.0			24.9			46.7	
Approach LOS		D			C			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 105

Offset: 57.8 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 38.1

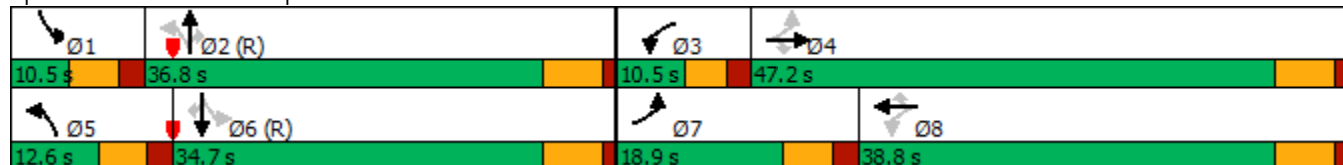
Intersection LOS: D

Intersection Capacity Utilization 77.0%

ICU Level of Service D







Analysis Period (min) 15

Splits and Phases: 11: Airport Road & Nelson Road



HCM 6th TWSC
13: Anderson Street & Nelson Road












2025 Background Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	745	2	6	830	8	4	0	3	1	0	1
Future Vol, veh/h	1	745	2	6	830	8	4	0	3	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	847	2	7	943	9	5	0	3	1	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	952	0	0	849	0	0	1812	1816	848	1814	1813	948
Stage 1	-	-	-	-	-	-	850	850	-	962	962	-
Stage 2	-	-	-	-	-	-	962	966	-	852	851	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	722	-	-	789	-	-	61	78	361	60	78	316
Stage 1	-	-	-	-	-	-	355	377	-	308	334	-
Stage 2	-	-	-	-	-	-	308	333	-	354	376	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	722	-	-	789	-	-	60	77	361	59	77	316
Mov Cap-2 Maneuver	-	-	-	-	-	-	60	77	-	59	77	-
Stage 1	-	-	-	-	-	-	355	377	-	308	331	-
Stage 2	-	-	-	-	-	-	304	330	-	350	376	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			47.3			42.2		
HCM LOS							E			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	93	722	-	-	789	-	-	99				
HCM Lane V/C Ratio	0.086	0.002	-	-	0.009	-	-	0.023				
HCM Control Delay (s)	47.3	10	-	-	9.6	-	-	42.2				
HCM Lane LOS	E	A	-	-	A	-	-	E				
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1				

HCM 6th TWSC

1: Airport Road & Rogers Road





2025 Background Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	8.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	8	43	53	1	19	7	1145	108	39	510	4
Future Vol, veh/h	27	8	43	53	1	19	7	1145	108	39	510	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	100	-	100	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	9	46	56	1	20	7	1218	115	41	543	4
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1249	1972	272	1590	1861	609	547	0	0	1333	0	0
Stage 1	625	625	-	1232	1232	-	-	-	-	-	-	-
Stage 2	624	1347	-	358	629	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	129	62	726	72	72	438	1018	-	-	513	-	-
Stage 1	439	475	-	188	248	-	-	-	-	-	-	-
Stage 2	440	218	-	633	474	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	114	57	726	~ 56	66	438	1018	-	-	513	-	-
Mov Cap-2 Maneuver	114	57	-	~ 56	66	-	-	-	-	-	-	-
Stage 1	436	437	-	187	246	-	-	-	-	-	-	-
Stage 2	415	216	-	535	436	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	31.1			179.7			0			0.9		
HCM LOS	D			F								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR	
Capacity (veh/h)	1018	-	-	114	256	56	66	438	513	-	-	
HCM Lane V/C Ratio	0.007	-	-	0.252	0.212	1.007	0.016	0.046	0.081	-	-	
HCM Control Delay (s)	8.6	-	-	46.9	22.8	241.5	60.4	13.6	12.6	-	-	
HCM Lane LOS	A	-	-	E	C	F	F	B	B	-	-	
HCM 95th %tile Q(veh)	0	-	-	0.9	0.8	4.6	0	0.1	0.3	-	-	
Notes												
-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

HCM 6th TWSC

2: Local Collector & Rogers Road

2025 Background Traffic
PM Peak Hour

























Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	153	2	2	71	2	2
Future Vol, veh/h	153	2	2	71	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	166	2	2	77	2	2
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	168	0	248	167
Stage 1	-	-	-	-	167	-
Stage 2	-	-	-	-	81	-
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	-	-	1410	-	740	877
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	942	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1410	-	739	877
Mov Cap-2 Maneuver	-	-	-	-	739	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	941	-
Approach	EB		WB		NW	
HCM Control Delay, s	0		0.2		9.5	
HCM LOS					A	
Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	802	-	-	1410	-	
HCM Lane V/C Ratio	0.005	-	-	0.002	-	
HCM Control Delay (s)	9.5	-	-	7.6	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Lanes, Volumes, Timings

11: Airport Road & Nelson Road

2025 Background Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	558	688	223	117	317	174	55	563	84	129	354	168
Future Volume (vph)	558	688	223	117	317	174	55	563	84	129	354	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		100	100		100	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.401			0.189			0.491			0.255		
Satd. Flow (perm)	747	1863	1583	352	3539	1583	915	3539	1583	475	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			131			187			192			192
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		625			8388			575			5330	
Travel Time (s)		12.2			163.4			8.7			80.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	569	702	228	119	323	178	56	574	86	132	361	171
Shared Lane Traffic (%)												
Lane Group Flow (vph)	569	702	228	119	323	178	56	574	86	132	361	171
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6













Synchro 10 Report

Lanes, Volumes, Timings

11: Airport Road & Nelson Road

2025 Background Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.6	5.0	5.0	4.5	5.0	5.0
Minimum Split (s)	10.9	24.3	24.3	10.1	24.3	24.3	10.4	24.2	24.2	10.4	24.2	24.2
Total Split (s)	35.6	58.6	58.6	11.5	34.5	34.5	10.4	34.5	34.5	10.4	34.5	34.5
Total Split (%)	31.0%	51.0%	51.0%	10.0%	30.0%	30.0%	9.0%	30.0%	30.0%	9.0%	30.0%	30.0%
Maximum Green (s)	29.7	52.3	52.3	6.4	28.2	28.2	4.6	28.7	28.7	4.5	28.7	28.7
Yellow Time (s)	3.9	4.7	4.7	3.2	4.7	4.7	3.9	4.7	4.7	3.9	4.7	4.7
All-Red Time (s)	2.0	1.6	1.6	1.9	1.6	1.6	1.9	1.1	1.1	2.0	1.1	1.1
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.9	5.3	5.3	4.1	5.3	5.3	4.8	4.8	4.8	4.9	4.8	4.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	61.2	49.3	49.3	35.2	26.6	26.6	38.3	31.8	31.8	40.7	35.0	35.0
Actuated g/C Ratio	0.53	0.43	0.43	0.31	0.23	0.23	0.33	0.28	0.28	0.35	0.30	0.30
v/c Ratio	0.86	0.88	0.30	0.60	0.39	0.35	0.16	0.59	0.15	0.53	0.34	0.28
Control Delay	33.1	43.3	9.3	31.6	38.4	6.3	25.9	39.5	0.5	36.0	33.9	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	43.3	9.3	31.6	38.4	6.3	25.9	39.5	0.5	36.0	33.9	4.6
LOS	C	D	A	C	D	A	C	D	A	D	C	A
Approach Delay		34.2			27.9			33.8			26.8	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 23 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 31.6

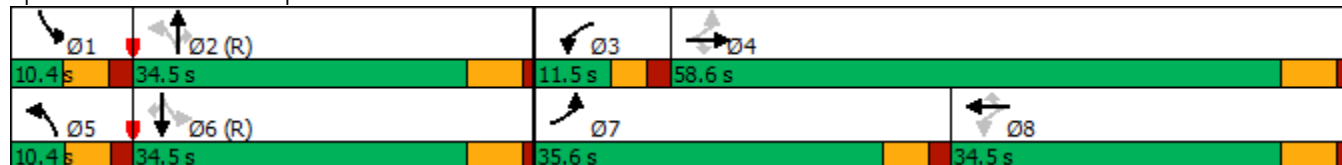
Intersection LOS: C

Intersection Capacity Utilization 81.3%

ICU Level of Service D







Analysis Period (min) 15

Splits and Phases: 11: Airport Road & Nelson Road



HCM 6th TWSC
13: Anderson Street & Nelson Road












2025 Background Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1085	6	4	835	1	2	0	13	2	0	3
Future Vol, veh/h	3	1085	6	4	835	1	2	0	13	2	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1179	7	4	908	1	2	0	14	2	0	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	909	0	0	1186	0	0	2107	2106	1183	2113	2109	909
Stage 1	-	-	-	-	-	-	1189	1189	-	917	917	-
Stage 2	-	-	-	-	-	-	918	917	-	1196	1192	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	749	-	-	589	-	-	37	51	231	37	51	333
Stage 1	-	-	-	-	-	-	229	261	-	326	351	-
Stage 2	-	-	-	-	-	-	326	351	-	227	261	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	749	-	-	589	-	-	36	50	231	34	50	333
Mov Cap-2 Maneuver	-	-	-	-	-	-	36	50	-	34	50	-
Stage 1	-	-	-	-	-	-	228	260	-	325	349	-
Stage 2	-	-	-	-	-	-	321	349	-	212	260	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			35.6			57.5		
HCM LOS							E			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	134	749	-	-	589	-	-	74				
HCM Lane V/C Ratio	0.122	0.004	-	-	0.007	-	-	0.073				
HCM Control Delay (s)	35.6	9.8	-	-	11.2	-	-	57.5				
HCM Lane LOS	E	A	-	-	B	-	-	F				
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.2				

HCM 6th TWSC

1: Airport Road & Rogers Road

2025 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	15.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	12	13	71	10	28	29	505	107	56	1330	38
Future Vol, veh/h	5	12	13	71	10	28	29	505	107	56	1330	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	100	-	100	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	13	14	77	11	30	32	549	116	61	1446	41
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1912	2297	723	1465	2222	275	1487	0	0	665	0	0
Stage 1	1568	1568	-	613	613	-	-	-	-	-	-	-
Stage 2	344	729	-	852	1609	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	41	38	369	89	43	722	448	-	-	920	-	-
Stage 1	116	170	-	446	481	-	-	-	-	-	-	-
Stage 2	645	426	-	321	162	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	27	33	369	~ 54	37	722	448	-	-	920	-	-
Mov Cap-2 Maneuver	27	33	-	~ 54	37	-	-	-	-	-	-	-
Stage 1	108	159	-	414	447	-	-	-	-	-	-	-
Stage 2	560	396	-	265	151	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	111.5		273.7		0.6		0.4					
HCM LOS	F		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR	
Capacity (veh/h)	448	-	-	27	63	54	37	722	920	-	-	
HCM Lane V/C Ratio	0.07	-	-	0.201	0.431	1.429	0.294	0.042	0.066	-	-	
HCM Control Delay (s)	13.6	-	-	169.3	99.9	396.7	138.6	10.2	9.2	-	-	
HCM Lane LOS	B	-	-	F	F	F	F	B	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	-	0.6	1.7	7	1	0.1	0.2	-	-	
Notes												
-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

