

Comments 8/31/18:

- 1) Propose mitigation measures for queuing beyond proposed storage for intersections 2 & 4.
- 2) Provide additional discussion in report for Queuing analysis.
- 3) Please update time of day distribution for Warrant 2.
- 4) Additional analysis is required for intersection 9. See below for more information.
- 5) Comments throughout.

1. Intersection 2 - S. Aurora Pkwy./E. Alexander Dr. - Mitigation discussion has been added to the text.
Intersection 4 - S. Aurora Pkwy./Pronghorn Valley Rd. - Since this is a new intersection additional queue storage has been recommended where required.

2. Additional discussion has been added in the text.

3. Warrant analysis has been updated - See Appendix "D".

4. Additional analysis has been provided as well as discussion in the text.

5. See comments throughout

TRAFFIC IMPACT REPORT

MEROY DEVELOPMENT AURORA, COLORADO

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I. EXECUTIVE SUMMARY

Mr. Lawrence Jacobsen of Denver, CO is proposing to develop the approximate 58.3-acre parcel located east and west of S Aurora Parkway just north of Southlands Shopping Center in the City of Aurora, CO into a multi-use commercial and residential development. Although the development process for the parcels east and west of S Aurora Parkway has been bifurcated, for the purposes of this study, it is conservatively assumed that the parcels east and west will both be fully developed by 2020.

Although final land uses are not yet defined, land uses that are allowed by the proposed zoning and that are also high-intensity trip generators were chosen for the overall project trip generation calculations. Based on these assumptions, the proposed project is projected to generate 16,693 daily vehicle trips of which 1,026 are projected to be generated during the AM peak hour and approximately 1,072 are projected to be generated during the PM peak hour.

Access to the project is proposed to be gained through the following new access points:

1. For the East Parcel:
 - a. A new connection to the existing stubbed south end of S De Gaulle St.
 - b. A new connection to S Aurora Pkwy via the new intersection of Pronghorn Valley Way and S Aurora Pkwy.
2. For the West Parcel:
 - a. A new right-in/right-out intersection on S Aurora Pkwy that will serve the commercial area of the west parcel.
 - b. A new connection to S Aurora Pkwy via the new intersection of Pronghorn Valley Way and S Aurora Pkwy that will serve the commercial area of the west parcel.
 - c. A new connection to the existing stubbed south end of E Alexander Drive near the westerly end of the West Parcel that will serve the multi-family portion of the west parcel.
 - d. An extension of Alexander Drive to the south to connect with the Southlands shopping center internal roadway system that will serve the multi-family portion of the west parcel.

The new intersection of S Aurora Parkway and Pronghorn Valley Road is projected to meet traffic signal warrants in 2020 even if only the first phase west of Aurora Pkwy is complete.

The intersections below are projected to continue to operate with acceptable levels of operation in 2040, despite the heavy growth of background traffic:

1. S Aurora Parkway and E Alexander Drive
2. S Aurora Parkway and Right-In/Right-Out (new stop-controlled intersection)
3. S Aurora Parkway and Pronghorn Valley Road (new signalized intersection)
4. S Aurora Parkway and E Applewood Drive (a.k.a. E Commons Ave)
5. S Aurora Parkway and S Southlands Parkway

The intersections below are projected to operate with unacceptable levels of operation during the AM or PM peak hours in 2040 due to the heavy growth of background traffic:

1. E Alexander Drive and S De Gaulle Street
2. S Aurora Parkway and E Orchard Road
3. S Aurora Parkway and E Smoky Hill Road

The projected traffic from the development is not projected to move any intersection from satisfactory to unsatisfactory operations. Therefore, based on the analyses contained in this traffic study, it is concluded that the study-area roadway system can accommodate the proposed Pomeroy development with the recommended access improvements with negligible impact on the study-area roadway system.

II. INTRODUCTION

A. Project Overview

Mr. Lawrence Jacobsen of Denver, CO is proposing to develop the approximate 58.3-acre parcel located east and west of S Aurora Parkway just north of Southlands Shopping Center in the City of Aurora, CO into a multi-use commercial and residential development. Although the development process for the parcels east and west of S Aurora Parkway has been bifurcated, for the purposes of this study, it is conservatively assumed that the parcels east and west will be fully developed by 2020. See Figure 1 Vicinity Map.

The overall property is currently undeveloped. The proposed development is named Pomeroy and will consist of two parcels: the East Parcel and the West parcel.

The East Parcel is analyzed as containing:

- 300 dwelling units of apartments (as allowed by current zoning)

The West Parcel which is analyzed as containing the following land uses (as allowed by proposed zoning):

- On the west end of the west parcel (west of Toll Gate Creek):
 - 300 dwelling units of apartments,
- On the east end of the west parcel (between Toll Gate Creek and S Aurora Pkwy):
 - 200-room business hotel,
 - 75-bed assisted-living facility,
 - 3500 SF fast-food with drive-thru,
 - 3500 SF fast-food with drive-thru,
 - Convenience market with gasoline pumps

The rectangular-shaped combination of the two parcels is bounded on the north by residential developments, on the east by undeveloped land, on the south by Southlands Shopping Center, and on the west by C-470. South Aurora Parkway bisects the combined parcels running roughly diagonally northwest-southeast.

Access to the project is proposed to be gained through the following new access points:

1. For the East Parcel:
 - a. A new connection to the existing stubbed south end of S De Gaulle St.
 - b. A new connection to S Aurora Pkwy via the new intersection of Pronghorn Valley Way and S Aurora Pkwy.
2. For the West Parcel:
 - a. A new right-in/right-out intersection on S Aurora Pkwy that will serve the commercial area of the west parcel.
 - b. A new connection to S Aurora Pkwy via the new intersection of Pronghorn Valley Way and S Aurora Pkwy that will serve the commercial area of the west parcel.
 - c. A new connection to the existing stubbed south end of E Alexander Drive near the westerly end of the West Parcel that will serve the multi-family portion of the west parcel.
 - d. An extension of Alexander Drive to the south to connect with the Southlands shopping center internal roadway system that will serve the multi-family portion of the west parcel.

B. Purpose of Study

The purpose of this study is to evaluate the impact of the vehicular trips projected to be generated by the proposed development on the nearby intersections and roadway system. A secondary purpose of this study is to analyze traffic on S Aurora Pkwy and recommend a location of the new intersection of S Aurora Pkwy and Pronghorn Valley Road. The study includes analysis horizons of 2017, 2020 (year of anticipated build-out), and 2040 (long-range horizon year).

C. Study Area

The study area encompasses the existing roadway system in the vicinity of the project site. Specifically, the

following existing intersections are evaluated:

- E Alexander Drive and S De Gaulle Street
- S Aurora Parkway and E Alexander Drive
- S Aurora Parkway and E Orchard Road
- S Aurora Parkway and E Applewood Drive (a.k.a. E Commons Ave)
- S Aurora Parkway and S Southlands Parkway
- S Aurora Parkway and E Smoky Hill Road

See Figures 1 and 2 for a graphical representation of the general area of the Pomeroy project and the preliminary site plan, respectively.

III. EXISTING CONDITIONS

A. Existing Traffic Volumes

Existing (2017) peak-hour intersection turning-movement traffic-volume counts were collected for this study at the following intersections in April, 2017:

- E Alexander Drive and S De Gaulle Street
- S Aurora Parkway and E Alexander Drive
- S Aurora Parkway and E Orchard Road
- S Aurora Parkway and E Applewood Drive (a.k.a. E Commons Ave)
- S Aurora Parkway and S Southlands Parkway
- S Aurora Parkway and E Smoky Hill Road

A 72-hour count was taken on S Aurora Parkway just north of E Orchard and averaged to obtain a 24-hour average daily volume. Existing Peak-Hour Factors (PHF) were used in the 2017 and 2020 analyses. For the 2040 analyses, the existing PHFs were averaged with the default of 0.92 to arrive at the PHF for the 2040 analyses.

A summary of the existing (2017) peak-hour intersection turning-movement traffic volume counts and the averaged 24-hour traffic volume count is graphically illustrated in Figure 3. Detailed traffic-volume-count data are provided in Appendix "A".

B. Existing Roadway System

The existing transportation network in the vicinity of the subject property is graphically illustrated in Figure 1.

Study Area Roadways:

- South Aurora Parkway is a Major Arterial with limited access. South of E Orchard Rd, the roadway section consists of three lanes in each direction with a raised median with auxiliary turning lanes at all intersections. North of Orchard, the roadway section is two lanes in each direction. There is curb and gutter and detached sidewalks on both sides. The posted speed limit is 45 mph.
- E Alexander Drive is a Collector serving the Sorrell Ranch development. It is constructed as one travel lane in each direction with both attached and detached sidewalks on both sides.

IV. BACKGROUND TRAFFIC

A. Background Traffic Volumes

Background traffic and forecasts for the 2020 and 2040 analysis horizons were developed for this study utilizing traffic volume counts collected in April, 2017, and the following:

- For the purposes of this study it is assumed that peak-hour distribution of background intersection approach traffic (left turn, through, right turn) will remain constant through the 2020 and 2040 analysis

horizons.

- Denver Regional Council of Governments (DRCOG) projects a 25-year-growth factor of 2.0 for S Aurora Parkway north of Smoky Hill Road, which equates to an annual growth rate of +2.8%. The city standard growth rate for background traffic is +2.0%/year. At the direction of the city and because it represents the growth in this specific area on this specific section of roadway, an annual growth rate of +2.8%/year was used on streets in the vicinity of the development to estimate traffic for 2020 and 2040 using 2017 counts as a starting point.

Figures 4 and 5 graphically illustrate the projected background-traffic volumes for the 2020 and 2040 analysis horizons, respectively.

B. Background Traffic Operational Analysis

In order to establish a base condition in which to evaluate the impact of the traffic generated by the proposed development on the study-area intersections, peak-hour capacity analyses were performed for the 2017 existing, and the 2020 and 2040 background traffic conditions. These analyses utilized the methodologies contained in the *Highway Capacity Manual* 2010 (HCM) employing *Synchro 8.0* software and resulted in a qualitative measure of the operational characteristics of the intersection described by a letter designation ranging from “A” to “F” known as “Level of Service” (LOS). LOS “A” represents ideal free flow operating conditions, whereas LOS “F” represents excessive congestion and delay. Unsignalized intersection capacity analysis reports a LOS designation for each impeded intersection movement. Signalized intersection capacity analysis reports the overall LOS designation for the intersection as well as for each lane group and approach. LOS “D” is considered the minimum acceptable standard of operation.

The following study-area intersections were analyzed for 2017 existing traffic, 2020 background, and 2040 background conditions:

- E Alexander Drive and S De Gaulle Street
- S Aurora Parkway and E Alexander Drive
- S Aurora Parkway and E Orchard Road
- S Aurora Parkway and E Applewood Drive (a.k.a. E Commons Ave)
- S Aurora Parkway and S Southlands Parkway
- S Aurora Parkway and E Smoky Hill Road

The results of these background traffic operational analyses are summarized graphically for the 2017 existing, 2020 background and 2040 background analysis horizons in Figures 6, 7, and 8, respectively. A summary of the results of the intersection capacity analyses is provided in Table 3 and detailed *Synchro 8.0* software intersection capacity analysis reports in Appendix “B”.

The intersections below are projected to continue to operate with acceptable levels of service (“D” or better) in the 2040 Background Traffic scenarios, despite the heavy growth of background traffic:

- S Aurora Parkway and E Alexander Drive
- S Aurora Parkway and E Applewood Drive (a.k.a. E Commons Ave)
- S Aurora Parkway and S Southlands Parkway

The intersections below are projected to operate with unacceptable levels of service during the AM or PM peak hours in the 2040 Background Traffic scenarios due to the heavy growth of background traffic:

- E Alexander Drive and S De Gaulle Street
- S Aurora Parkway and E Orchard Road
- S Aurora Parkway and E Smoky Hill Road

V. PROJECT DEVELOPMENT

A. Trip Generation

The trip-generation projection for the proposed development was estimated utilizing the publication *Trip Generation, 9th Edition*, Institute of Transportation Engineers. Estimates of total daily traffic volume and AM and PM peak-hour traffic volumes were calculated. Trip-generation reductions due to transportation demand management or transit use were not considered. See Table 1.

For the purposes of this study it is conservatively assumed that both the East Parcel and the West Parcel will be fully developed by 2020 with the land uses shown in Table 1. Although final land uses are not yet defined, land uses that are allowed by the proposed zoning and that are also high-intensity trip generators were chosen for the overall project trip generation calculations. Based on these assumptions, the proposed project is projected to generate 16,693 daily vehicle trips of which 1,026 are projected to be generated during the AM peak hour and approximately 1,072 are projected to be generated during the PM peak hour.

**TABLE 1
POMEROY DEVELOPMENT**

Trip Generation									
Land Use	Intensity	ITE Code	Daily (vpd)	AM Peak Hour (vph)			PM Peak Hour (vph)		
				Total	In	Out	Total	In	Out
Parcel 1 (West MF)									
Multi-Family Apartments	300 DU	220	1942	151	31	120	183	119	64
Parcel 1 (West Commercial)									
Hotel	200 Rooms	310	1417	106	63	43	120	62	58
Assisted Living	75 Beds	254	242	11	8	3	17	8	9
Fast-Food Restaurant w/ Drive Thru	3500 SF	934	1737	159	82	77	115	60	55
Fast-Food Restaurant w/ Drive Thru	3500 SF	934	1737	159	82	77	115	60	55
Convenience Market With Gasoline Pumps	12 Fuel Spots	853	6511	199	100	99	229	115	114
Parcel 1 (West) Total		-	14,751	875	385	491	889	495	393
Parcel 2(East)									
Multi-Family Apartments	300 DU	220	1942	151	31	120	183	119	64
Parcel 2 (East) Total			1,942	151	31	120	183	119	64
Grand Total			16,693	1,026	416	611	1,072	614	457

Notes:

1. Trip Generation Projections are based on ITE Trip Generation, 9th Edition using "Fitted Curve" when available

B. Trip Distribution

The distribution of the projected vehicle trips generated by the land uses for this study was established based on the current and projected future traffic patterns on the surrounding transportation system, efficiency of access to the principal transportation corridors serving the area, and the potential trip origins/destinations for the proposed land use for the subject property. Figures 9A, 9B, and 9C graphically illustrate the project-generated trip-distribution patterns for the West and East parcels.

The West parcel is proposed to be developed in two distinct sections unconnected by roadway:

- The area east of Toll Gate Creek will be commercial with access on Aurora Pkwy being via the new Pronghorn Way intersection and the new RIRO intersection.
- The area west of Toll Gate Creek will be multi-family with access via the extension of Alexander to both the north and south.

For the 2020 and 2040 Total Traffic scenarios, it was assumed the Alexander Street connection with Southlands will be in place. This connection is projected to result in trips between Southlands and areas to the north being re-routed onto the new Alexander connection. Engineering judgment was used to make assumptions for re-routed traffic to the Alexander connection as follows:

- 70% of trips currently using Orchard (volume of SB R and volume of EB L)
- 70% of trips currently using Commons (SB R and EB L)

- 60% of trips currently using Southlands (SB R and EB L)

The net result of the Alexander connection is projected to divert approximately 500 vehicles per AM or PM peak hour to the connection and therefore be removed from the intersections of Orchard, Commons, and Southlands. See Figure 10B for a graphical representation of the projected diverted trips in 2040.

C. Trip Assignment

The vehicular traffic volumes estimated to be generated by the proposed development were assigned to the study-area roadways and intersections utilizing the trip-distribution analysis described above. Figure 10A graphically illustrates the site-generated traffic assignment for the combined development of the East and West parcels.

VI. TOTAL TRAFFIC

Total-traffic forecast for the 2020 analysis scenario was computed by combining the 2020 background-traffic volumes with the associated projected site-generated traffic volumes. Total-traffic forecast for the 2040 analysis scenario was computed by combining the 2040 background-traffic volumes with the associated projected site-generated traffic volumes. Figures 11 and 12 graphically illustrate the total-traffic forecasts for the study-area intersections for the 2020 and 2040 analysis horizons, respectively.

VII. PROJECT ANALYSIS

A. Operational Analysis

To evaluate the impact of the proposed land use for the subject property on the study-area roadway system, peak-hour intersection capacity analyses for total-traffic conditions were performed for the 2020 and 2040 analysis horizons at each of the study-area intersections listed below.

- E Alexander Drive and S De Gaulle Street
- S Aurora Parkway and E Alexander Drive
- S Aurora Parkway and Right-In/Right-Out (new stop-controlled intersection)
- S Aurora Parkway and Pronghorn Valley Road (new signalized intersection)
- S Aurora Parkway and E Orchard Road
- S Aurora Parkway and E Applewood Drive (a.k.a. E Commons Ave)
- S Aurora Parkway and S Southlands Parkway
- S Aurora Parkway and E Smoky Hill Road
- E Alexander Drive and West Multi-Family Access (new stop-controlled “T” intersection)
- S De Gaulle Street and Pronghorn Valley Road and East Site Access (new stop controlled “T” intersection)

The City of Aurora supplied *Synchro 8.0* models of AM peak hour and PM peak hour and these models were utilized as the starting point for 2017, 2020 and 2040 analyses. Intersection phasing and timing plans were maintained as existing in 2017, with the exception of the new Aurora Pkwy/Orchard EB L protected/permissive plan, which was utilized in the 2020 and 2040 analyses. All splits were “optimized” in Synchro after revised volumes were inputted into the models.

A narrative of the summary of the analysis and comparison to background traffic conditions for the 2020 and 2040 analysis horizons is provided below. The results of the total-traffic operational analysis are summarized graphically for the 2020 and 2040 analysis horizons in Figure 13 and 14, respectively. A summary of the results of the intersection capacity analyses is provided in Table 4. Detailed *Synchro* software intersection capacity analysis reports are provided in Appendix “B”.

Study-Area Intersections – Summary of Results:

1. E Alexander Drive and S De Gaulle Street:
 - a. De Gaulle Street is projected to serve as an access route to/from the East Parcel.
 - b. The two-way stop-controlled intersection is projected to operate with all movements at LOS “C” or better through 2020. In 2040, due to growth of background traffic, the northbound L/T/R is projected to operate at LOS “F” while the other three movements are projected to operate at LOS “C” or better.
2. S Aurora Parkway and E Alexander Drive:
 - a. This intersection is at the north end of the new Alexander connection with Southlands. Therefore, compared to volumes without the connection in place, the NB L and SB R are projected to be approximately +500vph during peak hours due to a more direct route with Southlands. The SB T and NB T are correspondingly projected to decrease 500 vph. The volumes in the Synchro analyses reflect these volume changes.
 - b. The intersection is projected to continue with overall LOS “D” or better through 2040.
 - c. After optimizing splits in Synchro, three of the four left-turn movements are projected at LOS “E” or “F” in the 2040 Background Traffic Scenarios.
 - d. With the Alexander connection in place, the 2040 Total Traffic scenario shows overall LOS “D”. Three of the four left-turn movements are projected at LOS “F”.
3. S Aurora Parkway and Right-In/Right-Out (new intersection):
 - a. The new RIRO intersection is projected to have the impeded eastbound right-turn movement operate at LOS “B” in 2020 and 2040.
4. S Aurora Parkway and Pronghorn Valley Road (new intersection):
 - a. The location of this new intersection along S Aurora Pkwy is ruled by minimum distance standards of the city plus the projected northbound left-turn 95th-percentile queue length at Pronghorn, projected as 182’ in the 2040 PM peak hour (from SimTraffic analysis). Therefore, the proposed location of the intersection is projected to be based on a 180’ northbound left-turn queue storage plus appropriate taper.
 - b. The centerline of the new intersection is currently proposed as approximately 758’ northwest along the centerline of S Aurora Pkwy from the center of the existing Orchard intersection.
 - c. Protected-permissive LT phasing was used for 2020 and 2040 and was based on criteria from the city’s flowchart, see Appendix “E”. Signal timing may be adjusted by the city when the signal is constructed. Based on having the signal timing matching the existing cycle lengths on the S Aurora Pkwy corridor (AM C=90sec, PM C=135sec) and ped-crossing times across Aurora Pkwy of 100’ travel / 3.5fps = 28.5 sec – 3 sec Yellow = 25.5 sec, the signalized intersection is projected to operate with overall intersection LOS of “C” in 2040. The eastbound and westbound minor approaches are projected to have one or more lane groups operate at LOS “E” in 2020 PM and 2040 PM.
5. S Aurora Parkway and E Orchard Road:
 - a. Trips to/from the north were adjusted due to the Alexander connection.
 - b. Proposed protected/permissive EB L phasing was used for 2020 and 2040 analyses. The existing signalized intersection is projected to operate with overall intersection LOS of “C” or better in 2020 and LOS “E” in 2040 due to the growth of background traffic.
6. S Aurora Parkway and E Applewood Drive (a.k.a. E Commons Ave):
 - a. Trips to/from the north were adjusted due to the Alexander connection.
 - b. The existing signalized intersection is projected to operate with overall intersection LOS of “C” or better in 2020 and 2040.
7. S Aurora Parkway and S Southlands Parkway:
 - a. Trips to/from the north were adjusted due to the Alexander connection.

- b. The existing signalized intersection is projected to operate with overall intersection LOS of “D” or better in 2020 and 2040.
8. S Aurora Parkway and E Smoky Hill Road:
 - a. The existing signalized intersection is projected to operate with overall intersection LOS of “D” in 2020 and LOS “F” in 2040 due to the growth of background traffic.
9. E Alexander Drive and West Multi-Family Access (new intersection):
 - a. This will be a new “T” intersection with stop-sign control on the southbound approach. The north leg of the intersection will consist of one shared left/right turn lane on the southbound approach and one northbound departure lane. The east leg of the intersection will consist of one shared through/right turn lane on the westbound approach and one westbound departure lane. The west leg of the intersection will have one shared left turn/through lane on the eastbound approach and one westbound departure lane.
 - b. This intersection is projected to operate at acceptable levels of service through the 2019 analysis horizon. The southbound approach falls to LOS “E” during the p.m. peak hour in the 2038 analysis horizon. This is due to the predominant traffic movement at the intersection being the southbound to westbound right turn. **Putting the stop sign on the westbound approach and having the eastbound and southbound approaches operate as free movements would mitigate this problem.**
10. S De Gaulle Street and Pronghorn Valley Road and East Site Access (new intersection):
 - a. This will be a new “T” intersection with stop-sign control on the southbound approach. The north leg of the intersection will consist of one shared left/right turn lane on the southbound approach and one northbound departure lane. The east leg of the intersection will consist of one shared through/right turn lane on the westbound approach and one westbound departure lane. The west leg of the intersection will have one shared left turn/through lane on the eastbound approach and one westbound departure lane.
 - b. This intersection is projected to operate at acceptable levels of service through the 2037 analysis horizon.

B. Traffic Signal Warrants Analysis

At the direction of the city, traffic signal Warrant 1 (8th-highest hour), Warrant 2 (4th-highest hour), and Warrant 3 (peak hour) were analyzed for the proposed intersection of S Aurora Pkwy and Pronghorn Valley. The results are shown in Table 2.

City of Aurora TIS Guidelines state that a 50% Right-Turn-On-Red reduction should be taken and this reduction was therefore taken for all the warrant analyses.

The signal warrant analyses for the intersection of S Aurora Pkwy and Pronghorn Valley were conducted under two scenarios:

1. The intersection will be a T-intersection with stop sign control on the southbound approach. The north leg of the intersection will consist of one shared left/right turn lane on the southbound approach and one northbound departure lane. The east leg of the intersection will consist of one shared through/right turn lane on the westbound approach and one westbound departure lane. The west leg of the intersection will have one shared left turn/through lane on the eastbound approach and one westbound departure lane.
2. The intersection will be a T-intersection with stop sign control on the southbound approach. The north leg of the intersection will consist of one shared left/right turn lane on the southbound approach and one northbound departure lane. The east leg of the intersection will consist of one shared through/right turn lane on the westbound approach and one westbound departure lane. The west leg of the intersection will have one shared left turn/through lane on the eastbound approach and one westbound departure lane.

Does the intersection have an acceptable LOS if the SB right & left turn lanes are separate? This proposed Stop Sign location violates driver expectation and the uncontrolled EB through and SB left would conflict with this proposed intersection control. Propose an alternate solution. Per the TIS guidelines, if an all-way stop is proposed a roundabout must be analyzed.

**TABLE 2
POMEROY DEVELOPMENT
TRAFFIC SIGNAL WARRANTS 1, 2, OR 3 MET?**

	2019 TOTAL TRAFFIC AM	2019 TOTAL TRAFFIC PM
Warrant 1 Met?	YES	YES
Warrant 2 Met?	YES	YES
Warrant 3 Met?	YES	YES
	2019 TOTAL TRAFFIC AM WEST SIDE ONLY (EAST NOT OPEN)	2020 TOTAL TRAFFIC PM WEST SIDE ONLY (EAST NOT OPEN)
Warrant 1 Met?	YES	YES
Warrant 2 Met?	YES	YES
Warrant 3 Met?	YES	YES
Notes:		
1. For Warrant 1 and 2 analyses, ADT for given movements estimated from volume profile derived from 24-hour counts as 1/0.086.		
2. For Warrant 1 analysis, 8th-highest-hour volume estimated from volume profile derived from 24-hour counts as 7.19% of ADT		
3. For Warrant 2 analysis, 4th-highest-hour volume estimated from volume profile derived from 24-hour counts as 8.14% of ADT		
4. 50% RTR deduction as per COA guidelines		
5. "West-Side-Only" assumes Pomeroy development on east side of Aurora Pky is not built and therefore generating no traffic		

C. Queue Lengths and Projected Storage Needed

At the direction of the city, SimTraffic 8 (95th percentile queue lengths) was used to analyze and project queue lengths and associated queue-storage needs. See Table 3 for a summary of these analyses. The following narrative discusses queue length issues identified in the analyses:

- At the intersection of S Aurora Pkwy and Alexander, the SWB L movement is projected to exceed the existing queue storage of 185' in all analysis scenarios.
- At the intersection of S Aurora Pkwy and Orchard:
 - The EB L movement is projected to exceed the existing queue storage of 125' in 2017 and beyond with a 95th percentile queue length of 159' even after the implementation of the prot/perm LT phasing.
 - The SB L queues are projected to exceed the available queue storage of 290' in 2040 with a 95th percentile queue length of 385'.
 - The SB R queues are projected to exceed the available queue storage of 100' in 2017 and beyond with a 95th percentile queue length of 129'.
 - The SB T queue of 497' in the 2040 PM peak hour is projected to not back up into the new Pronghorn Valley intersection (approximately 650' feet queue storage available).
- At the intersection of S Aurora Pkwy and Smoky Hill Road, multiple queue storage capacities are projected to be exceeded (EB L, WB L, WB R, NB L, SB L) as shown in Table 3.

**TABLE 3
POMEROY DEVELOPMENT
QUEUE LENGTHS AND ASSOCIATED STORAGE NEEDED
SIMTRAFFIC 95TH PERCENTILE METHOD**

INTERSECTION			EXISTING STORAGE PER LANE (FT)	INTERSECTION CONTROL	2037 TOTAL TRAFFIC	
					QUEUE LENGTH (FT)	
					AM PEAK	PM PEAK
1.	ALEXANDER & DE GAULLE		-	TWSC	-	-
	a.	EB L/T/R			62	54
	b.	NB L/T/R	-		51	48
	c.	SB L/T/R	-		86	156
2.	S AURORA PKWY & ALEXANDER		-	SIGNALIZED	-	-
	a.	EB L (ALEXANDER)	185		119	213*
	b.	EB T/R	-		60	497
	c.	WB L (ALEXANDER)	185		231*	239*
	d.	WB T	-		434	432
	e.	WB R	185		93	44
	f.	NB L (S AURORA PKWY)	290		75	147
	g.	NB T	-		301	238
	h.	NB T/R	-		330	319
	i.	SB L (S AURORA PKWY)	275		22	210
	j.	SB T	-		290	504
	k.	SB T/R	-		240	602
3.	S AURORA PKWY & RIRO		-	TWSC	-	-
	a.	EB R	-		51	64
4.	S AURORA PKWY & PRONGHORN VALLEY		-	SIGNALIZED	-	-
	a.	EB L	200**		197	207
	b.	EB T/R	-		378	461
	c.	WB L	200**		120	90
	d.	WB T/R	-		96	110
	e.	NB L	175**		163	182
	f.	NB T	-		252	246
	g.	NB R	250**		131	275
	h.	SB L	150**		68	150
	j.	SB T	-		313	343
	j.	SB T/R	-		292	313
5.	S AURORA PKWY & ORCHARD		-	SIGNALIZED	-	-
	a.	EB L (Prot/Perm)	125		52	159*
	b.	EB T	-		15	242
	c.	EB R	-		70	141
	d.	WB L	190		69	73
	e.	WB T	-		45	154
	f.	WB R	-		229	193
	g.	NB L	280		142	284
	h.	NB T	-		358	430
	i.	NB T/R	-		374	455
	j.	SB L	290		234	385*
	k.	SB T	-		296	497
	l.	SB R	100		129*	108

INTERSECTION			EXISTING STORAGE PER LANE (FT)	INTERSECTION CONTROL	2037 TOTAL TRAFFIC	
					QUEUE LENGTH (FT) 95TH %	
					AM PEAK	PM PEAK
6.	S AURORA PKWY & APPLEWOOD		-	SIGNALIZED	-	-
	a.	EB L (Applewood)	130		71	124
	b.	EB T	-		27	86
	c.	EB R	-		53	254
	d.	WB L	230		162	142
	e.	WB T	-		41	42
	f.	WB R	230		58	30
	g.	NB L	280		81	277
	h.	NB T	-		153	372
	i.	NB R	210		16	246
	j.	SB L	260		40	229
	k.	SB T	-		328	503
	l.	SB R	140		132	158
7.	S AURORA PKWY & SOUTHLANDS		-	SIGNALIZED	-	-
	a.	EB L (Southlands)	240		86	166
	b.	EB T	-		39	124
	c.	EB T/R	-		75	292
	d.	WB L	180		12	37
	e.	WB T	-		38	82
	f.	WB T/R	-		76	100
	g.	NB L	390		114	294
	h.	NB T	-		135	320
	i.	NB T/R	-		130	320
	j.	SB L	215		91	228
	k.	SB T	-		175	349
	l.	SB T/R	-		191	295
8.	S AURORA PKWY & SMOKY HILL		-	SIGNALIZED	-	-
	a.	EB L (Smoky Hill)	335		256	408*
	b.	EB T	-		322	1200
	c.	EB R	395		113	353
	d.	WB L	260		302*	220
	e.	WB T	-		671	658
	f.	WB R	260		357*	328*
	g.	NB L	380		257	472*
	h.	NB T	-		247	763
	i.	NB T/R	465		167	382
	j.	SB L	235		294*	309*
	k.	SB T	-		483	881
	l.	SB R	-		504	308
NOTES:						
1.	Vehicle Length = 25 feet					
2.	* Exceeds available queue storage length					
3.	** Proposed storage					

D. Left-Turn Phasing at New Pronghorn Valley Intersection

E Alexander Drive and S Aurora Parkway:

At the direction of the city, protected/permissive EB L, WB L, NB L and SB L phasing was evaluated using the City of Aurora flow chart. Based on the results of the evaluation the E Alexander Drive and S Aurora Parkway intersection will warrant NB L and SB L protected/permitted signal phasing by the 2019 analysis horizon and EB L and WB L protected/permitted signal phasing by the 2037 analysis horizon. See Appendix "E" for the completed flow chart confirming the proposed protected/permissive phasing.

S Aurora Parkway and Pronghorn Valley Road:

At the direction of the city, the proposed protected/permissive EB L and WB L phasing at the new Pronghorn Valley intersection was confirmed using a flow chart provided by the city. See Appendix "E" for the completed flow chart confirming the proposed protected/permissive phasing.

VIII. SUMMARY

Based on the analyses contained in this traffic study, it is concluded that the study-area roadway system can accommodate the proposed Pomeroy development with the recommended access improvements shown in Table 4 with negligible impact on the study-area roadway system.

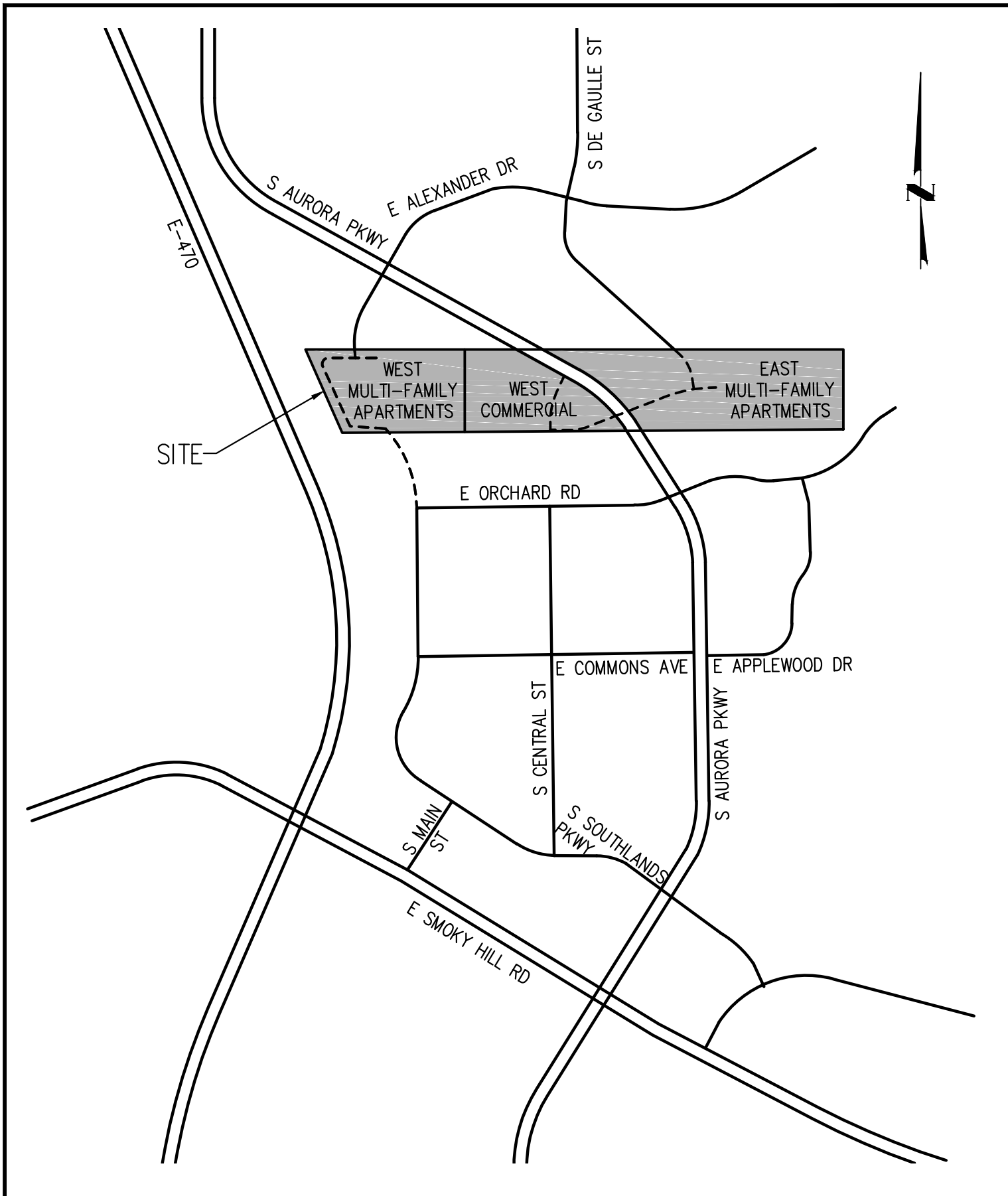
**TABLE 4
SUMMARY OF RECOMMENDATIONS**

Roadway	Recommendations	Responsible	Timing
Alexander Street	Construct collector roadway section connecting Alexander Street with the northwest corner of Southlands internal roadway system. Construct driveways to multi-family development at locations to be determined.	Developer	Developer
Intersection	Recommendations	Responsible	Timing
S Aurora Parkway / S De Gaulle Street	No changes recommended	N.A.	N.A.
S Aurora Parkway / E Alexander Drive	No changes recommended. Monitor intersection for meeting NB and SB protected/permitted left turn traffic signal phasing.	N.A.	N.A.
S Aurora Parkway / RIRO	Construct new right-in/right-out stop-controlled intersection to City of Aurora specifications with 75 right-turn queue storage.	Developer	Developer
S Aurora Parkway / Pronghorn Valley	Construct new signalized intersection to City of Aurora specifications. Center of new intersection to be located 758' northwest along the centerline of S Aurora Pkwy from the center of the intersection of S Aurora Pkwy and Orchard. New west leg to consist of one eastbound left-turn lane with 200' queue storage plus taper, one eastbound through/right lane, and one westbound departure lane. New east leg to consist of one westbound left-turn lane with 200' queue storage plus taper, one westbound through/right lane, and one eastbound departure lane. North leg to consist of one new southbound left-turn lane with 150' queue storage plus taper, two southbound through lanes, one southbound through/right lane, and three northbound departure lanes. Three northbound lanes roadway section to be extended for northbound lanes to meet with existing three-lane northbound section (approximately 650' widening northwest of new intersection). South leg to consist of one new northbound left-turn lane with 175' queue storage plus taper, three northbound through lanes, one new northbound right-turn lane with 250' storage plus taper, and three southbound departure lanes.	Developer	Developer
S Aurora Parkway / E Orchard Road	No changes recommended. City may choose to implement prot/perm LT phasing for EB L movement.	N.A.	N.A.
S Aurora Parkway / E Applewood Drive	No changes recommended	N.A.	N.A.
S Aurora Parkway / S Southlands Parkway	No changes recommended	N.A.	N.A.
S Aurora Parkway / E Smoky Hill Road	No changes recommended	N.A.	N.A.
E Alexander Drive / West MF Site Access	Construct new "T" intersection with stop sign control on the southbound approach. The north leg of the intersection will consist of one shared left/right turn lane on the southbound approach and one northbound departure lane. The east leg of the intersection will consist of one shared through/right turn lane on the westbound approach and one westbound departure lane. The west leg of the intersection will have one shared left turn/through lane on the eastbound approach and one westbound departure lane.	Developer	See response to previous comment.
S De Gaulle Street / Pronghorn Valley Rd / East Site Access	Construct new "T" intersection with stop sign control on the southbound approach. The north leg of the intersection will consist of one shared left/right turn lane on the southbound approach and one northbound departure lane. The east leg of the intersection will consist of one shared through/right turn lane on the westbound approach and one westbound departure lane. The west leg of the intersection will have one shared left turn/through lane on the eastbound approach and one westbound departure lane.	Developer	See previous comment. This may change.