HCM 6th TWSC 2: Local Collector & Rogers Road

2025 Total Traffic
AM Peak Hour

Intersection

Int Delay, s/veh 2.6

Movement EBT EBR WBL WBT NWL NWR

Lane Configurations 

Traffic Vol, veh/h 106 69 37 74 35 23

Future Vol, veh/h 106 69 37 74 35 23

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - 100 - 0 -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 115 75 40 80 38 25

Major/Minor Major1 Major2 Minor1

Conflicting Flow All 0 0 190 0 313 153

Stage 1 - - - - 153 -

Stage 2 - - - - 160 -

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 - - 1384 - 680 893

Stage 1 - - - - 875 -

Stage 2 - - - - 869 -

Platoon blocked, % - - - - -

Mov Cap-1 Maneuver - - 1384 - 660 893

Mov Cap-2 Maneuver - - - - 660 -

Stage 1 - - - - 875 -

Stage 2 - - - - 844 -

Approach EB WB NW

HCM Control Delay, s 0 2.6 10.3

HCM LOS B

Minor Lane/Major Mvmt NWLn1 EBT EBR WBL WBT

Capacity (veh/h) 736 - - 1384 -

HCM Lane V/C Ratio 0.086 - - 0.029 -

HCM Control Delay (s) 10.3 - - 7.7 -

HCM Lane LOS B - - A -

HCM 95th %tile Q(veh) 0.3 - - 0.1 -




HCM 6th TWSC

4: Northwest Site Access & Local Collector

2025 Total Traffic
AM Peak Hour

Intersection

Int Delay, s/veh 4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	58	48	36	7	47	37
Future Vol, veh/h	58	48	36	7	47	37
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	52	39	8	51	40

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	115
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1474
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1474
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.3	9.7
HCM LOS			A




Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	862	-	-	1474	-
HCM Lane V/C Ratio	0.106	-	-	0.027	-
HCM Control Delay (s)	9.7	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

HCM 6th TWSC
5: Northeast Site Access & Local Collector

2025 Total Traffic
AM Peak Hour

Intersection

Int Delay, s/veh 2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	54	41	40	7	6
Future Vol, veh/h	41	54	41	40	7	6
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	59	45	43	8	7

























Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	104
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1488
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1488
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.8	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	847	-	-	1488	-
HCM Lane V/C Ratio	0.017	-	-	0.03	-
HCM Control Delay (s)	9.3	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-













Lanes, Volumes, Timings
11: Airport Road & Nelson Road

2025 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	314	460	171	94	532	70	171	305	63	111	708	661
Future Volume (vph)	314	460	171	94	532	70	171	305	63	111	708	661
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		100	100		100	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.223			0.248			0.179			0.554		
Satd. Flow (perm)	415	1863	1583	462	3539	1583	333	3539	1583	1032	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			205			210			282
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		625			4100			575			5330	
Travel Time (s)		12.2			79.9			8.7			80.8	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	338	495	184	101	572	75	184	328	68	119	761	711
Shared Lane Traffic (%)												
Lane Group Flow (vph)	338	495	184	101	572	75	184	328	68	119	761	711
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings
11: Airport Road & Nelson Road

2025 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.6	5.0	5.0
Minimum Split (s)	10.9	24.3	24.3	10.1	24.3	24.3	10.8	24.2	24.2	10.5	24.2	24.2
Total Split (s)	18.9	47.2	47.2	10.5	38.8	38.8	12.6	36.8	36.8	10.5	34.7	34.7
Total Split (%)	18.0%	45.0%	45.0%	10.0%	37.0%	37.0%	12.0%	35.0%	35.0%	10.0%	33.0%	33.0%
Maximum Green (s)	13.0	40.9	40.9	5.4	32.5	32.5	6.8	31.0	31.0	4.6	28.9	28.9
Yellow Time (s)	3.9	4.7	4.7	3.2	4.7	4.7	3.9	4.7	4.7	3.9	4.7	4.7
All-Red Time (s)	2.0	1.6	1.6	1.9	1.6	1.6	1.9	1.1	1.1	2.0	1.1	1.1
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.9	5.3	5.3	4.1	5.3	5.3	4.8	4.8	4.8	4.9	4.8	4.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	45.8	34.9	34.9	34.1	26.5	26.5	47.6	36.5	36.5	41.7	33.6	33.6
Actuated g/C Ratio	0.44	0.33	0.33	0.32	0.25	0.25	0.45	0.35	0.35	0.40	0.32	0.32
v/c Ratio	0.94	0.80	0.30	0.44	0.64	0.14	0.61	0.27	0.10	0.25	0.67	1.02
Control Delay	56.1	41.8	7.5	23.0	37.8	0.5	29.6	26.6	0.3	20.0	35.5	62.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.1	41.8	7.5	23.0	37.8	0.5	29.6	26.6	0.3	20.0	35.5	62.4
LOS	E	D	A	C	D	A	C	C	A	B	D	E
Approach Delay		40.3			32.1			24.4			46.4	
Approach LOS		D			C			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 105

Offset: 57.8 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 38.9

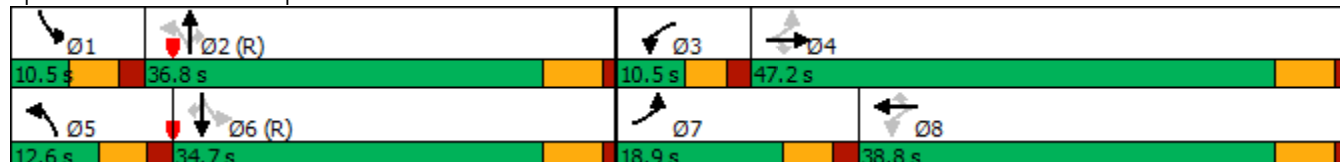
Intersection LOS: D

Intersection Capacity Utilization 77.6%

ICU Level of Service D







Analysis Period (min) 15

Splits and Phases: 11: Airport Road & Nelson Road



HCM 6th TWSC
13: Anderson Street & Nelson Road

2025 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	745	2	6	830	70	4	0	3	34	0	11
Future Vol, veh/h	16	745	2	6	830	70	4	0	3	34	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	847	2	7	943	80	5	0	3	39	0	13












Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1023	0	0	849	0	0	1888	1921	848	1883	1882	983
Stage 1	-	-	-	-	-	-	884	884	-	997	997	-
Stage 2	-	-	-	-	-	-	1004	1037	-	886	885	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	679	-	-	789	-	-	54	67	361	54	71	302
Stage 1	-	-	-	-	-	-	340	363	-	294	322	-
Stage 2	-	-	-	-	-	-	291	308	-	339	363	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	679	-	-	789	-	-	50	65	361	52	68	302
Mov Cap-2 Maneuver	-	-	-	-	-	-	50	65	-	52	68	-
Stage 1	-	-	-	-	-	-	331	353	-	286	319	-
Stage 2	-	-	-	-	-	-	276	305	-	327	353	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			55.6			160.4		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	79	679	-	-	789	-	-	65
HCM Lane V/C Ratio	0.101	0.027	-	-	0.009	-	-	0.787
HCM Control Delay (s)	55.6	10.4	-	-	9.6	-	-	160.4
HCM Lane LOS	F	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	3.6

HCM 6th TWSC
1: Airport Road & Rogers Road

2025 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	40.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	15	43	92	12	63	7	1135	143	66	505	4
Future Vol, veh/h	27	15	43	92	12	63	7	1135	143	66	505	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	100	-	100	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	16	46	98	13	67	7	1207	152	70	537	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1301	2050	269	1638	1902	604	541	0	0	1359	0	0
Stage 1	677	677	-	1221	1221	-	-	-	-	-	-	-
Stage 2	624	1373	-	417	681	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	118	55	729	~ 66	68	441	1024	-	-	502	-	-
Stage 1	409	450	-	191	251	-	-	-	-	-	-	-
Stage 2	440	212	-	584	448	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	74	47	729	~ 41	58	441	1024	-	-	502	-	-
Mov Cap-2 Maneuver	74	47	-	~ 41	58	-	-	-	-	-	-	-
Stage 1	406	387	-	190	249	-	-	-	-	-	-	-
Stage 2	352	211	-	452	386	-	-	-	-	-	-	-






Approach	EB	WB	NB	SB
HCM Control Delay, s	55.7	\$ 475.8	0	1.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1024	-	-	74	153	41	58	441	502	-	-
HCM Lane V/C Ratio	0.007	-	-	0.388	0.403	2.387	0.22	0.152	0.14	-	-
HCM Control Delay (s)	8.5	-	-	81.7	43.6	\$ 842.8	83.8	14.6	13.3	-	-
HCM Lane LOS	A	-	-	F	E	F	F	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.5	1.8	10.6	0.7	0.5	0.5	-	-

Notes											
-: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon			

HCM 6th TWSC 2: Local Collector & Rogers Road

2025 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	4.3					
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	150	74	34	71	99	50
Future Vol, veh/h	150	74	34	71	99	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	163	80	37	77	108	54
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	243	0	354	203
Stage 1	-	-	-	-	203	-
Stage 2	-	-	-	-	151	-
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	-	-	1323	-	644	838
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	877	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1323	-	626	838
Mov Cap-2 Maneuver	-	-	-	-	626	-
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	852	-
Approach	EB		WB		NW	
HCM Control Delay, s	0		2.5		11.9	
HCM LOS					B	
Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	684	-	-	1323	-	
HCM Lane V/C Ratio	0.237	-	-	0.028	-	
HCM Control Delay (s)	11.9	-	-	7.8	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-	




HCM 6th TWSC

4: Northwest Site Access & Local Collector

2025 Total Traffic
PM Peak Hour

Intersection

Int Delay, s/veh 5.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	11	97	58	46	67	64
Future Vol, veh/h	11	97	58	46	67	64
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	105	63	50	73	70




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	117
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1471
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1471
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.2	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	830	-	-	1471	-
HCM Lane V/C Ratio	0.172	-	-	0.043	-
HCM Control Delay (s)	10.2	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

























HCM 6th TWSC
5: Northeast Site Access & Local Collector

2025 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	68	7	6	62	46	38
Future Vol, veh/h	68	7	6	62	46	38
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	74	8	7	67	50	41
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	82	0	159	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	81	-
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	-	-	1515	-	832	983
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	942	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1515	-	828	983
Mov Cap-2 Maneuver	-	-	-	-	828	-
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	937	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.7		9.5	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	892	-	-	1515	-	
HCM Lane V/C Ratio	0.102	-	-	0.004	-	
HCM Control Delay (s)	9.5	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0	-	

Lanes, Volumes, Timings
11: Airport Road & Nelson Road













2025 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	568	693	223	131	326	174	55	578	91	129	374	182
Future Volume (vph)	568	693	223	131	326	174	55	578	91	129	374	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		100	100		100	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.377			0.147			0.435			0.211		
Satd. Flow (perm)	702	1863	1583	274	3539	1583	810	3539	1583	393	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			131			187			192			195
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		625			8388			575			5330	
Travel Time (s)		12.2			163.4			8.7			80.8	
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
Adj. Flow (vph)	617	753	242	142	354	189	60	628	99	140	407	198
Shared Lane Traffic (%)												
Lane Group Flow (vph)	617	753	242	142	354	189	60	628	99	140	407	198
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings

11: Airport Road & Nelson Road

2025 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.6	5.0	5.0	4.5	5.0	5.0
Minimum Split (s)	10.9	24.3	24.3	10.1	24.3	24.3	10.4	24.2	24.2	10.4	24.2	24.2
Total Split (s)	35.6	58.6	58.6	11.5	34.5	34.5	10.4	34.5	34.5	10.4	34.5	34.5
Total Split (%)	31.0%	51.0%	51.0%	10.0%	30.0%	30.0%	9.0%	30.0%	30.0%	9.0%	30.0%	30.0%
Maximum Green (s)	29.7	52.3	52.3	6.4	28.2	28.2	4.6	28.7	28.7	4.5	28.7	28.7
Yellow Time (s)	3.9	4.7	4.7	3.2	4.7	4.7	3.9	4.7	4.7	3.9	4.7	4.7
All-Red Time (s)	2.0	1.6	1.6	1.9	1.6	1.6	1.9	1.1	1.1	2.0	1.1	1.1
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.9	5.3	5.3	4.1	5.3	5.3	4.8	4.8	4.8	4.9	4.8	4.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	62.9	51.0	51.0	35.9	27.3	27.3	37.0	30.8	30.8	38.4	33.6	33.6
Actuated g/C Ratio	0.55	0.44	0.44	0.31	0.24	0.24	0.32	0.27	0.27	0.33	0.29	0.29
v/c Ratio	0.93	0.91	0.31	0.78	0.42	0.37	0.19	0.66	0.18	0.67	0.39	0.33
Control Delay	40.2	46.2	9.7	52.8	38.5	7.2	26.8	41.8	0.7	46.0	35.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	46.2	9.7	52.8	38.5	7.2	26.8	41.8	0.7	46.0	35.4	6.6
LOS	D	D	A	D	D	A	C	D	A	D	D	A
Approach Delay		38.4			32.8			35.5			29.7	
Approach LOS		D			C			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 23 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 35.1

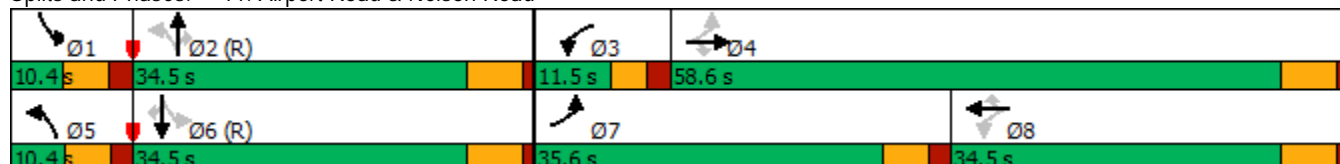
Intersection LOS: D

Intersection Capacity Utilization 82.8%

ICU Level of Service E







Analysis Period (min) 15

Splits and Phases: 11: Airport Road & Nelson Road



HCM 6th TWSC
13: Anderson Street & Nelson Road

2025 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	54.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	1085	6	4	835	53	2	0	13	81	0	26
Future Vol, veh/h	15	1085	6	4	835	53	2	0	13	81	0	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	1179	7	4	908	58	2	0	14	88	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	966	0	0	1186	0	0	2174	2189	1183	2167	2163	937
Stage 1	-	-	-	-	-	-	1215	1215	-	945	945	-
Stage 2	-	-	-	-	-	-	959	974	-	1222	1218	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	713	-	-	589	-	-	34	45	231	~ 34	47	321
Stage 1	-	-	-	-	-	-	222	254	-	314	340	-
Stage 2	-	-	-	-	-	-	309	330	-	220	253	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	713	-	-	589	-	-	30	44	231	~ 31	46	321
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	44	-	~ 31	46	-
Stage 1	-	-	-	-	-	-	217	248	-	307	338	-
Stage 2	-	-	-	-	-	-	280	328	-	202	247	-
























Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			39			\$ 1073.7		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	122	713	-	-	589	-	-	40
HCM Lane V/C Ratio	0.134	0.023	-	-	0.007	-	-	2.908
HCM Control Delay (s)	39	10.2	-	-	11.2	-	-	\$ 1073.7
HCM Lane LOS	E	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	12.9

Notes												
-: Volume exceeds capacity	\$: Delay exceeds 300s			+: Computation Not Defined			*: All major volume in platoon					

Lanes, Volumes, Timings
1: Airport Road & Rogers Road













2025 Total Traffic
AM Peak Hour - mitigated

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	12	13	71	10	28	29	505	107	56	1330	38
Future Volume (vph)	5	12	13	71	10	28	29	505	107	56	1330	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		100	100		100	100		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.922				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1717	0	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.750			0.480			0.121			0.417		
Satd. Flow (perm)	1397	1717	0	894	1863	1583	225	3539	1583	777	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				145			135			135
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		632			1476			5330			645	
Travel Time (s)		12.3			28.8			80.8			9.8	
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
Adj. Flow (vph)	5	13	14	77	11	30	32	549	116	61	1446	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	27	0	77	11	30	32	549	116	61	1446	41
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6

Lanes, Volumes, Timings

1: Airport Road & Rogers Road

2025 Total Traffic
AM Peak Hour - mitigated

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	23.0		10.0	23.0	23.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	15.0	25.0		15.0	25.0	25.0	12.0	53.0	53.0	12.0	53.0	53.0
Total Split (%)	14.3%	23.8%		14.3%	23.8%	23.8%	11.4%	50.5%	50.5%	11.4%	50.5%	50.5%
Maximum Green (s)	10.0	20.0		10.0	20.0	20.0	6.0	47.0	47.0	6.0	47.0	47.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effect Green (s)	11.8	7.6		17.1	14.8	14.8	76.5	71.7	71.7	78.4	74.5	74.5
Actuated g/C Ratio	0.11	0.07		0.16	0.14	0.14	0.73	0.68	0.68	0.75	0.71	0.71
v/c Ratio	0.03	0.20		0.34	0.04	0.09	0.12	0.23	0.10	0.09	0.58	0.04
Control Delay	32.2	32.0		39.6	37.4	0.5	4.7	8.8	3.0	5.2	12.9	0.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	32.0		39.6	37.4	0.5	4.7	8.8	3.0	5.2	12.9	0.1
LOS	C	C		D	D	A	A	A	A	A	B	A
Approach Delay		32.1			29.4			7.6			12.3	
Approach LOS		C			C			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 105

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 12.0

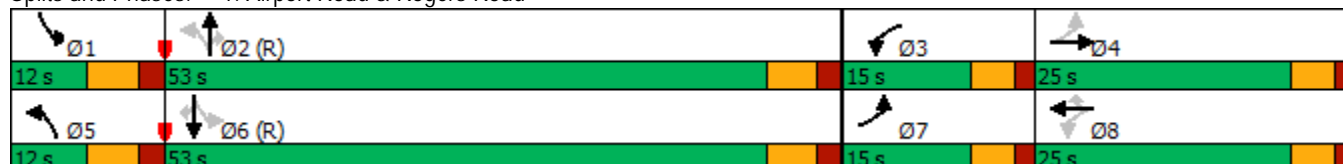
Intersection LOS: B

Intersection Capacity Utilization 63.2%

ICU Level of Service B
























Analysis Period (min) 15

Splits and Phases: 1: Airport Road & Rogers Road



Lanes, Volumes, Timings
1: Airport Road & Rogers Road













2025 Total Traffic
PM Peak Hour - mitigated

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	15	43	92	12	63	7	1135	143	66	505	4
Future Volume (vph)	27	15	43	92	12	63	7	1135	143	66	505	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		100	100		100	100		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.889				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1656	0	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.749			0.482			0.452			0.163		
Satd. Flow (perm)	1395	1656	0	898	1863	1583	842	3539	1583	304	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46				133			123			123
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		632			1476			5330			645	
Travel Time (s)		12.3			28.8			80.8			9.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	29	16	46	98	13	67	7	1207	152	70	537	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	62	0	98	13	67	7	1207	152	70	537	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6

Lanes, Volumes, Timings

1: Airport Road & Rogers Road

2025 Total Traffic
PM Peak Hour mitigated

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	23.0		10.0	23.0	23.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	15.0	25.0		15.0	25.0	25.0	12.0	63.0	63.0	12.0	63.0	63.0
Total Split (%)	13.0%	21.7%		13.0%	21.7%	21.7%	10.4%	54.8%	54.8%	10.4%	54.8%	54.8%
Maximum Green (s)	10.0	20.0		10.0	20.0	20.0	6.0	57.0	57.0	6.0	57.0	57.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effect Green (s)	15.0	8.3		19.3	12.7	12.7	80.4	75.0	75.0	85.0	83.2	83.2
Actuated g/C Ratio	0.13	0.07		0.17	0.11	0.11	0.70	0.65	0.65	0.74	0.72	0.72
v/c Ratio	0.14	0.39		0.43	0.06	0.23	0.01	0.52	0.14	0.22	0.21	0.00
Control Delay	38.1	27.0		45.1	47.4	1.8	4.0	8.1	0.7	6.6	6.7	0.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	27.0		45.1	47.4	1.8	4.0	8.1	0.7	6.6	6.7	0.0
LOS	D	C		D	D	A	A	A	A	A	A	A
Approach Delay		30.5			29.0			7.3			6.6	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 9.8

Intersection LOS: A

Intersection Capacity Utilization 59.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Airport Road & Rogers Road


























Lanes, Volumes, Timings

1: Airport Road & Rogers Road

2040 Background Traffic

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	6	15	108	15	26	35	585	125	83	1545	45
Future Volume (vph)	10	6	15	108	15	26	35	585	125	83	1545	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		100	100		100	100		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.896				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1669	0	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.800			0.444			0.077			0.373		
Satd. Flow (perm)	1490	1669	0	827	1863	1583	143	3539	1583	695	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				145			135			135
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		632			1476			5330			645	
Travel Time (s)		12.3			28.8			80.8			9.8	
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
Adj. Flow (vph)	11	7	16	117	16	28	38	636	136	90	1679	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	23	0	117	16	28	38	636	136	90	1679	49
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6













Synchro 10 Report

Lanes, Volumes, Timings

1: Airport Road & Rogers Road

2040 Background Traffic

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	23.0		10.0	23.0	23.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	15.0	25.0		15.0	25.0	25.0	12.0	53.0	53.0	12.0	53.0	53.0
Total Split (%)	14.3%	23.8%		14.3%	23.8%	23.8%	11.4%	50.5%	50.5%	11.4%	50.5%	50.5%
Maximum Green (s)	10.0	20.0		10.0	20.0	20.0	6.0	47.0	47.0	6.0	47.0	47.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effect Green (s)	10.5	7.4		15.3	13.1	13.1	75.7	69.9	69.9	78.2	73.0	73.0
Actuated g/C Ratio	0.10	0.07		0.15	0.12	0.12	0.72	0.67	0.67	0.74	0.70	0.70
v/c Ratio	0.07	0.18		0.55	0.07	0.09	0.18	0.27	0.12	0.15	0.68	0.04
Control Delay	35.4	28.3		48.7	40.0	0.5	8.9	11.3	5.7	4.7	14.0	0.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	28.3		48.7	40.0	0.5	8.9	11.3	5.7	4.7	14.0	0.1
LOS	D	C		D	D	A	A	B	A	A	B	A
Approach Delay		30.6			39.5			10.2			13.2	
Approach LOS		C			D			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 105