**TABLE 5
SUMMARY OF RESULTS
INTERSECTION CAPACITY ANALYSIS**

INTERSECTION	INTERSECTION CONTROL	2017 EXISTING TRAFFIC		2019 BACKGROUND TRAFFIC		2019 TOTAL TRAFFIC		2037 BACKGROUND TRAFFIC		2037 TOTAL TRAFFIC	
		AM PEAK LOS	PM PEAK LOS	AM PEAK LOS	PM PEAK LOS	AM PEAK LOS	PM PEAK LOS	AM PEAK LOS	PM PEAK LOS	AM PEAK LOS	PM PEAK LOS
1. ALEXANDER / DE GAULLE	TWSC	-	-	-	-	-	-	-	-	-	-
a. EB L/T/R		A	A	A	A	A	A	A	A	A	A
b. WB L/T/R		A	A	A	A	A	A	A	A	A	A
c. NB L/T/R	STOP	C	C	C	C	C	C	E	F	E	F
d. SB L/T/R	STOP	B	B	B	B	B	B	B	B	B	C
2. S AURORA PKWY / ALEXANDER	SIGNALIZED	-	-	-	-	-	-	-	-	-	-
a. EB L (perm) (Alexander)		C	B	B	B	C	D	B	D	B	F
b. EB T/R		C	A	B	A	B	C	B	D	B	C
c. WB L (perm) (Alexander)		C	B	C	B	C	D	D	F	D	D
d. WB T		C	A	B	A	B	C	B	D	B	C
e. WB R		C	D	C	D	B	C	C	D	B	C
f. NB L (perm) (S Aurora Pkwy)		B	D	B	D	B	C	D	E	D	F
g. NB T/R		B	D	B	D	B	B	C	B	D	C
h. SB L (perm) (S Aurora Pkwy)		B	E	B	E	B	C	D	F	D	F
i. SB T/R		B	D	B	D	B	B	C	B	C	C
j. INTERSECTION		B	B	B	B	B	C	C	C	D	D
3. S AURORA PKWY / RIRO	TWSC	-	-	-	-	-	-	-	-	-	-
a. EB R	STOP	-	-	-	-	B	B	-	-	B	B
4. S AURORA PKWY / PRONGHORN VALLEY	SIGNALIZED	-	-	-	-	-	-	-	-	-	-
a. EB L (prot/perm)		-	-	-	-	C	D	-	-	C	E
b. EB T/R		-	-	-	-	D	E	-	-	D	E
c. WB L (prot/perm)		-	-	-	-	C	D	-	-	C	D
d. WB T/R		-	-	-	-	C	E	-	-	C	D
e. NB L (prot/perm)		-	-	-	-	B	B	-	-	F	D
f. NB T		-	-	-	-	A	A	-	-	A	A
g. NB R		-	-	-	-	A	A	-	-	A	A
h. SB L (prot/perm)		-	-	-	-	A	A	-	-	A	B
i. SB T		-	-	-	-	B	B	-	-	C	C
k. INTERSECTION		-	-	-	-	B	B	-	-	C	B
5. S AURORA PKWY / ORCHARD	SIGNALIZED	-	-	-	-	-	-	-	-	-	-
a. EB L (perm)		C	D	-	-	-	-	-	-	-	-
b. EB L (prot/perm)		-	-	C	E	C	D	B	F	B	E
c. EB T		C	C	B	D	B	D	B	C	B	D
d. EB R		C	C	B	D	C	D	B	C	B	D
e. WB L (perm)		C	C	C	D	C	D	B	D	B	D
f. WB T		C	C	C	D	C	D	B	D	B	D
g. WB R		D	D	D	E	D	E	D	E	D	E
h. NB L (prot/perm)		B	B	B	B	B	B	C	D	C	C
i. NB T/R		B	C	C	C	C	B	E	D	F	D
j. SB L (prot/perm)		A	B	B	B	B	B	F	F	F	F
k. SB T		B	B	B	B	A	A	D	C	F	B
l. SB R		B	C	B	B	A	A	C	D	B	B
m. INTERSECTION		B	C	C	C	B	B	E	E	F	D
6. S AURORA PKWY / COMMONS, APPLEWOOD	SIGNALIZED	-	-	-	-	-	-	-	-	-	-
a. EB L (perm)		D	D	D	D	D	D	C	D	C	D
b. EB T		D	D	C	D	C	D	C	D	C	D
c. EB R		D	E	D	E	D	E	C	E	C	E
d. WB L (perm)		D	D	D	D	D	D	D	D	D	D
e. WB T		D	D	C	D	C	D	C	D	C	D
f. WB R		D	D	D	D	D	D	C	D	C	D
g. NB L (prot/perm)		A	A	A	A	A	A	A	D	B	E
h. NB T		A	A	A	A	A	A	A	B	A	B
j. SB L (prot/perm)		A	A	A	A	A	A	A	C	A	D
k. SB T		A	A	A	A	A	B	B	C	B	C
m. INTERSECTION		A	B	A	B	A	B	B	C	B	C

INTERSECTION	INTERSECTION CONTROL	2017 EXISTING TRAFFIC		2019 BACKGROUND TRAFFIC		2019 TOTAL TRAFFIC		2037 BACKGROUND TRAFFIC		2037 TOTAL TRAFFIC	
		AM PEAK LOS	PM PEAK LOS	AM PEAK LOS	PM PEAK LOS	AM PEAK LOS	PM PEAK LOS	AM PEAK LOS	PM PEAK LOS	AM PEAK LOS	PM PEAK LOS
7. S AURORA PKWY / SOUTHLANDS	SIGNALIZED	-	-	-	-	-	-	-	-	-	-
a. EB L (perm)		D	D	D	D	D	D	D	D	D	D
b. EB T/R		D	D	D	D	C	D	C	D	C	D
c. WB L (perm)		D	E	D	E	D	E	D	E	D	E
d. WB T/R		D	D	D	D	D	D	C	D	C	D
e. NB L (prot/perm)		A	A	A	A	A	B	A	D	B	D
f. NB T		A	A	A	A	A	A	A	B	B	C
g. NB R		A	A	A	A	A	A	A	B	B	C
h. SB L (prot/perm)		A	A	A	A	A	A	A	C	A	C
i. SB T		A	B	A	B	A	B	B	D	B	D
j. SB R		A	B	A	B	A	B	B	D	B	D
k. INTERSECTION		A	B	A	B	B	B	B	C	B	D
8. S AURORA PKWY / SMOKY HILL ROAD	SIGNALIZED	-	-	-	-	-	-	-	-	-	-
a. EB L (prot)		E	E	E	E	E	C	C	C	C	C
b. EB T		C	D	C	D	C	B	A	C	B	C
c. EB R (pm + ov)		B	C	B	C	B	A	B	A	B	A
d. WB L (prot)		E	E	E	E	E	E	E	E	E	E
e. WB T		C	D	C	D	C	D	C	E	F	E
f. WB R (pm + ov)		B	C	B	C	B	D	C	D	F	F
g. NB L (prot)		E	E	E	E	E	E	F	F	E	F
h. NB T		D	D	D	D	D	D	D	E	D	E
j. SB L (prot)		E	E	E	E	E	F	F	F	F	F
k. SB T		D	D	D	D	D	D	D	E	D	E
l. SB R (pm + ov)		C	B	C	B	D	B	A	B	B	C
m. INTERSECTION		C	D	C	D	D	D	C	E	E	F
9 ALEXANDER / WEST MF SITE ACCESS	TWSC	-	-	-	-	-	-	-	-	-	-
a. EB L		-	-	-	-	A	A	-	-	A	A
b. SB L/R		-	-	-	-	A	B	-	-	A	E
c. INTERSECTION		-	-	-	-	A	B	-	-	A	D
10 PRONGHORN VALLEY / EAST SITE ACCESS & DEGAULLE	TWSC	-	-	-	-	-	-	-	-	-	-
a. EB L		-	-	-	-	A	A	-	-	A	A
b. SB L/R		-	-	-	-	A	A	-	-	A	A
c. INTERSECTION		-	-	-	-	A	A	-	-	A	A



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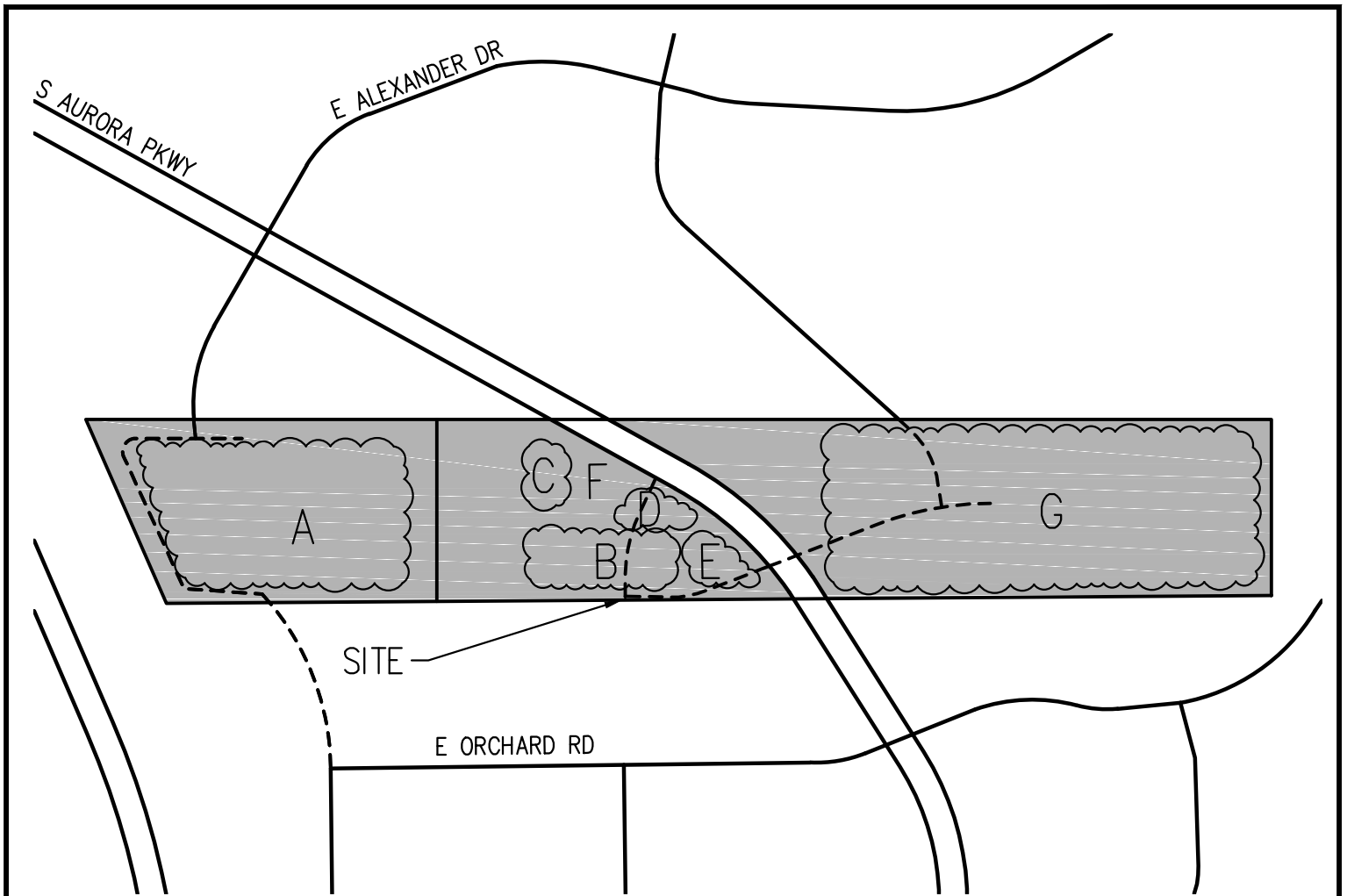
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VICINITY MAP



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WEST PARCEL

- A – 300 DWELLING UNITS: MULTI-FAMILY APARTMENTS
- B – 200 ROOM HOTEL
- C – 75 BED ASSISTED LIVING
- D – 3,500 SF FAST FOOD WITH DT
- E – 3,500 SF FAST FOOD WITH DT
- F – 12 FUEL SPOTS CONVENIENCE STORE

EAST PARCEL

- G – 300 DWELLING UNITS: MULTI-FAMILY APARTMENTS



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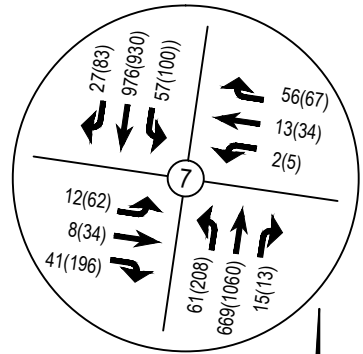
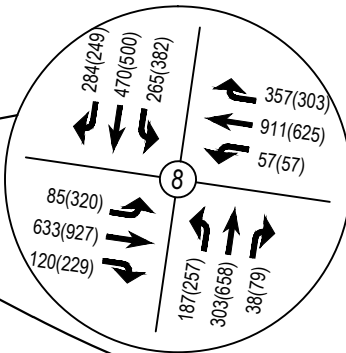
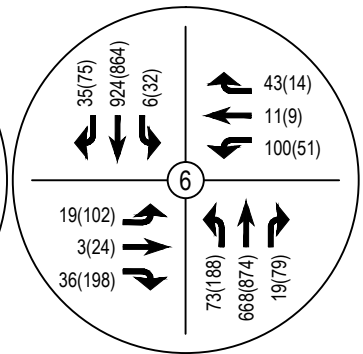
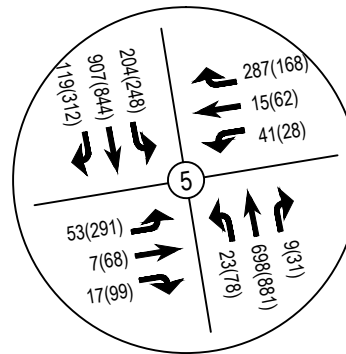
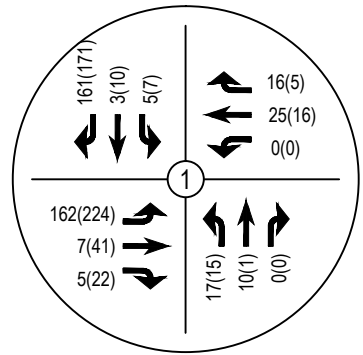
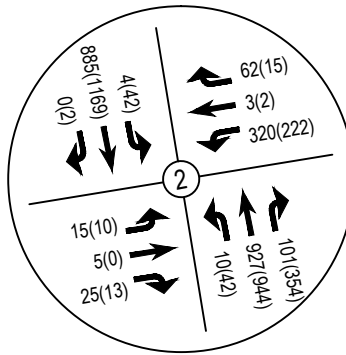
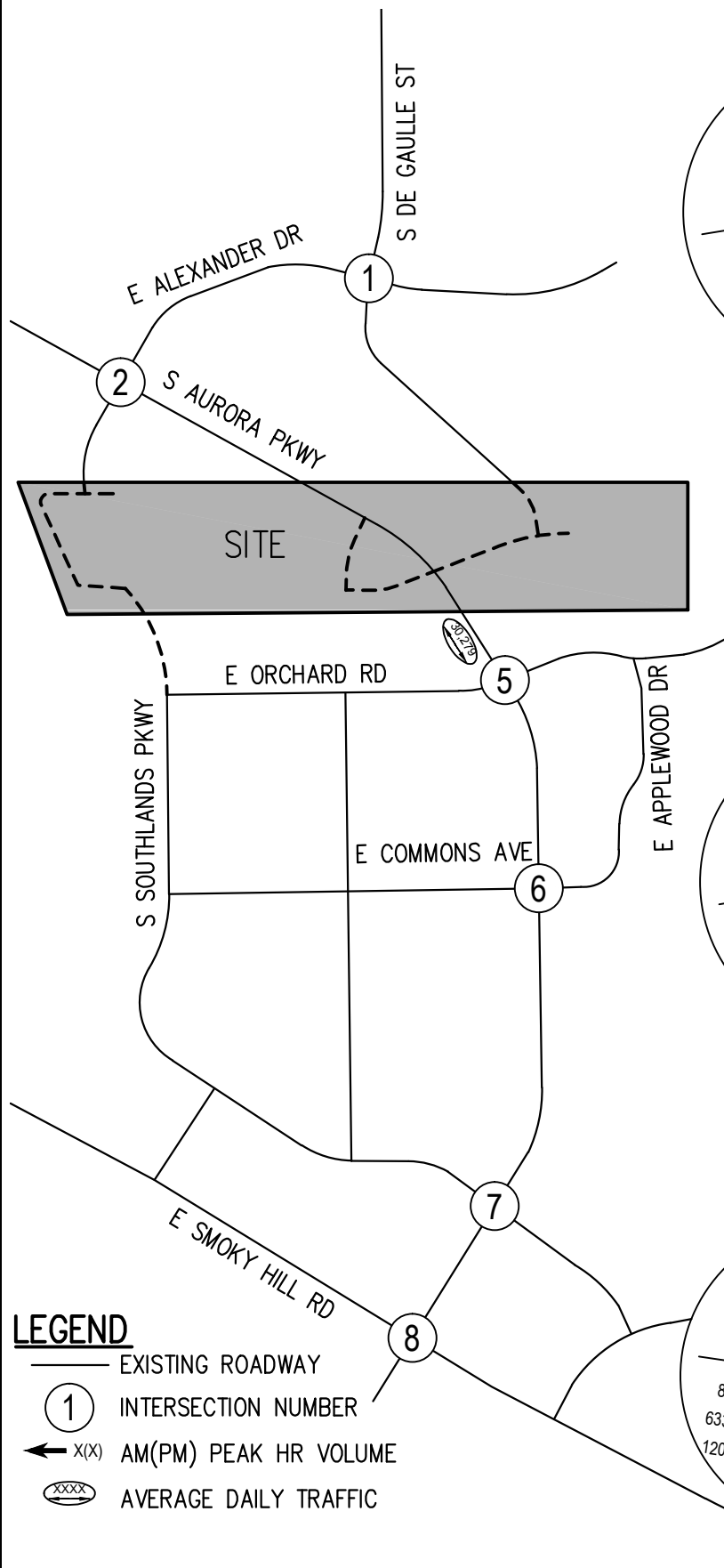
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2017 EXISTING TRAFFIC
VOLUMES

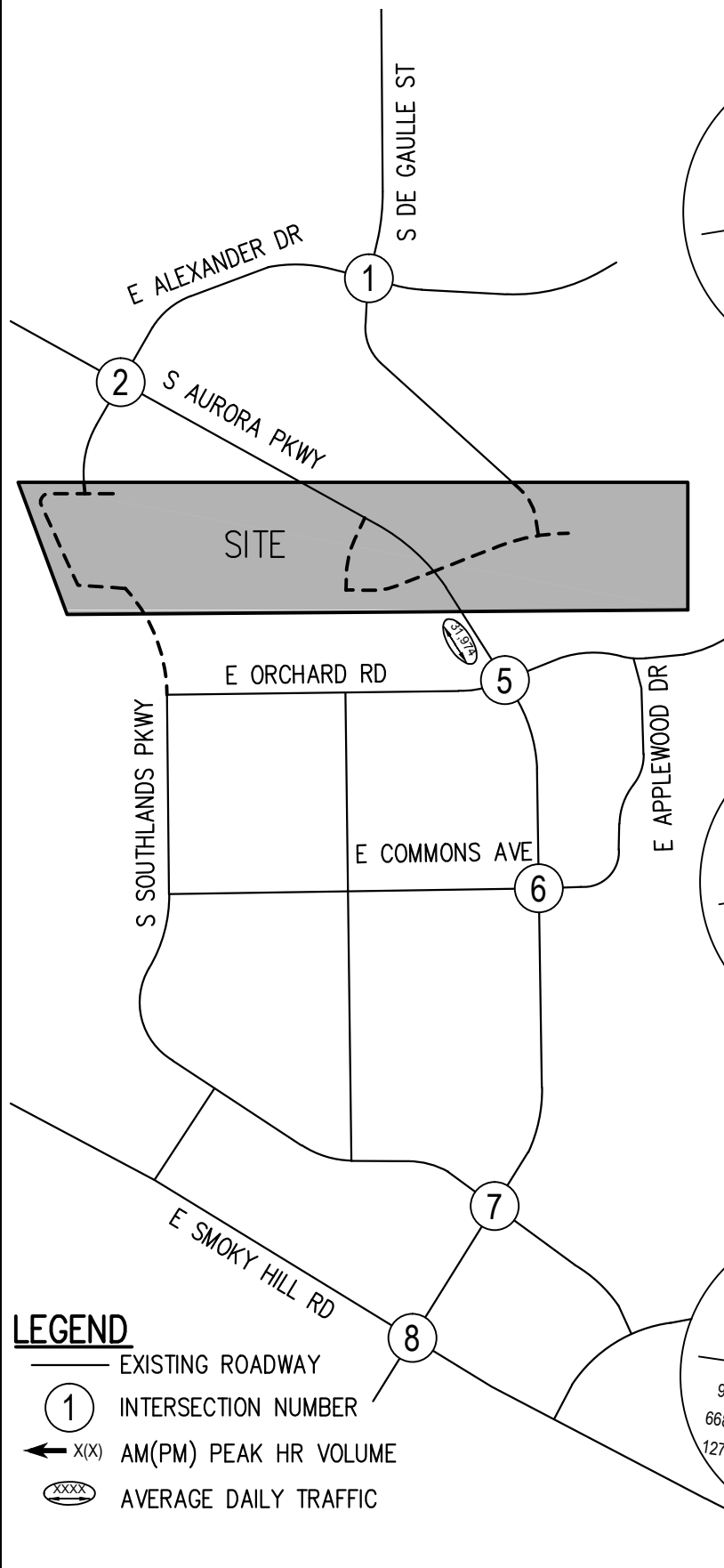
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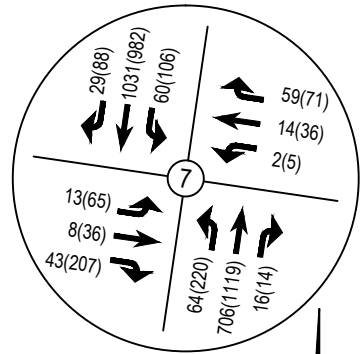
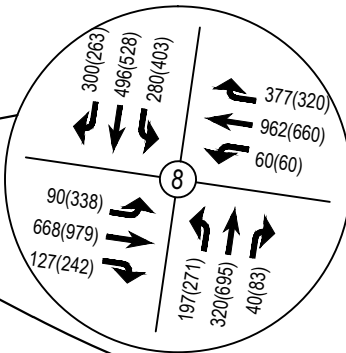
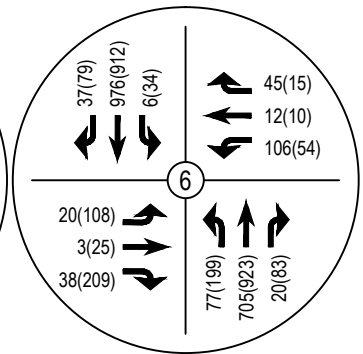
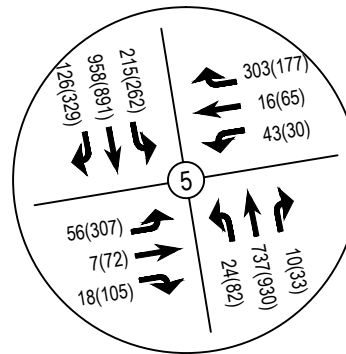
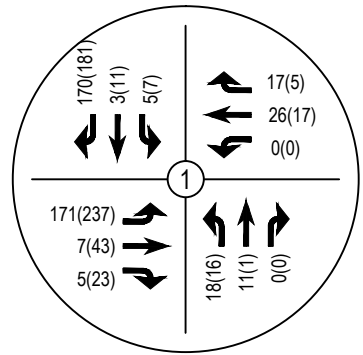
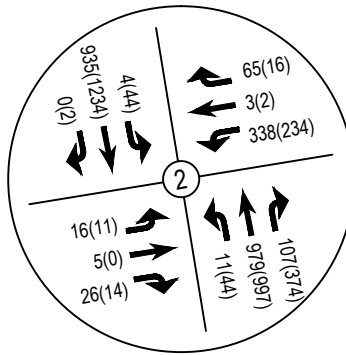
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3 OF 15



LEGEND

- EXISTING ROADWAY
- ① INTERSECTION NUMBER
- ← X(X) AM(PM) PEAK HR VOLUME
- XXXX AVERAGE DAILY TRAFFIC



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2019 BACKGROUND TRAFFIC
VOLUMES

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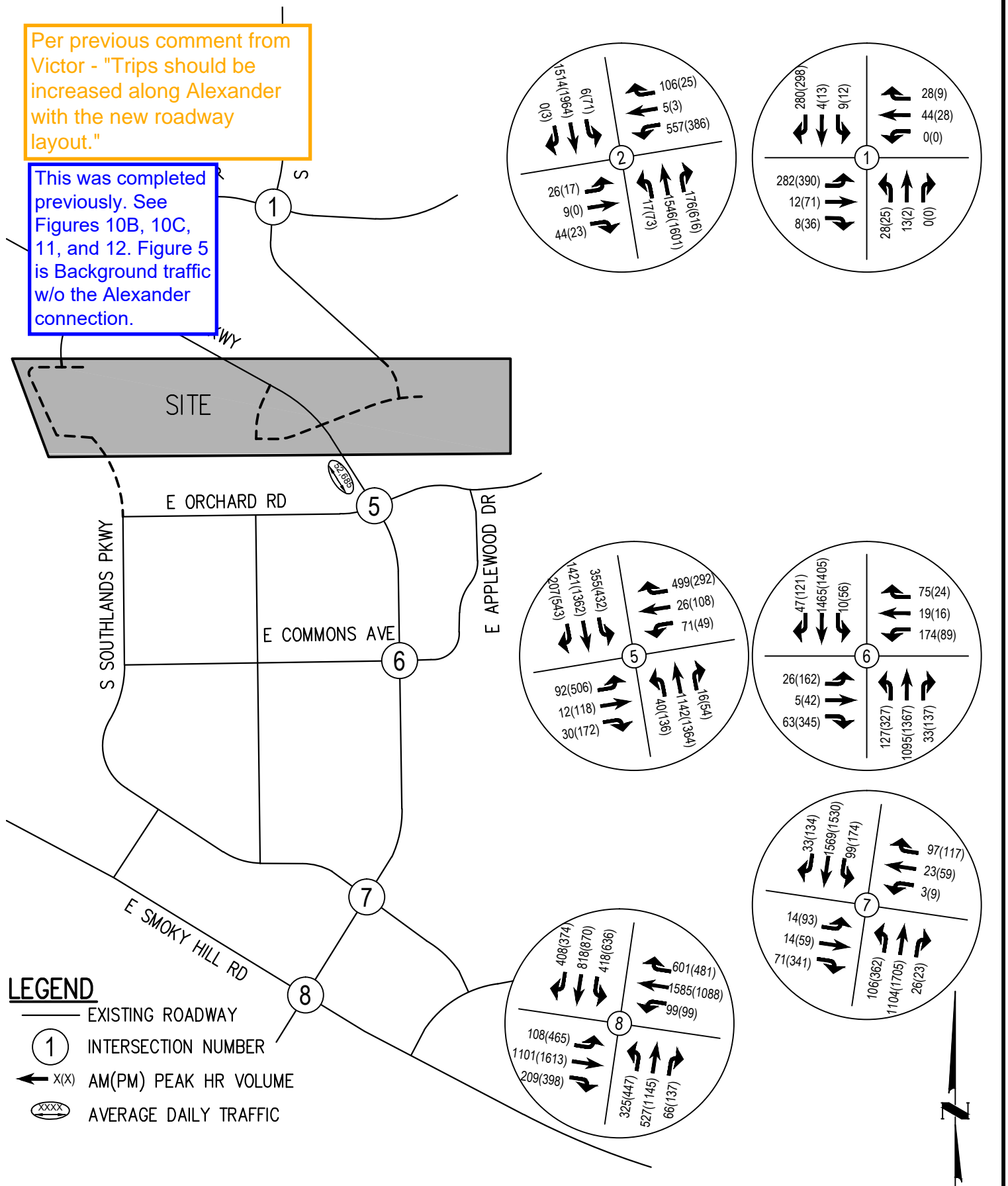
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4 OF 15

Per previous comment from Victor - "Trips should be increased along Alexander with the new roadway layout."

This was completed previously. See Figures 10B, 10C, 11, and 12. Figure 5 is Background traffic w/o the Alexander connection.



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DATE	REVISION COMMENTS

LARRY JACOBSON

POMEROY
2037 BACKGROUND TRAFFIC
VOLUMES

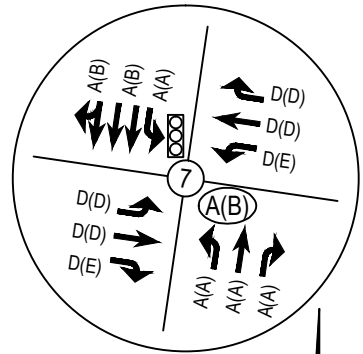
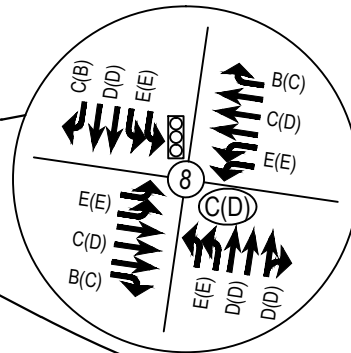
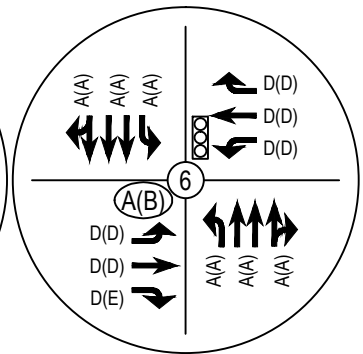
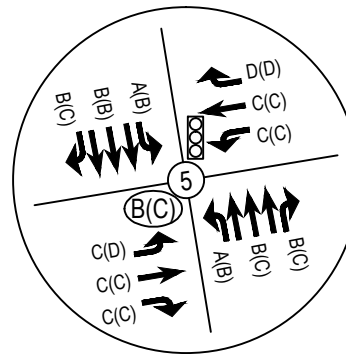
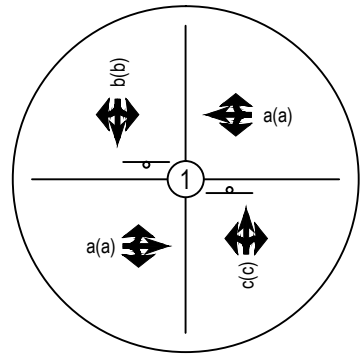
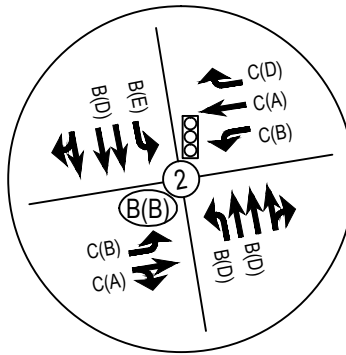
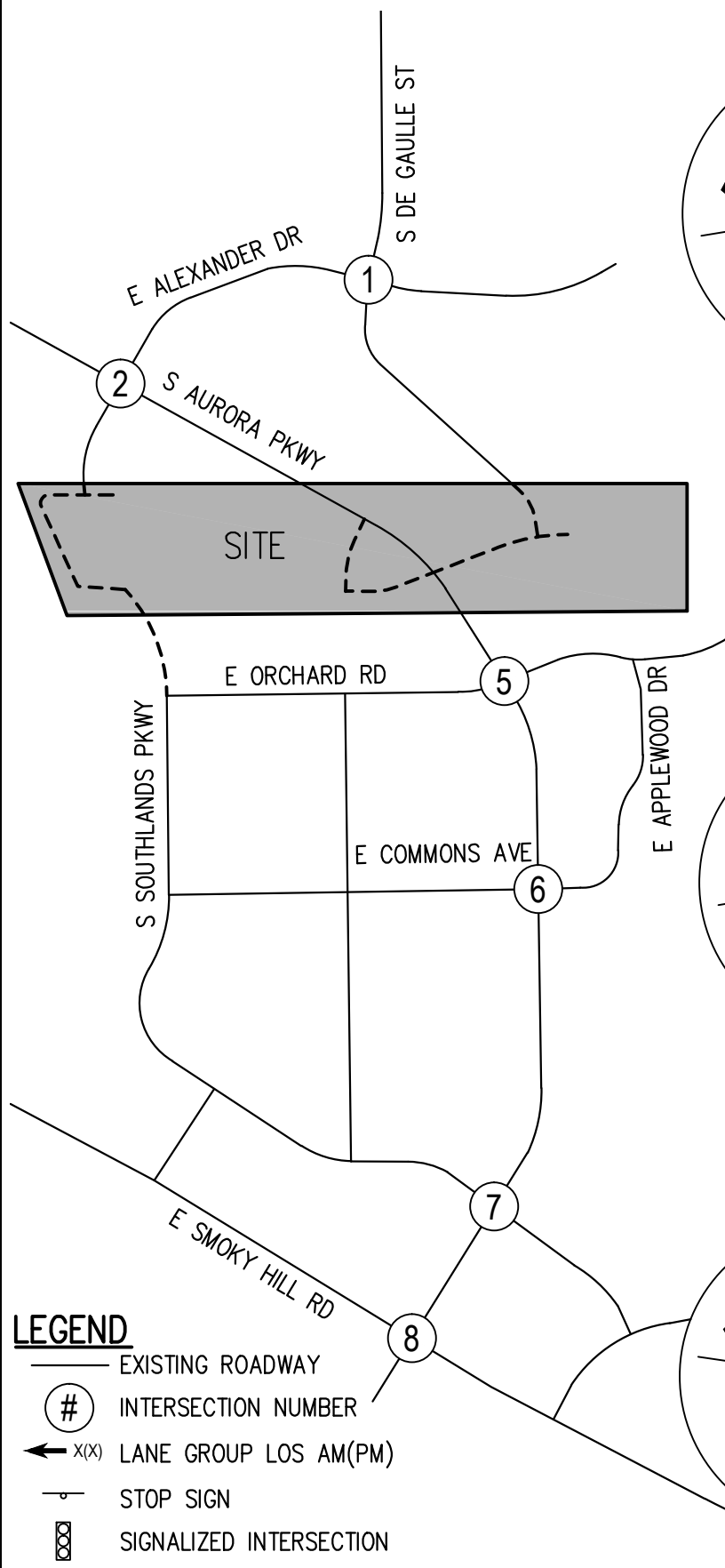
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5

5 OF 15



Plotted: TUE 07/03/18 5:08:14P By: Charles Kudlauskas Filepath: p:\170220\traffic study\1st submittal\traffic study figures\6-8 ex op.dwg Layout: 2017 ex op

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POMEROY
2017 EXISTING TRAFFIC
OPERATIONAL CONDITIONS

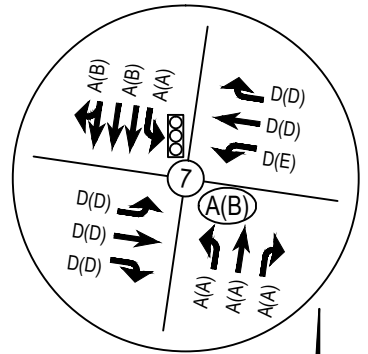
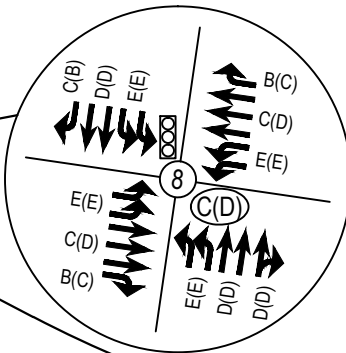
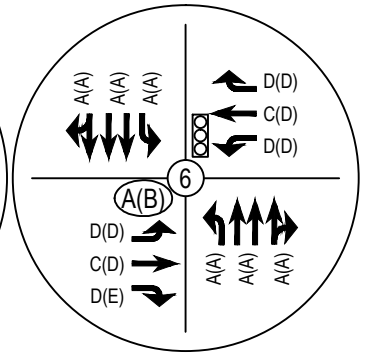
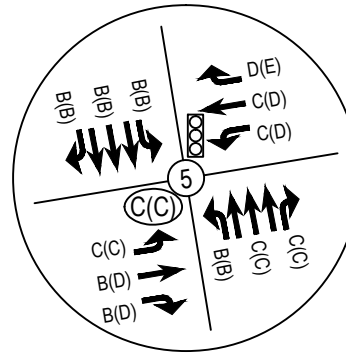
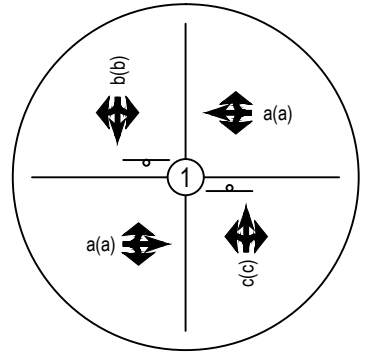
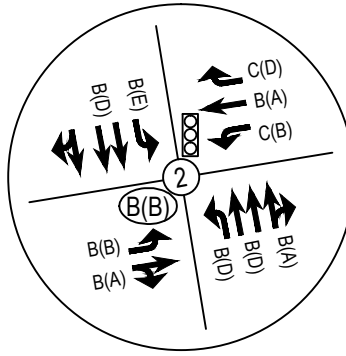
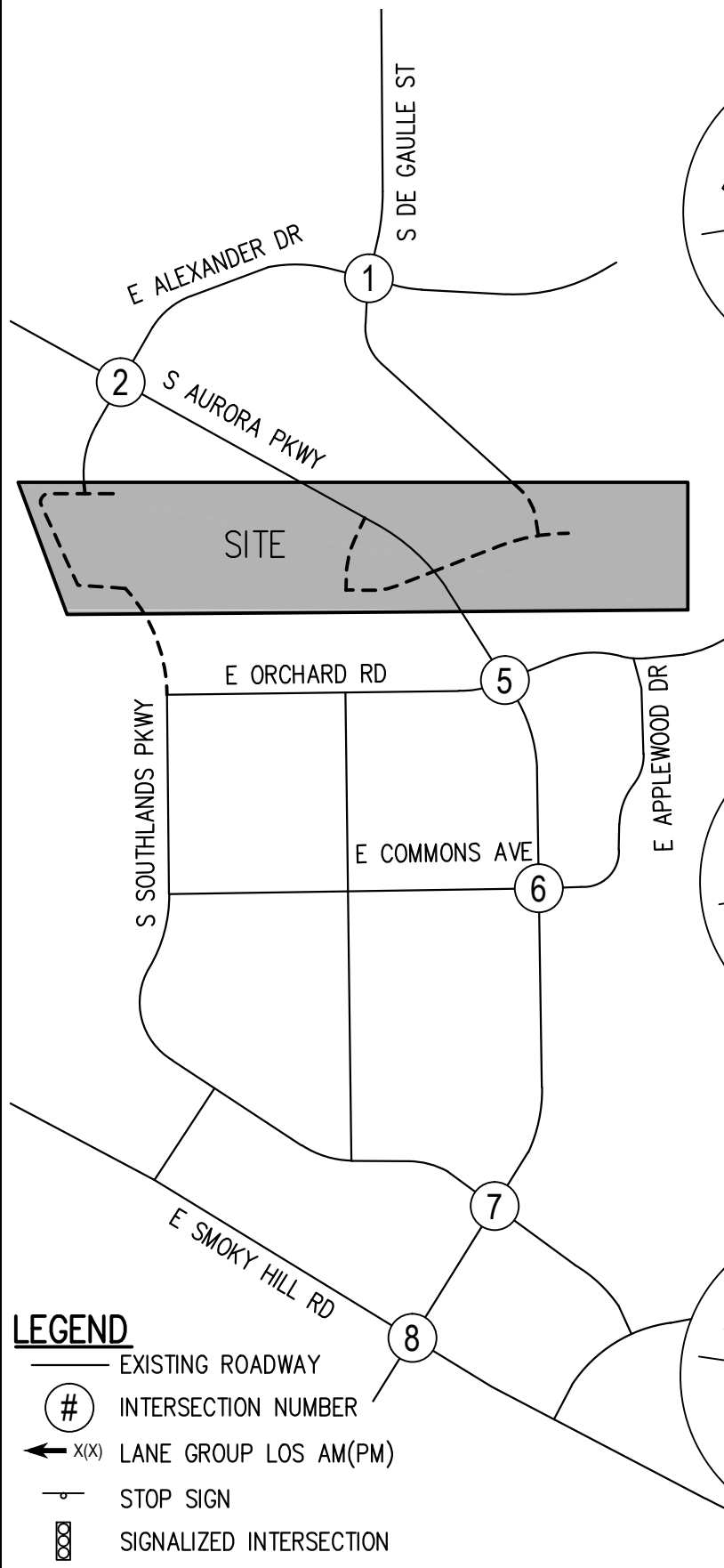
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6

6 OF 15



Plotted: TUE 07/03/18 5:08:18P By: Charles Kudlauskas Filepath: p:\170220\traffic study\1st submittal\traffic study figures\6-8 ex op.dwg Layout: 2019 back op