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 14.0

Intersection LOS: B

Intersection Capacity Utilization 71.2%

ICU Level of Service C





Analysis Period (min) 15

Splits and Phases: 1: Airport Road & Rogers Road



HCM 6th TWSC 2: Local Collector & Rogers Road

2040 Background Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	180	35	8	75	75	18
Future Vol, veh/h	180	35	8	75	75	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	196	38	9	82	82	20
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	234	0	315	215
Stage 1	-	-	-	-	215	-
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	-	-	1355	-	735	904
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	924	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1355	-	729	904
Mov Cap-2 Maneuver	-	-	-	-	729	-
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	918	-
Approach	EB		WB		NW	
HCM Control Delay, s	0		0.7		10.5	
HCM LOS					B	
Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	757	-	-	1355	-	
HCM Lane V/C Ratio	0.134	-	-	0.006	-	
HCM Control Delay (s)	10.5	-	-	7.7	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	




HCM 6th TWSC

3: Local Collector

2040 Background Traffic
AM Peak Hour

Intersection

Int Delay, s/veh 4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	28	15	20	63	30	40
Future Vol, veh/h	28	15	20	63	30	40
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	16	22	68	33	43

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	46
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1562
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1562
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	935	-	-	1562	-
HCM Lane V/C Ratio	0.081	-	-	0.014	-
HCM Control Delay (s)	9.2	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

























HCM 6th TWSC
6: Anderson Street & Local Collector

2040 Background Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	46	12	25	60	15	13	25	10	20	40	10
Future Vol, veh/h	10	46	12	25	60	15	13	25	10	20	40	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	50	13	27	65	16	14	27	11	22	43	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	81	0	0	63	0	0	233	214	57	225	212	73
Stage 1	-	-	-	-	-	-	79	79	-	127	127	-
Stage 2	-	-	-	-	-	-	154	135	-	98	85	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1517	-	-	1540	-	-	722	684	1009	730	685	989
Stage 1	-	-	-	-	-	-	930	829	-	877	791	-
Stage 2	-	-	-	-	-	-	848	785	-	908	824	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1517	-	-	1540	-	-	665	666	1009	686	667	989
Mov Cap-2 Maneuver	-	-	-	-	-	-	665	666	-	686	667	-
Stage 1	-	-	-	-	-	-	923	822	-	870	777	-
Stage 2	-	-	-	-	-	-	777	771	-	862	817	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			1.8			10.4			10.7		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	716	1517	-	-	1540	-	-	705				
HCM Lane V/C Ratio	0.073	0.007	-	-	0.018	-	-	0.108				
HCM Control Delay (s)	10.4	7.4	0	-	7.4	0	-	10.7				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.4				













Lanes, Volumes, Timings
11: Airport Road & Nelson Road

2040 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	525	200	100	615	80	200	335	65	130	815	760
Future Volume (vph)	350	525	200	100	615	80	200	335	65	130	815	760
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		100	100		100	100		100	100		100
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.435			0.115			0.535		
Satd. Flow (perm)	3433	3539	1583	810	3539	1583	214	3539	1583	997	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			206			205			210			96
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		625			4100			575			5330	
Travel Time (s)		12.2			79.9			8.7			80.8	
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
Adj. Flow (vph)	380	571	217	109	668	87	217	364	71	141	886	826
Shared Lane Traffic (%)												
Lane Group Flow (vph)	380	571	217	109	668	87	217	364	71	141	886	826
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4	8		8	2		2	6		6

Lanes, Volumes, Timings 11: Airport Road & Nelson Road

2040 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.6	5.0	5.0
Minimum Split (s)	10.9	24.3	24.3	10.1	24.3	24.3	10.8	24.2	24.2	10.5	24.2	10.9
Total Split (s)	18.9	47.2	47.2	10.5	38.8	38.8	12.6	36.8	36.8	10.5	34.7	18.9
Total Split (%)	18.0%	45.0%	45.0%	10.0%	37.0%	37.0%	12.0%	35.0%	35.0%	10.0%	33.0%	18.0%
Maximum Green (s)	13.0	40.9	40.9	5.4	32.5	32.5	6.8	31.0	31.0	4.6	28.9	13.0
Yellow Time (s)	3.9	4.7	4.7	3.2	4.7	4.7	3.9	4.7	4.7	3.9	4.7	3.9
All-Red Time (s)	2.0	1.6	1.6	1.9	1.6	1.6	1.9	1.1	1.1	2.0	1.1	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.9	5.3	5.3	4.1	5.3	5.3	4.8	4.8	4.8	4.9	4.8	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	14.0	35.8	35.8	35.0	27.4	27.4	47.0	35.1	35.1	38.5	30.0	48.8
Actuated g/C Ratio	0.13	0.34	0.34	0.33	0.26	0.26	0.45	0.33	0.33	0.37	0.29	0.46
v/c Ratio	0.83	0.47	0.32	0.33	0.72	0.15	0.72	0.31	0.11	0.33	0.88	1.05
Control Delay	61.0	28.0	4.9	19.4	39.8	0.6	39.5	27.7	0.3	25.8	45.5	64.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.0	28.0	4.9	19.4	39.8	0.6	39.5	27.7	0.3	25.8	45.5	64.0
LOS	E	C	A	B	D	A	D	C	A	C	D	E
Approach Delay		34.5			33.3			28.7			52.2	
Approach LOS		C			C			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 105

Offset: 57.8 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 40.7

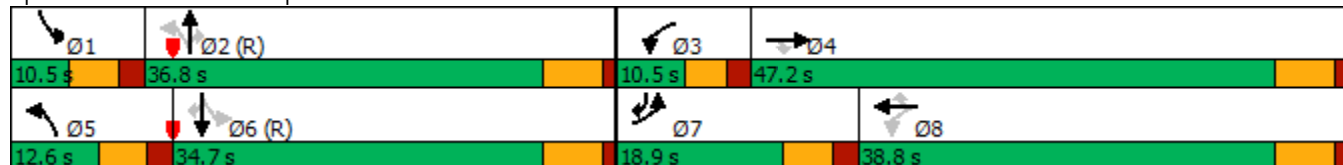
Intersection LOS: D

Intersection Capacity Utilization 87.6%

ICU Level of Service E







Analysis Period (min) 15

Splits and Phases: 11: Airport Road & Nelson Road



HCM 6th TWSC
12: Local Collector & Nelson Road

2040 Background Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	875	10	10	960	15	15	2	30	10	2	13
Future Vol, veh/h	16	875	10	10	960	15	15	2	30	10	2	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	951	11	11	1043	16	16	2	33	11	2	14







Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1059	0	0	962	0	0	1536	2072	481	1584	2069	530
Stage 1	-	-	-	-	-	-	991	991	-	1073	1073	-
Stage 2	-	-	-	-	-	-	545	1081	-	511	996	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	653	-	-	711	-	-	79	53	531	73	54	493
Stage 1	-	-	-	-	-	-	264	322	-	235	295	-
Stage 2	-	-	-	-	-	-	490	292	-	514	320	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	653	-	-	711	-	-	72	51	531	64	52	493
Mov Cap-2 Maneuver	-	-	-	-	-	-	72	51	-	64	52	-
Stage 1	-	-	-	-	-	-	257	314	-	229	291	-
Stage 2	-	-	-	-	-	-	465	288	-	467	312	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			39.2			46.7		
HCM LOS							E			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	155	653	-	-	711	-	-	113
HCM Lane V/C Ratio	0.33	0.027	-	-	0.015	-	-	0.24
HCM Control Delay (s)	39.2	10.7	-	-	10.1	-	-	46.7
HCM Lane LOS	E	B	-	-	B	-	-	E
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0	-	-	0.9

HCM 6th TWSC
13: Anderson Street & Nelson Road

2040 Background Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	865	5	6	960	28	5	2	5	17	2	20
Future Vol, veh/h	45	865	5	6	960	28	5	2	5	17	2	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	940	5	7	1043	30	5	2	5	18	2	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1073	0	0	945	0	0	1578	2128	473	1641	2115	537
Stage 1	-	-	-	-	-	-	1041	1041	-	1072	1072	-
Stage 2	-	-	-	-	-	-	537	1087	-	569	1043	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	645	-	-	722	-	-	74	49	538	66	50	488
Stage 1	-	-	-	-	-	-	246	305	-	235	295	-
Stage 2	-	-	-	-	-	-	496	290	-	474	305	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	645	-	-	722	-	-	64	45	538	59	46	488
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	45	-	59	46	-
Stage 1	-	-	-	-	-	-	227	282	-	217	292	-
Stage 2	-	-	-	-	-	-	466	287	-	430	282	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	51.1	60.8
HCM LOS			F	F
























Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	91	645	-	-	722	-	-	105
HCM Lane V/C Ratio	0.143	0.076	-	-	0.009	-	-	0.404
HCM Control Delay (s)	51.1	11	-	-	10	-	-	60.8
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0	-	-	1.7

Lanes, Volumes, Timings

1: Airport Road & Rogers Road

2040 Background Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	13	50	118	4	71	10	1330	158	133	595	10
Future Volume (vph)	35	13	50	118	4	71	10	1330	158	133	595	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		100	100		100	100		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.881				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1641	0	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.755			0.465			0.406			0.089		
Satd. Flow (perm)	1406	1641	0	866	1863	1583	756	3539	1583	166	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54				133			123			123
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		632			1476			5330			645	
Travel Time (s)		12.3			28.8			80.8			9.8	
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
Adj. Flow (vph)	38	14	54	128	4	77	11	1446	172	145	647	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	68	0	128	4	77	11	1446	172	145	647	11
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6













Synchro 10 Report

Lanes, Volumes, Timings

1: Airport Road & Rogers Road

2040 Background Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	23.0		10.0	23.0	23.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	15.0	25.0		15.0	25.0	25.0	12.0	63.0	63.0	12.0	63.0	63.0
Total Split (%)	13.0%	21.7%		13.0%	21.7%	21.7%	10.4%	54.8%	54.8%	10.4%	54.8%	54.8%
Maximum Green (s)	10.0	20.0		10.0	20.0	20.0	6.0	57.0	57.0	6.0	57.0	57.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effect Green (s)	15.4	8.2		19.3	12.7	12.7	74.3	67.6	67.6	85.2	82.8	82.8
Actuated g/C Ratio	0.13	0.07		0.17	0.11	0.11	0.65	0.59	0.59	0.74	0.72	0.72
v/c Ratio	0.18	0.41		0.56	0.02	0.26	0.02	0.70	0.18	0.49	0.25	0.01
Control Delay	38.7	25.3		49.9	47.2	3.0	1.9	7.0	0.7	15.1	7.0	0.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	25.3		49.9	47.2	3.0	1.9	7.0	0.7	15.1	7.0	0.0
LOS	D	C		D	D	A	A	A	A	B	A	A
Approach Delay		30.1			32.6			6.3			8.4	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 9.8

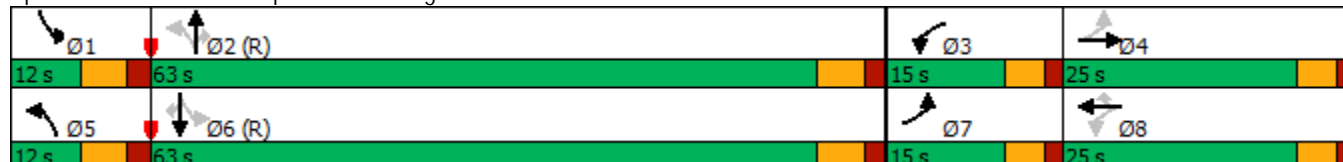
Intersection LOS: A

Intersection Capacity Utilization 69.0%

ICU Level of Service C





Analysis Period (min) 15

Splits and Phases: 1: Airport Road & Rogers Road



HCM 6th TWSC 2: Local Collector & Rogers Road

2040 Background Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	235	70	16	140	55	14
Future Vol, veh/h	235	70	16	140	55	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	255	76	17	152	60	15
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	331	0	479	293
Stage 1	-	-	-	-	293	-
Stage 2	-	-	-	-	186	-
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	-	-	1250	-	602	858
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1250	-	593	858
Mov Cap-2 Maneuver	-	-	-	-	593	-
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	834	-
Approach	EB		WB		NW	
HCM Control Delay, s	0		0.8		11.5	
HCM LOS					B	
Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	633	-	-	1250	-	
HCM Lane V/C Ratio	0.118	-	-	0.014	-	
HCM Control Delay (s)	11.5	-	-	7.9	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	




HCM 6th TWSC

3: Local Collector

2040 Background Traffic
PM Peak Hour

Intersection

Int Delay, s/veh 3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	61	25	40	49	20	25
Future Vol, veh/h	61	25	40	49	20	25
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	27	43	53	22	27





Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	93
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1501
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1501
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	860	-	-	1501	-
HCM Lane V/C Ratio	0.057	-	-	0.029	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

























HCM 6th TWSC
6: Anderson Street & Local Collector

2040 Background Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	58	16	20	59	10	18	40	20	15	50	12
Future Vol, veh/h	12	58	16	20	59	10	18	40	20	15	50	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	63	17	22	64	11	20	43	22	16	54	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	75	0	0	80	0	0	245	217	72	244	220	70
Stage 1	-	-	-	-	-	-	98	98	-	114	114	-
Stage 2	-	-	-	-	-	-	147	119	-	130	106	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1524	-	-	1518	-	-	709	681	990	710	678	993
Stage 1	-	-	-	-	-	-	908	814	-	891	801	-
Stage 2	-	-	-	-	-	-	856	797	-	874	807	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1524	-	-	1518	-	-	644	665	990	648	662	993
Mov Cap-2 Maneuver	-	-	-	-	-	-	644	665	-	648	662	-
Stage 1	-	-	-	-	-	-	900	807	-	883	789	-
Stage 2	-	-	-	-	-	-	775	785	-	801	800	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			1.7			10.7			10.9		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	720	1524	-	-	1518	-	-	695				
HCM Lane V/C Ratio	0.118	0.009	-	-	0.014	-	-	0.12				
HCM Control Delay (s)	10.7	7.4	0	-	7.4	0	-	10.9				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.4				

Lanes, Volumes, Timings
11: Airport Road & Nelson Road













2040 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	645	800	255	135	370	150	65	654	100	150	410	195
Future Volume (vph)	645	800	255	135	370	150	65	654	100	150	410	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		100	100		100	100		100	100		100
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.326			0.488			0.162		
Satd. Flow (perm)	3433	3539	1583	607	3539	1583	909	3539	1583	302	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			187			192			207
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		625			4100			575			5330	
Travel Time (s)		12.2			79.9			8.7			80.8	
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
Adj. Flow (vph)	701	870	277	147	402	163	71	711	109	163	446	212
Shared Lane Traffic (%)												
Lane Group Flow (vph)	701	870	277	147	402	163	71	711	109	163	446	212
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4	8		8	2		2	6		6

Lanes, Volumes, Timings

11: Airport Road & Nelson Road

2040 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.6	5.0	5.0	4.5	5.0	5.0
Minimum Split (s)	10.9	24.3	24.3	10.1	24.3	24.3	10.4	24.2	24.2	10.4	24.2	10.9
Total Split (s)	35.6	58.6	58.6	11.5	34.5	34.5	10.4	34.5	34.5	10.4	34.5	35.6
Total Split (%)	31.0%	51.0%	51.0%	10.0%	30.0%	30.0%	9.0%	30.0%	30.0%	9.0%	30.0%	31.0%
Maximum Green (s)	29.7	52.3	52.3	6.4	28.2	28.2	4.6	28.7	28.7	4.5	28.7	29.7
Yellow Time (s)	3.9	4.7	4.7	3.2	4.7	4.7	3.9	4.7	4.7	3.9	4.7	3.9
All-Red Time (s)	2.0	1.6	1.6	1.9	1.6	1.6	1.9	1.1	1.1	2.0	1.1	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.9	5.3	5.3	4.1	5.3	5.3	4.8	4.8	4.8	4.9	4.8	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	28.6	42.0	42.0	28.6	20.0	20.0	41.5	32.8	32.8	49.8	40.2	73.6
Actuated g/C Ratio	0.25	0.37	0.37	0.25	0.17	0.17	0.36	0.29	0.29	0.43	0.35	0.64
v/c Ratio	0.82	0.67	0.40	0.65	0.65	0.38	0.18	0.71	0.19	0.53	0.36	0.20
Control Delay	49.6	33.0	10.4	35.0	49.0	6.2	22.2	42.1	0.7	36.2	38.5	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	33.0	10.4	35.0	49.0	6.2	22.2	42.1	0.7	36.2	38.5	0.9
LOS	D	C	B	D	D	A	C	D	A	D	D	A
Approach Delay		35.9			36.3			35.5			28.3	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 23 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 34.4

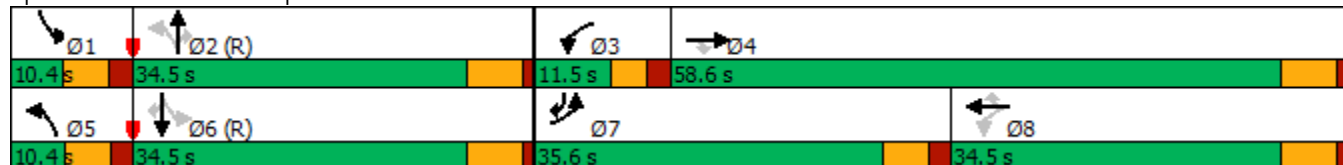
Intersection LOS: C

Intersection Capacity Utilization 71.9%

ICU Level of Service C







Analysis Period (min) 15

Splits and Phases: 11: Airport Road & Nelson Road



HCM 6th TWSC
12: Local Collector & Nelson Road

2040 Background Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1255	15	30	975	10	10	2	20	15	2	15
Future Vol, veh/h	10	1255	15	30	975	10	10	2	20	15	2	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	1364	16	33	1060	11	11	2	22	16	2	16







Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1071	0	0	1380	0	0	1991	2531	690	1837	2534	536
Stage 1	-	-	-	-	-	-	1394	1394	-	1132	1132	-
Stage 2	-	-	-	-	-	-	597	1137	-	705	1402	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	647	-	-	493	-	-	36	27	388	47	27	489
Stage 1	-	-	-	-	-	-	149	207	-	216	276	-
Stage 2	-	-	-	-	-	-	456	275	-	393	205	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	647	-	-	493	-	-	30	25	388	39	25	489
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	25	-	39	25	-
Stage 1	-	-	-	-	-	-	146	203	-	212	258	-
Stage 2	-	-	-	-	-	-	408	257	-	361	202	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.4	101.4	111.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	69	647	-	-	493	-	-	65
HCM Lane V/C Ratio	0.504	0.017	-	-	0.066	-	-	0.535
HCM Control Delay (s)	101.4	10.7	-	-	12.8	-	-	111.6
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.1	0.1	-	-	0.2	-	-	2.2

HCM 6th TWSC
13: Anderson Street & Nelson Road

2040 Background Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	1260	6	4	965	23	5	2	15	21	2	45
Future Vol, veh/h	25	1260	6	4	965	23	5	2	15	21	2	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	1370	7	4	1049	25	5	2	16	23	2	49
























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1074	0	0	1377	0	0	1962	2510	689	1810	2501	537
Stage 1	-	-	-	-	-	-	1428	1428	-	1070	1070	-
Stage 2	-	-	-	-	-	-	534	1082	-	740	1431	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	645	-	-	494	-	-	38	28	388	49	28	488
Stage 1	-	-	-	-	-	-	142	199	-	236	296	-
Stage 2	-	-	-	-	-	-	498	292	-	375	198	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	645	-	-	494	-	-	31	27	388	42	27	488
Mov Cap-2 Maneuver	-	-	-	-	-	-	31	27	-	42	27	-
Stage 1	-	-	-	-	-	-	136	191	-	226	294	-
Stage 2	-	-	-	-	-	-	441	290	-	340	190	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	68.1	102.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	80	645	-	-	494	-	-	102
HCM Lane V/C Ratio	0.299	0.042	-	-	0.009	-	-	0.725
HCM Control Delay (s)	68.1	10.8	-	-	12.4	-	-	102.2
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0	-	-	3.8

Lanes, Volumes, Timings
1: Airport Road & Rogers Road













2040 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	15	15	115	20	40	35	585	140	110	1545	45
Future Volume (vph)	10	15	15	115	20	40	35	585	140	110	1545	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		100	100		100	100		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.925				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1723	0	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.743			0.482			0.071			0.352		
Satd. Flow (perm)	1384	1723	0	898	1863	1583	132	3539	1583	656	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				145			143			135
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		632			1476			5330			645	
Travel Time (s)		12.3			28.8			80.8			9.8	
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
Adj. Flow (vph)	11	16	16	125	22	43	38	636	152	120	1679	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	32	0	125	22	43	38	636	152	120	1679	49
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6

Lanes, Volumes, Timings

1: Airport Road & Rogers Road

2040 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	23.0		10.0	23.0	23.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	15.0	25.0		15.0	25.0	25.0	12.0	53.0	53.0	12.0	53.0	53.0
Total Split (%)	14.3%	23.8%		14.3%	23.8%	23.8%	11.4%	50.5%	50.5%	11.4%	50.5%	50.5%
Maximum Green (s)	10.0	20.0		10.0	20.0	20.0	6.0	47.0	47.0	6.0	47.0	47.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effect Green (s)	12.2	7.7		17.9	15.7	15.7	71.4	64.3	64.3	76.2	70.4	70.4
Actuated g/C Ratio	0.12	0.07		0.17	0.15	0.15	0.68	0.61	0.61	0.73	0.67	0.67
v/c Ratio	0.06	0.23		0.52	0.08	0.12	0.19	0.29	0.15	0.21	0.71	0.04
Control Delay	32.7	32.0		44.7	38.0	0.7	10.7	14.0	6.9	5.8	16.2	0.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	32.0		44.7	38.0	0.7	10.7	14.0	6.9	5.8	16.2	0.1
LOS	C	C		D	D	A	B	B	A	A	B	A
Approach Delay		32.2			34.0			12.5			15.1	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 105