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ISSUE DATE: 07-29-2013	PROJECT #: 170220
DATE	REVISION COMMENTS

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POMEROY
2019 BACKGROUND TRAFFIC
OPERATIONAL CONDITIONS

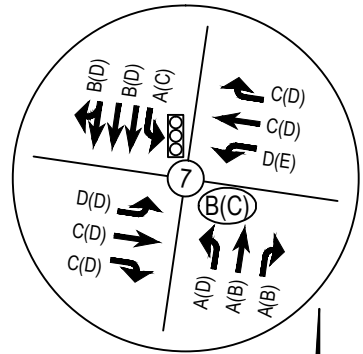
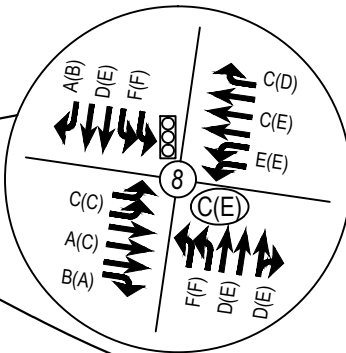
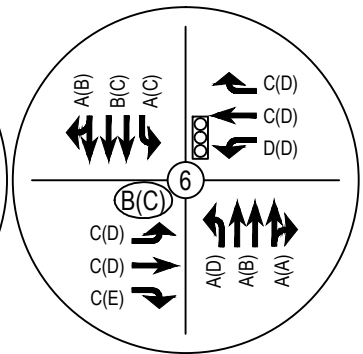
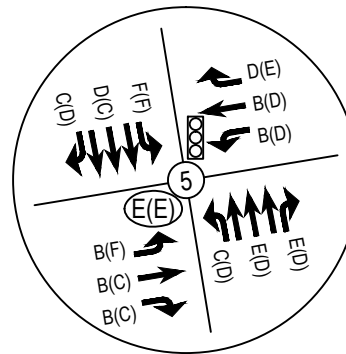
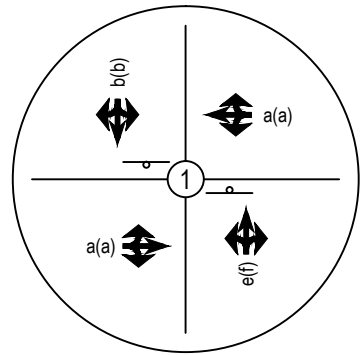
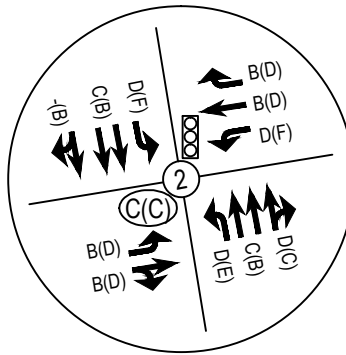
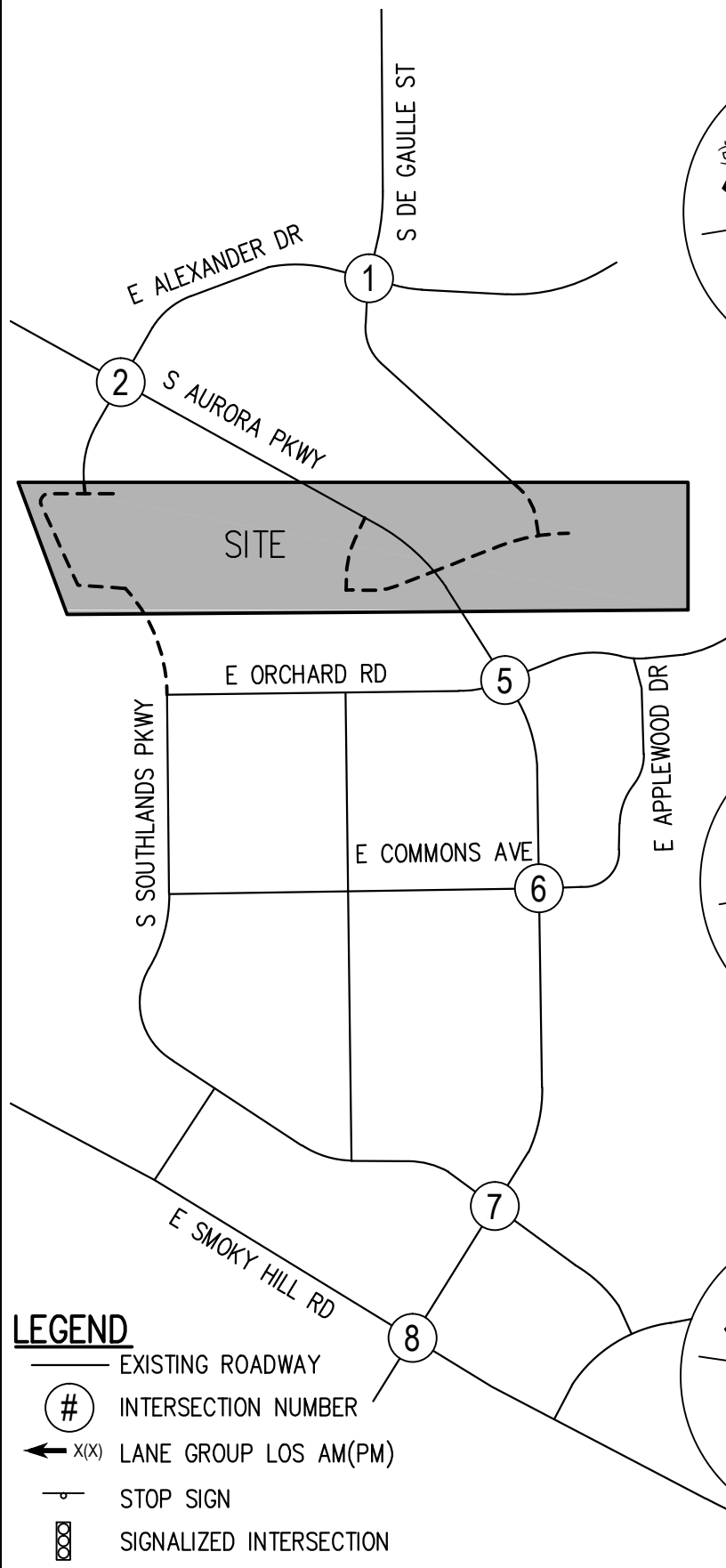
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7

7 OF 15



Plotted: TUE 07/03/18 5:08:23P By: Charles Kudlauskas Filepath: p:\170220\traffic study\1st submittal\traffic study figures\6-8 ex op.dwg Layout: 2037 back op

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POMEROY
2037 BACKGROUND TRAFFIC
OPERATIONAL CONDITIONS

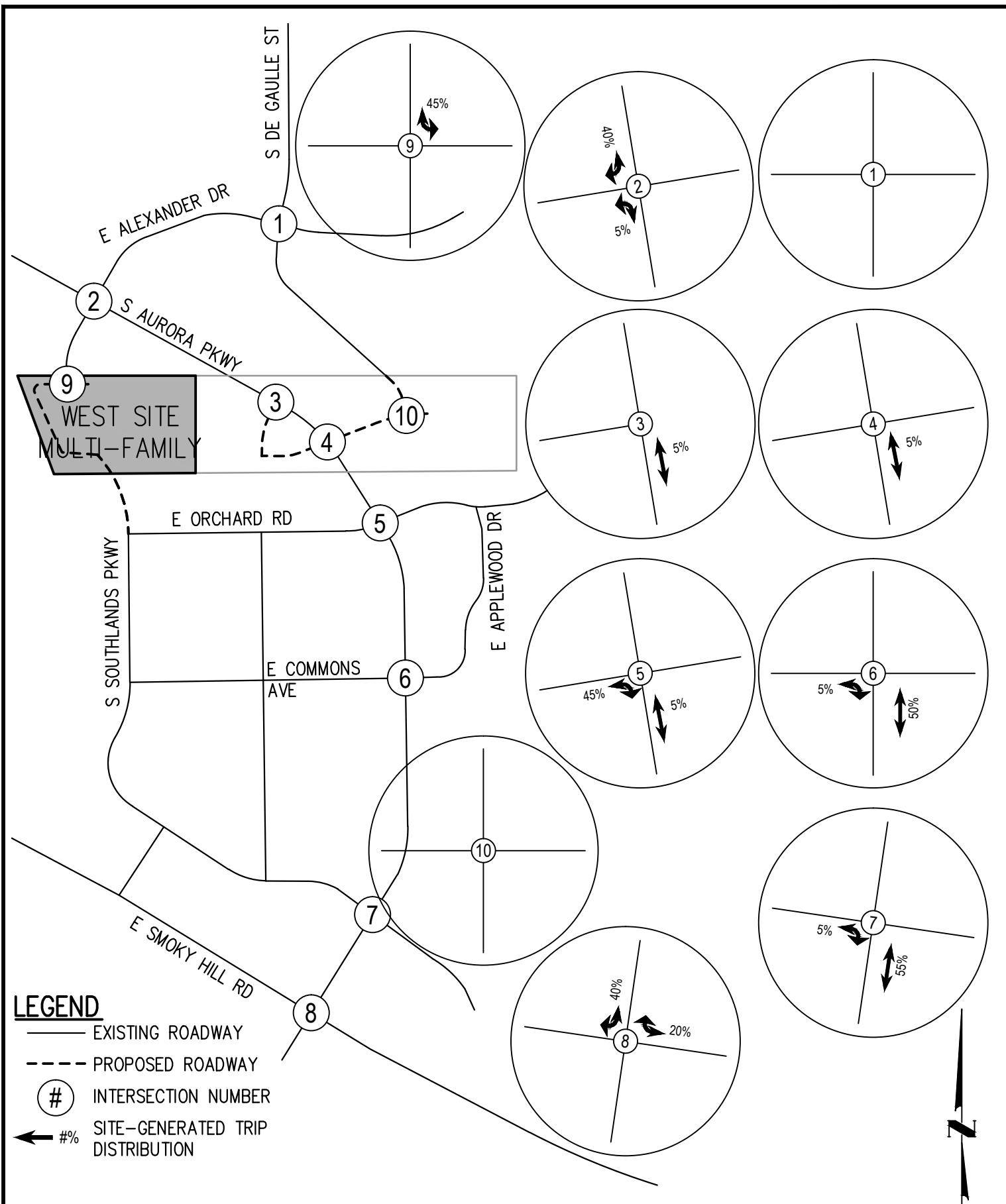
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8

8 OF 15



Plotted: TUE 07/03/18 5:08:33P By: Charles Kudlauskas Filepath: p:\170220\traffic study\1st submittal\traffic study figures\9-10 site gen.dwg Layout: 9a

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DATE		REVISION COMMENTS	

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POMEROY
SITE-GENERATED TRIP
DISTRIBUTION
WEST MULTI-FAMILY

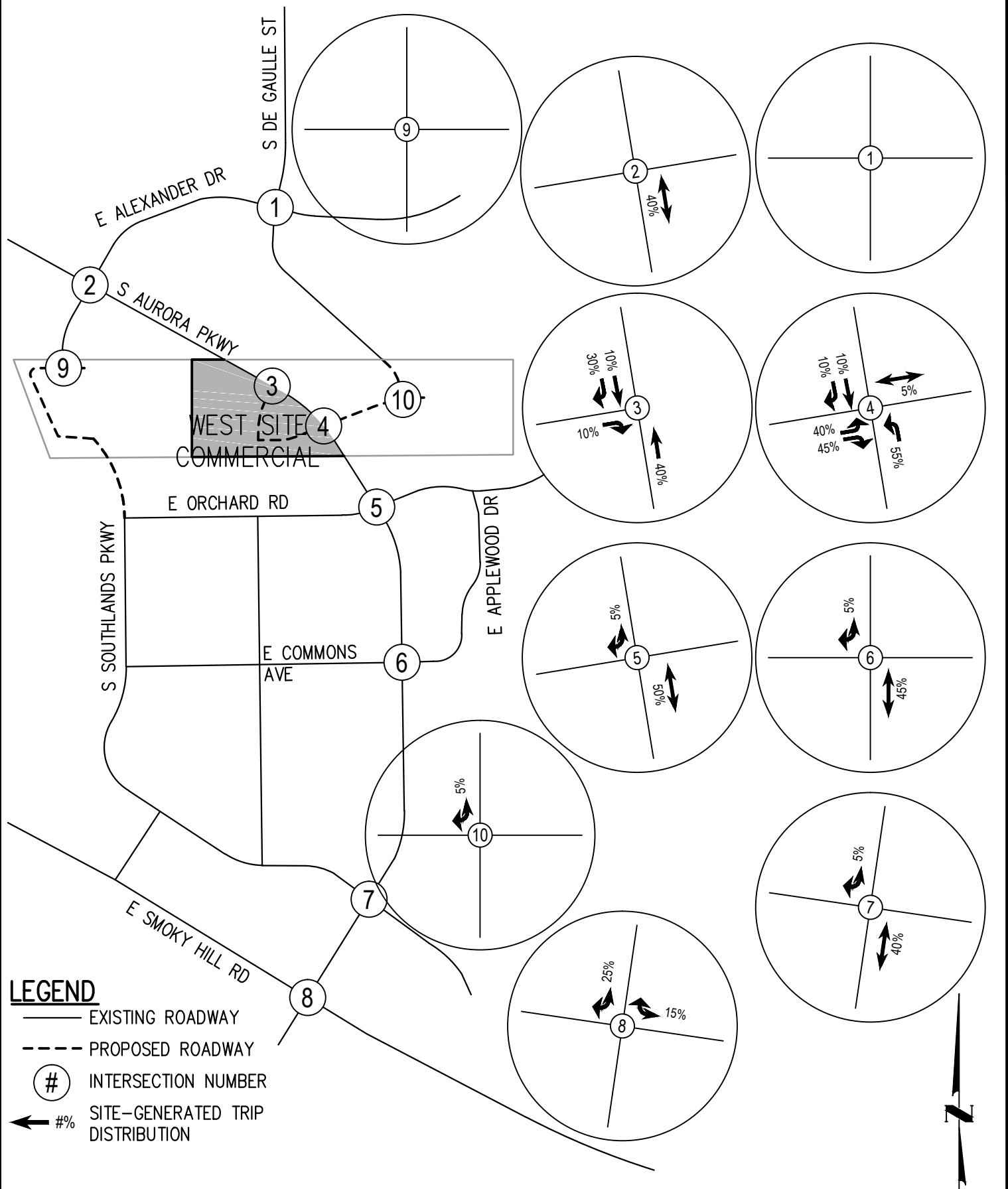
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9A

9A OF 15



Plotted: TUE 07/03/18 5:08:39P By: Charles Kudlauskas Filepath: p:\170220\traffic study\1st submittal\traffic study figures\9-10 site gen.dwg Layout: 9b site-generated trip distribution

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ISSUE DATE: 07-29-2013	PROJECT #: 170220
DATE	REVISION COMMENTS

LARRY JACOBSON

POMEROY
SITE-GENERATED TRIP
DISTRIBUTION
WEST COMMERCIAL

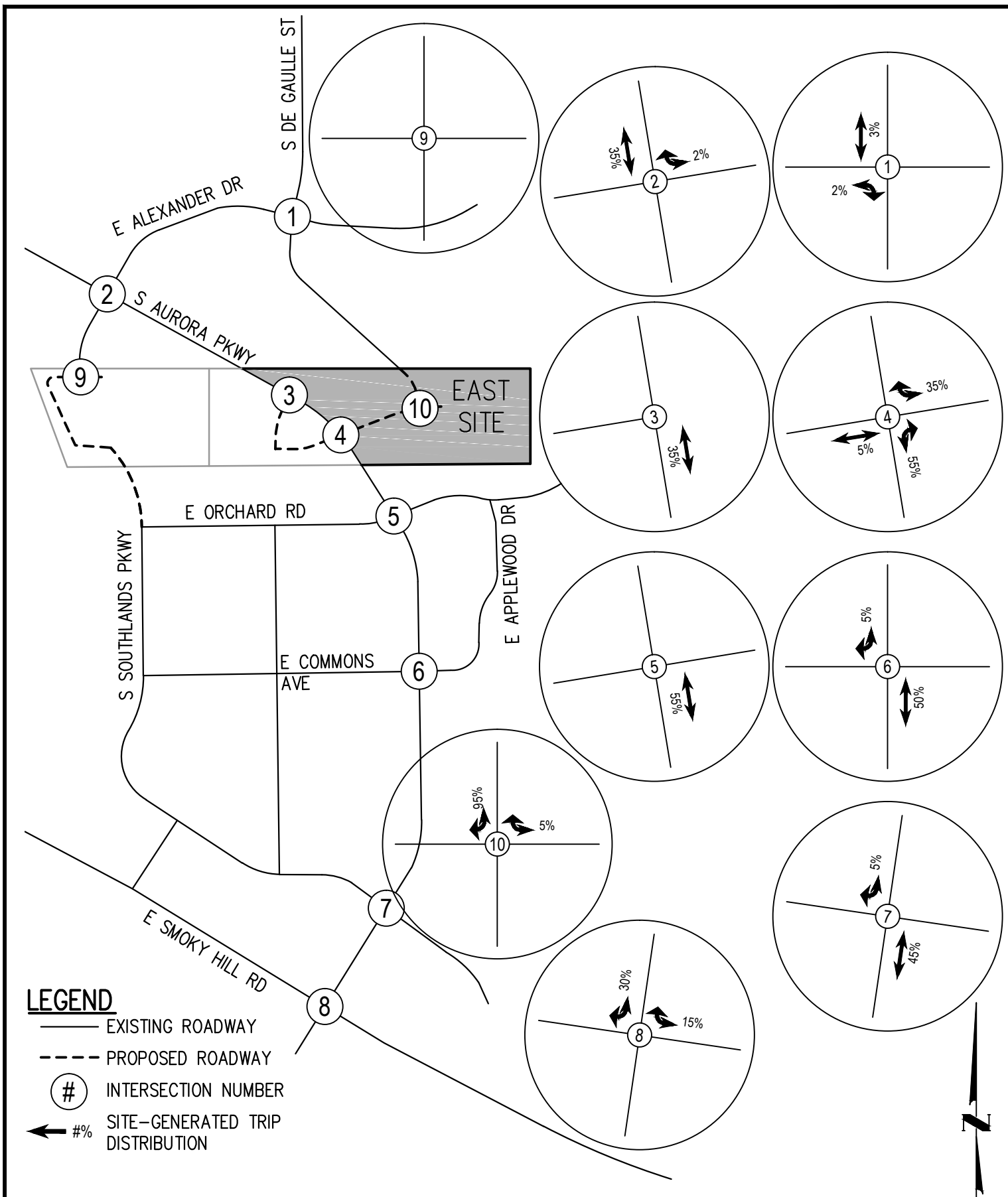
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9B

9B OF 15



Plotted: TUE 07/03/18 5:08:43P By: Charles Kudlauskas Filepath: p:\170220\traffic study\1st submittal\traffic study figures\9-10 site gen.dwg Layout: 9c site-generated trip distribution

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ISSUE DATE: 07-29-2013		PROJECT #: 170220	
DATE		REVISION COMMENTS	

LARRY JACOBSON

POMEROY
SITE-GENERATED TRIP
DISTRIBUTION
EAST SITE

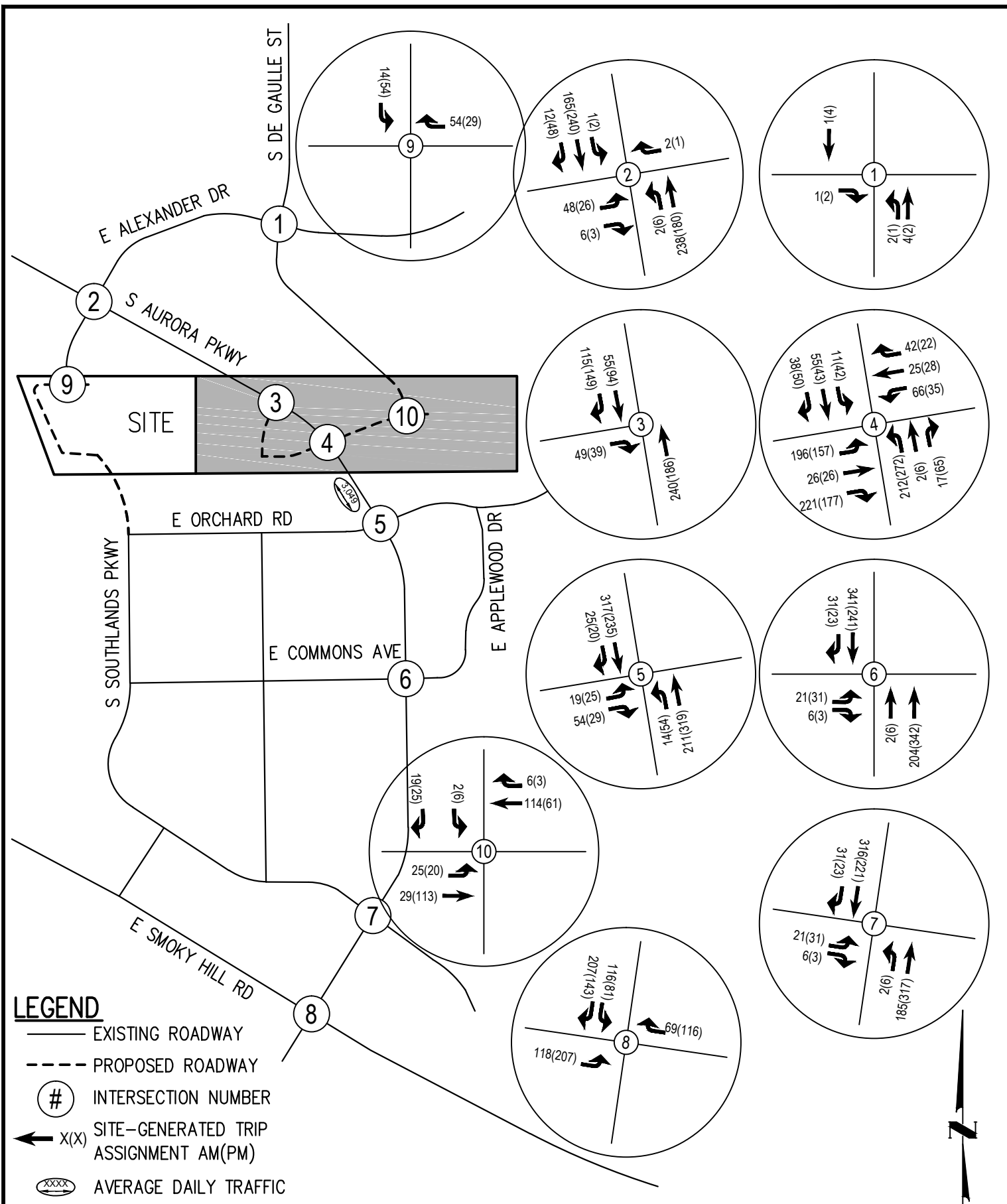
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9C

9C OF 15



Plotted: TUE 07/03/18 5:08:49P By: Charles Kudlauskas Filepath: p:\170220\traffic study\1st submittal\traffic study figures\9-10 site gen.dwg Layout: 10a site-generated trip assignment

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ISSUE DATE: 07-29-2013	PROJECT #: 170220
DATE	REVISION COMMENTS

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POMEROY
SITE-GENERATED TRIP
ASSIGNMENT

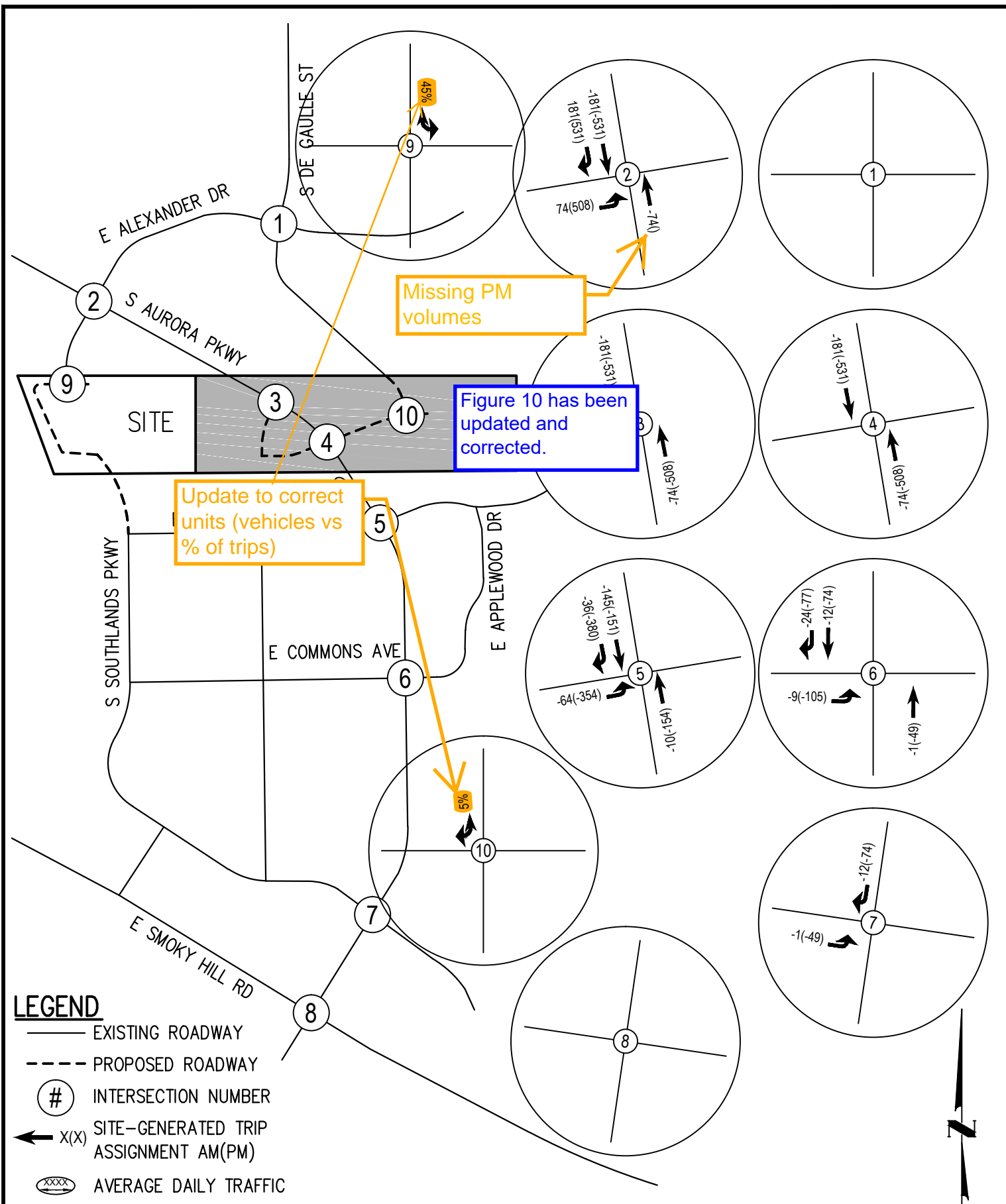
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10A

10A OF 15



Plotted: TUE 07/03/18 5:08:54P By: Charles Kudlauskas Filepath: p:\170220\traffic study\1st submittal\traffic study figures\9-10 site gen.dwg Layout: 10b 2037 diverted traffic due to alexander connection CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.

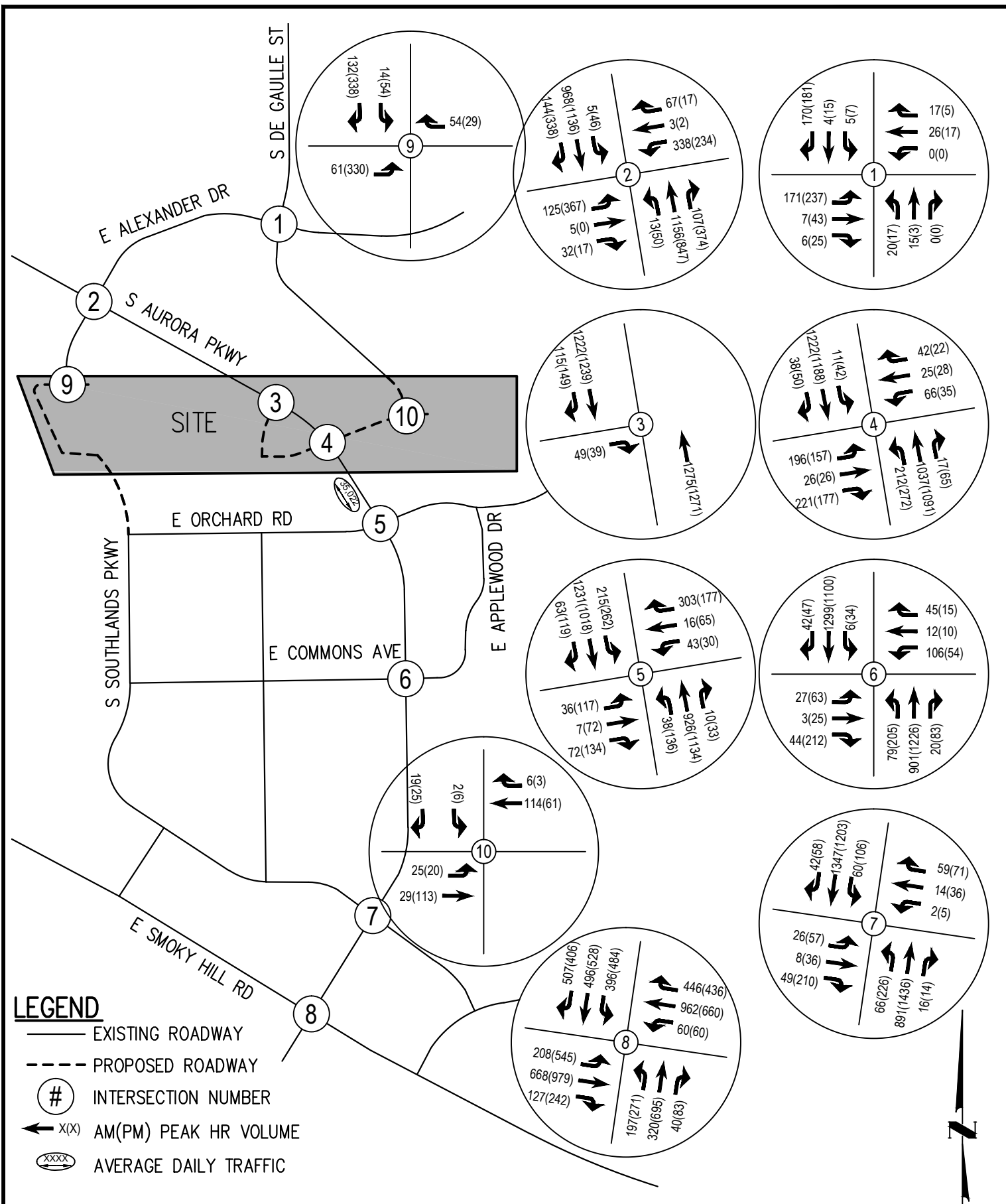
ISSUE DATE: 07-29-2013	PROJECT #: 170220
DATE	REVISION COMMENTS

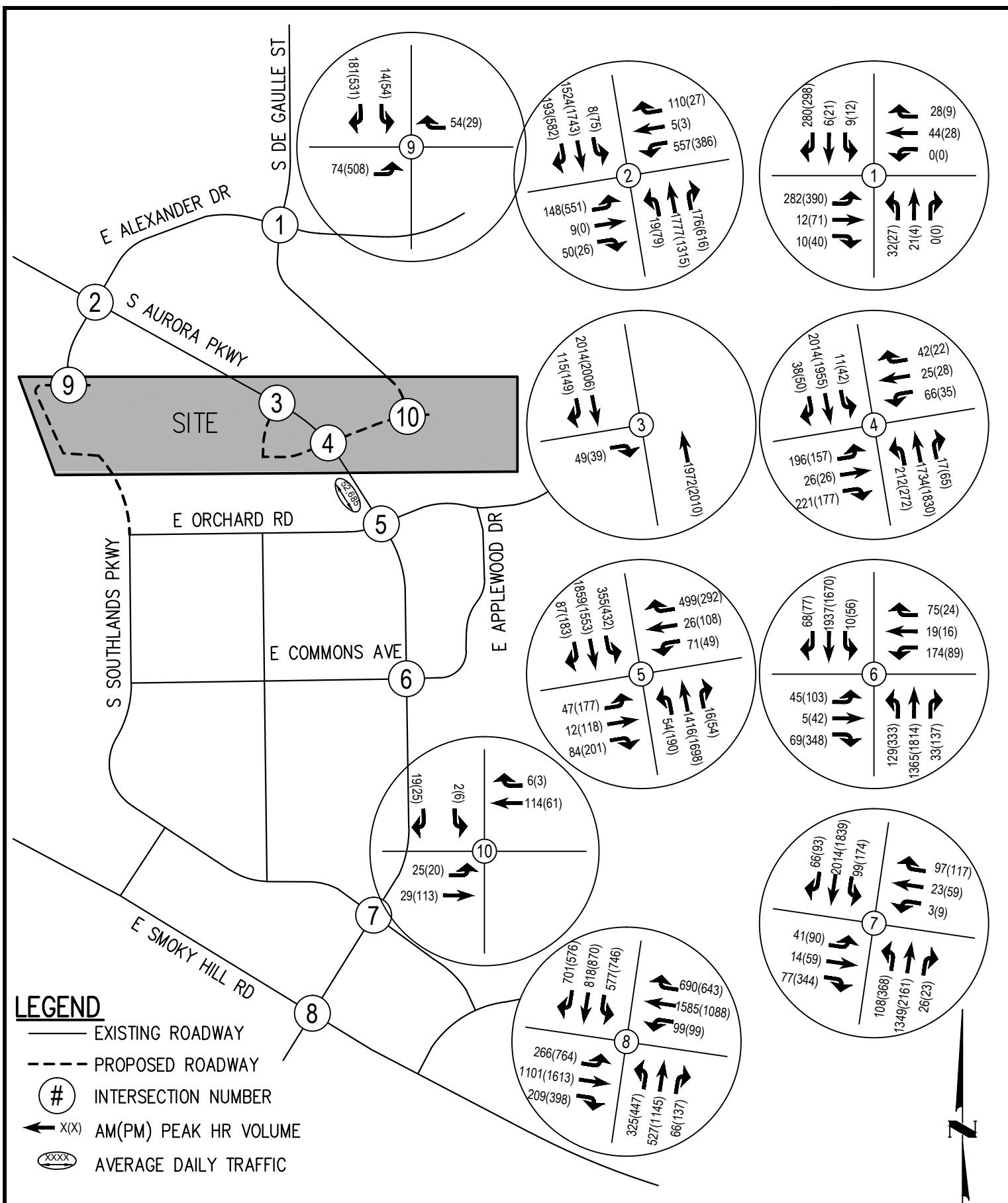
LARRY JACOBSON

POMEROY
2037 DIVERTED TRAFFIC DUE
TO ALEXANDER CONNECTION

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10B
10B OF 15





Plotted: TUE 07/03/18 5:09:09P By: Charles Kudlauskas Filepath: p:\170220\traffic study\1st submittal\traffic study figures\11-12 tot vol.dwg Layout: 2037 tot vol

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ISSUE DATE: 07-29-2013	PROJECT #: 170220
DATE	REVISION COMMENTS

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POMEROY
2037 TOTAL TRAFFIC VOLUMES

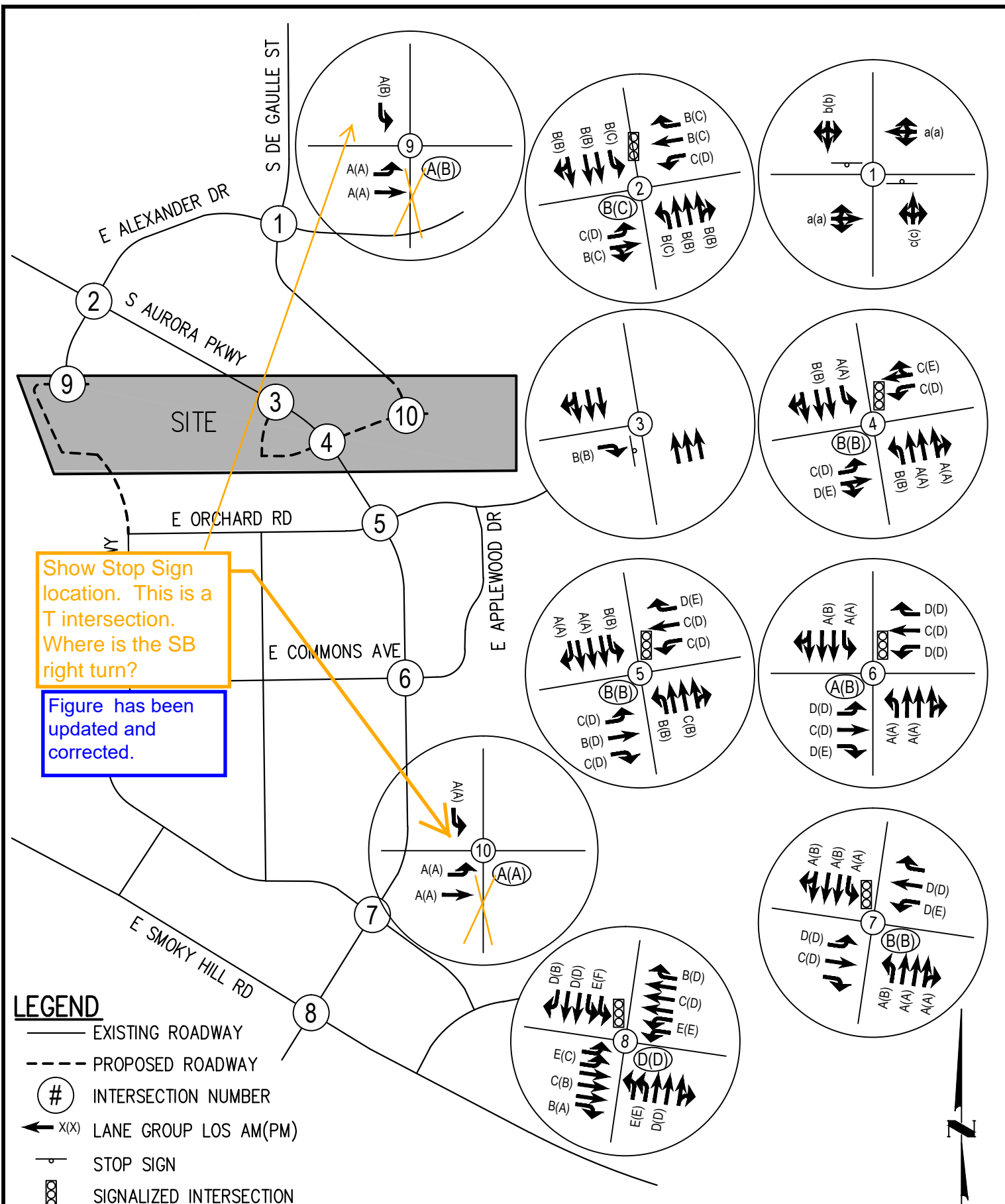
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SHEET NO.

12

12 OF 15



Show Stop Sign location. This is a T intersection. Where is the SB right turn?

Figure has been updated and corrected.

Plotted: TUE 07/03/18 5:09:17P By: Charles Kudlauskas Filepath: p:\170220\traffic study\1st submittal\traffic study figures\13-14 tot op dwg Layout: 2019 tot op

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ISSUE DATE: 07-29-2013	PROJECT #: 170220
DATE	REVISION COMMENTS

LARRY JACOBSON

POMEROY
2019 TOTAL TRAFFIC
OPERATIONAL CONDITIONS

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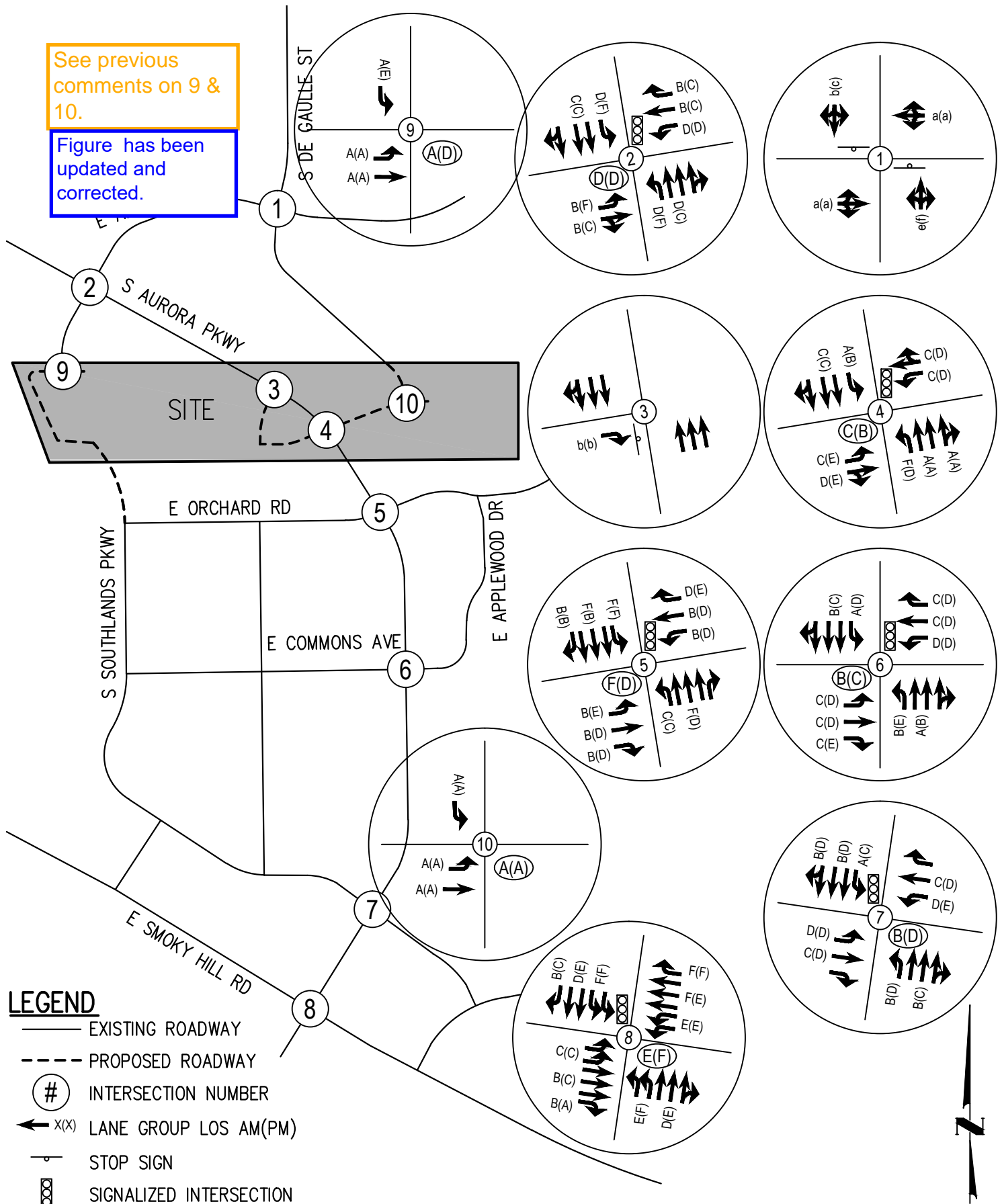
SHEET NO.

13

13 OF 15

See previous comments on 9 & 10.

Figure has been updated and corrected.



Plotted: TUE 07/03/18 5:09:19P By: Charles Kudlauskas Filepath: p:\170220\traffic study\1st submittal\traffic study figures\13-14 tot op.dwg Layout: 2037 tot op

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ISSUE DATE: 07-29-2013	PROJECT #: 170220
DATE	REVISION COMMENTS

LARRY JACOBSON

POMEROY
2037 TOTAL TRAFFIC
OPERATIONAL CONDITIONS

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14

14 OF 15

APPENDIX “A”

**2017 EXISTING
TRAFFIC VOLUME COUNTS**

Page 1

1

Comb.	0	30123	30573	30142	0	30277	0
+	0	30123	30573	30142	0	30277	0

ADT	ADT 30,279	AADT 30,279
-----	------------	-------------



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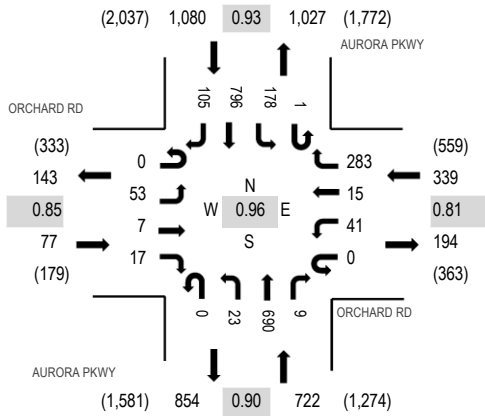
Location: 1 AURORA PKWY & ORCHARD RD AM

Date and Start Time: Tuesday, April 18, 2017

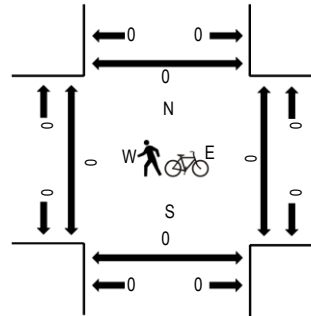
Peak Hour: 07:00 AM - 08:00 AM

Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	ORCHARD RD Eastbound				ORCHARD RD Westbound				AURORA PKWY Northbound				AURORA PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	17	7	6	0	11	4	89	0	8	189	3	0	47	176	23	580	2,218	0	0	0	0
7:15 AM	0	8	0	1	0	9	4	65	0	0	178	1	0	40	217	13	536	2,029	0	0	0	0
7:30 AM	0	19	0	6	0	15	1	66	0	4	155	2	1	48	208	34	559	1,902	0	0	0	0
7:45 AM	0	9	0	4	0	6	6	63	0	11	168	3	0	43	195	35	543	1,864	0	0	0	0
8:00 AM	0	13	1	6	0	0	9	45	0	4	114	2	0	33	147	17	391	1,831	0	0	2	0
8:15 AM	0	20	6	4	0	8	4	41	0	6	111	0	0	30	155	24	409		0	0	0	0
8:30 AM	0	17	5	5	0	4	11	39	0	8	162	5	0	40	186	39	521		0	0	1	0
8:45 AM	0	17	2	6	0	5	12	42	0	10	124	6	0	39	201	46	510		0	0	0	0
Count Total	0	120	21	38	0	58	51	450	0	51	1,201	22	1	320	1,485	231	4,049		0	0	3	0
Peak Hour	0	53	7	17	0	41	15	283	0	23	690	9	1	178	796	105	2,218		0	0	0	0



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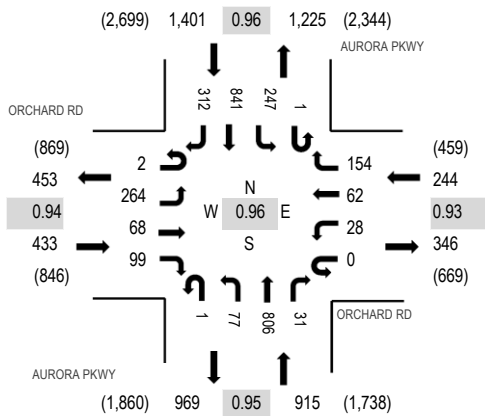
Location: 1 AURORA PKWY & ORCHARD RD PM

Date and Start Time: Tuesday, April 18, 2017

Peak Hour: 04:45 PM - 05:45 PM

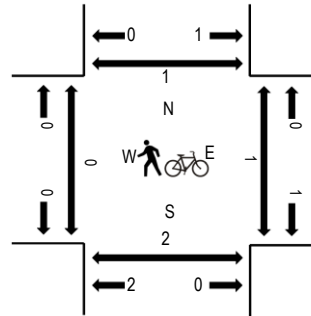
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	ORCHARD RD Eastbound				ORCHARD RD Westbound				AURORA PKWY Northbound				AURORA PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	68	8	28	0	1	6	32	0	14	170	12	0	52	184	70	645	2,774	0	0	0	0
4:15 PM	1	62	10	28	0	10	18	39	0	23	177	8	0	48	203	73	700	2,852	0	0	0	0
4:30 PM	0	62	20	22	0	7	11	45	1	15	181	6	0	75	200	63	708	2,921	0	0	1	0
4:45 PM	0	68	17	25	0	12	17	40	0	24	167	8	0	54	208	81	721	2,993	0	0	2	1
5:00 PM	0	74	13	20	0	5	13	41	1	14	199	13	0	62	191	77	723	2,968	0	1	0	0
5:15 PM	0	61	18	22	0	6	20	36	0	22	216	5	0	58	224	81	769		0	0	0	0
5:30 PM	2	61	20	32	0	5	12	37	0	17	224	5	1	73	218	73	780		0	0	0	0
5:45 PM	0	74	12	18	0	8	13	25	2	21	184	9	0	63	179	88	696		0	0	0	0
Count Total	3	530	118	195	0	54	110	295	4	150	1,518	66	1	485	1,607	606	5,742		0	1	3	1
Peak Hour	2	264	68	99	0	28	62	154	1	77	806	31	1	247	841	312	2,993		0	1	2	1



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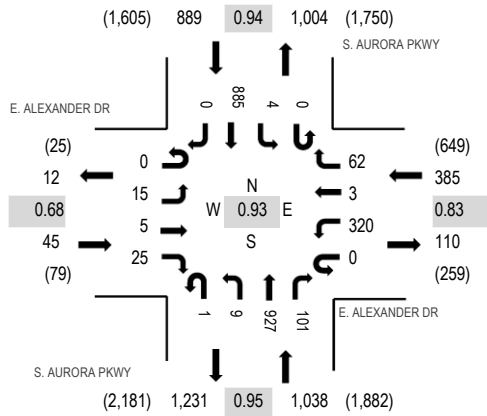
Location: 1 S. AURORA PKWY & E. ALEXANDER DR AM

Date and Start Time: Wednesday, April 26, 2017

Peak Hour: 07:00 AM - 08:00 AM

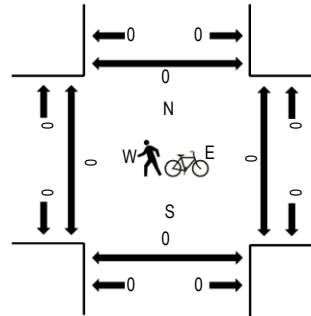
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E. ALEXANDER DR Eastbound				E. ALEXANDER DR Westbound				S. AURORA PKWY Northbound				S. AURORA PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	3	2	3	0	85	0	25	1	0	224	12	0	2	206	0	563	2,357	0	0	0	0
7:15 AM	0	2	1	6	0	101	0	15	0	2	248	21	0	1	235	0	632	2,256	0	0	0	0
7:30 AM	0	4	1	12	0	82	3	11	0	4	234	35	0	1	220	0	607	2,058	0	0	0	0
7:45 AM	0	6	1	4	0	52	0	11	0	3	221	33	0	0	224	0	555	1,890	0	0	0	0
8:00 AM	0	4	0	4	0	48	0	7	0	4	184	34	0	4	172	1	462	1,858	0	0	0	0
8:15 AM	0	3	0	7	0	50	1	9	0	2	169	28	0	3	162	0	434		0	0	0	1
8:30 AM	0	2	3	3	0	47	0	9	0	3	177	37	0	4	154	0	439		0	0	0	0
8:45 AM	0	5	1	2	0	87	1	5	0	1	172	33	0	2	214	0	523		0	0	0	0
Count Total	0	29	9	41	0	552	5	92	1	19	1,629	233	0	17	1,587	1	4,215		0	0	0	1
Peak Hour	0	15	5	25	0	320	3	62	1	9	927	101	0	4	885	0	2,357		0	0	0	0



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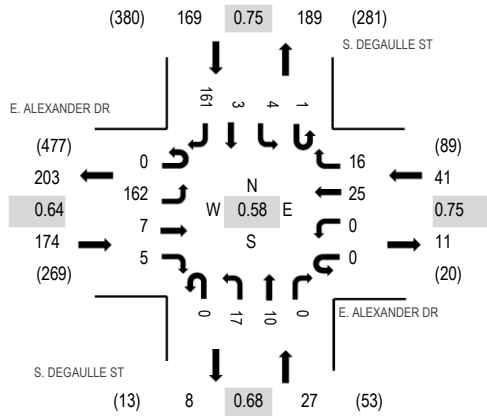
Location: 2 S. DEGAULLE ST & E. ALEXANDER DR AM

Date and Start Time: Wednesday, April 26, 2017

Peak Hour: 08:00 AM - 09:00 AM

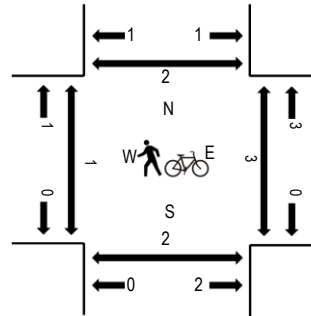
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E. ALEXANDER DR Eastbound				E. ALEXANDER DR Westbound				S. DEGAULLE ST Northbound				S. DEGAULLE ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	15	3	0	0	0	9	2	0	6	3	0	0	0	0	49	87	380	0	0	0	0
7:15 AM	0	11	1	1	0	0	12	0	0	7	0	0	0	1	0	69	102	378	0	0	0	4
7:30 AM	0	31	4	2	0	0	12	4	0	4	0	0	0	0	0	54	111	336	0	0	0	4
7:45 AM	0	25	0	2	0	0	8	1	0	6	0	0	0	0	0	38	80	315	0	0	0	0
8:00 AM	0	37	4	2	0	0	10	1	0	3	0	0	0	0	0	28	85	411	0	0	1	0
8:15 AM	0	21	1	1	0	0	7	0	0	4	1	0	0	0	0	25	60		0	0	0	0
8:30 AM	0	39	0	1	0	0	3	5	0	7	2	0	1	1	1	30	90		1	2	1	1
8:45 AM	0	65	2	1	0	0	5	10	0	3	7	0	0	3	2	78	176		0	1	0	1
Count Total	0	244	15	10	0	0	66	23	0	40	13	0	1	5	3	371	791		1	3	2	10
Peak Hour	0	162	7	5	0	0	25	16	0	17	10	0	1	4	3	161	411		1	3	2	2



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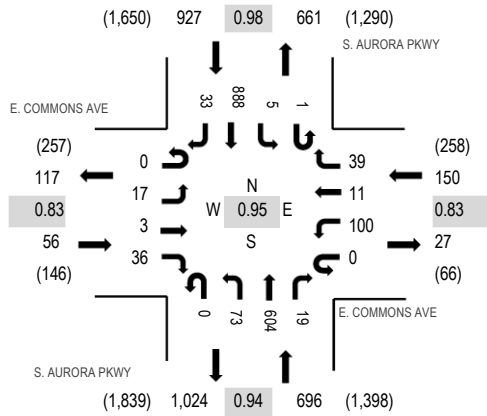
Location: 3 S. AURORA PKWY & E. COMMONS AVE AM

Date and Start Time: Wednesday, April 26, 2017

Peak Hour: 07:00 AM - 08:00 AM

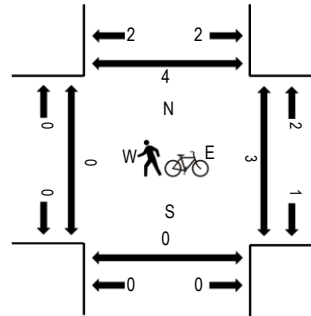
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E. COMMONS AVE Eastbound				E. COMMONS AVE Westbound				S. AURORA PKWY Northbound				S. AURORA PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	5	1	8	0	29	1	11	0	17	130	4	1	1	228	7	443	1,829	0	1	0	1
7:15 AM	0	0	0	11	0	24	1	13	0	10	151	2	0	1	231	2	446	1,773	0	1	0	0
7:30 AM	0	3	1	10	0	30	7	8	0	20	165	5	0	1	221	11	482	1,704	0	1	0	2
7:45 AM	0	9	1	7	0	17	2	7	0	26	158	8	0	2	208	13	458	1,636	0	0	0	1
8:00 AM	0	3	2	17	0	18	3	7	0	19	154	6	0	2	151	5	387	1,623	0	0	0	1
8:15 AM	0	3	0	14	0	15	3	4	0	25	130	4	0	4	164	11	377		0	0	0	0
8:30 AM	0	8	1	18	0	24	2	8	1	22	161	7	0	0	153	9	414		0	1	1	0
8:45 AM	0	8	3	13	0	16	2	6	0	28	137	8	0	2	211	11	445		0	0	0	1
Count Total	0	39	9	98	0	173	21	64	1	167	1,186	44	1	13	1,567	69	3,452		0	4	1	6
Peak Hour	0	17	3	36	0	100	11	39	0	73	604	19	1	5	888	33	1,829		0	3	0	4



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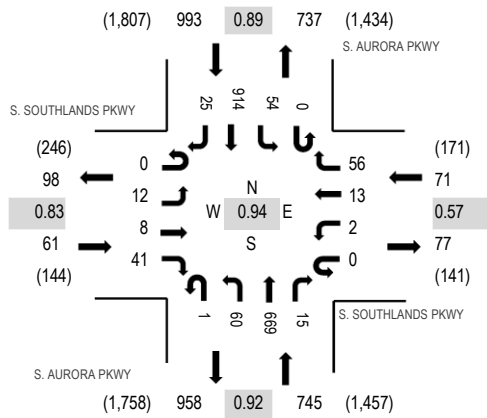
Location: 4 S. AURORA PKWY & S. SOUTHLANDS PKWY AM

Date and Start Time: Wednesday, April 26, 2017

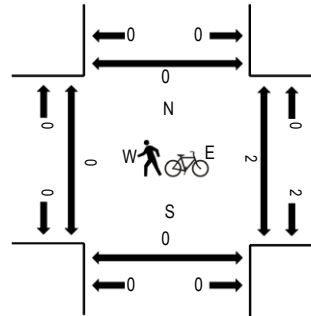
Peak Hour: 07:00 AM - 08:00 AM

Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	S. SOUTHLANDS PKWY Eastbound				S. SOUTHLANDS PKWY Westbound				S. AURORA PKWY Northbound				S. AURORA PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	3	0	6	0	1	2	17	0	11	148	3	0	15	230	3	439	1,870	0	1	0	0
7:15 AM	0	1	1	11	0	0	2	15	1	18	166	3	0	19	253	7	497	1,811	0	0	0	0
7:30 AM	0	1	5	11	0	1	4	9	0	17	181	4	0	8	250	3	494	1,736	0	1	0	0
7:45 AM	0	7	2	13	0	0	5	15	0	14	174	5	0	12	181	12	440	1,652	0	0	0	0
8:00 AM	0	8	3	10	0	2	1	13	1	24	130	3	0	7	174	4	380	1,709	0	0	0	0
8:15 AM	0	6	2	12	0	0	2	19	0	20	164	4	0	15	171	7	422		0	0	0	0
8:30 AM	0	1	0	16	0	1	7	37	0	18	126	1	0	9	185	9	410		0	0	0	0
8:45 AM	0	3	2	20	0	0	8	10	3	33	180	5	0	13	205	15	497		0	0	0	0
Count Total	0	30	15	99	0	5	31	135	5	155	1,269	28	0	98	1,649	60	3,579		0	2	0	0
Peak Hour	0	12	8	41	0	2	13	56	1	60	669	15	0	54	914	25	1,870		0	2	0	0



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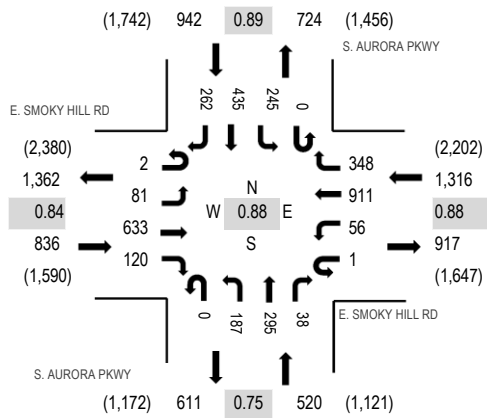
Location: 5 S. AURORA PKWY & E. SMOKY HILL RD AM

Date and Start Time: Wednesday, April 26, 2017

Peak Hour: 07:00 AM - 08:00 AM

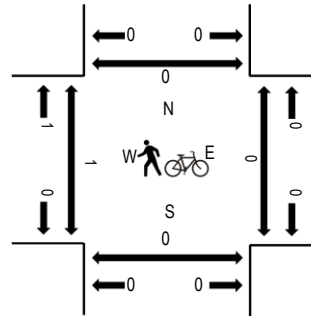
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E. SMOKY HILL RD Eastbound				E. SMOKY HILL RD Westbound				S. AURORA PKWY Northbound				S. AURORA PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	17	137	27	0	10	217	65	0	48	71	4	0	42	125	50	813	3,614	0	0	0	0
7:15 AM	0	15	167	33	0	16	209	83	0	48	80	5	0	81	111	72	920	3,558	1	0	0	0
7:30 AM	1	15	205	28	0	14	256	104	0	42	75	23	0	73	110	80	1,026	3,306	0	0	0	0
7:45 AM	1	34	124	32	1	16	229	96	0	49	69	6	0	49	89	60	855	3,035	0	0	0	0
8:00 AM	1	29	110	33	0	17	154	63	0	53	82	9	0	43	102	61	757	3,041	0	0	0	0
8:15 AM	0	42	104	22	0	15	142	52	0	28	75	10	0	37	91	50	668		0	0	0	0
8:30 AM	1	35	106	27	0	22	189	55	0	51	74	19	0	45	78	53	755		0	0	0	1
8:45 AM	0	53	154	37	0	18	107	52	0	64	120	16	0	77	99	64	861		0	0	0	0
Count Total	4	240	1,107	239	1	128	1,503	570	0	383	646	92	0	447	805	490	6,655		1	0	0	1
Peak Hour	2	81	633	120	1	56	911	348	0	187	295	38	0	245	435	262	3,614		1	0	0	0



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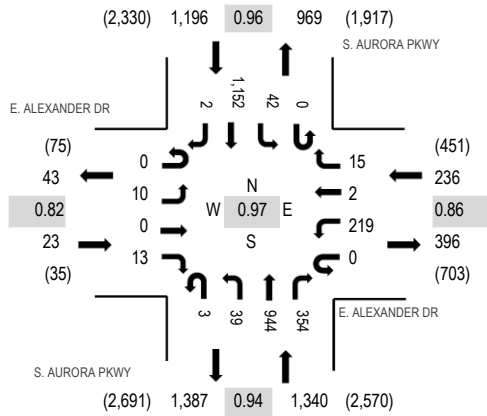
Location: 1 S. AURORA PKWY & E. ALEXANDER DR PM

Date and Start Time: Wednesday, April 26, 2017

Peak Hour: 04:45 PM - 05:45 PM

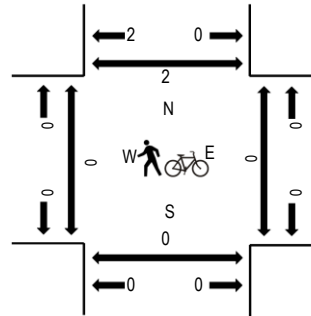
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E. ALEXANDER DR Eastbound				E. ALEXANDER DR Westbound				S. AURORA PKWY Northbound				S. AURORA PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	0	1	0	62	0	7	0	7	225	49	1	10	261	0	623	2,636	0	0	0	0
4:15 PM	0	1	0	4	0	50	0	4	0	10	237	75	0	9	278	1	669	2,700	0	0	0	0
4:30 PM	0	0	0	3	0	48	0	0	1	6	253	69	0	5	263	2	650	2,748	0	0	0	3
4:45 PM	0	3	0	4	0	65	0	2	1	9	200	105	0	11	294	0	694	2,795	0	0	0	0
5:00 PM	0	3	0	3	0	46	0	7	1	10	231	76	0	9	300	1	687	2,750	0	0	0	0
5:15 PM	0	1	0	2	0	57	1	3	1	13	251	92	0	8	288	0	717		0	0	0	0
5:30 PM	0	3	0	4	0	51	1	3	0	7	262	81	0	14	270	1	697		0	0	0	2
5:45 PM	0	2	0	1	0	40	0	4	0	4	214	80	0	10	292	2	649		0	0	0	0
Count Total	0	13	0	22	0	419	2	30	4	66	1,873	627	1	76	2,246	7	5,386		0	0	0	5
Peak Hour	0	10	0	13	0	219	2	15	3	39	944	354	0	42	1,152	2	2,795		0	0	0	2



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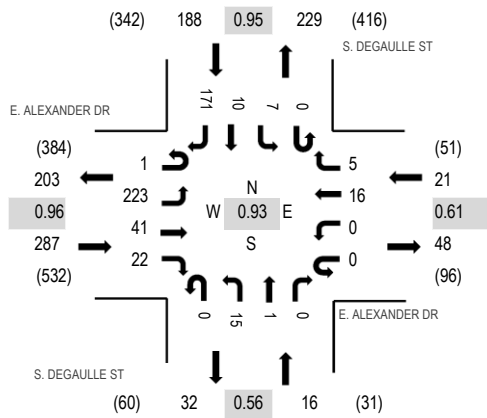
Location: 2 S. DEGAULLE ST & E. ALEXANDER DR PM

Date and Start Time: Wednesday, April 26, 2017

Peak Hour: 04:30 PM - 05:30 PM

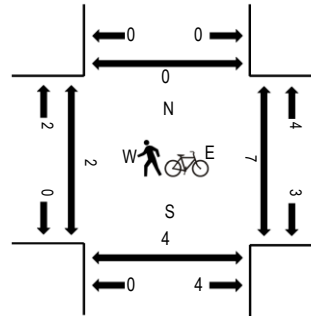
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E. ALEXANDER DR Eastbound				E. ALEXANDER DR Westbound				S. DEGAULLE ST Northbound				S. DEGAULLE ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	35	6	3	0	1	4	0	0	5	1	0	0	2	1	36	94	463	0	0	0	0
4:15 PM	0	46	12	6	0	0	9	2	0	3	1	1	0	0	1	48	129	506	0	0	0	0
4:30 PM	0	46	10	5	0	0	5	0	0	4	0	0	0	2	3	42	117	512	0	2	0	0
4:45 PM	0	58	11	4	0	0	5	1	0	1	0	0	0	1	1	41	123	509	2	2	2	0
5:00 PM	0	55	11	9	0	0	2	2	0	7	1	0	0	0	3	47	137	493	0	0	0	0
5:15 PM	1	64	9	4	0	0	4	2	0	3	0	0	0	4	3	41	135		0	2	2	0
5:30 PM	0	54	12	7	0	0	5	0	0	1	1	0	0	1	0	33	114		0	0	0	0
5:45 PM	1	45	11	7	0	1	7	1	0	1	1	0	0	3	1	28	107		0	2	2	0
Count Total	2	403	82	45	0	2	41	8	0	25	5	1	0	13	13	316	956		2	8	6	0
Peak Hour	1	223	41	22	0	0	16	5	0	15	1	0	0	7	10	171	512		2	6	4	0



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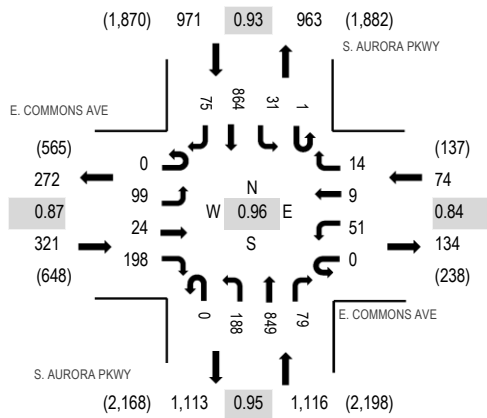
Location: 3 S. AURORA PKWY & E. COMMONS AVE PM

Date and Start Time: Wednesday, April 26, 2017

Peak Hour: 04:15 PM - 05:15 PM

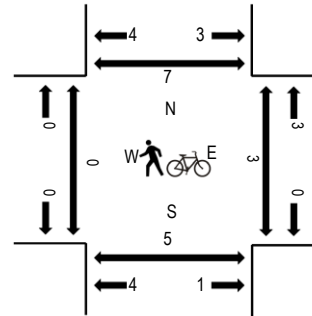
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E. COMMONS AVE Eastbound				E. COMMONS AVE Westbound				S. AURORA PKWY Northbound				S. AURORA PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	16	2	52	0	5	4	2	0	49	187	12	0	8	190	23	550	2,389	0	0	0	1
4:15 PM	0	26	5	53	0	15	2	5	0	45	214	22	0	6	229	22	644	2,482	0	1	4	3
4:30 PM	0	25	10	44	0	10	1	4	0	45	238	15	0	11	195	16	614	2,453	0	0	0	1
4:45 PM	0	22	4	53	0	14	3	2	0	45	192	14	1	6	212	13	581	2,449	0	2	1	2
5:00 PM	0	26	5	48	0	12	3	3	0	53	205	28	0	8	228	24	643	2,464	0	0	0	1
5:15 PM	0	32	2	63	0	16	1	3	0	50	207	17	0	4	206	14	615		0	1	0	2
5:30 PM	0	20	3	50	0	6	1	5	0	55	228	13	0	10	202	17	610		0	0	0	0
5:45 PM	0	22	7	58	0	10	6	4	0	54	192	18	1	8	197	19	596		0	0	0	0
Count Total	0	189	38	421	0	88	21	28	0	396	1,663	139	2	61	1,659	148	4,853		0	4	5	10
Peak Hour	0	99	24	198	0	51	9	14	0	188	849	79	1	31	864	75	2,482		0	3	5	7



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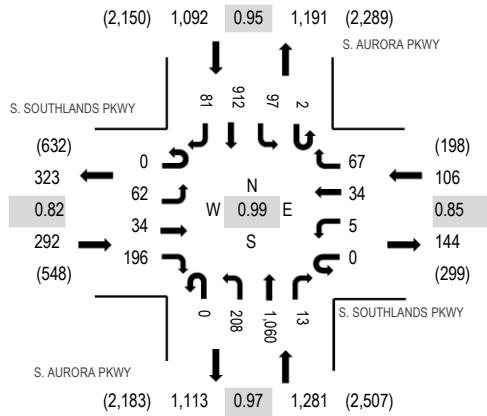
Location: 4 S. AURORA PKWY & S. SOUTHLANDS PKWY PM

Date and Start Time: Wednesday, April 26, 2017

Peak Hour: 05:00 PM - 06:00 PM

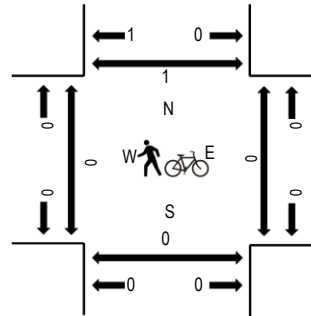
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	S. SOUTHLANDS PKWY Eastbound				S. SOUTHLANDS PKWY Westbound				S. AURORA PKWY Northbound				S. AURORA PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	11	6	57	0	1	5	16	0	67	231	4	0	22	201	14	635	2,632	0	0	0	0
4:15 PM	0	11	11	39	0	1	4	15	0	40	242	7	0	25	239	11	645	2,699	0	0	0	0
4:30 PM	0	17	4	36	0	3	1	25	0	61	237	3	0	30	246	15	678	2,754	0	0	1	0
4:45 PM	0	13	13	38	0	0	5	16	0	64	264	6	0	24	209	22	674	2,753	0	1	0	0
5:00 PM	0	15	6	54	0	0	9	22	0	40	258	1	1	25	252	19	702	2,771	0	0	0	0
5:15 PM	0	16	8	38	0	1	9	15	0	50	278	2	0	31	237	15	700		0	0	0	0
5:30 PM	0	16	13	60	0	2	12	13	0	63	257	7	1	22	193	18	677		0	0	0	0
5:45 PM	0	15	7	44	0	2	4	17	0	55	267	3	0	19	230	29	692		0	0	0	1
Count Total	0	114	68	366	0	10	49	139	0	440	2,034	33	2	198	1,807	143	5,403		0	1	1	1
Peak Hour	0	62	34	196	0	5	34	67	0	208	1,060	13	2	97	912	81	2,771		0	0	0	1



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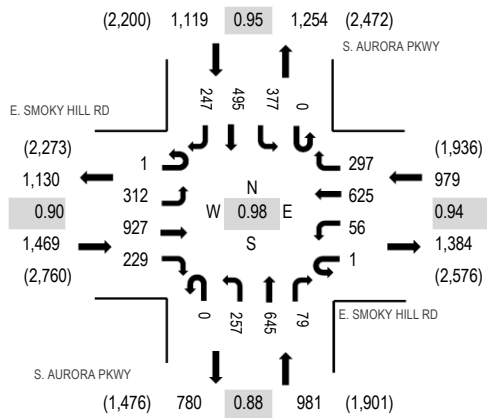
Location: 5 S. AURORA PKWY & E. SMOKY HILL RD PM

Date and Start Time: Wednesday, April 26, 2017

Peak Hour: 05:00 PM - 06:00 PM

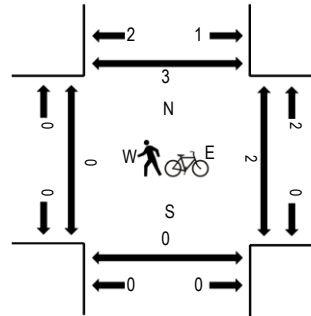
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E. SMOKY HILL RD Eastbound				E. SMOKY HILL RD Westbound				S. AURORA PKWY Northbound				S. AURORA PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	1	76	189	44	0	10	139	86	0	81	141	18	0	77	116	61	1,039	4,249	1	0	1	0
4:15 PM	2	75	204	43	0	10	175	60	0	65	144	12	0	95	107	85	1,077	4,358	0	0	0	1
4:30 PM	0	91	185	49	0	12	172	67	0	55	166	23	0	109	123	51	1,103	4,439	0	0	0	2
4:45 PM	1	93	186	52	0	11	145	70	0	57	149	9	0	85	119	53	1,030	4,454	0	0	0	0
5:00 PM	1	79	237	61	1	17	172	77	0	62	136	16	0	103	124	62	1,148	4,548	0	0	0	1
5:15 PM	0	72	203	47	0	14	164	82	0	71	183	25	0	89	135	73	1,158		0	0	0	0
5:30 PM	0	81	225	55	0	13	143	71	0	67	186	20	0	65	131	61	1,118		0	2	0	2
5:45 PM	0	80	262	66	0	12	146	67	0	57	140	18	0	120	105	51	1,124		0	0	0	0
Count Total	5	647	1,691	417	1	99	1,256	580	0	515	1,245	141	0	743	960	497	8,797		1	2	1	6
Peak Hour	1	312	927	229	1	56	625	297	0	257	645	79	0	377	495	247	4,548		0	2	0	3

















APPENDIX “B”

**INTERSECTION
CAPACITY ANALYSIS
WORKSHEETS**

Lanes, Volumes, Timings

1: DeGaulle & Alexander

07/03/2018


























												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	7	5	0	25	16	17	10	0	5	3	161
Future Volume (vph)	162	7	5	0	25	16	17	10	0	5	3	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.947						0.872	
Flt Protected		0.956						0.970			0.998	
Satd. Flow (prot)	0	1774	0	0	1764	0	0	1807	0	0	1621	0
Flt Permitted		0.956						0.970			0.998	
Satd. Flow (perm)	0	1774	0	0	1764	0	0	1807	0	0	1621	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		568			374			335			287	
Travel Time (s)		15.5			10.2			9.1			7.8	
Peak Hour Factor	0.64	0.64	0.64	0.75	0.75	0.75	0.68	0.68	0.68	0.75	0.75	0.75
Adj. Flow (vph)	253	11	8	0	33	21	25	15	0	7	4	215
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	272	0	0	54	0	0	40	0	0	226	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	33.3%											
Analysis Period (min)	15											
	ICU Level of Service A											

Intersection												
Int Delay, s/veh	8.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	162	7	5	0	25	16	17	10	0	5	3	161
Future Vol, veh/h	162	7	5	0	25	16	17	10	0	5	3	161
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	64	64	64	75	75	75	68	68	68	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	253	11	8	0	33	21	25	15	0	7	4	215
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	19	0	0	674	575	15	573	569	44
Stage 1	-	-	-	-	-	-	521	521	-	44	44	-
Stage 2	-	-	-	-	-	-	153	54	-	529	525	-
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	1551	-	-	1597	-	-	368	429	1065	430	432	1026
Stage 1	-	-	-	-	-	-	539	532	-	970	858	-
Stage 2	-	-	-	-	-	-	849	850	-	533	529	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1551	-	-	1597	-	-	252	358	1065	364	361	1026
Mov Cap-2 Maneuver	-	-	-	-	-	-	252	358	-	364	361	-
Stage 1	-	-	-	-	-	-	450	444	-	810	858	-
Stage 2	-	-	-	-	-	-	668	850	-	430	442	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	7.2			0			19.8			10		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	283	1551	-	-	1597	-	-	944				
HCM Lane V/C Ratio	0.14	0.163	-	-	-	-	-	0.239				
HCM Control Delay (s)	19.8	7.8	0	-	0	-	-	10				
HCM Lane LOS	C	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.5	0.6	-	-	0	-	-	0.9				

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	4	885	0	10	927	101	15	5	25	320	3	62
Future Volume (vph)	4	885	0	10	927	101	15	5	25	320	3	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	290		0	185		0	185		185
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.985			0.874				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	0	1770	5009	0	1770	1628	0	1770	1863	1583
Flt Permitted	0.218			0.265			0.755			0.728		
Satd. Flow (perm)	406	5085	0	494	5009	0	1406	1628	0	1356	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					24			37				37
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1377			2056			484			500	
Travel Time (s)		20.9			31.2			13.2			13.6	
Peak Hour Factor	0.94	0.94	0.94	0.95	0.95	0.95	0.68	0.68	0.68	0.83	0.83	0.83
Adj. Flow (vph)	4	941	0	11	976	106	22	7	37	386	4	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	941	0	11	1082	0	22	44	0	386	4	75
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	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		8

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	26.0	26.0		28.0	28.0		41.0	41.0		41.0	41.0	41.0
Total Split (s)	41.0	41.0		41.0	41.0		49.0	49.0		49.0	49.0	49.0
Total Split (%)	45.6%	45.6%		45.6%	45.6%		54.4%	54.4%		54.4%	54.4%	54.4%
Maximum Green (s)	35.0	35.0		35.0	35.0		44.0	44.0		44.0	44.0	44.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Flash Dont Walk (s)	14.0	14.0		16.0	16.0		30.0	30.0		30.0	30.0	30.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	46.6	46.6		46.6	46.6		32.4	32.4		32.4	32.4	32.4
Actuated g/C Ratio	0.52	0.52		0.52	0.52		0.36	0.36		0.36	0.36	0.36
v/c Ratio	0.02	0.36		0.04	0.42		0.04	0.07		0.79	0.01	0.13
Control Delay	15.2	14.7		12.1	13.4		15.3	6.2		37.2	14.0	9.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	15.2	14.7		12.1	13.4		15.3	6.2		37.2	14.0	9.5
LOS	B	B		B	B		B	A		D	B	A
Approach Delay		14.7			13.4			9.2			32.5	
Approach LOS		B			B			A			C	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 17.2

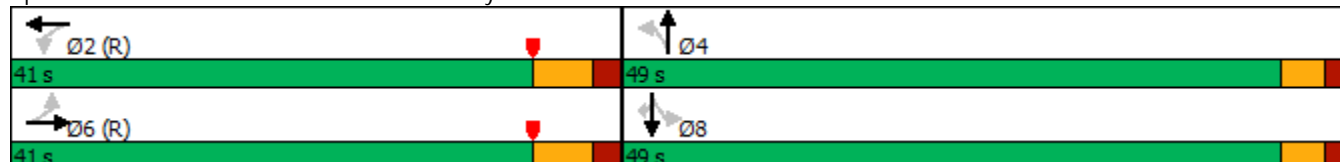
Intersection LOS: B

Intersection Capacity Utilization 53.7%

ICU Level of Service A

Analysis Period (min) 15






















Splits and Phases: 2: Alexander & Aurora Pkwy



HCM 2010 Signalized Intersection Summary

2: Alexander & Aurora Pkwy

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	885	0	10	927	101	15	5	25	320	3	62
Future Volume (veh/h)	4	885	0	10	927	101	15	5	25	320	3	62
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	4	941	0	11	976	106	22	7	37	386	4	75
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.95	0.95	0.95	0.68	0.68	0.68	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	2784	0	344	2550	276	512	85	451	503	615	523
Arrive On Green	0.55	0.55	0.00	0.55	0.55	0.55	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	519	5253	0	593	4659	505	1314	258	1364	1357	1863	1583
Grp Volume(v), veh/h	4	941	0	11	710	372	22	0	44	386	4	75
Grp Sat Flow(s),veh/h/ln	519	1695	0	593	1695	1774	1314	0	1622	1357	1863	1583
Q Serve(g_s), s	0.4	9.2	0.0	0.9	10.8	10.8	1.0	0.0	1.7	24.6	0.1	3.0
Cycle Q Clear(g_c), s	11.2	9.2	0.0	10.2	10.8	10.8	1.2	0.0	1.7	26.3	0.1	3.0
Prop In Lane	1.00		0.00	1.00		0.28	1.00		0.84	1.00		1.00
Lane Grp Cap(c), veh/h	302	2784	0	344	1856	971	512	0	536	503	615	523
V/C Ratio(X)	0.01	0.34	0.00	0.03	0.38	0.38	0.04	0.00	0.08	0.77	0.01	0.14
Avail Cap(c_a), veh/h	302	2784	0	344	1856	971	721	0	793	718	911	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	11.3	0.0	14.1	11.7	11.7	20.6	0.0	20.7	29.8	20.2	21.2
Incr Delay (d2), s/veh	0.1	0.3	0.0	0.2	0.6	1.1	0.0	0.0	0.1	3.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	7.8	0.0	0.3	8.9	9.5	0.7	0.0	1.4	14.8	0.1	2.4
LnGrp Delay(d),s/veh	15.0	11.6	0.0	14.3	12.3	12.8	20.6	0.0	20.8	33.0	20.2	21.3
LnGrp LOS	B	B		B	B	B	C		C	C	C	C
Approach Vol, veh/h		945			1093			66			465	
Approach Delay, s/veh		11.7			12.5			20.8			31.0	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		55.3		34.7		55.3		34.7				
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0				
Max Green Setting (Gmax), s		35.0		44.0		35.0		44.0				
Max Q Clear Time (g_c+I1), s		12.8		3.7		13.2		28.3				
Green Ext Time (p_c), s		7.0		0.3		6.2		1.4				
Intersection Summary												
HCM 2010 Ctrl Delay				15.7								
HCM 2010 LOS				B								