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 15.8

Intersection LOS: B

Intersection Capacity Utilization 71.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Airport Road & Rogers Road







HCM 6th TWSC 2: Local Collector & Rogers Road

2040 Total Traffic
AM Peak Hour

Intersection

Int Delay, s/veh 3

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	180	86	8	75	101	18
Future Vol, veh/h	180	86	8	75	101	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	196	93	9	82	110	20

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	289
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1287
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	1287
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.8	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	721	-	-	1287	-
HCM Lane V/C Ratio	0.179	-	-	0.007	-
HCM Control Delay (s)	11.1	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0	-




HCM 6th TWSC

3: Local Collector

2040 Total Traffic
AM Peak Hour

Intersection

Int Delay, s/veh 3.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	69	25	20	73	46	40
Future Vol, veh/h	69	25	20	73	46	40
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	27	22	79	50	43

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	102
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1490
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1490
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	847	-	-	1490	-
HCM Lane V/C Ratio	0.11	-	-	0.015	-
HCM Control Delay (s)	9.8	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-




HCM 6th TWSC

4: Northwest Site Access & Local Collector

2040 Total Traffic
AM Peak Hour

Intersection

Int Delay, s/veh 1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	97	12	23	87	6	22
Future Vol, veh/h	97	12	23	87	6	22
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	13	25	95	7	24




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	118
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1470
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1470
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	883	-	-	1470	-
HCM Lane V/C Ratio	0.034	-	-	0.017	-
HCM Control Delay (s)	9.2	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

HCM 6th TWSC
5: Northeast Site Access & Local Collector

2040 Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	89	30	45	105	5	6
Future Vol, veh/h	89	30	45	105	5	6
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	33	49	114	5	7
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	130	0	326	114
Stage 1	-	-	-	-	114	-
Stage 2	-	-	-	-	212	-
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	-	-	1455	-	668	939
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1455	-	644	939
Mov Cap-2 Maneuver	-	-	-	-	644	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	793	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.3		9.7	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	777	-	-	1455	-	
HCM Lane V/C Ratio	0.015	-	-	0.034	-	
HCM Control Delay (s)	9.7	-	-	7.6	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0.1	-	




HCM 6th TWSC
6: Anderson Street & Local Collector

2040 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	60	20	25	85	15	45	25	10	20	40	20
Future Vol, veh/h	15	60	20	25	85	15	45	25	10	20	40	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	65	22	27	92	16	49	27	11	22	43	22
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	108	0	0	87	0	0	295	270	76	281	273	100
Stage 1	-	-	-	-	-	-	108	108	-	154	154	-
Stage 2	-	-	-	-	-	-	187	162	-	127	119	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1483	-	-	1509	-	-	657	636	985	671	634	956
Stage 1	-	-	-	-	-	-	897	806	-	848	770	-
Stage 2	-	-	-	-	-	-	815	764	-	877	797	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1483	-	-	1509	-	-	594	617	985	627	615	956
Mov Cap-2 Maneuver	-	-	-	-	-	-	594	617	-	627	615	-
Stage 1	-	-	-	-	-	-	887	797	-	839	755	-
Stage 2	-	-	-	-	-	-	736	749	-	829	788	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			1.5			11.6			11.1		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	633	1483	-	-	1509	-	-	679				
HCM Lane V/C Ratio	0.137	0.011	-	-	0.018	-	-	0.128				
HCM Control Delay (s)	11.6	7.5	0	-	7.4	0	-	11.1				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.4				

HCM 6th TWSC
7: Local Collector & West Site Access #1

2040 Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	3	83	35	5	40
Future Vol, veh/h	3	3	83	35	5	40
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	3	90	38	5	43




Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	162	109	0	0	128
Stage 1	109	-	-	-	-
Stage 2	53	-	-	-	-
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	829	945	-	-	1458
Stage 1	916	-	-	-	-
Stage 2	970	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	826	945	-	-	1458
Mov Cap-2 Maneuver	826	-	-	-	-
Stage 1	916	-	-	-	-
Stage 2	966	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	882	1458
HCM Lane V/C Ratio	-	-	0.007	0.004
HCM Control Delay (s)	-	-	9.1	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0




HCM 6th TWSC
8: Local Collector & West Site Access #2

2040 Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	5	113	4	1	42
Future Vol, veh/h	18	5	113	4	1	42
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	5	123	4	1	46
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	173	125	0	0	127	0
Stage 1	125	-	-	-	-	-
Stage 2	48	-	-	-	-	-
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	817	926	-	-	1459	-
Stage 1	901	-	-	-	-	-
Stage 2	974	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	816	926	-	-	1459	-
Mov Cap-2 Maneuver	816	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.4	0		0.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		838	1459	
HCM Lane V/C Ratio	-	-		0.03	0.001	
HCM Control Delay (s)	-	-		9.4	7.5	
HCM Lane LOS	-	-		A	A	
HCM 95th %tile Q(veh)	-	-		0.1	0	




HCM 6th TWSC
9: Local Collector & West Site Access #3

2040 Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	5	112	5	1	59
Future Vol, veh/h	19	5	112	5	1	59
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	5	122	5	1	64
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	191	125	0	0	127	0
Stage 1	125	-	-	-	-	-
Stage 2	66	-	-	-	-	-
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	798	926	-	-	1459	-
Stage 1	901	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	797	926	-	-	1459	-
Mov Cap-2 Maneuver	797	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.5	0		0.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	821		1459	-	
HCM Lane V/C Ratio	-	0.032		0.001	-	
HCM Control Delay (s)	-	9.5		7.5	0	
HCM Lane LOS	-	A		A	A	
HCM 95th %tile Q(veh)	-	0.1		0	-	

























HCM 6th TWSC
10: Local Collector & West Site Access #4

2040 Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	3	114	15	3	75
Future Vol, veh/h	2	3	114	15	3	75
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	3	124	16	3	82
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	220	132	0	0	140	0
Stage 1	132	-	-	-	-	-
Stage 2	88	-	-	-	-	-
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	768	917	-	-	1443	-
Stage 1	894	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	766	917	-	-	1443	-
Mov Cap-2 Maneuver	766	-	-	-	-	-
Stage 1	894	-	-	-	-	-
Stage 2	933	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.3	0		0.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		850	1443	-
HCM Lane V/C Ratio	-	-		0.006	0.002	-
HCM Control Delay (s)	-	-		9.3	7.5	0
HCM Lane LOS	-	-		A	A	A
HCM 95th %tile Q(veh)	-	-		0	0	-

Lanes, Volumes, Timings
11: Airport Road & Nelson Road

2040 Total Traffic
AM Peak Hour













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	356	537	200	110	622	80	200	344	82	130	819	763
Future Volume (vph)	356	537	200	110	622	80	200	344	82	130	819	763
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		100	100		100	100		100	100		100
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.424			0.115			0.530		
Satd. Flow (perm)	3433	3539	1583	790	3539	1583	214	3539	1583	987	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202			205			210			96
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		625			4100			575			5330	
Travel Time (s)		12.2			79.9			8.7			80.8	
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
Adj. Flow (vph)	387	584	217	120	676	87	217	374	89	141	890	829
Shared Lane Traffic (%)												
Lane Group Flow (vph)	387	584	217	120	676	87	217	374	89	141	890	829
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4	8		8	2		2	6		6

Synchro 10 Report

Lanes, Volumes, Timings

11: Airport Road & Nelson Road

2040 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.6	5.0	5.0
Minimum Split (s)	10.9	24.3	24.3	10.1	24.3	24.3	10.8	24.2	24.2	10.5	24.2	10.9
Total Split (s)	18.9	47.2	47.2	10.5	38.8	38.8	12.6	36.8	36.8	10.5	34.7	18.9
Total Split (%)	18.0%	45.0%	45.0%	10.0%	37.0%	37.0%	12.0%	35.0%	35.0%	10.0%	33.0%	18.0%
Maximum Green (s)	13.0	40.9	40.9	5.4	32.5	32.5	6.8	31.0	31.0	4.6	28.9	13.0
Yellow Time (s)	3.9	4.7	4.7	3.2	4.7	4.7	3.9	4.7	4.7	3.9	4.7	3.9
All-Red Time (s)	2.0	1.6	1.6	1.9	1.6	1.6	1.9	1.1	1.1	2.0	1.1	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.9	5.3	5.3	4.1	5.3	5.3	4.8	4.8	4.8	4.9	4.8	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	14.0	35.9	35.9	35.1	27.5	27.5	46.8	35.0	35.0	38.4	29.9	48.7
Actuated g/C Ratio	0.13	0.34	0.34	0.33	0.26	0.26	0.45	0.33	0.33	0.37	0.28	0.46
v/c Ratio	0.85	0.48	0.32	0.37	0.73	0.15	0.73	0.32	0.13	0.33	0.88	1.05
Control Delay	62.5	28.1	5.2	20.1	39.8	0.6	40.0	27.9	0.4	28.0	48.3	64.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.5	28.1	5.2	20.1	39.8	0.6	40.0	27.9	0.4	28.0	48.3	64.1
LOS	E	C	A	C	D	A	D	C	A	C	D	E
Approach Delay		35.1			33.3			28.2			53.8	
Approach LOS		D			C			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 105

Offset: 57.8 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 41.3

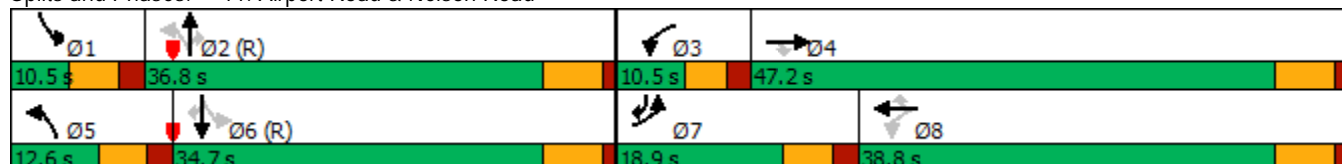
Intersection LOS: D

Intersection Capacity Utilization 88.0%

ICU Level of Service E







Analysis Period (min) 15

Splits and Phases: 11: Airport Road & Nelson Road



HCM 6th TWSC
12: Local Collector & Nelson Road

2040 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	875	10	10	960	45	15	2	30	35	2	30
Future Vol, veh/h	45	875	10	10	960	45	15	2	30	35	2	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	951	11	11	1043	49	16	2	33	38	2	33







Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1092	0	0	962	0	0	1600	2169	481	1665	2150	546
Stage 1	-	-	-	-	-	-	1055	1055	-	1090	1090	-
Stage 2	-	-	-	-	-	-	545	1114	-	575	1060	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	635	-	-	711	-	-	71	46	531	63	48	482
Stage 1	-	-	-	-	-	-	241	301	-	230	289	-
Stage 2	-	-	-	-	-	-	490	282	-	470	299	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	635	-	-	711	-	-	59	42	531	53	44	482
Mov Cap-2 Maneuver	-	-	-	-	-	-	59	42	-	53	44	-
Stage 1	-	-	-	-	-	-	222	278	-	212	285	-
Stage 2	-	-	-	-	-	-	446	278	-	404	276	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.1			49			139.8		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	131	635	-	-	711	-	-	87
HCM Lane V/C Ratio	0.39	0.077	-	-	0.015	-	-	0.837
HCM Control Delay (s)	49	11.1	-	-	10.1	-	-	139.8
HCM Lane LOS	E	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.6	0.2	-	-	0	-	-	4.4