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	17	41	15	287	23	698	9	204	907	119
Future Volume (vph)	53	7	17	41	15	287	23	698	9	204	907	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	190		0	280		0	290		100
Storage Lanes	1		1	1		1	1		0	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	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850		0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5075	0	1770	5085	1583
Flt Permitted	0.745			0.752			0.282			0.313		
Satd. Flow (perm)	1388	1863	1583	1401	1863	1583	525	5075	0	583	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			319		2				108
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		249			440			428			609	
Travel Time (s)		5.7			10.0			6.5			9.2	
Peak Hour Factor	0.85	0.85	0.85	0.81	0.81	0.81	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	62	8	20	51	19	354	26	776	10	219	975	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	8	20	51	19	354	26	786	0	219	975	128
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	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		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	20	6	20	20	6		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	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0		6.0	11.0	11.0
Minimum Split (s)	40.0	40.0	40.0	44.0	44.0	44.0	10.0	29.0		10.0	34.0	34.0
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	10.0	29.0		17.0	36.0	36.0
Total Split (%)	48.9%	48.9%	48.9%	48.9%	48.9%	48.9%	11.1%	32.2%		18.9%	40.0%	40.0%
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	6.0	23.0		13.0	30.0	30.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0		4.0	6.0	6.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Flash Dont Walk (s)	29.0	29.0	29.0	33.0	33.0	33.0		17.0			22.0	22.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0			0	0
Act Effect Green (s)	11.4	11.4	11.4	11.4	11.4	11.4	61.8	53.7		69.6	63.5	63.5
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.13	0.69	0.60		0.77	0.71	0.71
v/c Ratio	0.35	0.03	0.06	0.29	0.08	0.74	0.06	0.26		0.38	0.27	0.11
Control Delay	39.2	30.4	0.4	37.2	31.9	15.8	2.7	4.5		7.1	3.9	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	39.2	30.4	0.4	37.2	31.9	15.8	2.7	4.5		7.1	3.9	0.7
LOS	D	C	A	D	C	B	A	A		A	A	A
Approach Delay		29.8			19.1			4.4			4.1	
Approach LOS		C			B			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 88 (98%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 7.5

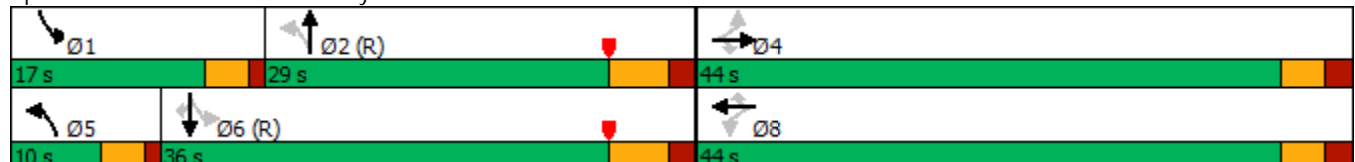
Intersection LOS: A

Intersection Capacity Utilization 49.8%

ICU Level of Service A

Analysis Period (min) 15
























Splits and Phases: 5: Aurora Pkwy & Orchard



HCM 2010 Signalized Intersection Summary

5: Aurora Pkwy & Orchard

























07/03/2018

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	53	7	17	41	15	287	23	698	9	204	907	119						
Future Volume (veh/h)	53	7	17	41	15	287	23	698	9	204	907	119						
Number	7	4	14	3	8	18	5	2	12	1	6	16						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863						
Adj Flow Rate, veh/h	62	8	20	51	19	354	26	776	10	219	975	128						
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1						
Peak Hour Factor	0.85	0.85	0.85	0.81	0.81	0.81	0.90	0.90	0.90	0.93	0.93	0.93						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2						
Cap, veh/h	327	471	400	424	471	400	361	2584	33	506	2789	869						
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.03	0.50	0.50	0.08	0.55	0.55						
Sat Flow, veh/h	1005	1863	1583	1377	1863	1583	1774	5175	67	1774	5085	1583						
Grp Volume(v), veh/h	62	8	20	51	19	354	26	508	278	219	975	128						
Grp Sat Flow(s),veh/h/ln	1005	1863	1583	1377	1863	1583	1774	1695	1851	1774	1695	1583						
Q Serve(g_s), s	4.5	0.3	0.9	2.6	0.7	19.4	0.6	7.9	8.0	5.0	9.6	3.6						
Cycle Q Clear(g_c), s	5.2	0.3	0.9	2.9	0.7	19.4	0.6	7.9	8.0	5.0	9.6	3.6						
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00						
Lane Grp Cap(c), veh/h	327	471	400	424	471	400	361	1693	924	506	2789	869						
V/C Ratio(X)	0.19	0.02	0.05	0.12	0.04	0.88	0.07	0.30	0.30	0.43	0.35	0.15						
Avail Cap(c_a), veh/h	508	807	686	672	807	686	423	1693	924	618	2789	869						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Uniform Delay (d), s/veh	27.3	25.2	25.4	26.3	25.4	32.3	10.2	13.3	13.3	8.9	11.3	10.0						
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.1	0.0	7.2	0.1	0.5	0.8	0.6	0.3	0.4						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(95%),veh/ln	2.3	0.3	0.7	1.8	0.6	14.3	0.5	6.8	7.6	4.4	8.1	3.0						
LnGrp Delay(d),s/veh	27.6	25.2	25.5	26.4	25.4	39.6	10.3	13.7	14.1	9.5	11.7	10.3						
LnGrp LOS	C	C	C	C	C	D	B	B	B	A	B	B						
Approach Vol, veh/h	90				424				812									
Approach Delay, s/veh	26.9				37.4				13.7									
Approach LOS	C				D				B									
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	1	2			4	5	6	8										
Phs Duration (G+Y+Rc), s	11.3	50.9			27.8	6.9	55.4	27.8										
Change Period (Y+Rc), s	4.0	6.0			5.0	4.0	6.0	5.0										
Max Green Setting (Gmax), s	13.0	23.0			39.0	6.0	30.0	39.0										
Max Q Clear Time (g_c+I1), s	7.0	10.0			7.2	2.6	11.6	21.4										
Green Ext Time (p_c), s	0.3	3.8			0.4	0.0	6.5	1.4										
Intersection Summary																		
HCM 2010 Ctrl Delay																		
HCM 2010 LOS																		

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	3	36	100	11	43	73	668	19	6	924	35
Future Volume (vph)	19	3	36	100	11	43	73	668	19	6	924	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	230		230	280		210	260		140
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	1.00	1.00	1.00	0.91	1.00	1.00	0.91	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	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.749			0.755			0.262			0.370		
Satd. Flow (perm)	1395	1863	1583	1406	1863	1583	488	5085	1583	689	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			85			24			73
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		610			552			1344			931	
Travel Time (s)		13.9			12.5			20.4			14.1	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.94	0.94	0.94	0.98	0.98	0.98
Adj. Flow (vph)	23	4	43	120	13	52	78	711	20	6	943	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	4	43	120	13	52	78	711	20	6	943	36
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	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood

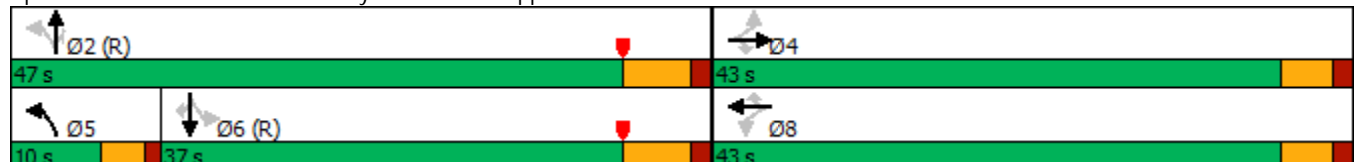
07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0	11.0	11.0
Minimum Split (s)	42.0	42.0	42.0	43.0	43.0	43.0	10.0	31.0	31.0	33.0	33.0	33.0
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0	10.0	47.0	47.0	37.0	37.0	37.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	47.8%	47.8%	11.1%	52.2%	52.2%	41.1%	41.1%	41.1%
Maximum Green (s)	38.0	38.0	38.0	38.0	38.0	38.0	6.0	41.0	41.0	31.0	31.0	31.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Flash Dont Walk (s)	31.0	31.0	31.0	32.0	32.0	32.0		19.0	19.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0	0	0	0
Act Effect Green (s)	13.2	13.2	13.2	13.2	13.2	13.2	67.8	65.8	65.8	57.1	57.1	57.1
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15	0.15	0.75	0.73	0.73	0.63	0.63	0.63
v/c Ratio	0.11	0.01	0.14	0.59	0.05	0.17	0.17	0.19	0.02	0.01	0.29	0.03
Control Delay	32.2	29.7	2.4	46.5	30.5	3.9	5.3	5.4	3.5	16.0	12.0	5.6
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	32.2	29.7	2.4	46.5	30.5	3.9	5.3	5.4	3.5	16.0	12.0	5.6
LOS	C	C	A	D	C	A	A	A	A	B	B	A
Approach Delay		13.7			33.4			5.3			11.8	
Approach LOS		B			C			A			B	

Intersection Summary

Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 84 (93%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 11.2	Intersection LOS: B
Intersection Capacity Utilization 48.4%	ICU Level of Service A
Analysis Period (min) 15	

























Splits and Phases: 6: Aurora Pkwy & Commons/Applewood



HCM 2010 Signalized Intersection Summary

6: Aurora Pkwy & Commons/Applewood






















07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	3	36	100	11	43	73	668	19	6	924	35
Future Volume (veh/h)	19	3	36	100	11	43	73	668	19	6	924	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	23	4	43	120	13	52	78	711	20	6	943	36
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.94	0.94	0.94	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	217	184	235	217	184	515	3872	1205	556	3355	1045
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.06	0.76	0.76	0.66	0.66	0.66
Sat Flow, veh/h	1331	1863	1583	1353	1863	1583	1774	5085	1583	722	5085	1583
Grp Volume(v), veh/h	23	4	43	120	13	52	78	711	20	6	943	36
Grp Sat Flow(s),veh/h/ln	1331	1863	1583	1353	1863	1583	1774	1695	1583	722	1695	1583
Q Serve(g_s), s	1.4	0.2	2.2	7.8	0.6	2.7	1.1	3.5	0.3	0.3	7.0	0.7
Cycle Q Clear(g_c), s	2.0	0.2	2.2	7.9	0.6	2.7	1.1	3.5	0.3	0.3	7.0	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	227	217	184	235	217	184	515	3872	1205	556	3355	1045
V/C Ratio(X)	0.10	0.02	0.23	0.51	0.06	0.28	0.15	0.18	0.02	0.01	0.28	0.03
Avail Cap(c_a), veh/h	634	786	669	649	786	669	531	3872	1205	556	3355	1045
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	35.2	36.1	38.7	35.4	36.3	3.7	3.0	2.6	5.3	6.4	5.3
Incr Delay (d2), s/veh	0.2	0.0	0.6	1.7	0.1	0.8	0.1	0.1	0.0	0.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.2	1.8	5.4	0.5	2.2	0.9	2.9	0.2	0.1	5.9	0.6
LnGrp Delay(d),s/veh	36.4	35.2	36.8	40.4	35.5	37.1	3.9	3.1	2.6	5.3	6.6	5.4
LnGrp LOS	D	D	D	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	70			185			809			985		
Approach Delay, s/veh	36.6			39.2			3.1			6.6		
Approach LOS	D			D			A			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	74.5			15.5			65.4			15.5		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	41.0			38.0			31.0			38.0		
Max Q Clear Time (g_c+I1), s	5.5			4.2			9.0			9.9		
Green Ext Time (p_c), s	5.0			0.2			6.4			0.6		
Intersection Summary												
HCM 2010 Ctrl Delay	9.2											
HCM 2010 LOS	A											

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	8	41	2	13	56	61	669	15	57	976	27
Future Volume (vph)	12	8	41	2	13	56	61	669	15	57	976	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	180		0	390		0	215		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.875			0.879			0.997			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3097	0	1770	3111	0	1770	5070	0	1770	5065	0
Flt Permitted	0.675			0.717			0.231			0.358		
Satd. Flow (perm)	1257	3097	0	1336	3111	0	430	5070	0	667	5065	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			98			4			5	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		497			563			925			311	
Travel Time (s)		11.3			12.8			14.0			4.7	
Peak Hour Factor	0.83	0.83	0.83	0.57	0.57	0.57	0.92	0.92	0.92	0.89	0.89	0.89
Adj. Flow (vph)	14	10	49	4	23	98	66	727	16	64	1097	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	59	0	4	121	0	66	743	0	64	1127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
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	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(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	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	11.0		6.0	11.0	
Minimum Split (s)	42.0	42.0		43.0	43.0		10.0	28.0		10.0	34.0	
Total Split (s)	43.0	43.0		43.0	43.0		10.0	37.0		10.0	37.0	
Total Split (%)	47.8%	47.8%		47.8%	47.8%		11.1%	41.1%		11.1%	41.1%	
Maximum Green (s)	37.0	37.0		37.0	37.0		6.0	31.0		6.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Flash Dont Walk (s)	30.0	30.0		31.0	31.0			16.0			22.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effect Green (s)	6.9	6.9		6.9	6.9		69.9	62.8		69.9	62.8	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.78	0.70		0.78	0.70	
v/c Ratio	0.15	0.21		0.04	0.37		0.15	0.21		0.11	0.32	
Control Delay	41.7	16.7		38.5	15.6		2.7	5.4		1.4	3.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.7	16.7		38.5	15.6		2.7	5.4		1.4	3.9	
LOS	D	B		D	B		A	A		A	A	
Approach Delay		21.5			16.3			5.2			3.7	
Approach LOS		C			B			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 38 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 5.6

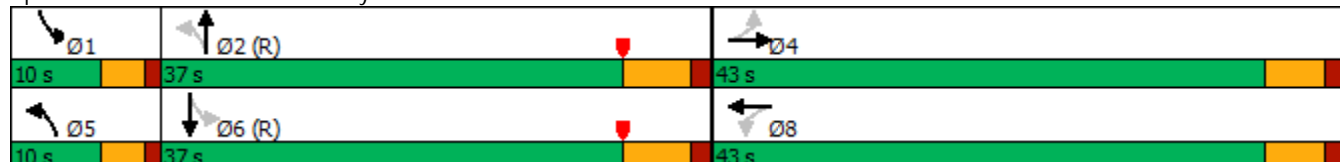
Intersection LOS: A

Intersection Capacity Utilization 45.1%

ICU Level of Service A

Analysis Period (min) 15






















Splits and Phases: 7: Aurora Pkwy & Southlands



HCM 2010 Signalized Intersection Summary

























7: Aurora Pkwy & Southlands

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	8	41	2	13	56	61	669	15	57	976	27
Future Volume (veh/h)	12	8	41	2	13	56	61	669	15	57	976	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	14	10	49	4	23	98	66	727	16	64	1097	30
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.83	0.83	0.83	0.57	0.57	0.57	0.92	0.92	0.92	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	169	151	169	169	151	465	3448	76	616	3423	94
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.05	0.67	0.67	0.05	0.67	0.67
Sat Flow, veh/h	1265	1770	1583	1338	1770	1583	1774	5121	113	1774	5089	139
Grp Volume(v), veh/h	14	10	49	4	23	98	66	481	262	64	731	396
Grp Sat Flow(s),veh/h/ln	1265	1770	1583	1338	1770	1583	1774	1695	1843	1774	1695	1838
Q Serve(g_s), s	1.0	0.5	2.6	0.3	1.1	5.4	1.0	4.9	4.9	0.9	8.1	8.1
Cycle Q Clear(g_c), s	6.3	0.5	2.6	2.9	1.1	5.4	1.0	4.9	4.9	0.9	8.1	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.08
Lane Grp Cap(c), veh/h	126	169	151	169	169	151	465	2283	1241	616	2281	1237
V/C Ratio(X)	0.11	0.06	0.32	0.02	0.14	0.65	0.14	0.21	0.21	0.10	0.32	0.32
Avail Cap(c_a), veh/h	525	728	651	592	728	651	488	2283	1241	640	2281	1237
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	37.0	38.0	39.3	37.3	39.2	3.9	5.6	5.6	3.6	6.1	6.1
Incr Delay (d2), s/veh	0.4	0.1	1.2	0.1	0.4	4.6	0.1	0.2	0.4	0.1	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.4	2.1	0.2	1.0	4.6	0.9	4.2	4.7	0.8	7.0	7.7
LnGrp Delay(d),s/veh	42.7	37.2	39.2	39.4	37.6	43.8	4.0	5.8	6.0	3.7	6.5	6.8
LnGrp LOS	D	D	D	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	73			125			809			1191		
Approach Delay, s/veh	39.6			42.5			5.7			6.5		
Approach LOS	D			D			A			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	66.6		14.6	8.8	66.5		14.6				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	6.0	31.0		37.0	6.0	31.0		37.0				
Max Q Clear Time (g_c+I1), s	2.9	6.9		8.3	3.0	10.1		7.4				
Green Ext Time (p_c), s	0.0	4.5		0.3	0.0	7.0		0.7				
Intersection Summary												
HCM 2010 Ctrl Delay	9.3											
HCM 2010 LOS	A											

Lanes, Volumes, Timings
8: Aurora Pkwy & Smoky Hill Rd













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	633	120	57	911	357	187	303	38	265	470	284
Future Volume (vph)	85	633	120	57	911	357	187	303	38	265	470	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	335		395	260		260	380		465	235		0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	1.00					0.98		1.00		1.00		
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	4989	0	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3429	5085	1583	3433	5085	1556	3433	4989	0	3424	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			127			196			16			113
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1859			2698			936			925	
Travel Time (s)		28.2			40.9			14.2			14.0	
Confl. Peds. (#/hr)	5					5			5	5		
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.75	0.75	0.75	0.89	0.89	0.89
Adj. Flow (vph)	101	754	143	65	1035	406	249	404	51	298	528	319
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	754	143	65	1035	406	249	455	0	298	528	319
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			24			24	
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	1	1	1	1	1	1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	30	20	20	30	20	20	30		20	30	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	30	20	20	30	20	20	30		20	30	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
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	41.0	11.0	11.0	43.0	11.0	11.0	45.0		11.0	44.0	11.0
Total Split (s)	18.0	55.0	20.0	11.0	48.0	24.0	20.0	45.0		24.0	49.0	18.0
Total Split (%)	13.3%	40.7%	14.8%	8.1%	35.6%	17.8%	14.8%	33.3%		17.8%	36.3%	13.3%
Maximum Green (s)	13.0	49.0	15.0	6.0	42.0	19.0	15.0	39.0		19.0	43.0	13.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0		2.0	3.0	2.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max		None	Max	None
Walk Time (s)		6.0			6.0			6.0			6.0	
Flash Dont Walk (s)		29.0			31.0			33.0			32.0	
Pedestrian Calls (#/hr)		0			5			5			0	
Act Effect Green (s)	13.0	52.9	68.2	6.0	43.7	60.4	13.3	40.6		15.7	43.0	62.0
Actuated g/C Ratio	0.10	0.39	0.51	0.04	0.32	0.45	0.10	0.30		0.12	0.32	0.46
v/c Ratio	0.31	0.38	0.17	0.43	0.63	0.50	0.74	0.30		0.75	0.47	0.40
Control Delay	59.5	30.8	3.2	71.4	38.6	12.0	72.4	35.8		69.4	38.5	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	59.5	30.8	3.2	71.4	38.6	12.0	72.4	35.8		69.4	38.5	16.8
LOS	E	C	A	E	D	B	E	D		E	D	B
Approach Delay		29.8			32.8			48.7			40.5	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 101 (75%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 36.7

Intersection LOS: D

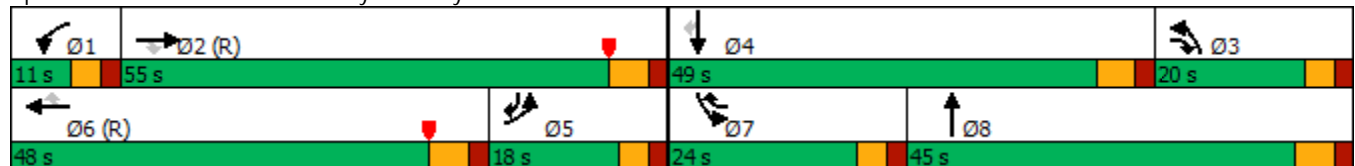
Intersection Capacity Utilization 90.6%

ICU Level of Service E

Analysis Period (min) 15

Description: Aurora

























Splits and Phases: 8: Aurora Pkwy & Smoky Hill Rd



HCM 2010 Signalized Intersection Summary

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	633	120	57	911	357	187	303	38	265	470	284
Future Volume (veh/h)	85	633	120	57	911	357	187	303	38	265	470	284
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	101	754	143	65	1035	406	249	404	51	298	528	319
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	2	2	1
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.75	0.75	0.75	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	1950	743	140	1582	652	300	1425	176	351	1127	669
Arrive On Green	0.11	0.38	0.38	0.08	0.62	0.62	0.09	0.31	0.31	0.10	0.32	0.32
Sat Flow, veh/h	3442	5085	1577	3442	5085	1576	3442	4582	567	3442	3539	1576
Grp Volume(v), veh/h	101	754	143	65	1035	406	249	297	158	298	528	319
Grp Sat Flow(s),veh/h/ln	1721	1695	1577	1721	1695	1576	1721	1695	1759	1721	1770	1576
Q Serve(g_s), s	3.7	14.5	1.0	2.4	17.5	14.0	9.6	8.9	9.2	11.5	16.1	5.4
Cycle Q Clear(g_c), s	3.7	14.5	1.0	2.4	17.5	14.0	9.6	8.9	9.2	11.5	16.1	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	363	1950	743	140	1582	652	300	1055	547	351	1127	669
V/C Ratio(X)	0.28	0.39	0.19	0.47	0.65	0.62	0.83	0.28	0.29	0.85	0.47	0.48
Avail Cap(c_a), veh/h	363	1950	743	153	1582	652	382	1055	547	484	1127	669
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	55.6	30.1	10.2	60.6	20.9	7.0	60.6	35.1	35.2	59.6	36.8	28.0
Incr Delay (d2), s/veh	0.2	0.6	0.6	0.8	2.0	4.2	9.4	0.7	1.3	7.3	1.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.1	11.2	4.0	2.1	12.8	10.5	8.6	7.6	8.2	9.7	12.6	5.0
LnGrp Delay(d),s/veh	55.8	30.7	10.8	61.5	22.9	11.2	70.0	35.8	36.5	66.9	38.2	30.4
LnGrp LOS	E	C	B	E	C	B	E	D	D	E	D	C
Approach Vol, veh/h		998			1506			704			1145	
Approach Delay, s/veh		30.4			21.4			48.1			43.5	
Approach LOS		C			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	57.8	17.8	49.0	20.2	48.0	18.8	48.0				
Change Period (Y+Rc), s	5.0	6.0	6.0	* 6	6.0	* 6	5.0	6.0				
Max Green Setting (Gmax), s	6.0	49.0	15.0	* 43	13.0	* 42	19.0	39.0				
Max Q Clear Time (g_c+I1), s	4.4	16.5	11.6	18.1	5.7	19.5	13.5	11.2				
Green Ext Time (p_c), s	0.0	3.6	0.2	3.1	0.1	6.0	0.3	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay				33.6								
HCM 2010 LOS				C								
Notes												

















User approved pedestrian interval to be less than phase max green.

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

Lanes, Volumes, Timings

1: DeGaulle & Alexander






















07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	41	22	0	16	5	15	1	0	7	10	171
Future Volume (vph)	224	41	22	0	16	5	15	1	0	7	10	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.968						0.877	
Flt Protected		0.962						0.956			0.998	
Satd. Flow (prot)	0	1774	0	0	1803	0	0	1781	0	0	1630	0
Flt Permitted		0.962						0.956			0.998	
Satd. Flow (perm)	0	1774	0	0	1803	0	0	1781	0	0	1630	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		552			404			431			425	
Travel Time (s)		15.1			11.0			11.8			11.6	
Peak Hour Factor	0.96	0.96	0.96	0.61	0.61	0.61	0.56	0.56	0.56	0.95	0.95	0.95
Adj. Flow (vph)	233	43	23	0	26	8	27	2	0	7	11	180
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	299	0	0	34	0	0	29	0	0	198	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	40.5%											
Analysis Period (min)	15											
	ICU Level of Service A											

Intersection												
Int Delay, s/veh	7.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	224	41	22	0	16	5	15	1	0	7	10	171
Future Vol, veh/h	224	41	22	0	16	5	15	1	0	7	10	171
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	96	96	96	61	61	61	56	56	56	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	233	43	23	0	26	8	27	2	0	7	11	180
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	34	0	0	66	0	0	647	555	55	552	562	30
Stage 1	-	-	-	-	-	-	521	521	-	30	30	-
Stage 2	-	-	-	-	-	-	126	34	-	522	532	-
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	1578	-	-	1536	-	-	384	440	1012	444	436	1044
Stage 1	-	-	-	-	-	-	539	532	-	987	870	-
Stage 2	-	-	-	-	-	-	878	867	-	538	526	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1578	-	-	1536	-	-	274	372	1012	390	369	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	274	372	-	390	369	-
Stage 1	-	-	-	-	-	-	456	450	-	835	870	-
Stage 2	-	-	-	-	-	-	718	867	-	453	445	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	6			0			19.4			10.1		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	279	1578	-	-	1536	-	-	900				
HCM Lane V/C Ratio	0.102	0.148	-	-	-	-	-	0.22				
HCM Control Delay (s)	19.4	7.7	0	-	0	-	-	10.1				
HCM Lane LOS	C	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.3	0.5	-	-	0	-	-	0.8				

Lanes, Volumes, Timings
2: Alexander & Aurora Pkwy













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	1169	2	42	944	354	10	0	13	222	2	15
Future Volume (vph)	42	1169	2	42	944	354	10	0	13	222	2	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	290		0	185		0	185		185
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.959			0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	0	1770	4877	0	1770	1583	0	1770	1863	1583
Flt Permitted	0.164			0.200			0.757			0.747		
Satd. Flow (perm)	305	5085	0	373	4877	0	1410	1583	0	1391	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					115			60				24
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1377			2056			484			448	
Travel Time (s)		20.9			31.2			13.2			12.2	
Peak Hour Factor	0.96	0.96	0.96	0.94	0.94	0.94	0.82	0.82	0.82	0.86	0.86	0.86
Adj. Flow (vph)	44	1218	2	45	1004	377	12	0	16	258	2	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	1220	0	45	1381	0	12	16	0	258	2	17
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(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	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		8

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	26.0	26.0		28.0	28.0		41.0	41.0		41.0	41.0	41.0
Total Split (s)	82.0	82.0		82.0	82.0		53.0	53.0		53.0	53.0	53.0
Total Split (%)	60.7%	60.7%		60.7%	60.7%		39.3%	39.3%		39.3%	39.3%	39.3%
Maximum Green (s)	76.0	76.0		76.0	76.0		48.0	48.0		48.0	48.0	48.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Flash Dont Walk (s)	14.0	14.0		16.0	16.0		30.0	30.0		30.0	30.0	30.0
Pedestrian Calls (#/hr)	0	0		0	0		5	5		5	5	5
Act Effect Green (s)	93.2	93.2		93.2	93.2		30.8	30.8		30.8	30.8	30.8
Actuated g/C Ratio	0.69	0.69		0.69	0.69		0.23	0.23		0.23	0.23	0.23
v/c Ratio	0.21	0.35		0.18	0.41		0.04	0.04		0.81	0.00	0.04
Control Delay	12.9	9.6		18.2	12.9		36.5	0.2		68.5	35.0	8.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	12.9	9.6		18.2	12.9		36.5	0.2		68.5	35.0	8.7
LOS	B	A		B	B		D	A		E	C	A
Approach Delay		9.7			13.0			15.7			64.6	
Approach LOS		A			B			B			E	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 42 (31%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 16.4

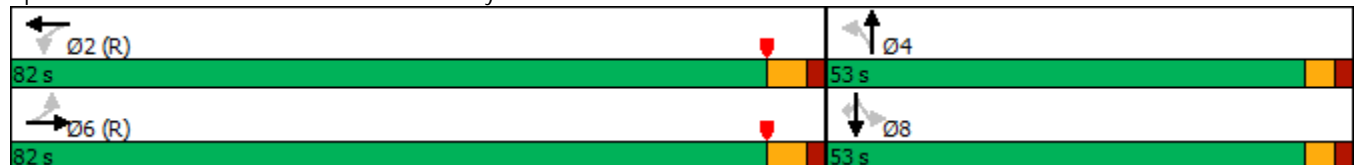
Intersection LOS: B

Intersection Capacity Utilization 63.0%

ICU Level of Service B

Analysis Period (min) 15






















Splits and Phases: 2: Alexander & Aurora Pkwy



HCM 2010 Signalized Intersection Summary

2: Alexander & Aurora Pkwy

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	1169	2	42	944	354	10	0	13	222	2	15
Future Volume (veh/h)	42	1169	2	42	944	354	10	0	13	222	2	15
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	44	1218	2	45	1004	377	12	0	16	258	2	17
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.94	0.94	0.94	0.82	0.82	0.82	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	287	3713	6	336	2580	969	344	0	333	335	392	333
Arrive On Green	0.71	0.71	0.71	0.71	0.71	0.71	0.21	0.00	0.21	0.21	0.21	0.21
Sat Flow, veh/h	391	5243	9	456	3644	1368	1388	0	1583	1392	1863	1583
Grp Volume(v), veh/h	44	788	432	45	934	447	12	0	16	258	2	17
Grp Sat Flow(s),veh/h/ln	391	1695	1861	456	1695	1621	1388	0	1583	1392	1863	1583
Q Serve(g_s), s	6.9	11.9	11.9	5.6	15.0	15.0	0.9	0.0	1.1	24.5	0.1	1.2
Cycle Q Clear(g_c), s	21.9	11.9	11.9	17.5	15.0	15.0	1.0	0.0	1.1	25.6	0.1	1.2
Prop In Lane	1.00		0.00	1.00		0.84	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	287	2401	1318	336	2401	1148	344	0	333	335	392	333
V/C Ratio(X)	0.15	0.33	0.33	0.13	0.39	0.39	0.03	0.00	0.05	0.77	0.01	0.05
Avail Cap(c_a), veh/h	287	2401	1318	336	2401	1148	546	0	563	537	662	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.3	7.5	7.5	10.8	7.9	7.9	42.5	0.0	42.5	52.7	42.1	42.5
Incr Delay (d2), s/veh	1.1	0.4	0.7	0.8	0.5	1.0	0.0	0.0	0.1	3.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	9.6	10.5	1.4	11.6	11.4	0.6	0.0	0.9	14.9	0.1	0.9
LnGrp Delay(d),s/veh	13.5	7.9	8.2	11.7	8.4	8.9	42.6	0.0	42.6	56.5	42.1	42.6
LnGrp LOS	B	A	A	B	A	A	D		D	E	D	D
Approach Vol, veh/h	1264			1426				28		277		
Approach Delay, s/veh	8.2			8.7				42.6		55.5		
Approach LOS	A			A				D		E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4		6		8				
Phs Duration (G+Y+Rc), s	101.6			33.4		101.6		33.4				
Change Period (Y+Rc), s	6.0			5.0		6.0		5.0				
Max Green Setting (Gmax), s	76.0			48.0		76.0		48.0				
Max Q Clear Time (g_c+I1), s	19.5			3.1		23.9		27.6				
Green Ext Time (p_c), s	13.6			0.1		10.9		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	13.1											
HCM 2010 LOS	B											

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	291	68	99	28	62	168	78	881	31	248	844	312
Future Volume (vph)	291	68	99	28	62	168	78	881	31	248	844	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	190		0	280		0	290		100
Storage Lanes	1		1	1		1	1		0	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	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850		0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5060	0	1770	5085	1583
Flt Permitted	0.713			0.710			0.311			0.226		
Satd. Flow (perm)	1328	1863	1583	1323	1863	1583	579	5060	0	421	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			105			181			4			246
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		249			440			428			609	
Travel Time (s)		5.7			10.0			6.5			9.2	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	310	72	105	30	67	181	82	927	33	258	879	325
Shared Lane Traffic (%)												
Lane Group Flow (vph)	310	72	105	30	67	181	82	960	0	258	879	325
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	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		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	20	6	20	20	6		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	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0		6.0	11.0	11.0
Minimum Split (s)	40.0	40.0	40.0	44.0	44.0	44.0	10.0	29.0		10.0	34.0	34.0
Total Split (s)	57.0	57.0	57.0	57.0	57.0	57.0	11.0	45.0		33.0	67.0	67.0
Total Split (%)	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%	8.1%	33.3%		24.4%	49.6%	49.6%
Maximum Green (s)	52.0	52.0	52.0	52.0	52.0	52.0	7.0	39.0		29.0	61.0	61.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0		4.0	6.0	6.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Flash Dont Walk (s)	29.0	29.0	29.0	33.0	33.0	33.0		17.0			22.0	22.0
Pedestrian Calls (#/hr)	10	10	10	10	10	10		0			0	0
Act Effect Green (s)	37.9	37.9	37.9	37.9	37.9	37.9	75.9	66.2		87.8	74.4	74.4
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.28	0.28	0.56	0.49		0.65	0.55	0.55
v/c Ratio	0.83	0.14	0.20	0.08	0.13	0.32	0.21	0.39		0.60	0.31	0.33
Control Delay	63.6	34.0	6.2	32.2	33.8	5.5	6.3	11.3		25.7	14.1	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	63.6	34.0	6.2	32.2	33.8	5.5	6.3	11.3		25.7	14.1	3.2
LOS	E	C	A	C	C	A	A	B		C	B	A
Approach Delay		46.9			15.2			10.9			13.7	
Approach LOS		D			B			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 26 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 17.9

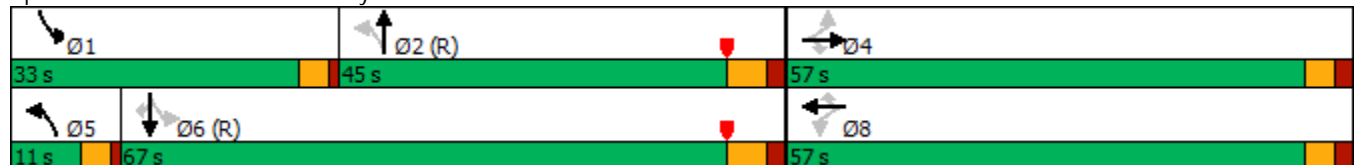
Intersection LOS: B

Intersection Capacity Utilization 66.7%

ICU Level of Service C

Analysis Period (min) 15

























Splits and Phases: 5: Aurora Pkwy & Orchard



HCM 2010 Signalized Intersection Summary

5: Aurora Pkwy & Orchard

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	68	99	28	62	168	78	881	31	248	844	312
Future Volume (veh/h)	291	68	99	28	62	168	78	881	31	248	844	312
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	310	72	105	30	67	181	82	927	33	258	879	325
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.95	0.95	0.95	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	385	595	506	405	595	506	327	2415	86	424	2680	834
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.04	0.48	0.48	0.09	0.53	0.53
Sat Flow, veh/h	1127	1863	1583	1203	1863	1583	1774	5042	179	1774	5085	1583
Grp Volume(v), veh/h	310	72	105	30	67	181	82	623	337	258	879	325
Grp Sat Flow(s),veh/h/ln	1127	1863	1583	1203	1863	1583	1774	1695	1831	1774	1695	1583
Q Serve(g_s), s	36.1	3.7	6.5	2.4	3.4	11.9	3.1	15.8	15.9	9.6	13.3	16.5
Cycle Q Clear(g_c), s	39.6	3.7	6.5	6.1	3.4	11.9	3.1	15.8	15.9	9.6	13.3	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	385	595	506	405	595	506	327	1624	877	424	2680	834
V/C Ratio(X)	0.81	0.12	0.21	0.07	0.11	0.36	0.25	0.38	0.38	0.61	0.33	0.39
Avail Cap(c_a), veh/h	459	718	610	484	718	610	343	1624	877	645	2680	834
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	32.5	33.5	34.7	32.4	35.3	16.4	22.4	22.5	15.8	18.3	19.0
Incr Delay (d2), s/veh	8.7	0.1	0.2	0.1	0.1	0.4	0.4	0.7	1.3	1.4	0.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	17.9	3.4	5.2	1.5	3.2	9.0	2.8	12.1	13.1	8.4	10.5	12.0
LnGrp Delay(d),s/veh	55.0	32.6	33.7	34.8	32.5	35.7	16.8	23.1	23.7	17.2	18.6	20.4
LnGrp LOS	E	C	C	C	C	D	B	C	C	B	B	C
Approach Vol, veh/h		487			278			1042			1462	
Approach Delay, s/veh		47.1			34.8			22.8			18.7	
Approach LOS		D			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.2	70.7		48.1	9.7	77.1		48.1				
Change Period (Y+Rc), s	4.0	6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s	29.0	39.0		52.0	7.0	61.0		52.0				
Max Q Clear Time (g_c+I1), s	11.6	17.9		41.6	5.1	18.5		13.9				
Green Ext Time (p_c), s	0.6	5.8		1.6	0.0	8.1		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				25.6								
HCM 2010 LOS				C								

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	24	198	51	9	14	188	874	79	32	864	75
Future Volume (vph)	102	24	198	51	9	14	188	874	79	32	864	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	230		230	280		210	260		140
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	1.00	1.00	1.00	0.91	1.00	1.00	0.91	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	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.750			0.739			0.265			0.298		
Satd. Flow (perm)	1397	1863	1583	1377	1863	1583	494	5085	1583	555	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228			57			83			66
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		610			552			1344			931	
Travel Time (s)		13.9			12.5			20.4			14.1	
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	117	28	228	61	11	17	198	920	83	34	929	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	28	228	61	11	17	198	920	83	34	929	81
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	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0	11.0	11.0
Minimum Split (s)	42.0	42.0	42.0	43.0	43.0	43.0	10.0	31.0	31.0	33.0	33.0	33.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	30.0	85.0	85.0	55.0	55.0	55.0
Total Split (%)	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%	22.2%	63.0%	63.0%	40.7%	40.7%	40.7%
Maximum Green (s)	45.0	45.0	45.0	45.0	45.0	45.0	26.0	79.0	79.0	49.0	49.0	49.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Flash Dont Walk (s)	31.0	31.0	31.0	32.0	32.0	32.0		19.0	19.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)	10	10	10	10	10	10		0	0	0	0	0
Act Effect Green (s)	23.3	23.3	23.3	23.3	23.3	23.3	102.7	100.7	100.7	86.7	86.7	86.7
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17	0.17	0.76	0.75	0.75	0.64	0.64	0.64
v/c Ratio	0.49	0.09	0.49	0.26	0.03	0.05	0.42	0.24	0.07	0.10	0.28	0.08
Control Delay	54.3	41.4	8.3	46.5	38.9	0.3	12.3	8.9	4.5	4.7	4.1	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	41.4	8.3	46.5	38.9	0.3	12.3	8.9	4.5	4.7	4.1	1.4
LOS	D	D	A	D	D	A	B	A	A	A	A	A
Approach Delay		25.2			36.8			9.2			3.9	
Approach LOS		C			D			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 61 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 10.2

Intersection LOS: B

Intersection Capacity Utilization 52.5%

ICU Level of Service A

Analysis Period (min) 15

























Splits and Phases: 6: Aurora Pkwy & Commons/Applewood



HCM 2010 Signalized Intersection Summary

6: Aurora Pkwy & Commons/Applewood






















07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	24	198	51	9	14	188	874	79	32	864	75
Future Volume (veh/h)	102	24	198	51	9	14	188	874	79	32	864	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	117	28	228	61	11	17	198	920	83	34	929	81
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.95	0.95	0.95	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	307	261	223	307	261	478	3834	1194	430	3423	1066
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.05	0.75	0.75	0.67	0.67	0.67
Sat Flow, veh/h	1377	1863	1583	1119	1863	1583	1774	5085	1583	559	5085	1583
Grp Volume(v), veh/h	117	28	228	61	11	17	198	920	83	34	929	81
Grp Sat Flow(s),veh/h/ln	1377	1863	1583	1119	1863	1583	1774	1695	1583	559	1695	1583
Q Serve(g_s), s	10.5	1.7	19.0	6.6	0.7	1.2	4.4	7.3	1.8	2.9	9.9	2.4
Cycle Q Clear(g_c), s	11.2	1.7	19.0	8.3	0.7	1.2	4.4	7.3	1.8	2.9	9.9	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	307	261	223	307	261	478	3834	1194	430	3423	1066
V/C Ratio(X)	0.43	0.09	0.87	0.27	0.04	0.07	0.41	0.24	0.07	0.08	0.27	0.08
Avail Cap(c_a), veh/h	505	621	528	412	621	528	729	3834	1194	430	3423	1066
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	47.8	55.0	51.4	47.4	47.6	6.0	5.0	4.3	7.7	8.8	7.6
Incr Delay (d2), s/veh	1.1	0.1	9.0	0.7	0.0	0.1	0.6	0.1	0.1	0.4	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.3	1.6	13.9	3.8	0.6	1.0	4.0	6.2	1.5	0.9	8.1	1.9
LnGrp Delay(d),s/veh	53.2	48.0	64.0	52.0	47.4	47.7	6.6	5.1	4.4	8.0	9.0	7.7
LnGrp LOS	D	D	E	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	373			89			1201			1044		
Approach Delay, s/veh	59.4			50.6			5.3			8.9		
Approach LOS	E			D			A			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	107.8		27.2		10.9		96.9		27.2			
Change Period (Y+Rc), s	6.0		5.0		4.0		6.0		5.0			
Max Green Setting (Gmax), s	79.0		45.0		26.0		49.0		45.0			
Max Q Clear Time (g_c+I1), s	9.3		21.0		6.4		11.9		10.3			
Green Ext Time (p_c), s	7.5		1.3		0.5		7.8		0.3			
Intersection Summary												
HCM 2010 Ctrl Delay	15.6											
HCM 2010 LOS	B											

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	34	196	5	34	67	208	1060	13	100	930	83
Future Volume (vph)	62	34	196	5	34	67	208	1060	13	100	930	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	180		0	390		0	215		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.872			0.900			0.998			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3086	0	1770	3185	0	1770	5075	0	1770	5024	0
Flt Permitted	0.677			0.466			0.228			0.234		
Satd. Flow (perm)	1261	3086	0	868	3185	0	425	5075	0	436	5024	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		239			79			2			12	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		497			563			925			311	
Travel Time (s)		11.3			12.8			14.0			4.7	
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.97	0.97	0.97	0.95	0.95	0.95
Adj. Flow (vph)	76	41	239	6	40	79	214	1093	13	105	979	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	280	0	6	119	0	214	1106	0	105	1066	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
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	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(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	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	11.0		6.0	11.0	
Minimum Split (s)	42.0	42.0		43.0	43.0		10.0	28.0		10.0	34.0	
Total Split (s)	46.0	46.0		46.0	46.0		33.0	72.0		17.0	56.0	
Total Split (%)	34.1%	34.1%		34.1%	34.1%		24.4%	53.3%		12.6%	41.5%	
Maximum Green (s)	40.0	40.0		40.0	40.0		29.0	66.0		13.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Flash Dont Walk (s)	30.0	30.0		31.0	31.0			16.0			22.0	
Pedestrian Calls (#/hr)	10	10		10	10			0			0	
Act Effect Green (s)	21.2	21.2		21.2	21.2		102.2	90.0		97.0	87.2	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.76	0.67		0.72	0.65	
v/c Ratio	0.39	0.41		0.04	0.21		0.50	0.33		0.27	0.33	
Control Delay	52.5	9.8		39.6	16.7		16.7	6.3		5.3	5.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	52.5	9.8		39.6	16.7		16.7	6.3		5.3	5.7	
LOS	D	A		D	B		B	A		A	A	
Approach Delay		18.9			17.8			8.0			5.6	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 88 (65%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 8.8

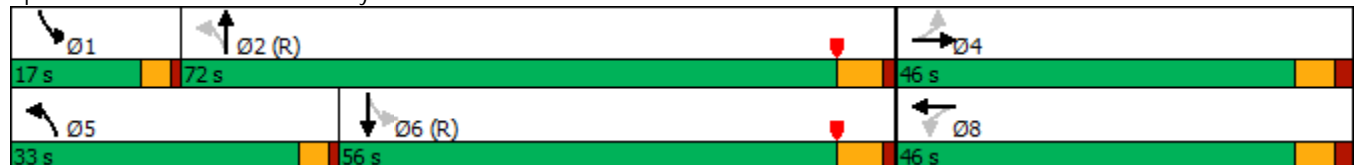
Intersection LOS: A

Intersection Capacity Utilization 54.8%

ICU Level of Service A

Analysis Period (min) 15





















Splits and Phases: 7: Aurora Pkwy & Southlands



HCM 2010 Signalized Intersection Summary

7: Aurora Pkwy & Southlands
























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	34	196	5	34	67	208	1060	13	100	930	83
Future Volume (veh/h)	62	34	196	5	34	67	208	1060	13	100	930	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	76	41	239	6	40	79	214	1093	13	105	979	87
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.97	0.97	0.97	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	310	278	85	310	278	454	3432	41	458	3064	272
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.12	1.00	1.00	0.04	0.64	0.64
Sat Flow, veh/h	1268	1770	1583	1095	1770	1583	1774	5180	62	1774	4757	422
Grp Volume(v), veh/h	76	41	239	6	40	79	214	715	391	105	697	369
Grp Sat Flow(s),veh/h/ln	1268	1770	1583	1095	1770	1583	1774	1695	1852	1774	1695	1788
Q Serve(g_s), s	7.5	2.6	19.8	0.7	2.6	5.8	5.8	0.0	0.0	2.7	12.4	12.5
Cycle Q Clear(g_c), s	13.3	2.6	19.8	20.5	2.6	5.8	5.8	0.0	0.0	2.7	12.4	12.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		0.24
Lane Grp Cap(c), veh/h	221	310	278	85	310	278	454	2246	1227	458	2184	1152
V/C Ratio(X)	0.34	0.13	0.86	0.07	0.13	0.28	0.47	0.32	0.32	0.23	0.32	0.32
Avail Cap(c_a), veh/h	374	524	469	217	524	469	725	2246	1227	551	2184	1152
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.77	0.77	0.77	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	47.0	54.1	64.0	47.0	48.3	7.0	0.0	0.0	7.0	10.8	10.8
Incr Delay (d2), s/veh	0.9	0.2	8.2	0.3	0.2	0.6	0.6	0.3	0.5	0.3	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.8	2.4	14.3	0.4	2.3	4.7	5.1	0.2	0.3	2.3	9.9	10.5
LnGrp Delay(d),s/veh	55.0	47.2	62.2	64.4	47.1	48.9	7.6	0.3	0.5	7.2	11.1	11.5
LnGrp LOS	E	D	E	E	D	D	A	A	A	A	B	B
Approach Vol, veh/h	356				125				1320			
Approach Delay, s/veh	59.0				49.1				1.5			
Approach LOS	E				D				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	95.4		29.7	12.4	93.0		29.7				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	13.0	66.0		40.0	29.0	50.0		40.0				
Max Q Clear Time (g_c+I1), s	4.7	2.0		21.8	7.8	14.5		22.5				
Green Ext Time (p_c), s	0.1	8.4		1.9	0.5	7.6		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay	14.1											
HCM 2010 LOS	B											

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	927	229	57	625	303	257	658	79	382	500	249
Future Volume (vph)	320	927	229	57	625	303	257	658	79	382	500	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	335		395	260		260	380		465	235		0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor			0.98	1.00				1.00		1.00		
Frt			0.850			0.850		0.984				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	4995	0	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1555	3425	5085	1583	3433	4995	0	3427	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126			113			16			105
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1859			2698			936			925	
Travel Time (s)		28.2			40.9			14.2			14.0	
Confl. Peds. (#/hr)			5	5					5	5		
Peak Hour Factor	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.88	0.95	0.95	0.95
Adj. Flow (vph)	356	1030	254	61	665	322	292	748	90	402	526	262
Shared Lane Traffic (%)												
Lane Group Flow (vph)	356	1030	254	61	665	322	292	838	0	402	526	262
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			24			24	
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	1	1	1	1	1	1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	30	20	20	30	20	20	30		20	30	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	30	20	20	30	20	20	30		20	30	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
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	41.0	11.0	11.0	43.0	11.0	11.0	45.0		11.0	44.0	11.0
Total Split (s)	22.0	54.0	22.0	11.0	43.0	25.0	22.0	45.0		25.0	48.0	22.0
Total Split (%)	16.3%	40.0%	16.3%	8.1%	31.9%	18.5%	16.3%	33.3%		18.5%	35.6%	16.3%
Maximum Green (s)	17.0	48.0	17.0	6.0	37.0	20.0	17.0	39.0		20.0	42.0	17.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0		2.0	3.0	2.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max		None	Max	None
Walk Time (s)		6.0			6.0			6.0			6.0	
Flash Dont Walk (s)		29.0			31.0			33.0			32.0	
Pedestrian Calls (#/hr)		5			0			5			0	
Act Effect Green (s)	17.0	51.5	67.6	6.0	38.3	63.0	15.0	39.0		18.7	42.6	60.6
Actuated g/C Ratio	0.13	0.38	0.50	0.04	0.28	0.47	0.11	0.29		0.14	0.32	0.45
v/c Ratio	0.82	0.53	0.30	0.40	0.46	0.40	0.76	0.58		0.85	0.47	0.34
Control Delay	79.4	39.1	22.4	66.2	45.5	19.0	71.6	42.0		70.1	34.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	79.4	39.1	22.4	66.2	45.5	19.0	71.6	42.0		70.1	34.0	8.5
LOS	E	D	C	E	D	B	E	D		E	C	A
Approach Delay		45.3			38.6			49.7			40.6	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 22 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 43.7

Intersection LOS: D

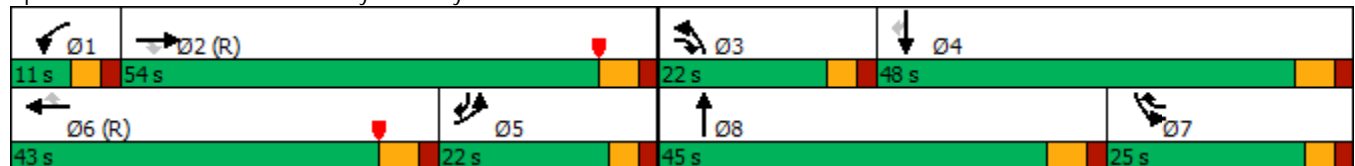
Intersection Capacity Utilization 95.9%

ICU Level of Service F

Analysis Period (min) 15

Description: Aurora
























Splits and Phases: 8: Aurora Pkwy & Smoky Hill Rd



HCM 2010 Signalized Intersection Summary

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	927	229	57	625	303	257	658	79	382	500	249
Future Volume (veh/h)	320	927	229	57	625	303	257	658	79	382	500	249
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	356	1030	254	61	665	322	292	748	90	402	526	262
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	2	2	1
Peak Hour Factor	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	436	1872	739	137	1394	642	343	1330	159	456	1165	719
Arrive On Green	0.04	0.12	0.12	0.04	0.27	0.27	0.10	0.29	0.29	0.04	0.11	0.11
Sat Flow, veh/h	3442	5085	1577	3442	5085	1575	3442	4603	550	3442	3539	1576
Grp Volume(v), veh/h	356	1030	254	61	665	322	292	550	288	402	526	262
Grp Sat Flow(s),veh/h/ln	1721	1695	1577	1721	1695	1575	1721	1695	1762	1721	1770	1576
Q Serve(g_s), s	13.9	25.7	17.0	2.3	14.7	2.6	11.3	18.6	18.8	15.7	18.8	4.3
Cycle Q Clear(g_c), s	13.9	25.7	17.0	2.3	14.7	2.6	11.3	18.6	18.8	15.7	18.8	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	436	1872	739	137	1394	642	343	979	509	456	1165	719
V/C Ratio(X)	0.82	0.55	0.34	0.44	0.48	0.50	0.85	0.56	0.57	0.88	0.45	0.36
Avail Cap(c_a), veh/h	436	1872	739	153	1394	642	433	979	509	510	1165	719
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.95	0.95	0.95	0.98	0.98	0.98	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	63.1	48.8	32.8	63.3	40.9	29.8	59.8	40.7	40.8	63.5	48.7	13.7
Incr Delay (d2), s/veh	10.3	1.1	1.2	0.8	1.1	2.7	10.3	2.3	4.5	13.6	1.2	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.5	17.9	12.1	2.0	11.3	2.8	9.8	13.9	14.9	13.0	14.4	9.2
LnGrp Delay(d),s/veh	73.4	49.9	34.1	64.2	42.1	32.6	70.1	43.1	45.3	77.1	50.0	15.1
LnGrp LOS	E	D	C	E	D	C	E	D	D	E	D	B
Approach Vol, veh/h		1640			1048			1130			1190	
Approach Delay, s/veh		52.5			40.4			50.6			51.4	
Approach LOS		D			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.4	55.7	18.5	50.4	23.1	43.0	23.9	45.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	6.0	* 6	6.0	* 6				
Max Green Setting (Gmax), s	6.0	48.0	17.0	42.0	17.0	* 37	20.0	* 39				
Max Q Clear Time (g_c+I1), s	4.3	27.7	13.3	20.8	15.9	16.7	17.7	20.8				
Green Ext Time (p_c), s	0.0	5.1	0.2	2.8	0.1	3.7	0.2	2.9				
Intersection Summary												
HCM 2010 Ctrl Delay			49.3									
HCM 2010 LOS			D									
Notes												

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

Lanes, Volumes, Timings

1: DeGaulle & Alexander

07/03/2018






















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	7	5	0	26	17	18	11	0	5	3	170
Future Volume (vph)	171	7	5	0	26	17	18	11	0	5	3	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.946						0.871	
Flt Protected		0.955						0.970			0.999	
Satd. Flow (prot)	0	1772	0	0	1762	0	0	1807	0	0	1621	0
Flt Permitted		0.955						0.970			0.999	
Satd. Flow (perm)	0	1772	0	0	1762	0	0	1807	0	0	1621	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		568			374			335			287	
Travel Time (s)		15.5			10.2			9.1			7.8	
Peak Hour Factor	0.64	0.64	0.64	0.75	0.75	0.75	0.68	0.68	0.68	0.75	0.75	0.75
Adj. Flow (vph)	267	11	8	0	35	23	26	16	0	7	4	227
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	286	0	0	58	0	0	42	0	0	238	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	34.6%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	8.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	171	7	5	0	26	17	18	11	0	5	3	170
Future Vol, veh/h	171	7	5	0	26	17	18	11	0	5	3	170
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	64	64	64	75	75	75	68	68	68	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	267	11	8	0	35	23	26	16	0	7	4	227
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	19	0	0	711	607	15	604	600	47
Stage 1	-	-	-	-	-	-	549	549	-	47	47	-
Stage 2	-	-	-	-	-	-	162	58	-	557	553	-
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	1546	-	-	1597	-	-	348	411	1065	410	415	1022
Stage 1	-	-	-	-	-	-	520	516	-	967	856	-
Stage 2	-	-	-	-	-	-	840	847	-	515	514	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1546	-	-	1597	-	-	232	339	1065	342	342	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	232	339	-	342	342	-
Stage 1	-	-	-	-	-	-	429	426	-	798	856	-
Stage 2	-	-	-	-	-	-	651	847	-	409	424	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	7.3			0			21.2			10.1		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	264	1546	-	-	1597	-	-	938				
HCM Lane V/C Ratio	0.162	0.173	-	-	-	-	-	0.253				
HCM Control Delay (s)	21.2	7.8	0	-	0	-	-	10.1				
HCM Lane LOS	C	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.6	0.6	-	-	0	-	-	1				

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	935	0	11	979	107	16	5	26	338	3	65
Future Volume (vph)	4	935	0	11	979	107	16	5	26	338	3	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	290		0	185		0	185		185
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.985			0.873				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	0	1770	5009	0	1770	1626	0	1770	1863	1583
Flt Permitted	0.196			0.243			0.755			0.728		
Satd. Flow (perm)	365	5085	0	453	5009	0	1406	1626	0	1356	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					24			34				36
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1377			2056			484			500	
Travel Time (s)		20.9			31.2			13.2			13.6	
Peak Hour Factor	0.94	0.94	0.94	0.95	0.95	0.95	0.68	0.68	0.68	0.83	0.83	0.83
Adj. Flow (vph)	4	995	0	12	1031	113	24	7	38	407	4	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	995	0	12	1144	0	24	45	0	407	4	78
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	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		8

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	26.0	26.0		28.0	28.0		41.0	41.0		41.0	41.0	41.0
Total Split (s)	41.0	41.0		41.0	41.0		49.0	49.0		49.0	49.0	49.0
Total Split (%)	45.6%	45.6%		45.6%	45.6%		54.4%	54.4%		54.4%	54.4%	54.4%
Maximum Green (s)	35.0	35.0		35.0	35.0		44.0	44.0		44.0	44.0	44.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Flash Dont Walk (s)	14.0	14.0		16.0	16.0		30.0	30.0		30.0	30.0	30.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	45.2	45.2		45.2	45.2		33.8	33.8		33.8	33.8	33.8
Actuated g/C Ratio	0.50	0.50		0.50	0.50		0.38	0.38		0.38	0.38	0.38
v/c Ratio	0.02	0.39		0.05	0.45		0.05	0.07		0.80	0.01	0.13
Control Delay	16.2	15.8		13.2	14.9		14.6	6.5		36.6	13.3	9.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	16.2	15.8		13.2	14.9		14.6	6.5		36.6	13.3	9.5
LOS	B	B		B	B		B	A		D	B	A
Approach Delay		15.8			14.9			9.3			32.1	
Approach LOS		B			B			A			C	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 18.2

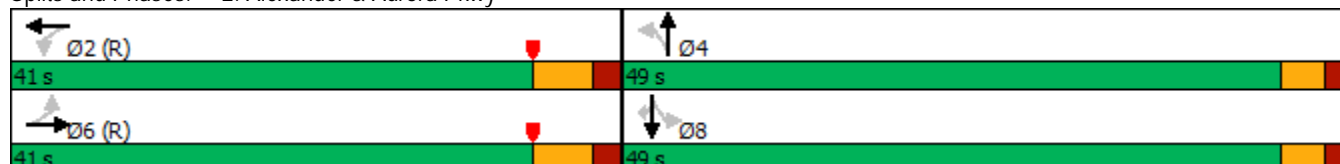
Intersection LOS: B

Intersection Capacity Utilization 55.9%

ICU Level of Service B

Analysis Period (min) 15






















Splits and Phases: 2: Alexander & Aurora Pkwy



HCM 2010 Signalized Intersection Summary

2: Alexander & Aurora Pkwy

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	935	0	11	979	107	16	5	26	338	3	65
Future Volume (veh/h)	4	935	0	11	979	107	16	5	26	338	3	65
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	4	995	0	12	1031	113	24	7	38	407	4	78
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.95	0.95	0.95	0.68	0.68	0.68	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	2705	0	316	2475	271	532	87	474	524	644	548
Arrive On Green	0.53	0.53	0.00	0.53	0.53	0.53	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	490	5253	0	564	4654	509	1311	252	1369	1356	1863	1583
Grp Volume(v), veh/h	4	995	0	12	751	393	24	0	45	407	4	78
Grp Sat Flow(s),veh/h/ln	490	1695	0	564	1695	1773	1311	0	1621	1356	1863	1583
Q Serve(g_s), s	0.4	10.2	0.0	1.1	12.0	12.0	1.1	0.0	1.7	26.0	0.1	3.1
Cycle Q Clear(g_c), s	12.5	10.2	0.0	11.4	12.0	12.0	1.2	0.0	1.7	27.7	0.1	3.1
Prop In Lane	1.00		0.00	1.00		0.29	1.00		0.84	1.00		1.00
Lane Grp Cap(c), veh/h	275	2705	0	316	1803	943	532	0	561	524	644	548
V/C Ratio(X)	0.01	0.37	0.00	0.04	0.42	0.42	0.05	0.00	0.08	0.78	0.01	0.14
Avail Cap(c_a), veh/h	275	2705	0	316	1803	943	719	0	793	717	911	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	12.3	0.0	15.6	12.7	12.7	19.7	0.0	19.8	29.1	19.3	20.3
Incr Delay (d2), s/veh	0.1	0.4	0.0	0.2	0.7	1.4	0.0	0.0	0.1	3.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	8.5	0.0	0.4	9.6	10.2	0.7	0.0	1.4	15.5	0.1	2.4
LnGrp Delay(d),s/veh	16.5	12.6	0.0	15.8	13.4	14.0	19.7	0.0	19.9	32.8	19.3	20.4
LnGrp LOS	B	B		B	B	B	B		B	C	B	C
Approach Vol, veh/h		999			1156			69			489	
Approach Delay, s/veh		12.7			13.6			19.8			30.7	
Approach LOS		B			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		53.9		36.1		53.9		36.1				
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0				
Max Green Setting (Gmax), s		35.0		44.0		35.0		44.0				
Max Q Clear Time (g_c+I1), s		14.0		3.7		14.5		29.7				
Green Ext Time (p_c), s		7.4		0.3		6.5		1.5				
Intersection Summary												
HCM 2010 Ctrl Delay				16.5								
HCM 2010 LOS				B								

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	7	18	43	16	303	24	737	10	215	958	126
Future Volume (vph)	56	7	18	43	16	303	24	737	10	215	958	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	190		0	280		0	290		100
Storage Lanes	1		1	1		1	1		0	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	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850		0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5075	0	1770	5085	1583
Flt Permitted	0.515			0.752			0.266			0.288		
Satd. Flow (perm)	959	1863	1583	1401	1863	1583	495	5075	0	536	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			374		2				121
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		249			440			428			609	
Travel Time (s)		5.7			10.0			6.5			9.2	
Peak Hour Factor	0.85	0.85	0.85	0.81	0.81	0.81	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	66	8	21	53	20	374	27	819	11	231	1030	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	8	21	53	20	374	27	830	0	231	1030	135
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	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		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	20	6	20	20	6		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	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	10.0		3.0	10.0	10.0
Minimum Split (s)	8.0	40.0	40.0	44.0	44.0	44.0	10.0	29.0		10.0	34.0	34.0
Total Split (s)	7.0	50.0	50.0	43.0	43.0	43.0	9.0	23.0		17.0	31.0	31.0
Total Split (%)	7.8%	55.6%	55.6%	47.8%	47.8%	47.8%	10.0%	25.6%		18.9%	34.4%	34.4%
Maximum Green (s)	3.0	45.0	45.0	38.0	38.0	38.0	5.0	17.0		13.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	1.5	2.0	2.0	2.0	2.0	2.0	1.5	5.0		1.5	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		5.0	5.0	5.0	5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)		29.0	29.0	33.0	33.0	33.0		17.0			22.0	22.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	15.6	14.6	14.6	9.0	9.0	9.0	56.5	50.0		66.4	60.8	60.8
Actuated g/C Ratio	0.17	0.16	0.16	0.10	0.10	0.10	0.63	0.56		0.74	0.68	0.68
v/c Ratio	0.34	0.03	0.06	0.38	0.11	0.76	0.07	0.29		0.43	0.30	0.12
Control Delay	33.9	27.4	0.3	43.5	35.1	14.4	5.0	6.8		9.7	4.5	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	33.9	27.4	0.3	43.5	35.1	14.4	5.0	6.8		9.7	4.5	0.7
LOS	C	C	A	D	D	B	A	A		A	A	A
Approach Delay		25.9			18.8			6.7			5.0	
Approach LOS		C			B			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 8.4

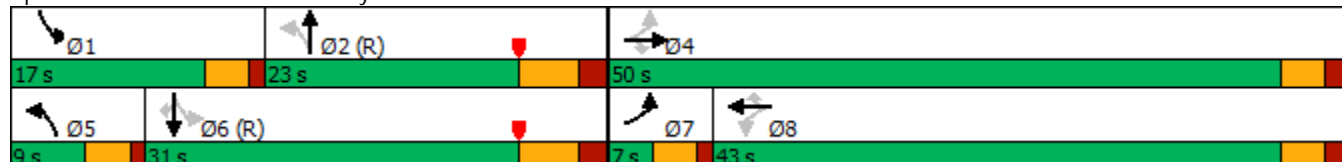
Intersection LOS: A

Intersection Capacity Utilization 49.1%

ICU Level of Service A

Analysis Period (min) 15
























Splits and Phases: 5: Aurora Pkwy & Orchard



HCM 2010 Signalized Intersection Summary

5: Aurora Pkwy & Orchard

07/03/2018

























																	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR					
Lane Configurations																	
Traffic Volume (veh/h)	56	7	18	43	16	303	24	737	10	215	958	126					
Future Volume (veh/h)	56	7	18	43	16	303	24	737	10	215	958	126					
Number	7	4	14	3	8	18	5	2	12	1	6	16					
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0					
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00					
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863					
Adj Flow Rate, veh/h	66	8	21	53	20	374	27	819	11	231	1030	135					
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1					
Peak Hour Factor	0.85	0.85	0.85	0.81	0.81	0.81	0.90	0.90	0.90	0.93	0.93	0.93					
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2					
Cap, veh/h	387	629	534	437	484	411	276	2073	28	438	2439	759					
Arrive On Green	0.03	0.34	0.34	0.26	0.26	0.26	0.02	0.40	0.40	0.09	0.48	0.48					
Sat Flow, veh/h	1774	1863	1583	1375	1863	1583	1774	5171	69	1774	5085	1583					
Grp Volume(v), veh/h	66	8	21	53	20	374	27	537	293	231	1030	135					
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1375	1863	1583	1774	1695	1850	1774	1695	1583					
Q Serve(g_s), s	2.4	0.3	0.8	2.7	0.7	20.6	0.8	10.1	10.2	6.5	11.9	4.4					
Cycle Q Clear(g_c), s	2.4	0.3	0.8	2.7	0.7	20.6	0.8	10.1	10.2	6.5	11.9	4.4					
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00					
Lane Grp Cap(c), veh/h	387	629	534	437	484	411	276	1359	742	438	2439	759					
V/C Ratio(X)	0.17	0.01	0.04	0.12	0.04	0.91	0.10	0.39	0.40	0.53	0.42	0.18					
Avail Cap(c_a), veh/h	387	931	792	661	786	669	345	1359	742	526	2439	759					
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Uniform Delay (d), s/veh	22.0	19.8	20.0	25.7	24.9	32.3	15.7	19.2	19.2	13.3	15.3	13.3					
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.0	7.1	0.1	0.9	1.6	0.4	0.5	0.5					
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
%ile BackOfQ(95%),veh/ln	2.1	0.2	0.6	1.8	0.7	15.0	0.7	8.5	9.3	5.6	9.6	3.6					
LnGrp Delay(d),s/veh	22.0	19.8	20.0	25.7	24.9	39.4	15.7	20.1	20.8	13.6	15.8	13.8					
LnGrp LOS	C	B	C	C	C	D	B	C	C	B	B	B					
Approach Vol, veh/h	95				447				857								
Approach Delay, s/veh	21.4				37.1				20.2								
Approach LOS	C				D				C								
Timer	1	2	3	4	5	6	7	8									
Assigned Phs	1	2			4	5	6	7	8								
Phs Duration (G+Y+Rc), s	12.5	42.1			35.4	5.5	49.2	7.0	28.4								
Change Period (Y+Rc), s	4.0	6.0			5.0	4.0	6.0	4.0	5.0								
Max Green Setting (Gmax), s	13.0	17.0			45.0	5.0	25.0	3.0	38.0								
Max Q Clear Time (g_c+I1), s	8.5	12.2			2.8	2.8	13.9	4.4	22.6								
Green Ext Time (p_c), s	0.1	3.0			0.0	0.0	7.7	0.0	0.8								
Intersection Summary																	
HCM 2010 Ctrl Delay	20.5																
HCM 2010 LOS	C																
Notes																	

User approved pedestrian interval to be less than phase max green.

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	3	38	106	12	45	77	705	20	6	976	37
Future Volume (vph)	20	3	38	106	12	45	77	705	20	6	976	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	230		230	280		210	260		140
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	1.00	1.00	1.00	0.91	1.00	1.00	0.91	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	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.748			0.755			0.245			0.355		
Satd. Flow (perm)	1393	1863	1583	1406	1863	1583	456	5085	1583	661	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			85			24			73
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		610			552			1344			931	
Travel Time (s)		13.9			12.5			20.4			14.1	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.94	0.94	0.94	0.98	0.98	0.98
Adj. Flow (vph)	24	4	46	128	14	54	82	750	21	6	996	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	4	46	128	14	54	82	750	21	6	996	38
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	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0	11.0	11.0
Minimum Split (s)	42.0	42.0	42.0	43.0	43.0	43.0	10.0	31.0	31.0	33.0	33.0	33.0
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0	10.0	47.0	47.0	37.0	37.0	37.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	47.8%	47.8%	11.1%	52.2%	52.2%	41.1%	41.1%	41.1%
Maximum Green (s)	38.0	38.0	38.0	38.0	38.0	38.0	6.0	41.0	41.0	31.0	31.0	31.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Flash Dont Walk (s)	31.0	31.0	31.0	32.0	32.0	32.0		19.0	19.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0	0	0	0
Act Effect Green (s)	13.6	13.6	13.6	13.6	13.6	13.6	67.4	65.4	65.4	56.6	56.6	56.6
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15	0.15	0.75	0.73	0.73	0.63	0.63	0.63
v/c Ratio	0.11	0.01	0.15	0.60	0.05	0.17	0.19	0.20	0.02	0.01	0.31	0.04
Control Delay	31.6	29.3	2.9	46.6	30.2	4.2	5.6	5.6	3.5	16.7	13.0	6.1
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	31.6	29.3	2.9	46.6	30.2	4.2	5.6	5.6	3.5	16.7	13.0	6.1
LOS	C	C	A	D	C	A	A	A	A	B	B	A
Approach Delay		13.6			33.7			5.6			12.7	
Approach LOS		B			C			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 84 (93%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 11.9

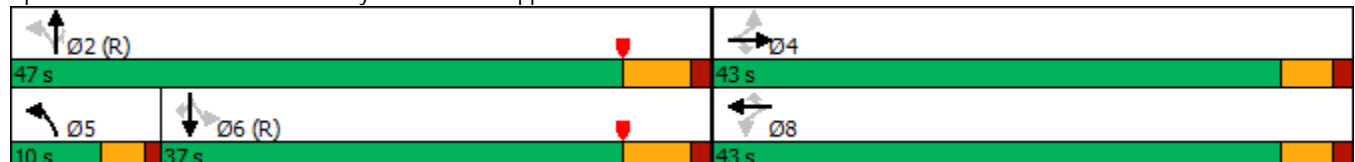
Intersection LOS: B

Intersection Capacity Utilization 49.5%

ICU Level of Service A

Analysis Period (min) 15

























Splits and Phases: 6: Aurora Pkwy & Commons/Applewood



HCM 2010 Signalized Intersection Summary

6: Aurora Pkwy & Commons/Applewood






















07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	3	38	106	12	45	77	705	20	6	976	37
Future Volume (veh/h)	20	3	38	106	12	45	77	705	20	6	976	37
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	24	4	46	128	14	54	82	750	21	6	996	38
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.94	0.94	0.94	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	229	195	243	229	195	492	3839	1195	534	3318	1033
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.06	0.75	0.75	0.65	0.65	0.65
Sat Flow, veh/h	1328	1863	1583	1349	1863	1583	1774	5085	1583	696	5085	1583
Grp Volume(v), veh/h	24	4	46	128	14	54	82	750	21	6	996	38
Grp Sat Flow(s),veh/h/ln	1328	1863	1583	1349	1863	1583	1774	1695	1583	696	1695	1583
Q Serve(g_s), s	1.5	0.2	2.4	8.3	0.6	2.8	1.2	3.8	0.3	0.3	7.6	0.8
Cycle Q Clear(g_c), s	2.1	0.2	2.4	8.5	0.6	2.8	1.2	3.8	0.3	0.3	7.6	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	229	195	243	229	195	492	3839	1195	534	3318	1033
V/C Ratio(X)	0.10	0.02	0.24	0.53	0.06	0.28	0.17	0.20	0.02	0.01	0.30	0.04
Avail Cap(c_a), veh/h	632	786	669	647	786	669	507	3839	1195	534	3318	1033
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	34.7	35.7	38.4	34.9	35.8	4.0	3.2	2.7	5.5	6.8	5.6
Incr Delay (d2), s/veh	0.2	0.0	0.6	1.8	0.1	0.8	0.2	0.1	0.0	0.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.2	1.9	5.8	0.6	2.3	1.0	3.2	0.2	0.1	6.4	0.6
LnGrp Delay(d),s/veh	36.0	34.7	36.3	40.2	35.0	36.6	4.1	3.3	2.8	5.5	7.0	5.6
LnGrp LOS	D	C	D	D	C	D	A	A	A	A	A	A
Approach Vol, veh/h		74			196			853			1040	
Approach Delay, s/veh		36.1			38.8			3.4			6.9	
Approach LOS		D			D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		73.9		16.1	9.2	64.7		16.1				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		41.0		38.0	6.0	31.0		38.0				
Max Q Clear Time (g_c+I1), s		5.8		4.4	3.2	9.6		10.5				
Green Ext Time (p_c), s		5.4		0.2	0.0	6.8		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			9.4									
HCM 2010 LOS			A									

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	8	43	2	14	59	64	706	16	60	1031	29
Future Volume (vph)	13	8	43	2	14	59	64	706	16	60	1031	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	180		0	390		0	215		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.874			0.879			0.997			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3093	0	1770	3111	0	1770	5070	0	1770	5065	0
Flt Permitted	0.670			0.714			0.214			0.343		
Satd. Flow (perm)	1248	3093	0	1330	3111	0	399	5070	0	639	5065	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			104			4			5	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		497			563			925			311	
Travel Time (s)		11.3			12.8			14.0			4.7	
Peak Hour Factor	0.83	0.83	0.83	0.57	0.57	0.57	0.92	0.92	0.92	0.89	0.89	0.89
Adj. Flow (vph)	16	10	52	4	25	104	70	767	17	67	1158	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	62	0	4	129	0	70	784	0	67	1191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
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	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(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	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	11.0		6.0	11.0	
Minimum Split (s)	42.0	42.0		43.0	43.0		10.0	28.0		10.0	34.0	
Total Split (s)	43.0	43.0		43.0	43.0		10.0	37.0		10.0	37.0	
Total Split (%)	47.8%	47.8%		47.8%	47.8%		11.1%	41.1%		11.1%	41.1%	
Maximum Green (s)	37.0	37.0		37.0	37.0		6.0	31.0		6.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Flash Dont Walk (s)	30.0	30.0		31.0	31.0			16.0			22.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effect Green (s)	7.0	7.0		7.0	7.0		69.8	62.7		69.8	62.7	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.78	0.70		0.78	0.70	
v/c Ratio	0.16	0.22		0.04	0.38		0.17	0.22		0.12	0.34	
Control Delay	42.1	16.2		38.5	15.4		2.9	5.5		1.4	3.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.1	16.2		38.5	15.4		2.9	5.5		1.4	3.9	
LOS	D	B		D	B		A	A		A	A	
Approach Delay		21.5			16.1			5.3			3.8	
Approach LOS		C			B			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 38 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.38

Intersection Signal Delay: 5.6

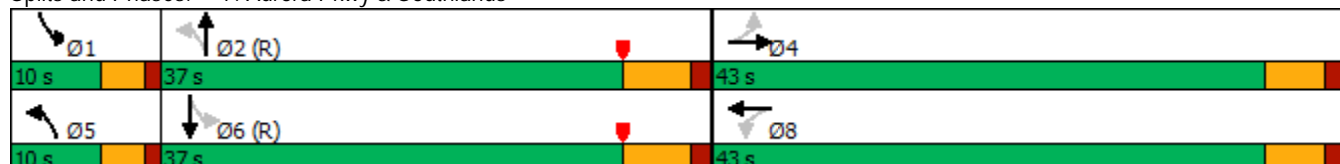
Intersection LOS: A

Intersection Capacity Utilization 46.3%

ICU Level of Service A

Analysis Period (min) 15





















Splits and Phases: 7: Aurora Pkwy & Southlands



HCM 2010 Signalized Intersection Summary
























7: Aurora Pkwy & Southlands

07/03/2018

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	13	8	43	2	14	59	64	706	16	60	1031	29				
Future Volume (veh/h)	13	8	43	2	14	59	64	706	16	60	1031	29				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900				
Adj Flow Rate, veh/h	16	10	52	4	25	104	70	767	17	67	1158	33				
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0				
Peak Hour Factor	0.83	0.83	0.83	0.57	0.57	0.57	0.92	0.92	0.92	0.89	0.89	0.89				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	128	179	160	174	179	160	443	3414	76	594	3384	96				
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.06	0.67	0.67	0.05	0.67	0.67				
Sat Flow, veh/h	1256	1770	1583	1335	1770	1583	1774	5120	113	1774	5083	145				
Grp Volume(v), veh/h	16	10	52	4	25	104	70	508	276	67	772	419				
Grp Sat Flow(s),veh/h/ln	1256	1770	1583	1335	1770	1583	1774	1695	1843	1774	1695	1837				
Q Serve(g_s), s	1.1	0.5	2.7	0.3	1.2	5.7	1.0	5.3	5.3	1.0	8.9	8.9				
Cycle Q Clear(g_c), s	6.8	0.5	2.7	3.0	1.2	5.7	1.0	5.3	5.3	1.0	8.9	8.9				
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.08				
Lane Grp Cap(c), veh/h	128	179	160	174	179	160	443	2261	1229	594	2257	1223				
V/C Ratio(X)	0.13	0.06	0.32	0.02	0.14	0.65	0.16	0.22	0.23	0.11	0.34	0.34				
Avail Cap(c_a), veh/h	517	728	651	588	728	651	464	2261	1229	616	2257	1223				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00				
Uniform Delay (d), s/veh	42.2	36.6	37.6	39.0	36.9	38.9	4.2	5.9	5.9	3.8	6.5	6.5				
Incr Delay (d2), s/veh	0.4	0.1	1.2	0.1	0.4	4.4	0.2	0.2	0.4	0.1	0.4	0.8				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(95%),veh/ln	0.7	0.4	2.3	0.2	1.1	4.8	0.9	4.6	5.1	0.9	7.6	8.2				
LnGrp Delay(d),s/veh	42.6	36.7	38.7	39.0	37.2	43.3	4.3	6.1	6.3	3.9	6.9	7.3				
LnGrp LOS	D	D	D	D	D	D	A	A	A	A	A	A				
Approach Vol, veh/h	78			133			854			1258						
Approach Delay, s/veh	39.3			42.0			6.0			6.9						
Approach LOS	D			D			A			A						
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2			4	5	6	8								
Phs Duration (G+Y+Rc), s	8.9	66.0			15.1	9.0	65.9	15.1								
Change Period (Y+Rc), s	4.0	6.0			6.0	4.0	6.0	6.0								
Max Green Setting (Gmax), s	6.0	31.0			37.0	6.0	31.0	37.0								
Max Q Clear Time (g_c+I1), s	3.0	7.3			8.8	3.0	10.9	7.7								
Green Ext Time (p_c), s	0.0	4.7			0.4	0.0	7.4	0.8								
Intersection Summary																
HCM 2010 Ctrl Delay				9.7												
HCM 2010 LOS				A												

Lanes, Volumes, Timings
8: Aurora Pkwy & Smoky Hill Rd













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	668	127	60	962	377	197	320	40	280	496	300
Future Volume (vph)	90	668	127	60	962	377	197	320	40	280	496	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	335		395	260		260	380		465	235		0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	1.00					0.98		1.00		1.00		
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	4989	0	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3429	5085	1583	3433	5085	1556	3433	4989	0	3424	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118			178			16			113
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1859			2698			936			925	
Travel Time (s)		28.2			40.9			14.2			14.0	
Confl. Peds. (#/hr)	5					5			5	5		
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.75	0.75	0.75	0.89	0.89	0.89
Adj. Flow (vph)	107	795	151	68	1093	428	263	427	53	315	557	337
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	795	151	68	1093	428	263	480	0	315	557	337
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			24			24	
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	1	1	1	1	1	1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	30	20	20	30	20	20	30		20	30	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	30	20	20	30	20	20	30		20	30	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
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	41.0	11.0	11.0	43.0	11.0	11.0	45.0		11.0	44.0	11.0
Total Split (s)	18.0	54.0	20.0	11.0	47.0	25.0	20.0	45.0		25.0	50.0	18.0
Total Split (%)	13.3%	40.0%	14.8%	8.1%	34.8%	18.5%	14.8%	33.3%		18.5%	37.0%	13.3%
Maximum Green (s)	13.0	48.0	15.0	6.0	41.0	20.0	15.0	39.0		20.0	44.0	13.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0		2.0	3.0	2.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max		None	Max	None
Walk Time (s)		6.0			6.0			6.0			6.0	
Flash Dont Walk (s)		29.0			31.0			33.0			32.0	
Pedestrian Calls (#/hr)		0			5			5			0	
Act Effect Green (s)	13.0	51.6	67.2	6.0	42.4	59.8	13.6	41.2		16.4	44.0	63.0
Actuated g/C Ratio	0.10	0.38	0.50	0.04	0.31	0.44	0.10	0.31		0.12	0.33	0.47
v/c Ratio	0.32	0.41	0.18	0.45	0.68	0.54	0.76	0.31		0.75	0.48	0.42
Control Delay	59.8	32.1	4.1	72.4	40.8	13.3	73.6	35.7		68.9	38.1	17.1
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	59.8	32.1	4.1	72.4	40.8	13.3	73.6	35.7		68.9	38.1	17.1
LOS	E	C	A	E	D	B	E	D		E	D	B
Approach Delay		30.9			34.7			49.1			40.3	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 101 (75%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 37.6

Intersection LOS: D

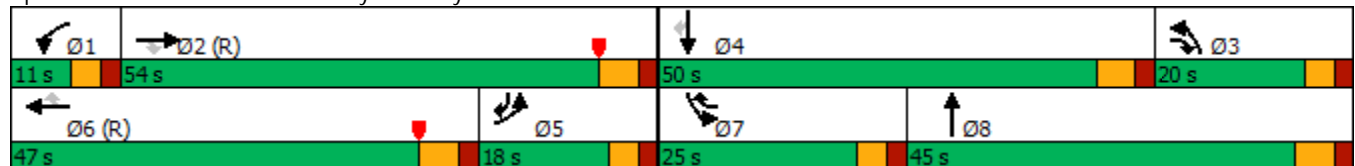
Intersection Capacity Utilization 93.2%

ICU Level of Service F

Analysis Period (min) 15

Description: Aurora
























Splits and Phases: 8: Aurora Pkwy & Smoky Hill Rd



HCM 2010 Signalized Intersection Summary

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	668	127	60	962	377	197	320	40	280	496	300
Future Volume (veh/h)	90	668	127	60	962	377	197	320	40	280	496	300
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	107	795	151	68	1093	428	263	427	53	315	557	337
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	2	2	1
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.75	0.75	0.75	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	349	1890	730	141	1544	648	313	1457	178	369	1154	674
Arrive On Green	0.10	0.37	0.37	0.08	0.61	0.61	0.09	0.32	0.32	0.11	0.33	0.33
Sat Flow, veh/h	3442	5085	1577	3442	5085	1576	3442	4592	560	3442	3539	1576
Grp Volume(v), veh/h	107	795	151	68	1093	428	263	313	167	315	557	337
Grp Sat Flow(s),veh/h/ln	1721	1695	1577	1721	1695	1576	1721	1695	1761	1721	1770	1576
Q Serve(g_s), s	3.9	15.7	1.1	2.5	20.0	16.4	10.2	9.4	9.6	12.1	17.0	7.2
Cycle Q Clear(g_c), s	3.9	15.7	1.1	2.5	20.0	16.4	10.2	9.4	9.6	12.1	17.0	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	349	1890	730	141	1544	648	313	1076	559	369	1154	674
V/C Ratio(X)	0.31	0.42	0.21	0.48	0.71	0.66	0.84	0.29	0.30	0.85	0.48	0.50
Avail Cap(c_a), veh/h	349	1890	730	153	1544	648	382	1076	559	510	1154	674
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	56.2	31.6	10.7	60.6	22.4	7.6	60.4	34.7	34.7	59.2	36.4	28.1
Incr Delay (d2), s/veh	0.2	0.7	0.6	0.9	2.6	4.9	11.1	0.7	1.4	7.3	1.4	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.4	12.0	4.3	2.2	14.5	12.1	9.1	8.0	8.5	10.1	13.2	13.7
LnGrp Delay(d),s/veh	56.4	32.3	11.3	61.5	25.0	12.5	71.4	35.3	36.1	66.5	37.8	30.6
LnGrp LOS	E	C	B	E	C	B	E	D	D	E	D	C
Approach Vol, veh/h	1053			1589			743			1209		
Approach Delay, s/veh	31.7			23.2			48.3			43.3		
Approach LOS	C			C			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	56.2	18.3	50.0	19.7	47.0	19.5	48.8				
Change Period (Y+Rc), s	5.0	6.0	6.0	* 6	6.0	* 6	5.0	6.0				
Max Green Setting (Gmax), s	6.0	48.0	15.0	* 44	13.0	* 41	20.0	39.0				
Max Q Clear Time (g_c+I1), s	4.5	17.7	12.2	19.0	5.9	22.0	14.1	11.6				
Green Ext Time (p_c), s	0.0	3.8	0.1	3.3	0.1	6.1	0.3	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay				34.5								
HCM 2010 LOS				C								
Notes												

















User approved pedestrian interval to be less than phase max green.