HCM 6th TWSC
13: Anderson Street & Nelson Road

2040 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	890	5	6	990	60	5	2	5	25	2	20
Future Vol, veh/h	45	890	5	6	990	60	5	2	5	25	2	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	967	5	7	1076	65	5	2	5	27	2	22
























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1141	0	0	972	0	0	1621	2223	486	1706	2193	571
Stage 1	-	-	-	-	-	-	1068	1068	-	1123	1123	-
Stage 2	-	-	-	-	-	-	553	1155	-	583	1070	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	608	-	-	705	-	-	68	43	527	59	45	464
Stage 1	-	-	-	-	-	-	237	296	-	219	279	-
Stage 2	-	-	-	-	-	-	485	269	-	465	296	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	608	-	-	705	-	-	58	39	527	52	41	464
Mov Cap-2 Maneuver	-	-	-	-	-	-	58	39	-	52	41	-
Stage 1	-	-	-	-	-	-	218	272	-	201	276	-
Stage 2	-	-	-	-	-	-	454	266	-	420	272	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	57	103.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	82	608	-	-	705	-	-	82
HCM Lane V/C Ratio	0.159	0.08	-	-	0.009	-	-	0.623
HCM Control Delay (s)	57	11.4	-	-	10.2	-	-	103.7
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.5	0.3	-	-	0	-	-	2.9

Lanes, Volumes, Timings
1: Airport Road & Rogers Road













2040 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	20	50	135	15	105	10	1330	170	155	595	10
Future Volume (vph)	35	20	50	135	15	105	10	1330	170	155	595	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		100	100		100	100		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.893				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1663	0	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.747			0.444			0.406			0.080		
Satd. Flow (perm)	1391	1663	0	827	1863	1583	756	3539	1583	149	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54				133			123			123
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		632			1476			5330			645	
Travel Time (s)		12.3			28.8			80.8			9.8	
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
Adj. Flow (vph)	38	22	54	147	16	114	11	1446	185	168	647	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	76	0	147	16	114	11	1446	185	168	647	11
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6

Lanes, Volumes, Timings

1: Airport Road & Rogers Road

2040 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	23.0		10.0	23.0	23.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	15.0	25.0		15.0	25.0	25.0	12.0	63.0	63.0	12.0	63.0	63.0
Total Split (%)	13.0%	21.7%		13.0%	21.7%	21.7%	10.4%	54.8%	54.8%	10.4%	54.8%	54.8%
Maximum Green (s)	10.0	20.0		10.0	20.0	20.0	6.0	57.0	57.0	6.0	57.0	57.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effect Green (s)	15.9	8.6		19.9	13.3	13.3	71.5	64.8	64.8	84.6	82.2	82.2
Actuated g/C Ratio	0.14	0.07		0.17	0.12	0.12	0.62	0.56	0.56	0.74	0.71	0.71
v/c Ratio	0.17	0.44		0.64	0.07	0.38	0.02	0.73	0.20	0.53	0.26	0.01
Control Delay	38.1	27.7		53.2	47.3	9.4	2.1	8.3	1.0	20.7	7.3	0.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	27.7		53.2	47.3	9.4	2.1	8.3	1.0	20.7	7.3	0.0
LOS	D	C		D	D	A	A	A	A	C	A	A
Approach Delay		31.2			34.9			7.5			9.9	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 11.8

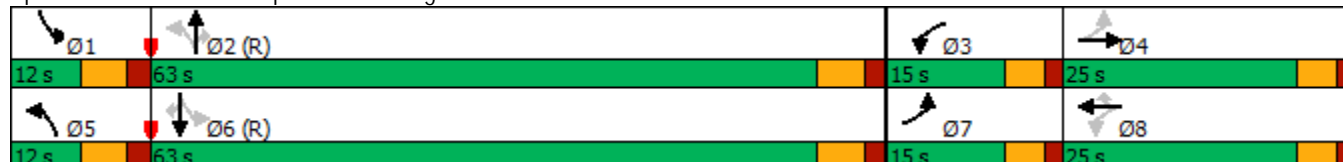
Intersection LOS: B

Intersection Capacity Utilization 71.2%

ICU Level of Service C





Analysis Period (min) 15

Splits and Phases: 1: Airport Road & Rogers Road



HCM 6th TWSC 2: Local Collector & Rogers Road




2040 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	235	111	16	140	117	14
Future Vol, veh/h	235	111	16	140	117	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	255	121	17	152	127	15
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	376	0	502	316
Stage 1	-	-	-	-	316	-
Stage 2	-	-	-	-	186	-
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	-	-	1194	-	580	827
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1194	-	571	827
Mov Cap-2 Maneuver	-	-	-	-	571	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	834	-
Approach	EB		WB		NW	
HCM Control Delay, s	0		0.8		13	
HCM LOS	B					
Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	591	-	-	1194	-	
HCM Lane V/C Ratio	0.241	-	-	0.015	-	
HCM Control Delay (s)	13	-	-	8.1	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.9	-	-	0	-	

HCM 6th TWSC

3: Local Collector

2040 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	86	41	40	99	32	25
Future Vol, veh/h	86	41	40	99	32	25
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	45	43	108	35	27
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	138	0	310	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	194	-
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	-	-	1446	-	682	936
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	839	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1446	-	660	936
Mov Cap-2 Maneuver	-	-	-	-	660	-
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	812	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.2		10.2	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	758	-	-	1446	-	
HCM Lane V/C Ratio	0.082	-	-	0.03	-	
HCM Control Delay (s)	10.2	-	-	7.6	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	




HCM 6th TWSC

4: Northwest Site Access & Local Collector

2040 Total Traffic
PM Peak Hour

Intersection

Int Delay, s/veh 3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	80	31	40	109	30	45
Future Vol, veh/h	80	31	40	109	30	45
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	34	43	118	33	49

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	121
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1467
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1467
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	9.9
HCM LOS			A




Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	810	-	-	1467	-
HCM Lane V/C Ratio	0.101	-	-	0.03	-
HCM Control Delay (s)	9.9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

HCM 6th TWSC
5: Northeast Site Access & Local Collector

2040 Total Traffic
PM Peak Hour

Intersection

Int Delay, s/veh 2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	120	5	6	119	30	40
Future Vol, veh/h	120	5	6	119	30	40
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	130	5	7	129	33	43

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	135
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1449
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1449
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	815	-	-	1449	-
HCM Lane V/C Ratio	0.093	-	-	0.005	-
HCM Control Delay (s)	9.9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

HCM 6th TWSC
6: Anderson Street & Local Collector

2040 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	90	45	20	80	10	25	40	20	15	50	20
Future Vol, veh/h	25	90	45	20	80	10	25	40	20	15	50	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	98	49	22	87	11	27	43	22	16	54	22




Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	98	0	0	147	0	0	352	319	123	346	338	93
Stage 1	-	-	-	-	-	-	177	177	-	137	137	-
Stage 2	-	-	-	-	-	-	175	142	-	209	201	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1495	-	-	1435	-	-	603	598	928	608	583	964
Stage 1	-	-	-	-	-	-	825	753	-	866	783	-
Stage 2	-	-	-	-	-	-	827	779	-	793	735	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1495	-	-	1435	-	-	531	576	928	544	562	964
Mov Cap-2 Maneuver	-	-	-	-	-	-	531	576	-	544	562	-
Stage 1	-	-	-	-	-	-	809	738	-	849	770	-
Stage 2	-	-	-	-	-	-	739	767	-	714	720	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			1.4			11.9			11.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	616	1495	-	-	1435	-	-	619
HCM Lane V/C Ratio	0.15	0.018	-	-	0.015	-	-	0.149
HCM Control Delay (s)	11.9	7.5	0	-	7.5	0	-	11.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	0.5




HCM 6th TWSC
7: Local Collector & West Site Access #1

2040 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	5	52	25	3	78
Future Vol, veh/h	41	5	52	25	3	78
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	5	57	27	3	85
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	162	71	0	0	84	0
Stage 1	71	-	-	-	-	-
Stage 2	91	-	-	-	-	-
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	829	991	-	-	1513	-
Stage 1	952	-	-	-	-	-
Stage 2	933	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	827	991	-	-	1513	-
Mov Cap-2 Maneuver	827	-	-	-	-	-
Stage 1	952	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.5	0		0.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	842		1513	-	
HCM Lane V/C Ratio	-	0.059		0.002	-	
HCM Control Delay (s)	-	9.5		7.4	0	
HCM Lane LOS	-	A		A	A	
HCM 95th %tile Q(veh)	-	0.2		0	-	




HCM 6th TWSC 8: Local Collector & West Site Access #2

2040 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	2	75	20	5	114
Future Vol, veh/h	12	2	75	20	5	114
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	2	82	22	5	124
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	227	93	0	0	104	0
Stage 1	93	-	-	-	-	-
Stage 2	134	-	-	-	-	-
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	761	964	-	-	1488	-
Stage 1	931	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	758	964	-	-	1488	-
Mov Cap-2 Maneuver	758	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.7	0		0.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		782	1488	
HCM Lane V/C Ratio	-	-		0.019	0.004	
HCM Control Delay (s)	-	-		9.7	7.4	
HCM Lane LOS	-	-		A	A	
HCM 95th %tile Q(veh)	-	-		0.1	0	




HCM 6th TWSC
9: Local Collector & West Site Access #3

2040 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	2	93	20	5	121
Future Vol, veh/h	12	2	93	20	5	121
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	2	101	22	5	132
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	254	112	0	0	123	0
Stage 1	112	-	-	-	-	-
Stage 2	142	-	-	-	-	-
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	735	941	-	-	1464	-
Stage 1	913	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	732	941	-	-	1464	-
Mov Cap-2 Maneuver	732	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.9	0	0.3			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	756	1464	-	
HCM Lane V/C Ratio	-	-	0.02	0.004	-	
HCM Control Delay (s)	-	-	9.9	7.5	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

























HCM 6th TWSC
10: Local Collector & West Site Access #4

2040 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	3	110	5	3	130
Future Vol, veh/h	25	3	110	5	3	130
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	3	120	5	3	141
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	270	123	0	0	125	0
Stage 1	123	-	-	-	-	-
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	719	928	-	-	1462	-
Stage 1	902	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	718	928	-	-	1462	-
Mov Cap-2 Maneuver	718	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	878	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.1	0		0.2		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		736	1462	-
HCM Lane V/C Ratio	-	-		0.041	0.002	-
HCM Control Delay (s)	-	-		10.1	7.5	0
HCM Lane LOS	-	-		B	A	A
HCM 95th %tile Q(veh)	-	-		0.1	0	-