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

Lanes, Volumes, Timings

1: DeGaulle & Alexander

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	7	6	0	26	17	20	15	0	5	4	170
Future Volume (vph)	171	7	6	0	26	17	20	15	0	5	4	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.946						0.872	
Flt Protected		0.956						0.972			0.999	
Satd. Flow (prot)	0	1774	0	0	1762	0	0	1811	0	0	1623	0
Flt Permitted		0.956						0.972			0.999	
Satd. Flow (perm)	0	1774	0	0	1762	0	0	1811	0	0	1623	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		568			374			335			287	
Travel Time (s)		15.5			10.2			9.1			7.8	
Peak Hour Factor	0.64	0.64	0.64	0.75	0.75	0.75	0.68	0.68	0.68	0.75	0.75	0.75
Adj. Flow (vph)	267	11	9	0	35	23	29	22	0	7	5	227
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	287	0	0	58	0	0	51	0	0	239	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	35.9%											
Analysis Period (min)	15											
	ICU Level of Service A											

Intersection												
Int Delay, s/veh	8.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	171	7	6	0	26	17	20	15	0	5	4	170
Future Vol, veh/h	171	7	6	0	26	17	20	15	0	5	4	170
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	64	64	64	75	75	75	68	68	68	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	267	11	9	0	35	23	29	22	0	7	5	227

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	20	0	0	713	608	16	608	601	47
Stage 1	-	-	-	-	-	-	550	550	-	47	47	-
Stage 2	-	-	-	-	-	-	163	58	-	561	554	-
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	1546	-	-	1596	-	-	347	410	1063	408	414	1022
Stage 1	-	-	-	-	-	-	519	516	-	967	856	-
Stage 2	-	-	-	-	-	-	839	847	-	512	514	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1546	-	-	1596	-	-	231	338	1063	336	342	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	231	338	-	336	342	-
Stage 1	-	-	-	-	-	-	428	426	-	798	856	-
Stage 2	-	-	-	-	-	-	649	847	-	401	424	-


























Approach	EB	WB	NB	SB
HCM Control Delay, s	7.3	0	21.7	10.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	267	1546	-	-	1596	-	-	928
HCM Lane V/C Ratio	0.193	0.173	-	-	-	-	-	0.257
HCM Control Delay (s)	21.7	7.8	0	-	0	-	-	10.2
HCM Lane LOS	C	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0.6	-	-	0	-	-	1

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	5	968	144	13	1156	107	125	5	32	338	3	67
Future Volume (vph)	5	968	144	13	1156	107	125	5	32	338	3	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	290		0	185		0	185		185
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.987			0.869				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4989	0	1770	5019	0	1770	1619	0	1770	1863	1583
Flt Permitted	0.147			0.184			0.755			0.722		
Satd. Flow (perm)	274	4989	0	343	5019	0	1406	1619	0	1345	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			19			27				36
Link Speed (mph)		45			45			25				25
Link Distance (ft)		1377			1328			484				500
Travel Time (s)		20.9			20.1			13.2				13.6
Peak Hour Factor	0.94	0.94	0.94	0.95	0.95	0.95	0.68	0.68	0.68	0.83	0.83	0.83
Adj. Flow (vph)	5	1030	153	14	1217	113	184	7	47	407	4	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	1183	0	14	1330	0	184	54	0	407	4	81
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	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			4				8
Permitted Phases	6			2			4			8		8

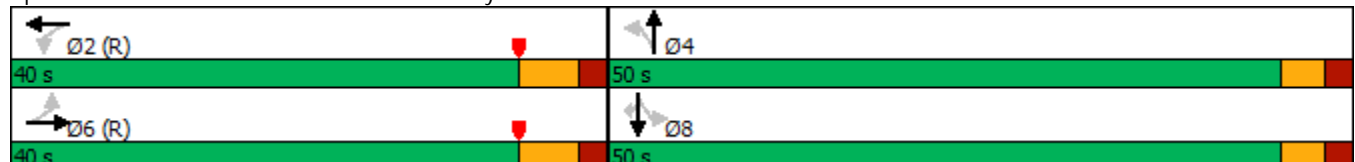
Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	26.0	26.0		28.0	28.0		41.0	41.0		41.0	41.0	41.0
Total Split (s)	40.0	40.0		40.0	40.0		50.0	50.0		50.0	50.0	50.0
Total Split (%)	44.4%	44.4%		44.4%	44.4%		55.6%	55.6%		55.6%	55.6%	55.6%
Maximum Green (s)	34.0	34.0		34.0	34.0		45.0	45.0		45.0	45.0	45.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Flash Dont Walk (s)	14.0	14.0		16.0	16.0		30.0	30.0		30.0	30.0	30.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	44.8	44.8		44.8	44.8		34.2	34.2		34.2	34.2	34.2
Actuated g/C Ratio	0.50	0.50		0.50	0.50		0.38	0.38		0.38	0.38	0.38
v/c Ratio	0.04	0.47		0.08	0.53		0.35	0.09		0.80	0.01	0.13
Control Delay	17.2	16.6		15.5	17.2		20.0	8.7		36.0	13.0	9.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	17.2	16.6		15.5	17.2		20.0	8.7		36.0	13.0	9.5
LOS	B	B		B	B		C	A		D	B	A
Approach Delay		16.6			17.2			17.5			31.4	
Approach LOS		B			B			B			C	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow												
Natural Cycle: 70												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.80												
Intersection Signal Delay: 19.1												
Intersection LOS: B												
Intersection Capacity Utilization 59.3%												
ICU Level of Service B												
Analysis Period (min) 15												






















Splits and Phases: 2: Alexander & Aurora Pkwy



HCM 2010 Signalized Intersection Summary

2: Alexander & Aurora Pkwy







07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	968	144	13	1156	107	125	5	32	338	3	67
Future Volume (veh/h)	5	968	144	13	1156	107	125	5	32	338	3	67
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	5	1030	153	14	1217	113	184	7	47	407	4	81
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.95	0.95	0.95	0.68	0.68	0.68	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	228	2350	349	261	2489	231	539	74	495	524	656	558
Arrive On Green	0.53	0.53	0.53	0.53	0.53	0.53	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	410	4473	663	472	4736	440	1307	209	1405	1345	1863	1583
Grp Volume(v), veh/h	5	780	403	14	871	459	184	0	54	407	4	81
Grp Sat Flow(s),veh/h/ln	410	1695	1746	472	1695	1785	1307	0	1615	1345	1863	1583
Q Serve(g_s), s	0.7	12.8	12.8	1.7	14.8	14.8	9.6	0.0	2.0	26.2	0.1	3.1
Cycle Q Clear(g_c), s	15.5	12.8	12.8	14.5	14.8	14.8	9.7	0.0	2.0	28.2	0.1	3.1
Prop In Lane	1.00		0.38	1.00		0.25	1.00		0.87	1.00		1.00
Lane Grp Cap(c), veh/h	228	1781	917	261	1781	938	539	0	569	524	656	558
V/C Ratio(X)	0.02	0.44	0.44	0.05	0.49	0.49	0.34	0.00	0.09	0.78	0.01	0.15
Avail Cap(c_a), veh/h	228	1781	917	261	1781	938	732	0	807	722	931	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	13.2	13.2	17.6	13.6	13.6	22.1	0.0	19.5	29.0	18.9	19.9
Incr Delay (d2), s/veh	0.2	0.8	1.5	0.4	1.0	1.8	0.4	0.0	0.1	3.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	10.2	10.7	0.5	11.5	12.3	6.3	0.0	1.6	15.5	0.1	2.5
LnGrp Delay(d),s/veh	18.8	13.9	14.7	18.0	14.6	15.5	22.4	0.0	19.6	32.6	18.9	20.0
LnGrp LOS	B	B	B	B	B	B	C		B	C	B	C
Approach Vol, veh/h	1188			1344			238			492		
Approach Delay, s/veh	14.2			14.9			21.8			30.4		
Approach LOS	B			B			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	53.3			36.7			53.3			36.7		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	34.0			45.0			34.0			45.0		
Max Q Clear Time (g_c+I1), s	16.8			11.7			17.5			30.2		
Green Ext Time (p_c), s	8.0			1.0			6.8			1.5		
Intersection Summary												
HCM 2010 Ctrl Delay	17.5											
HCM 2010 LOS	B											

Lanes, Volumes, Timings

3: RIRO & Aurora Pkwy

07/03/2018

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↓			↑↑↑		↗
Traffic Volume (vph)	1222	115	0	1275	0	49
Future Volume (vph)	1222	115	0	1275	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Frt	0.987					0.865
Flt Protected						
Satd. Flow (prot)	5019	0	0	5085	0	1611
Flt Permitted						
Satd. Flow (perm)	5019	0	0	5085	0	1611
Link Speed (mph)	45			45	25	
Link Distance (ft)	1328			734	357	
Travel Time (s)	20.1			11.1	9.7	
Peak Hour Factor	0.93	0.93	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1314	124	0	1386	0	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1438	0	0	1386	0	53
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	36.2%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 2010 TWSC

3: RIRO & Aurora Pkwy























07/03/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↗
Traffic Vol, veh/h	1222	115	0	1275	0	49
Future Vol, veh/h	1222	115	0	1275	0	49
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	93	93	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1314	124	0	1386	0	53
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	719
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	-	-	0	-	0	*652
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*652
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		11	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	652	-	-	-		
HCM Lane V/C Ratio	0.082	-	-	-		
HCM Control Delay (s)	11	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.3	-	-	-		
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Lanes, Volumes, Timings

4: Aurora Pkwy & Pronghorn Valley













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	26	221	66	25	42	212	1037	17	11	1222	38
Future Volume (vph)	196	26	221	66	25	42	212	1037	17	11	1222	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		250	150		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Frt		0.866			0.905				0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1613	0	1770	1686	0	1770	5085	1583	1770	5060	0
Flt Permitted	0.623			0.506			0.137			0.240		
Satd. Flow (perm)	1160	1613	0	943	1686	0	255	5085	1583	447	5060	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		240			46				158			5
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		501			450			674			289	
Travel Time (s)		11.4			10.2			10.2			4.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	213	28	240	72	27	46	230	1127	18	12	1314	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	213	268	0	72	73	0	230	1127	18	12	1355	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(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		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		

Lanes, Volumes, Timings

4: Aurora Pkwy & Pronghorn Valley

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	39.0		8.0	38.5		8.0	22.0	22.0	20.5	22.0	
Total Split (s)	8.0	39.0		8.0	39.0		13.0	22.5	22.5	20.5	30.0	
Total Split (%)	8.9%	43.3%		8.9%	43.3%		14.4%	25.0%	25.0%	22.8%	33.3%	
Maximum Green (s)	4.0	35.0		4.0	35.0		9.0	18.5	18.5	16.5	26.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)		5.0			5.0			5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		25.5			25.5			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0			0			0	0	0	0	
Act Effect Green (s)	12.2	9.0		11.9	9.0		66.6	64.6	64.6	57.3	51.5	
Actuated g/C Ratio	0.14	0.10		0.13	0.10		0.74	0.72	0.72	0.64	0.57	
v/c Ratio	1.15	0.71		0.45	0.35		0.61	0.31	0.02	0.03	0.47	
Control Delay	145.7	18.1		38.9	21.3		27.5	5.3	0.0	3.4	7.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	145.7	18.1		38.9	21.3		27.5	5.3	0.0	3.4	7.9	
LOS	F	B		D	C		C	A	A	A	A	
Approach Delay		74.6			30.1			9.0			7.9	
Approach LOS		E			C			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.15

Intersection Signal Delay: 18.8









Intersection LOS: B

Intersection Capacity Utilization 68.2%

ICU Level of Service C

Analysis Period (min) 15























Splits and Phases: 4: Aurora Pkwy & Pronghorn Valley

 Ø1	 Ø2 (R)	 Ø3	 Ø4
20.5 s	22.5 s	8 s	39 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	30 s	8 s	39 s

HCM 2010 Signalized Intersection Summary

4: Aurora Pkwy & Pronghorn Valley

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	26	221	66	25	42	212	1037	17	11	1222	38
Future Volume (veh/h)	196	26	221	66	25	42	212	1037	17	11	1222	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	213	28	240	72	27	46	230	1127	18	12	1314	41
Adj No. of Lanes	1	1	0	1	1	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	375	34	288	203	124	211	359	2713	845	399	2490	78
Arrive On Green	0.04	0.20	0.20	0.04	0.20	0.20	0.17	1.00	1.00	0.04	0.49	0.49
Sat Flow, veh/h	1774	168	1440	1774	620	1056	1774	5085	1583	1774	5067	158
Grp Volume(v), veh/h	213	0	268	72	0	73	230	1127	18	12	879	476
Grp Sat Flow(s),veh/h/ln	1774	0	1609	1774	0	1676	1774	1695	1583	1774	1695	1835
Q Serve(g_s), s	4.0	0.0	14.4	2.9	0.0	3.3	5.7	0.0	0.0	0.3	16.0	16.0
Cycle Q Clear(g_c), s	4.0	0.0	14.4	2.9	0.0	3.3	5.7	0.0	0.0	0.3	16.0	16.0
Prop In Lane	1.00		0.90	1.00		0.63	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	375	0	321	203	0	335	359	2713	845	399	1666	902
V/C Ratio(X)	0.57	0.00	0.83	0.35	0.00	0.22	0.64	0.42	0.02	0.03	0.53	0.53
Avail Cap(c_a), veh/h	375	0	626	203	0	652	383	2713	845	646	1666	902
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	0.0	34.6	28.0	0.0	30.1	11.0	0.0	0.0	9.8	15.7	15.7
Incr Delay (d2), s/veh	2.0	0.0	5.6	1.0	0.0	0.3	2.8	0.4	0.0	0.0	1.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.8	0.0	11.2	2.6	0.0	2.8	5.3	0.2	0.0	0.3	12.3	13.4
LnGrp Delay(d),s/veh	33.4	0.0	40.2	29.1	0.0	30.4	13.8	0.4	0.0	9.8	16.9	17.9
LnGrp LOS	C		D	C		C	B	A	A	A	B	B
Approach Vol, veh/h		481			145			1375			1367	
Approach Delay, s/veh		37.2			29.8			2.6			17.2	
Approach LOS		D			C			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	52.0	8.0	22.0	11.8	48.2	8.0	22.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.5	18.5	4.0	35.0	9.0	26.0	4.0	35.0				
Max Q Clear Time (g_c+I1), s	2.3	2.0	4.9	16.4	7.7	18.0	6.0	5.3				
Green Ext Time (p_c), s	0.0	6.8	0.0	1.6	0.1	4.8	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				14.7								
HCM 2010 LOS				B								

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	7	72	43	16	303	38	926	10	215	1231	63
Future Volume (vph)	36	7	72	43	16	303	38	926	10	215	1231	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	190		0	280		0	290		100
Storage Lanes	1		1	1		1	1		0	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	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850		0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5075	0	1770	5085	1583
Flt Permitted	0.569			0.752			0.195			0.203		
Satd. Flow (perm)	1060	1863	1583	1401	1863	1583	363	5075	0	378	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			285		2				121
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		249			440			428			674	
Travel Time (s)		5.7			10.0			6.5			10.2	
Peak Hour Factor	0.85	0.85	0.85	0.81	0.81	0.81	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	42	8	85	53	20	374	42	1029	11	231	1324	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	8	85	53	20	374	42	1040	0	231	1324	68
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	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		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	20	6	20	20	6		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	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	10.0		3.0	10.0	10.0
Minimum Split (s)	8.0	40.0	40.0	44.0	44.0	44.0	10.0	29.0		10.0	34.0	34.0
Total Split (s)	7.0	50.0	50.0	43.0	43.0	43.0	9.0	27.0		13.0	31.0	31.0
Total Split (%)	7.8%	55.6%	55.6%	47.8%	47.8%	47.8%	10.0%	30.0%		14.4%	34.4%	34.4%
Maximum Green (s)	3.0	45.0	45.0	38.0	38.0	38.0	5.0	21.0		9.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		5.0	5.0	5.0	5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)		29.0	29.0	33.0	33.0	33.0		17.0			22.0	22.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	18.2	17.2	17.2	13.0	13.0	13.0	52.7	44.4		63.8	55.3	55.3
Actuated g/C Ratio	0.20	0.19	0.19	0.14	0.14	0.14	0.59	0.49		0.71	0.61	0.61
v/c Ratio	0.18	0.02	0.23	0.26	0.07	0.79	0.14	0.42		0.49	0.42	0.07
Control Delay	25.9	22.4	6.8	34.0	29.2	21.6	8.9	11.8		19.7	5.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	25.9	22.4	6.8	34.0	29.2	21.6	8.9	11.8		19.7	5.8	0.2
LOS	C	C	A	C	C	C	A	B		B	A	A
Approach Delay		13.7			23.4			11.7			7.5	
Approach LOS		B			C			B			A	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 11.3

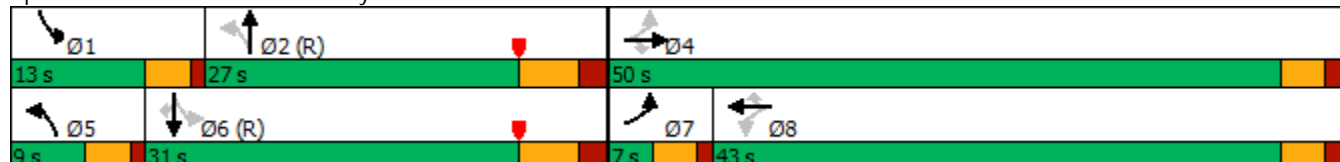
Intersection LOS: B

Intersection Capacity Utilization 52.7%

ICU Level of Service A

Analysis Period (min) 15

























Splits and Phases: 5: Aurora Pkwy & Orchard



HCM 2010 Signalized Intersection Summary

5: Aurora Pkwy & Orchard

07/03/2018

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	7	72	43	16	303	38	926	10	215	1231	63
Future Volume (veh/h)	36	7	72	43	16	303	38	926	10	215	1231	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	42	8	85	53	20	374	42	1029	11	231	1324	68
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1
Peak Hour Factor	0.85	0.85	0.85	0.81	0.81	0.81	0.90	0.90	0.90	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	379	624	531	425	495	420	277	2079	22	389	2413	751
Arrive On Green	0.03	0.34	0.34	0.27	0.27	0.27	0.02	0.40	0.40	0.19	0.95	0.95
Sat Flow, veh/h	1774	1863	1583	1298	1863	1583	1774	5188	55	1774	5085	1583
Grp Volume(v), veh/h	42	8	85	53	20	374	42	672	368	231	1324	68
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1298	1863	1583	1774	1695	1853	1774	1695	1583
Q Serve(g_s), s	1.5	0.3	3.4	2.8	0.7	20.4	1.3	13.3	13.4	6.8	2.5	0.2
Cycle Q Clear(g_c), s	1.5	0.3	3.4	2.8	0.7	20.4	1.3	13.3	13.4	6.8	2.5	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	379	624	531	425	495	420	277	1358	742	389	2413	751
V/C Ratio(X)	0.11	0.01	0.16	0.12	0.04	0.89	0.15	0.49	0.50	0.59	0.55	0.09
Avail Cap(c_a), veh/h	393	931	792	628	786	669	333	1358	742	394	2413	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	21.8	20.0	21.0	25.3	24.5	31.8	15.3	20.2	20.2	12.6	1.3	1.2
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.1	0.0	9.0	0.3	1.3	2.4	2.1	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.2	2.7	1.8	0.7	15.2	1.1	10.7	11.8	6.1	1.6	0.2
LnGrp Delay(d),s/veh	21.9	20.0	21.2	25.4	24.6	40.8	15.5	21.5	22.5	14.7	2.1	1.4
LnGrp LOS	C	B	C	C	C	D	B	C	C	B	A	A
Approach Vol, veh/h		135			447			1082			1623	
Approach Delay, s/veh		21.3			38.3			21.6			3.8	
Approach LOS		C			D			C			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.8	42.1		35.2	6.1	48.7	6.3	28.9				
Change Period (Y+Rc), s	4.0	6.0		5.0	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	9.0	21.0		45.0	5.0	25.0	3.0	38.0				
Max Q Clear Time (g_c+I1), s	8.8	15.4		5.4	3.3	4.5	3.5	22.4				
Green Ext Time (p_c), s	0.0	2.9		0.3	0.0	9.2	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay				15.1								
HCM 2010 LOS				B								
Notes												

User approved pedestrian interval to be less than phase max green.

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	3	44	106	12	45	79	901	20	6	1299	42
Future Volume (vph)	27	3	44	106	12	45	79	901	20	6	1299	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	230		230	280		210	260		140
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	1.00	1.00	1.00	0.91	1.00	1.00	0.91	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	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.748			0.755			0.160			0.286		
Satd. Flow (perm)	1393	1863	1583	1406	1863	1583	298	5085	1583	533	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			85			24			73
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		610			552			1344			931	
Travel Time (s)		13.9			12.5			20.4			14.1	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.94	0.94	0.94	0.98	0.98	0.98
Adj. Flow (vph)	33	4	53	128	14	54	84	959	21	6	1326	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	4	53	128	14	54	84	959	21	6	1326	43
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	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0	11.0	11.0
Minimum Split (s)	42.0	42.0	42.0	43.0	43.0	43.0	10.0	31.0	31.0	33.0	33.0	33.0
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0	10.0	47.0	47.0	37.0	37.0	37.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	47.8%	47.8%	11.1%	52.2%	52.2%	41.1%	41.1%	41.1%
Maximum Green (s)	38.0	38.0	38.0	38.0	38.0	38.0	6.0	41.0	41.0	31.0	31.0	31.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Flash Dont Walk (s)	31.0	31.0	31.0	32.0	32.0	32.0		19.0	19.0	21.0	21.0	21.0
Pedestrian Calls (/hr)	0	0	0	0	0	0		0	0	0	0	0
Act Effect Green (s)	13.6	13.6	13.6	13.6	13.6	13.6	67.4	65.4	65.4	56.5	56.5	56.5
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15	0.15	0.75	0.73	0.73	0.63	0.63	0.63
v/c Ratio	0.16	0.01	0.17	0.60	0.05	0.17	0.25	0.26	0.02	0.02	0.42	0.04
Control Delay	32.6	29.3	4.0	46.6	30.2	4.2	5.6	5.5	2.8	17.0	13.8	6.3
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	32.6	29.3	4.0	46.6	30.2	4.2	5.6	5.5	2.8	17.0	13.8	6.3
LOS	C	C	A	D	C	A	A	A	A	B	B	A
Approach Delay		15.6			33.7			5.5			13.6	
Approach LOS		B			C			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 84 (93%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 11.9

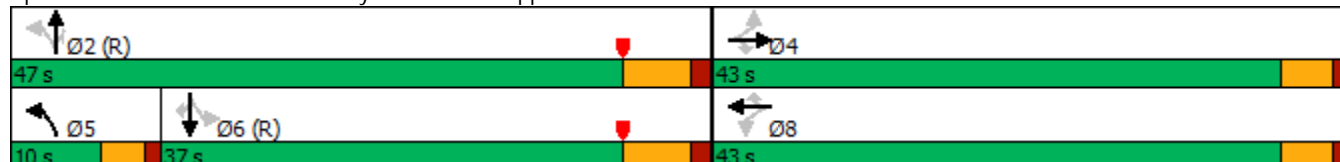
Intersection LOS: B

Intersection Capacity Utilization 55.1%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 6: Aurora Pkwy & Commons/Applewood



HCM 2010 Signalized Intersection Summary






















6: Aurora Pkwy & Commons/Applewood

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	3	44	106	12	45	79	901	20	6	1299	42
Future Volume (veh/h)	27	3	44	106	12	45	79	901	20	6	1299	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	4	53	128	14	54	84	959	21	6	1326	43
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.94	0.94	0.94	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	230	196	243	230	196	393	3836	1194	452	3312	1031
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.06	0.75	0.75	0.65	0.65	0.65
Sat Flow, veh/h	1328	1863	1583	1341	1863	1583	1774	5085	1583	572	5085	1583
Grp Volume(v), veh/h	33	4	53	128	14	54	84	959	21	6	1326	43
Grp Sat Flow(s),veh/h/ln	1328	1863	1583	1341	1863	1583	1774	1695	1583	572	1695	1583
Q Serve(g_s), s	2.0	0.2	2.7	8.3	0.6	2.8	1.2	5.1	0.3	0.3	11.1	0.9
Cycle Q Clear(g_c), s	2.6	0.2	2.7	8.5	0.6	2.8	1.2	5.1	0.3	0.3	11.1	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	230	196	243	230	196	393	3836	1194	452	3312	1031
V/C Ratio(X)	0.14	0.02	0.27	0.53	0.06	0.28	0.21	0.25	0.02	0.01	0.40	0.04
Avail Cap(c_a), veh/h	632	786	669	644	786	669	407	3836	1194	452	3312	1031
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	34.6	35.8	38.4	34.8	35.8	4.6	3.3	2.8	5.5	7.4	5.6
Incr Delay (d2), s/veh	0.3	0.0	0.7	1.8	0.1	0.8	0.3	0.2	0.0	0.1	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.2	2.2	5.8	0.6	2.3	1.1	4.4	0.2	0.1	9.0	0.7
LnGrp Delay(d),s/veh	36.3	34.7	36.5	40.1	34.9	36.5	4.9	3.5	2.8	5.6	7.8	5.7
LnGrp LOS	D	C	D	D	C	D	A	A	A	A	A	A
Approach Vol, veh/h	90			196			1064			1375		
Approach Delay, s/veh	36.3			38.8			3.6			7.7		
Approach LOS	D			D			A			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4		5	6	8				
Phs Duration (G+Y+Rc), s	73.9			16.1		9.3	64.6	16.1				
Change Period (Y+Rc), s	6.0			5.0		4.0	6.0	5.0				
Max Green Setting (Gmax), s	41.0			38.0		6.0	31.0	38.0				
Max Q Clear Time (g_c+I1), s	7.1			4.7		3.2	13.1	10.5				
Green Ext Time (p_c), s	7.2			0.3		0.0	8.6	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay	9.3											
HCM 2010 LOS	A											

Lanes, Volumes, Timings
7: Aurora Pkwy & Southlands













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	8	49	2	14	59	66	891	16	60	1347	42
Future Volume (vph)	26	8	49	2	14	59	66	891	16	60	1347	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	180		0	390		0	215		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.872			0.879			0.997			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3086	0	1770	3111	0	1770	5070	0	1770	5060	0
Flt Permitted	0.670			0.710			0.133			0.273		
Satd. Flow (perm)	1248	3086	0	1323	3111	0	248	5070	0	509	5060	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59			104			3			5	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		497			563			925			311	
Travel Time (s)		11.3			12.8			14.0			4.7	
Peak Hour Factor	0.83	0.83	0.83	0.57	0.57	0.57	0.92	0.92	0.92	0.89	0.89	0.89
Adj. Flow (vph)	31	10	59	4	25	104	72	968	17	67	1513	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	69	0	4	129	0	72	985	0	67	1560	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
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	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(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	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		

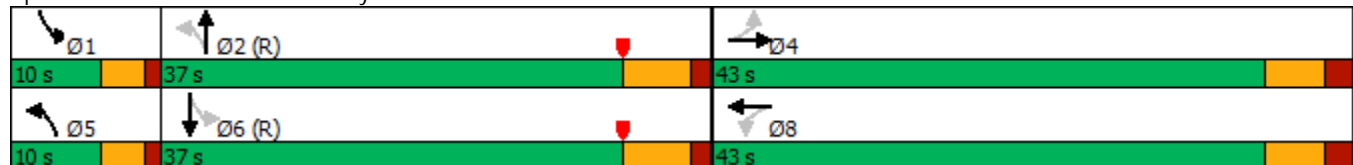
Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	11.0		6.0	11.0	
Minimum Split (s)	42.0	42.0		43.0	43.0		10.0	28.0		10.0	34.0	
Total Split (s)	43.0	43.0		43.0	43.0		10.0	37.0		10.0	37.0	
Total Split (%)	47.8%	47.8%		47.8%	47.8%		11.1%	41.1%		11.1%	41.1%	
Maximum Green (s)	37.0	37.0		37.0	37.0		6.0	31.0		6.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Flash Dont Walk (s)	30.0	30.0		31.0	31.0			16.0			22.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	8.0	8.0		8.0	8.0		68.9	61.7		68.8	61.6	
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.77	0.69		0.76	0.68	
v/c Ratio	0.28	0.21		0.03	0.35		0.24	0.28		0.14	0.45	
Control Delay	44.1	14.6		36.5	14.3		4.2	6.4		1.6	4.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.1	14.6		36.5	14.3		4.2	6.4		1.6	4.9	
LOS	D	B		D	B		A	A		A	A	
Approach Delay		23.7			14.9			6.2			4.8	
Approach LOS		C			B			A			A	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 38 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.45												
Intersection Signal Delay: 6.4						Intersection LOS: A						
Intersection Capacity Utilization 53.4%						ICU Level of Service A						
Analysis Period (min) 15												






















Splits and Phases: 7: Aurora Pkwy & Southlands



HCM 2010 Signalized Intersection Summary
























7: Aurora Pkwy & Southlands

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	8	49	2	14	59	66	891	16	60	1347	42
Future Volume (veh/h)	26	8	49	2	14	59	66	891	16	60	1347	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	31	10	59	4	25	104	72	968	17	67	1513	47
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.83	0.83	0.83	0.57	0.57	0.57	0.92	0.92	0.92	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	200	179	185	200	179	345	3370	59	503	3311	103
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.06	0.65	0.65	0.05	0.65	0.65
Sat Flow, veh/h	1256	1770	1583	1326	1770	1583	1774	5147	90	1774	5068	157
Grp Volume(v), veh/h	31	10	59	4	25	104	72	637	348	67	1012	548
Grp Sat Flow(s),veh/h/ln	1256	1770	1583	1326	1770	1583	1774	1695	1847	1774	1695	1835
Q Serve(g_s), s	2.2	0.5	3.1	0.3	1.1	5.6	1.1	7.2	7.2	1.0	13.3	13.3
Cycle Q Clear(g_c), s	7.8	0.5	3.1	3.3	1.1	5.6	1.1	7.2	7.2	1.0	13.3	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		0.09
Lane Grp Cap(c), veh/h	144	200	179	185	200	179	345	2220	1209	503	2215	1199
V/C Ratio(X)	0.22	0.05	0.33	0.02	0.12	0.58	0.21	0.29	0.29	0.13	0.46	0.46
Avail Cap(c_a), veh/h	518	728	651	580	728	651	365	2220	1209	525	2215	1199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	35.6	36.8	38.3	35.9	37.9	5.2	6.6	6.6	4.3	7.7	7.7
Incr Delay (d2), s/veh	0.7	0.1	1.1	0.0	0.3	2.9	0.2	0.3	0.5	0.1	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.4	2.5	0.2	1.0	4.7	1.0	6.2	6.8	0.9	10.5	11.5
LnGrp Delay(d),s/veh	42.3	35.7	37.8	38.3	36.2	40.8	5.5	6.9	7.1	4.4	8.4	9.0
LnGrp LOS	D	D	D	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h		100			133			1057			1627	
Approach Delay, s/veh		39.0			39.9			6.9			8.4	
Approach LOS		D			D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.9	64.9		16.2	9.0	64.8		16.2				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	6.0	31.0		37.0	6.0	31.0		37.0				
Max Q Clear Time (g_c+I1), s	3.0	9.2		9.8	3.1	15.3		7.6				
Green Ext Time (p_c), s	0.0	6.1		0.5	0.0	8.8		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay				10.3								
HCM 2010 LOS				B								

Lanes, Volumes, Timings
8: Aurora Pkwy & Smoky Hill Rd













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	668	127	60	962	446	197	320	40	396	496	507
Future Volume (vph)	208	668	127	60	962	446	197	320	40	396	496	507
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	335		395	260		260	380		465	235		0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	1.00					0.98		1.00		1.00		
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	4989	0	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3429	5085	1583	3433	5085	1556	3433	4989	0	3424	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113			123			16			113
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1859			2698			936			925	
Travel Time (s)		28.2			40.9			14.2			14.0	
Confl. Peds. (#/hr)	5					5			5	5		
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.75	0.75	0.75	0.89	0.89	0.89
Adj. Flow (vph)	248	795	151	68	1093	507	263	427	53	445	557	570
Shared Lane Traffic (%)												
Lane Group Flow (vph)	248	795	151	68	1093	507	263	480	0	445	557	570
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			24			24	
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	1	1	1	1	1	1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	30	20	20	30	20	20	30		20	30	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	30	20	20	30	20	20	30		20	30	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
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	41.0	11.0	11.0	43.0	11.0	11.0	45.0		11.0	44.0	11.0
Total Split (s)	21.0	54.0	21.0	11.0	44.0	25.0	21.0	45.0		25.0	49.0	21.0
Total Split (%)	15.6%	40.0%	15.6%	8.1%	32.6%	18.5%	15.6%	33.3%		18.5%	36.3%	15.6%
Maximum Green (s)	16.0	48.0	16.0	6.0	38.0	20.0	16.0	39.0		20.0	43.0	16.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0		2.0	3.0	2.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max		None	Max	None
Walk Time (s)		6.0			6.0			6.0			6.0	
Flash Dont Walk (s)		29.0			31.0			33.0			32.0	
Pedestrian Calls (#/hr)		0			5			5			0	
Act Effect Green (s)	16.0	50.8	68.2	6.0	38.6	59.0	15.4	39.0		19.4	43.0	65.0
Actuated g/C Ratio	0.12	0.38	0.51	0.04	0.29	0.44	0.11	0.29		0.14	0.32	0.48
v/c Ratio	0.61	0.42	0.18	0.45	0.75	0.67	0.67	0.33		0.90	0.49	0.70
Control Delay	63.6	32.7	4.3	73.9	45.3	18.5	66.3	37.2		78.9	39.0	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	63.6	32.7	4.3	73.9	45.3	18.5	66.3	37.2		78.9	39.0	26.7
LOS	E	C	A	E	D	B	E	D		E	D	C
Approach Delay		35.5			38.3			47.5			45.9	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 101 (75%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 41.3

Intersection LOS: D

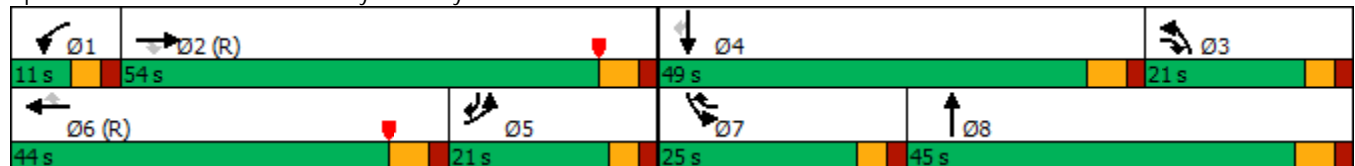
Intersection Capacity Utilization 98.9%

ICU Level of Service F

Analysis Period (min) 15

Description: Aurora
























Splits and Phases: 8: Aurora Pkwy & Smoky Hill Rd



HCM 2010 Signalized Intersection Summary

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	668	127	60	962	446	197	320	40	396	496	507
Future Volume (veh/h)	208	668	127	60	962	446	197	320	40	396	496	507
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	248	795	151	68	1093	507	263	427	53	445	557	570
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	2	2	1
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.75	0.75	0.75	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	401	1853	742	141	1431	669	364	1326	162	492	1127	686
Arrive On Green	0.12	0.36	0.36	0.08	0.56	0.56	0.11	0.29	0.29	0.14	0.32	0.32
Sat Flow, veh/h	3442	5085	1577	3442	5085	1575	3442	4591	559	3442	3539	1576
Grp Volume(v), veh/h	248	795	151	68	1093	507	263	313	167	445	557	570
Grp Sat Flow(s),veh/h/ln	1721	1695	1577	1721	1695	1575	1721	1695	1761	1721	1770	1576
Q Serve(g_s), s	9.3	15.9	1.1	2.5	22.2	24.7	10.0	9.8	10.0	17.2	17.2	27.4
Cycle Q Clear(g_c), s	9.3	15.9	1.1	2.5	22.2	24.7	10.0	9.8	10.0	17.2	17.2	27.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	401	1853	742	141	1431	669	364	979	509	492	1127	686
V/C Ratio(X)	0.62	0.43	0.20	0.48	0.76	0.76	0.72	0.32	0.33	0.91	0.49	0.83
Avail Cap(c_a), veh/h	408	1853	742	153	1431	669	408	979	509	510	1127	686
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00	0.89	0.89	0.89
Uniform Delay (d), s/veh	56.8	32.3	10.3	60.6	26.1	8.4	58.4	37.6	37.7	57.0	37.2	33.7
Incr Delay (d2), s/veh	2.0	0.7	0.6	0.9	3.7	7.4	4.3	0.9	1.7	17.1	1.4	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.0	12.1	4.2	2.2	15.9	16.8	8.6	8.2	8.8	14.1	13.1	19.4
LnGrp Delay(d),s/veh	58.8	33.1	10.9	61.5	29.7	15.8	62.7	38.5	39.4	74.0	38.6	43.9
LnGrp LOS	E	C	B	E	C	B	E	D	D	E	D	D
Approach Vol, veh/h	1194			1668			743			1572		
Approach Delay, s/veh	35.6			26.8			47.3			50.5		
Approach LOS	D			C			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	55.2	20.3	49.0	21.7	44.0	24.3	45.0				
Change Period (Y+Rc), s	5.0	6.0	6.0	* 6	6.0	* 6	5.0	6.0				
Max Green Setting (Gmax), s	6.0	48.0	16.0	* 43	16.0	* 38	20.0	39.0				
Max Q Clear Time (g_c+I1), s	4.5	17.9	12.0	29.4	11.3	26.7	19.2	12.0				
Green Ext Time (p_c), s	0.0	3.8	0.2	3.8	0.2	5.1	0.1	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay				39.0								
HCM 2010 LOS	D											
Notes												




User approved pedestrian interval to be less than phase max green.