Lanes, Volumes, Timings
11: Airport Road & Nelson Road

2040 Total Traffic
PM Peak Hour













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	810	255	159	386	150	65	661	115	150	420	202
Future Volume (vph)	650	810	255	159	386	150	65	661	115	150	420	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		100	100		100	100		100	100		100
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.323			0.476			0.153		
Satd. Flow (perm)	3433	3539	1583	602	3539	1583	887	3539	1583	285	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			187			192			196
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		625			4100			575			5330	
Travel Time (s)		12.2			79.9			8.7			80.8	
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
Adj. Flow (vph)	707	880	277	173	420	163	71	718	125	163	457	220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	707	880	277	173	420	163	71	718	125	163	457	220
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4	8		8	2		2	6		6

Synchro 10 Report

Lanes, Volumes, Timings

11: Airport Road & Nelson Road

2040 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.6	5.0	5.0	4.5	5.0	5.0
Minimum Split (s)	10.9	24.3	24.3	10.1	24.3	24.3	10.4	24.2	24.2	10.4	24.2	10.9
Total Split (s)	35.6	58.6	58.6	11.5	34.5	34.5	10.4	34.5	34.5	10.4	34.5	35.6
Total Split (%)	31.0%	51.0%	51.0%	10.0%	30.0%	30.0%	9.0%	30.0%	30.0%	9.0%	30.0%	31.0%
Maximum Green (s)	29.7	52.3	52.3	6.4	28.2	28.2	4.6	28.7	28.7	4.5	28.7	29.7
Yellow Time (s)	3.9	4.7	4.7	3.2	4.7	4.7	3.9	4.7	4.7	3.9	4.7	3.9
All-Red Time (s)	2.0	1.6	1.6	1.9	1.6	1.6	1.9	1.1	1.1	2.0	1.1	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.9	5.3	5.3	4.1	5.3	5.3	4.8	4.8	4.8	4.9	4.8	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	28.7	42.6	42.6	29.2	20.6	20.6	40.9	32.3	32.3	49.0	39.7	73.1
Actuated g/C Ratio	0.25	0.37	0.37	0.25	0.18	0.18	0.36	0.28	0.28	0.43	0.35	0.64
v/c Ratio	0.83	0.67	0.40	0.76	0.66	0.37	0.19	0.72	0.21	0.55	0.37	0.20
Control Delay	49.8	32.5	10.3	43.7	48.9	6.1	22.7	43.0	1.5	36.7	37.9	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	32.5	10.3	43.7	48.9	6.1	22.7	43.0	1.5	36.7	37.9	1.2
LOS	D	C	B	D	D	A	C	D	A	D	D	A
Approach Delay		35.7			38.5			35.7			28.1	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 23 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 34.7

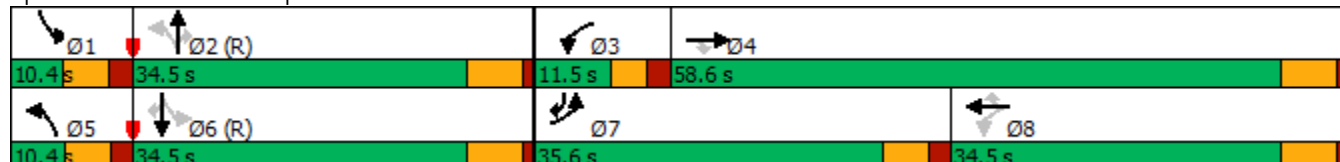
Intersection LOS: C

Intersection Capacity Utilization 73.7%

ICU Level of Service D







Analysis Period (min) 15

Splits and Phases: 11: Airport Road & Nelson Road



HCM 6th TWSC
12: Local Collector & Nelson Road

2040 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	42.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	1255	15	30	975	55	10	2	20	65	2	55
Future Vol, veh/h	35	1255	15	30	975	55	10	2	20	65	2	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	1364	16	33	1060	60	11	2	22	71	2	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1120	0	0	1380	0	0	2045	2634	690	1915	2612	560
Stage 1	-	-	-	-	-	-	1448	1448	-	1156	1156	-
Stage 2	-	-	-	-	-	-	597	1186	-	759	1456	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	619	-	-	493	-	-	33	23	388	~ 41	24	472
Stage 1	-	-	-	-	-	-	138	195	-	209	269	-
Stage 2	-	-	-	-	-	-	456	260	-	365	193	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	619	-	-	493	-	-	24	20	388	~ 32	21	472
Mov Cap-2 Maneuver	-	-	-	-	-	-	24	20	-	~ 32	21	-
Stage 1	-	-	-	-	-	-	130	183	-	196	251	-
Stage 2	-	-	-	-	-	-	368	243	-	320	181	-







Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	142.9	\$ 824.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	56	619	-	-	493	-	-	54
HCM Lane V/C Ratio	0.621	0.061	-	-	0.066	-	-	2.456
HCM Control Delay (s)	142.9	11.2	-	-	12.8	-	-	\$ 824.6
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.5	0.2	-	-	0.2	-	-	13.5

Notes			
-: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 6th TWSC
13: Anderson Street & Nelson Road

2040 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	19.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	1310	6	4	1010	30	5	2	15	50	2	45
Future Vol, veh/h	25	1310	6	4	1010	30	5	2	15	50	2	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	1424	7	4	1098	33	5	2	16	54	2	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1131	0	0	1431	0	0	2040	2621	716	1890	2608	566
Stage 1	-	-	-	-	-	-	1482	1482	-	1123	1123	-
Stage 2	-	-	-	-	-	-	558	1139	-	767	1485	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	613	-	-	471	-	-	33	24	373	~ 43	24	467
Stage 1	-	-	-	-	-	-	131	187	-	219	279	-
Stage 2	-	-	-	-	-	-	482	274	-	361	187	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	613	-	-	471	-	-	26	23	373	~ 37	23	467
Mov Cap-2 Maneuver	-	-	-	-	-	-	26	23	-	~ 37	23	-
Stage 1	-	-	-	-	-	-	125	179	-	209	277	-
Stage 2	-	-	-	-	-	-	424	272	-	326	179	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	82.6	\$ 470.6
HCM LOS			F	F












Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	69	613	-	-	471	-	-	63
HCM Lane V/C Ratio	0.347	0.044	-	-	0.009	-	-	1.674
HCM Control Delay (s)	82.6	11.1	-	-	12.7	-	-	\$ 470.6
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0	-	-	9.5

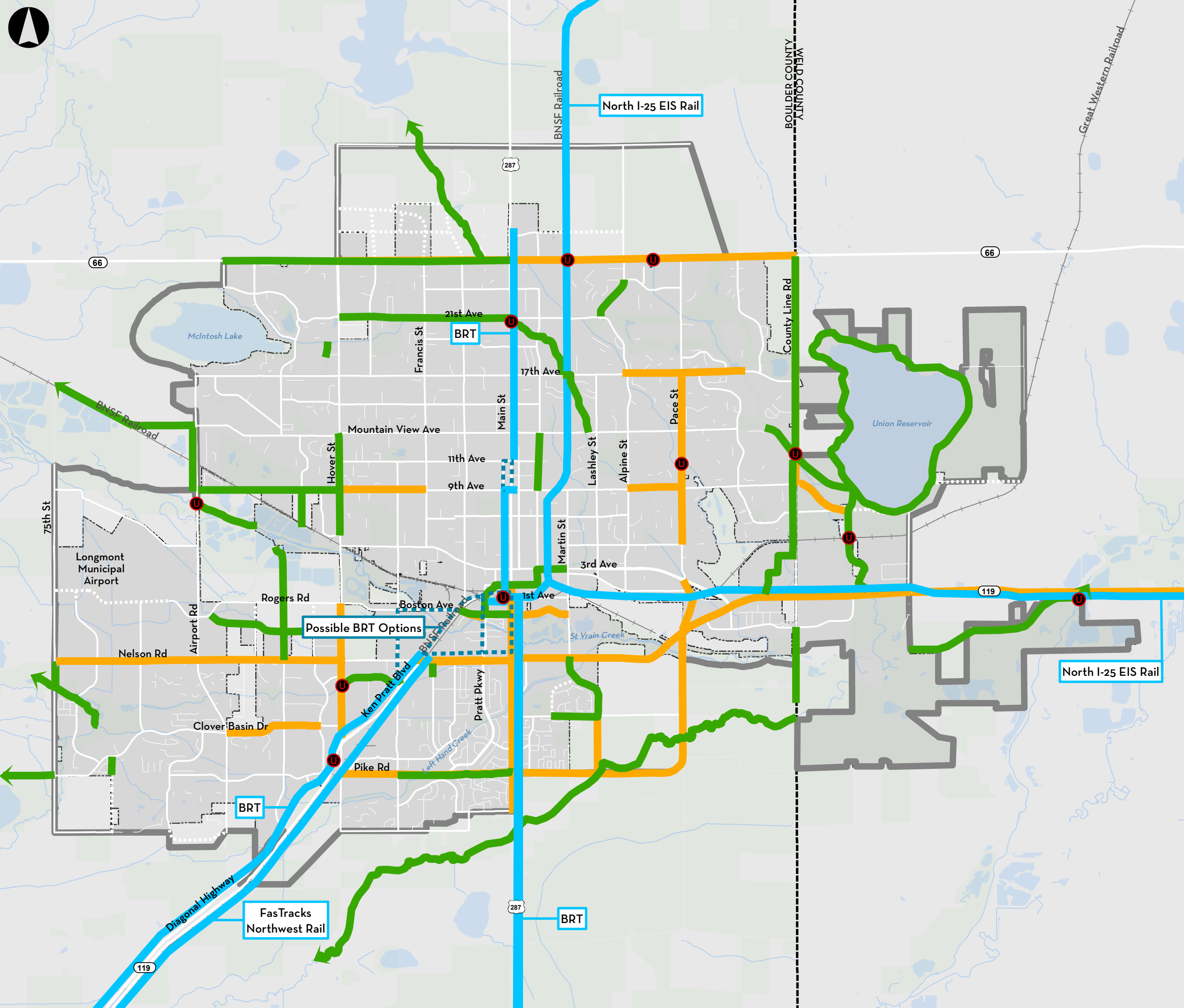
Notes			
-: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



CITY OF LONGMONT

Multimodal Transportation Improvements

-  Future Bicycle/Pedestrian Underpass
-  New Roads/
Road Capacity Improvements
-  New Rapid Transit
-  New Bicycle Facilities
-  Roads
-  Railroad
-  Streams
-  Lakes
-  Parks & Open Space
-  Longmont Planning Area
-  Longmont City Boundary





CITY OF LONGMONT Roadway System Plan

- Regional Arterial (2 Through Lanes)
- Regional Arterial (4 Through Lanes)
- Regional Arterial (6 Through Lanes)
- Principal Arterial (2 Through Lanes)
- Principal Arterial (4 Through Lanes)
- Principal Arterial (6 Through Lanes)
- Future Arterial (2 Through Lanes)
- Minor Arterial (2 Through Lanes)
- Minor Arterial (4 Through Lanes)
- Future Minor Arterial (2 Through Lanes)
- Collector (2 Through Lanes)
- Future Collector (2 Through Lanes)
- Local
- Railroad
- Longmont Planning Area
- Longmont City Boundary