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

Lanes, Volumes, Timings
9: Alexander/West MF Site Access




07/03/2018



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	61	0	0	54	14	132
Future Volume (vph)	61	0	0	54	14	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865		0.878	
Flt Protected		0.950			0.995	
Satd. Flow (prot)	0	1770	1611	0	1627	0
Flt Permitted		0.950			0.995	
Satd. Flow (perm)	0	1770	1611	0	1627	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		455	326		228	
Travel Time (s)		10.3	7.4		5.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	0	0	59	15	143
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	66	59	0	158	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 25.6%				ICU Level of Service A		
Analysis Period (min) 15						

HCM 2010 TWSC
9: Alexander/West MF Site Access




07/03/2018

Intersection						
Int Delay, s/veh	6.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	0	0	54	14	132
Future Vol, veh/h	61	0	0	54	14	132
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	0	0	59	15	143
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	59	0	-	0	162	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	132	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1545	-	-	-	829	1044
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	894	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1545	-	-	-	793	1044
Mov Cap-2 Maneuver	-	-	-	-	793	-
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	894	-
Approach	EB	WB		SB		
HCM Control Delay, s	7.4	0		9.2		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1545	-	-	-	1013	
HCM Lane V/C Ratio	0.043	-	-	-	0.157	
HCM Control Delay (s)	7.4	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	

Lanes, Volumes, Timings
10: Pronghorn Valley/East Site Access & DeGaulle

07/03/2018






Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	29	114	6	2	19
Future Volume (vph)	25	29	114	6	2	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.877	
Flt Protected		0.978			0.996	
Satd. Flow (prot)	0	1822	1850	0	1627	0
Flt Permitted		0.978			0.996	
Satd. Flow (perm)	0	1822	1850	0	1627	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		513	796		335	
Travel Time (s)		11.7	18.1		9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	32	124	7	2	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	59	131	0	23	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 19.6%				ICU Level of Service A		
Analysis Period (min) 15						

HCM 2010 TWSC
10: Pronghorn Valley/East Site Access & DeGaulle

07/03/2018

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	29	114	6	2	19
Future Vol, veh/h	25	29	114	6	2	19
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	27	32	124	7	2	21

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	131	0	0 214 128
Stage 1	-	-	- 128 -
Stage 2	-	-	- 86 -
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	1454	-	- 774 922
Stage 1	-	-	- 898 -
Stage 2	-	-	- 937 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1454	-	- 759 922
Mov Cap-2 Maneuver	-	-	- 759 -
Stage 1	-	-	- 881 -
Stage 2	-	-	- 937 -

















Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1454	-	-	-	904
HCM Lane V/C Ratio	0.019	-	-	-	0.025
HCM Control Delay (s)	7.5	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Lanes, Volumes, Timings

1: DeGaulle & Alexander

07/03/2018






















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	237	43	23	0	17	5	16	1	0	7	11	181
Future Volume (vph)	237	43	23	0	17	5	16	1	0	7	11	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.970						0.877	
Flt Protected		0.962						0.955			0.998	
Satd. Flow (prot)	0	1774	0	0	1807	0	0	1779	0	0	1630	0
Flt Permitted		0.962						0.955			0.998	
Satd. Flow (perm)	0	1774	0	0	1807	0	0	1779	0	0	1630	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		552			404			431			425	
Travel Time (s)		15.1			11.0			11.8			11.6	
Peak Hour Factor	0.96	0.96	0.96	0.61	0.61	0.61	0.56	0.56	0.56	0.95	0.95	0.95
Adj. Flow (vph)	247	45	24	0	28	8	29	2	0	7	12	191
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	316	0	0	36	0	0	31	0	0	210	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	42.1%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	7.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	237	43	23	0	17	5	16	1	0	7	11	181
Future Vol, veh/h	237	43	23	0	17	5	16	1	0	7	11	181
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	96	96	96	61	61	61	56	56	56	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	247	45	24	0	28	8	29	2	0	7	12	191
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	36	0	0	69	0	0	685	587	57	584	595	32
Stage 1	-	-	-	-	-	-	551	551	-	32	32	-
Stage 2	-	-	-	-	-	-	134	36	-	552	563	-
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	1575	-	-	1532	-	-	362	422	1009	423	417	1042
Stage 1	-	-	-	-	-	-	519	515	-	984	868	-
Stage 2	-	-	-	-	-	-	869	865	-	518	509	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1575	-	-	1532	-	-	252	353	1009	368	349	1042
Mov Cap-2 Maneuver	-	-	-	-	-	-	252	353	-	368	349	-
Stage 1	-	-	-	-	-	-	434	431	-	823	868	-
Stage 2	-	-	-	-	-	-	701	865	-	431	426	-
Approach	EB		WB				NB		SB			
HCM Control Delay, s	6		0				20.9		10.3			
HCM LOS							C		B			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	256	1575	-	-	1532	-	-	887				
HCM Lane V/C Ratio	0.119	0.157	-	-	-	-	-	0.236				
HCM Control Delay (s)	20.9	7.7	0	-	0	-	-	10.3				
HCM Lane LOS	C	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.4	0.6	-	-	0	-	-	0.9				

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1234	2	44	997	374	11	0	14	234	2	16
Future Volume (vph)	44	1234	2	44	997	374	11	0	14	234	2	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	290		0	185		0	185		185
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.959			0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	0	1770	4877	0	1770	1583	0	1770	1863	1583
Flt Permitted	0.147			0.182			0.757			0.746		
Satd. Flow (perm)	274	5085	0	339	4877	0	1410	1583	0	1390	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					117			53				24
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1377			2056			484			448	
Travel Time (s)		20.9			31.2			13.2			12.2	
Peak Hour Factor	0.96	0.96	0.96	0.94	0.94	0.94	0.82	0.82	0.82	0.86	0.86	0.86
Adj. Flow (vph)	46	1285	2	47	1061	398	13	0	17	272	2	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	1287	0	47	1459	0	13	17	0	272	2	19
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(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	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		8

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	26.0	26.0		28.0	28.0		41.0	41.0		41.0	41.0	41.0
Total Split (s)	83.0	83.0		83.0	83.0		52.0	52.0		52.0	52.0	52.0
Total Split (%)	61.5%	61.5%		61.5%	61.5%		38.5%	38.5%		38.5%	38.5%	38.5%
Maximum Green (s)	77.0	77.0		77.0	77.0		47.0	47.0		47.0	47.0	47.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Flash Dont Walk (s)	14.0	14.0		16.0	16.0		30.0	30.0		30.0	30.0	30.0
Pedestrian Calls (#/hr)	0	0		0	0		5	5		5	5	5
Act Effect Green (s)	91.8	91.8		91.8	91.8		32.2	32.2		32.2	32.2	32.2
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.24	0.24		0.24	0.24	0.24
v/c Ratio	0.25	0.37		0.20	0.44		0.04	0.04		0.82	0.00	0.05
Control Delay	15.0	10.4		11.9	8.9		35.4	0.2		67.7	34.0	9.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	15.0	10.4		11.9	8.9		35.4	0.2		67.7	34.0	9.9
LOS	B	B		B	A		D	A		E	C	A
Approach Delay		10.6			9.0			15.4			63.7	
Approach LOS		B			A			B			E	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 42 (31%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 14.8

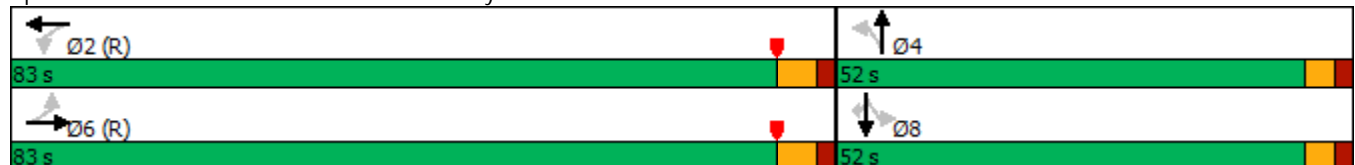
Intersection LOS: B

Intersection Capacity Utilization 65.4%

ICU Level of Service C

Analysis Period (min) 15






















Splits and Phases: 2: Alexander & Aurora Pkwy



HCM 2010 Signalized Intersection Summary

2: Alexander & Aurora Pkwy

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	1234	2	44	997	374	11	0	14	234	2	16
Future Volume (veh/h)	44	1234	2	44	997	374	11	0	14	234	2	16
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	46	1285	2	47	1061	398	13	0	17	272	2	19
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.94	0.94	0.94	0.82	0.82	0.82	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	261	3658	6	310	2542	954	358	0	350	349	412	350
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.70	0.22	0.00	0.22	0.22	0.22	0.22
Sat Flow, veh/h	363	5243	8	427	3645	1367	1385	0	1583	1390	1863	1583
Grp Volume(v), veh/h	46	831	456	47	987	472	13	0	17	272	2	19
Grp Sat Flow(s),veh/h/ln	363	1695	1861	427	1695	1621	1385	0	1583	1390	1863	1583
Q Serve(g_s), s	8.4	13.3	13.3	6.7	16.8	16.8	1.0	0.0	1.1	25.9	0.1	1.3
Cycle Q Clear(g_c), s	25.1	13.3	13.3	19.9	16.8	16.8	1.1	0.0	1.1	27.0	0.1	1.3
Prop In Lane	1.00		0.00	1.00		0.84	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	261	2365	1298	310	2365	1131	358	0	350	349	412	350
V/C Ratio(X)	0.18	0.35	0.35	0.15	0.42	0.42	0.04	0.00	0.05	0.78	0.00	0.05
Avail Cap(c_a), veh/h	261	2365	1298	310	2365	1131	534	0	551	526	649	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.1	8.2	8.2	12.2	8.7	8.7	41.4	0.0	41.4	52.0	41.0	41.5
Incr Delay (d2), s/veh	1.5	0.4	0.7	1.0	0.5	1.1	0.0	0.0	0.1	4.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	10.4	11.3	1.6	12.6	12.4	0.7	0.0	0.9	15.7	0.1	1.0
LnGrp Delay(d),s/veh	15.5	8.6	8.9	13.2	9.3	9.8	41.5	0.0	41.5	56.3	41.0	41.5
LnGrp LOS	B	A	A	B	A	A	D		D	E	D	D
Approach Vol, veh/h	1333			1506			30			293		
Approach Delay, s/veh	8.9			9.6			41.5			55.3		
Approach LOS	A			A			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	100.2			34.8			100.2			34.8		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	77.0			47.0			77.0			47.0		
Max Q Clear Time (g_c+I1), s	21.9			3.1			27.1			29.0		
Green Ext Time (p_c), s	15.0			0.1			11.9			0.8		
Intersection Summary												
HCM 2010 Ctrl Delay	13.8											
HCM 2010 LOS	B											

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	307	72	105	30	65	177	82	930	33	262	891	329
Future Volume (vph)	307	72	105	30	65	177	82	930	33	262	891	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	190		0	280		0	290		100
Storage Lanes	1		1	1		1	1		0	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	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850		0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5060	0	1770	5085	1583
Flt Permitted	0.597			0.707			0.296			0.196		
Satd. Flow (perm)	1112	1863	1583	1317	1863	1583	551	5060	0	365	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112			190		4				227
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		249			440			428			609	
Travel Time (s)		5.7			10.0			6.5			9.2	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	327	77	112	32	70	190	86	979	35	273	928	343
Shared Lane Traffic (%)												
Lane Group Flow (vph)	327	77	112	32	70	190	86	1014	0	273	928	343
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	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		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	20	6	20	20	6		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	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		6			6

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	10.0		3.0	10.0	10.0
Minimum Split (s)	8.0	40.0	40.0	44.0	44.0	44.0	10.0	29.0		10.0	34.0	34.0
Total Split (s)	20.0	64.0	64.0	44.0	44.0	44.0	10.0	41.0		30.0	61.0	61.0
Total Split (%)	14.8%	47.4%	47.4%	32.6%	32.6%	32.6%	7.4%	30.4%		22.2%	45.2%	45.2%
Maximum Green (s)	16.0	59.0	59.0	39.0	39.0	39.0	6.0	35.0		26.0	55.0	55.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Flash Dont Walk (s)		29.0	29.0	33.0	33.0	33.0		17.0			22.0	22.0
Pedestrian Calls (#/hr)		10	10	10	10	10		0			0	0
Act Effect Green (s)	41.8	40.8	40.8	20.8	20.8	20.8	68.1	59.6		85.2	72.8	72.8
Actuated g/C Ratio	0.31	0.30	0.30	0.15	0.15	0.15	0.50	0.44		0.63	0.54	0.54
v/c Ratio	0.77	0.14	0.20	0.16	0.24	0.47	0.26	0.45		0.63	0.34	0.36
Control Delay	51.4	31.1	4.8	44.4	47.3	8.8	23.2	35.2		32.2	30.3	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	51.4	31.1	4.8	44.4	47.3	8.8	23.2	35.2		32.2	30.3	19.9
LOS	D	C	A	D	D	A	C	D		C	C	B
Approach Delay		38.2			21.9			34.3			28.3	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 31.2

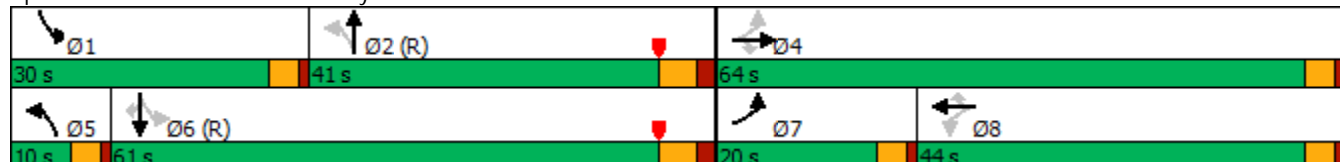
Intersection LOS: C

Intersection Capacity Utilization 69.4%

ICU Level of Service C

Analysis Period (min) 15

























Splits and Phases: 5: Aurora Pkwy & Orchard



HCM 2010 Signalized Intersection Summary

5: Aurora Pkwy & Orchard

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	307	72	105	30	65	177	82	930	33	262	891	329
Future Volume (veh/h)	307	72	105	30	65	177	82	930	33	262	891	329
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	327	77	112	32	70	190	86	979	35	273	928	343
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.95	0.95	0.95	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	382	537	456	220	261	222	321	2577	92	430	2869	893
Arrive On Green	0.12	0.29	0.29	0.14	0.14	0.14	0.04	0.51	0.51	0.09	0.56	0.56
Sat Flow, veh/h	1774	1863	1583	1189	1863	1583	1774	5041	180	1774	5085	1583
Grp Volume(v), veh/h	327	77	112	32	70	190	86	658	356	273	928	343
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1189	1863	1583	1774	1695	1831	1774	1695	1583
Q Serve(g_s), s	16.0	4.1	7.3	3.2	4.5	15.8	3.1	15.9	15.9	9.4	13.1	16.3
Cycle Q Clear(g_c), s	16.0	4.1	7.3	3.2	4.5	15.8	3.1	15.9	15.9	9.4	13.1	16.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	382	537	456	220	261	222	321	1733	936	430	2869	893
V/C Ratio(X)	0.86	0.14	0.25	0.15	0.27	0.86	0.27	0.38	0.38	0.64	0.32	0.38
Avail Cap(c_a), veh/h	382	814	692	397	538	457	335	1733	936	613	2869	893
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	35.7	36.8	51.3	51.9	56.7	14.7	20.0	20.0	14.1	15.7	16.4
Incr Delay (d2), s/veh	17.1	0.1	0.3	0.3	0.5	9.2	0.4	0.6	1.2	1.6	0.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	17.7	3.9	5.8	1.9	4.3	12.0	2.8	12.1	13.0	8.3	10.3	11.8
LnGrp Delay(d),s/veh	63.4	35.8	37.1	51.6	52.4	65.9	15.1	20.6	21.2	15.7	16.0	17.6
LnGrp LOS	E	D	D	D	D	E	B	C	C	B	B	B
Approach Vol, veh/h		516			292			1100			1544	
Approach Delay, s/veh		53.6			61.1			20.4			16.3	
Approach LOS		D			E			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.1	75.0		43.9	8.9	82.2	20.0	23.9				
Change Period (Y+Rc), s	4.0	6.0		5.0	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	26.0	35.0		59.0	6.0	55.0	16.0	39.0				
Max Q Clear Time (g_c+I1), s	11.4	17.9		9.3	5.1	18.3	18.0	17.8				
Green Ext Time (p_c), s	0.6	5.7		0.8	0.0	8.6	0.0	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				27.0								
HCM 2010 LOS				C								

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	25	209	54	10	15	199	923	83	34	912	79
Future Volume (vph)	108	25	209	54	10	15	199	923	83	34	912	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	230		230	280		210	260		140
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	1.00	1.00	1.00	0.91	1.00	1.00	0.91	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	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.750			0.738			0.248			0.282		
Satd. Flow (perm)	1397	1863	1583	1375	1863	1583	462	5085	1583	525	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			240			57			87			66
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		610			552			1344			931	
Travel Time (s)		13.9			12.5			20.4			14.1	
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	124	29	240	64	12	18	209	972	87	37	981	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	29	240	64	12	18	209	972	87	37	981	85
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	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0	11.0	11.0
Minimum Split (s)	42.0	42.0	42.0	43.0	43.0	43.0	10.0	31.0	31.0	33.0	33.0	33.0
Total Split (s)	49.0	49.0	49.0	49.0	49.0	49.0	30.0	86.0	86.0	56.0	56.0	56.0
Total Split (%)	36.3%	36.3%	36.3%	36.3%	36.3%	36.3%	22.2%	63.7%	63.7%	41.5%	41.5%	41.5%
Maximum Green (s)	44.0	44.0	44.0	44.0	44.0	44.0	26.0	80.0	80.0	50.0	50.0	50.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Flash Dont Walk (s)	31.0	31.0	31.0	32.0	32.0	32.0		19.0	19.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)	10	10	10	10	10	10		0	0	0	0	0
Act Effect Green (s)	23.6	23.6	23.6	23.6	23.6	23.6	102.4	100.4	100.4	86.0	86.0	86.0
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17	0.17	0.76	0.74	0.74	0.64	0.64	0.64
v/c Ratio	0.51	0.09	0.51	0.27	0.04	0.06	0.46	0.26	0.07	0.11	0.30	0.08
Control Delay	54.9	41.2	8.3	46.6	39.1	0.3	14.1	9.0	4.3	18.2	19.1	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	41.2	8.3	46.6	39.1	0.3	14.1	9.0	4.3	18.2	19.1	10.8
LOS	D	D	A	D	D	A	B	A	A	B	B	B
Approach Delay	25.4			36.8			9.5			18.5		
Approach LOS	C			D			A			B		

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 61 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 16.0

Intersection LOS: B

Intersection Capacity Utilization 53.8%

ICU Level of Service A

Analysis Period (min) 15

























Splits and Phases: 6: Aurora Pkwy & Commons/Applewood



HCM 2010 Signalized Intersection Summary

6: Aurora Pkwy & Commons/Applewood






















07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	25	209	54	10	15	199	923	83	34	912	79
Future Volume (veh/h)	108	25	209	54	10	15	199	923	83	34	912	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	124	29	240	64	12	18	209	972	87	37	981	85
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.95	0.95	0.95	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	321	273	229	321	273	456	3794	1181	405	3367	1048
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.05	0.75	0.75	0.66	0.66	0.66
Sat Flow, veh/h	1374	1863	1583	1106	1863	1583	1774	5085	1583	531	5085	1583
Grp Volume(v), veh/h	124	29	240	64	12	18	209	972	87	37	981	85
Grp Sat Flow(s),veh/h/ln	1374	1863	1583	1106	1863	1583	1774	1695	1583	531	1695	1583
Q Serve(g_s), s	11.2	1.8	20.0	7.0	0.7	1.3	4.8	8.1	2.0	3.4	10.9	2.6
Cycle Q Clear(g_c), s	11.9	1.8	20.0	8.7	0.7	1.3	4.8	8.1	2.0	3.4	10.9	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	321	273	229	321	273	456	3794	1181	405	3367	1048
V/C Ratio(X)	0.44	0.09	0.88	0.28	0.04	0.07	0.46	0.26	0.07	0.09	0.29	0.08
Avail Cap(c_a), veh/h	494	607	516	399	607	516	701	3794	1181	405	3367	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	47.0	54.5	50.6	46.5	46.8	6.5	5.4	4.6	8.3	9.6	8.1
Incr Delay (d2), s/veh	1.1	0.1	8.9	0.7	0.0	0.1	0.7	0.2	0.1	0.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.7	1.7	14.4	3.9	0.7	1.0	4.3	6.9	1.6	1.0	8.9	2.1
LnGrp Delay(d),s/veh	52.6	47.1	63.4	51.3	46.6	46.9	7.3	5.5	4.7	8.7	9.8	8.3
LnGrp LOS	D	D	E	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	393				94				1268			
Approach Delay, s/veh	58.8				49.8				5.8			
Approach LOS	E				D				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	106.7		28.3		11.4		95.4		28.3			
Change Period (Y+Rc), s	6.0		5.0		4.0		6.0		5.0			
Max Green Setting (Gmax), s	80.0		44.0		26.0		50.0		44.0			
Max Q Clear Time (g_c+I1), s	10.1		22.0		6.8		12.9		10.7			
Green Ext Time (p_c), s	8.1		1.3		0.5		8.4		0.3			
Intersection Summary												
HCM 2010 Ctrl Delay	16.0											
HCM 2010 LOS	B											

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	36	207	5	36	71	220	1119	14	106	982	88
Future Volume (vph)	65	36	207	5	36	71	220	1119	14	106	982	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	180		0	390		0	215		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.872			0.900			0.998			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3086	0	1770	3185	0	1770	5075	0	1770	5024	0
Flt Permitted	0.672			0.444			0.208			0.218		
Satd. Flow (perm)	1252	3086	0	827	3185	0	387	5075	0	406	5024	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		252			84			2			13	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		497			563			925			311	
Travel Time (s)		11.3			12.8			14.0			4.7	
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.97	0.97	0.97	0.95	0.95	0.95
Adj. Flow (vph)	79	44	252	6	42	84	227	1154	14	112	1034	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	296	0	6	126	0	227	1168	0	112	1127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
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	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(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	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	11.0		6.0	11.0	
Minimum Split (s)	42.0	42.0		43.0	43.0		10.0	28.0		10.0	34.0	
Total Split (s)	44.0	44.0		44.0	44.0		33.0	75.0		16.0	58.0	
Total Split (%)	32.6%	32.6%		32.6%	32.6%		24.4%	55.6%		11.9%	43.0%	
Maximum Green (s)	38.0	38.0		38.0	38.0		29.0	69.0		12.0	52.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Flash Dont Walk (s)	30.0	30.0		31.0	31.0			16.0			22.0	
Pedestrian Calls (#/hr)	10	10		10	10			0			0	
Act Effect Green (s)	21.4	21.4		21.4	21.4		102.1	89.7		96.1	86.1	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.76	0.66		0.71	0.64	
v/c Ratio	0.40	0.42		0.05	0.22		0.55	0.35		0.30	0.35	
Control Delay	52.9	9.8		39.6	16.6		21.1	6.8		8.3	6.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	52.9	9.8		39.6	16.6		21.1	6.8		8.3	6.7	
LOS	D	A		D	B		C	A		A	A	
Approach Delay		18.9			17.6			9.1			6.8	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 88 (65%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 9.7

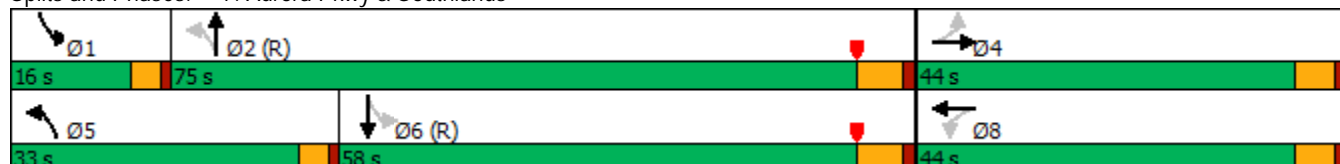
Intersection LOS: A

Intersection Capacity Utilization 56.7%

ICU Level of Service B

Analysis Period (min) 15






















Splits and Phases: 7: Aurora Pkwy & Southlands



HCM 2010 Signalized Intersection Summary

7: Aurora Pkwy & Southlands

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	36	207	5	36	71	220	1119	14	106	982	88
Future Volume (veh/h)	65	36	207	5	36	71	220	1119	14	106	982	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	79	44	252	6	42	84	227	1154	14	112	1034	93
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.97	0.97	0.97	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	226	324	290	84	324	290	434	3390	41	434	3003	270
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.13	1.00	1.00	0.04	0.63	0.63
Sat Flow, veh/h	1260	1770	1583	1079	1770	1583	1774	5179	63	1774	4751	427
Grp Volume(v), veh/h	79	44	252	6	42	84	227	755	413	112	737	390
Grp Sat Flow(s),veh/h/ln	1260	1770	1583	1079	1770	1583	1774	1695	1852	1774	1695	1787
Q Serve(g_s), s	7.8	2.8	20.9	0.7	2.7	6.2	6.3	0.0	0.0	2.9	13.8	13.8
Cycle Q Clear(g_c), s	14.0	2.8	20.9	21.6	2.7	6.2	6.3	0.0	0.0	2.9	13.8	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		0.24
Lane Grp Cap(c), veh/h	226	324	290	84	324	290	434	2219	1212	434	2143	1130
V/C Ratio(X)	0.35	0.14	0.87	0.07	0.13	0.29	0.52	0.34	0.34	0.26	0.34	0.34
Avail Cap(c_a), veh/h	350	498	446	190	498	446	698	2219	1212	514	2143	1130
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.73	0.73	0.73	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.6	46.2	53.6	64.0	46.1	47.6	7.6	0.0	0.0	7.6	11.7	11.7
Incr Delay (d2), s/veh	0.9	0.2	11.0	0.4	0.2	0.5	0.7	0.3	0.6	0.3	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.0	2.5	15.2	0.4	2.4	5.0	5.6	0.2	0.3	2.6	10.8	11.4
LnGrp Delay(d),s/veh	54.5	46.4	64.6	64.4	46.3	48.1	8.3	0.3	0.6	7.9	12.1	12.5
LnGrp LOS	D	D	E	E	D	D	A	A	A	A	B	B
Approach Vol, veh/h	375				132				1395			
Approach Delay, s/veh	60.3				48.3				1.7			
Approach LOS	E				D				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	94.4		30.7	12.9	91.3		30.7				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	12.0	69.0		38.0	29.0	52.0		38.0				
Max Q Clear Time (g_c+I1), s	4.9	2.0		22.9	8.3	15.8		23.6				
Green Ext Time (p_c), s	0.1	9.1		1.9	0.6	8.3		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	14.7											
HCM 2010 LOS	B											

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	338	979	242	60	660	320	271	695	83	403	528	263
Future Volume (vph)	338	979	242	60	660	320	271	695	83	403	528	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	335		395	260		260	380		465	235		0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor			0.98	1.00				1.00		1.00		
Frt			0.850			0.850		0.984				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	4995	0	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1555	3426	5085	1583	3433	4995	0	3428	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113			113			15			105
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1859			2698			936			925	
Travel Time (s)		28.2			40.9			14.2			14.0	
Confl. Peds. (#/hr)			5	5					5	5		
Peak Hour Factor	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.88	0.95	0.95	0.95
Adj. Flow (vph)	376	1088	269	64	702	340	308	790	94	424	556	277
Shared Lane Traffic (%)												
Lane Group Flow (vph)	376	1088	269	64	702	340	308	884	0	424	556	277
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			24			24	
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	1	1	1	1	1	1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	30	20	20	30	20	20	30		20	30	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	30	20	20	30	20	20	30		20	30	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
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	41.0	11.0	11.0	43.0	11.0	11.0	45.0		11.0	44.0	11.0
Total Split (s)	22.0	54.0	22.0	11.0	43.0	25.0	22.0	45.0		25.0	48.0	22.0
Total Split (%)	16.3%	40.0%	16.3%	8.1%	31.9%	18.5%	16.3%	33.3%		18.5%	35.6%	16.3%
Maximum Green (s)	17.0	48.0	17.0	6.0	37.0	20.0	17.0	39.0		20.0	42.0	17.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0		2.0	3.0	2.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max		None	Max	None
Walk Time (s)		6.0			6.0			6.0			6.0	
Flash Dont Walk (s)		29.0			31.0			33.0			32.0	
Pedestrian Calls (#/hr)		5			0			5			0	
Act Effect Green (s)	17.0	51.1	67.5	6.0	37.9	63.0	15.4	39.0		19.1	42.7	60.7
Actuated g/C Ratio	0.13	0.38	0.50	0.04	0.28	0.47	0.11	0.29		0.14	0.32	0.45
v/c Ratio	0.87	0.57	0.32	0.42	0.49	0.43	0.79	0.61		0.87	0.50	0.36
Control Delay	83.8	39.8	23.3	67.5	46.1	19.8	73.1	42.8		77.4	39.4	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	83.8	39.8	23.3	67.5	46.1	19.8	73.1	42.8		77.4	39.4	12.3
LOS	F	D	C	E	D	B	E	D		E	D	B
Approach Delay		46.8			39.3			50.6			46.2	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 22 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 45.9

Intersection LOS: D

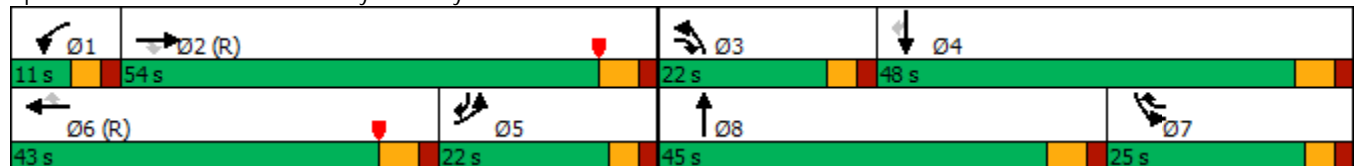
Intersection Capacity Utilization 96.5%

ICU Level of Service F

Analysis Period (min) 15

Description: Aurora
























Splits and Phases: 8: Aurora Pkwy & Smoky Hill Rd



HCM 2010 Signalized Intersection Summary

8: Aurora Pkwy & Smoky Hill Rd

















07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	338	979	242	60	660	320	271	695	83	403	528	263
Future Volume (veh/h)	338	979	242	60	660	320	271	695	83	403	528	263
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	376	1088	269	64	702	340	308	790	94	424	556	277
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	2	2	1
Peak Hour Factor	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	635	2164	836	139	1394	651	359	1331	157	477	1170	813
Arrive On Green	0.06	0.14	0.14	0.04	0.27	0.27	0.10	0.29	0.29	0.05	0.11	0.11
Sat Flow, veh/h	3442	5085	1578	3442	5085	1575	3442	4608	545	3442	3539	1576
Grp Volume(v), veh/h	376	1088	269	64	702	340	308	580	304	424	556	277
Grp Sat Flow(s),veh/h/ln	1721	1695	1578	1721	1695	1575	1721	1695	1763	1721	1770	1576
Q Serve(g_s), s	14.4	26.7	17.2	2.5	15.7	3.0	11.9	19.8	20.0	16.5	19.9	4.7
Cycle Q Clear(g_c), s	14.4	26.7	17.2	2.5	15.7	3.0	11.9	19.8	20.0	16.5	19.9	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	635	2164	836	139	1394	651	359	979	509	477	1170	813
V/C Ratio(X)	0.59	0.50	0.32	0.46	0.50	0.52	0.86	0.59	0.60	0.89	0.48	0.34
Avail Cap(c_a), veh/h	635	2164	836	153	1394	651	433	979	509	510	1170	813
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.95	0.95	0.95	0.98	0.98	0.98	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	58.4	44.8	28.4	63.3	41.3	29.7	59.5	41.2	41.2	63.4	49.1	14.1
Incr Delay (d2), s/veh	1.0	0.8	1.0	0.9	1.3	2.9	12.0	2.6	5.1	15.2	1.3	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.2	18.4	12.2	2.1	12.0	14.7	10.3	14.7	15.7	13.7	15.0	9.7
LnGrp Delay(d),s/veh	59.4	45.6	29.3	64.2	42.5	32.6	71.4	43.8	46.3	78.6	50.4	15.2
LnGrp LOS	E	D	C	E	D	C	E	D	D	E	D	B
Approach Vol, veh/h	1733			1106			1192			1257		
Approach Delay, s/veh	46.1			40.7			51.6			52.2		
Approach LOS	D			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	63.6	19.1	50.6	31.0	43.0	24.7	45.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	6.0	* 6	6.0	* 6				
Max Green Setting (Gmax), s	6.0	48.0	17.0	42.0	17.0	* 37	20.0	* 39				
Max Q Clear Time (g_c+I1), s	4.5	28.7	13.9	21.9	16.4	17.7	18.5	22.0				
Green Ext Time (p_c), s	0.0	5.4	0.2	3.0	0.1	3.9	0.2	3.0				
Intersection Summary												
HCM 2010 Ctrl Delay	47.7											
HCM 2010 LOS	D											
Notes												

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

Lanes, Volumes, Timings
1: DeGaulle & Alexander

07/03/2018




























												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	237	43	25	0	17	5	17	3	0	7	15	181
Future Volume (vph)	237	43	25	0	17	5	17	3	0	7	15	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.970						0.880	
Flt Protected		0.963						0.959			0.998	
Satd. Flow (prot)	0	1774	0	0	1807	0	0	1786	0	0	1636	0
Flt Permitted		0.963						0.959			0.998	
Satd. Flow (perm)	0	1774	0	0	1807	0	0	1786	0	0	1636	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		552			404			431			425	
Travel Time (s)		15.1			11.0			11.8			11.6	
Peak Hour Factor	0.96	0.96	0.96	0.61	0.61	0.61	0.56	0.56	0.56	0.95	0.95	0.95
Adj. Flow (vph)	247	45	26	0	28	8	30	5	0	7	16	191
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	318	0	0	36	0	0	35	0	0	214	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	42.4%											
Analysis Period (min)	15											
ICU Level of Service A												

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	237	43	25	0	17	5	17	3	0	7	15	181
Future Vol, veh/h	237	43	25	0	17	5	17	3	0	7	15	181
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	96	96	96	61	61	61	56	56	56	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	247	45	26	0	28	8	30	5	0	7	16	191
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	36	0	0	71	0	0	688	588	58	587	597	32
Stage 1	-	-	-	-	-	-	552	552	-	32	32	-
Stage 2	-	-	-	-	-	-	136	36	-	555	565	-
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	1575	-	-	1529	-	-	360	421	1008	421	416	1042
Stage 1	-	-	-	-	-	-	518	515	-	984	868	-
Stage 2	-	-	-	-	-	-	867	865	-	516	508	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1575	-	-	1529	-	-	248	352	1008	364	348	1042
Mov Cap-2 Maneuver	-	-	-	-	-	-	248	352	-	364	348	-
Stage 1	-	-	-	-	-	-	433	431	-	823	868	-
Stage 2	-	-	-	-	-	-	696	865	-	426	425	-
Approach	EB		WB				NB		SB			
HCM Control Delay, s	6		0				21		10.6			
HCM LOS							C		B			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	260	1575	-	-	1529	-	-	860				
HCM Lane V/C Ratio	0.137	0.157	-	-	-	-	-	0.248				
HCM Control Delay (s)	21	7.7	0	-	0	-	-	10.6				
HCM Lane LOS	C	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.5	0.6	-	-	0	-	-	1				

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	 
Traffic Volume (vph)	46	1136	388	50	847	374	367	0	17	234	2	17
Future Volume (vph)	46	1136	388	50	847	374	367	0	17	234	2	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	290		0	185		0	185		185
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.954			0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4892	0	1770	4851	0	1770	1583	0	1770	1863	1583
Flt Permitted	0.161			0.105			0.757			0.744		
Satd. Flow (perm)	300	4892	0	196	4851	0	1410	1583	0	1386	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		95			122			51				24
Link Speed (mph)		45			45			25				25
Link Distance (ft)		1377			1303			484				448
Travel Time (s)		20.9			19.7			13.2				12.2
Peak Hour Factor	0.96	0.96	0.96	0.94	0.94	0.94	0.82	0.82	0.82	0.86	0.86	0.86
Adj. Flow (vph)	48	1183	404	53	901	398	448	0	21	272	2	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	1587	0	53	1299	0	448	21	0	272	2	20
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	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			4				8
Permitted Phases	6			2			4			8		8

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	26.0	26.0		28.0	28.0		41.0	41.0		41.0	41.0	41.0
Total Split (s)	76.0	76.0		76.0	76.0		59.0	59.0		59.0	59.0	59.0
Total Split (%)	56.3%	56.3%		56.3%	56.3%		43.7%	43.7%		43.7%	43.7%	43.7%
Maximum Green (s)	70.0	70.0		70.0	70.0		54.0	54.0		54.0	54.0	54.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Flash Dont Walk (s)	14.0	14.0		16.0	16.0		30.0	30.0		30.0	30.0	30.0
Pedestrian Calls (#/hr)	0	0		0	0		5	5		5	5	5
Act Effect Green (s)	76.3	76.3		76.3	76.3		47.7	47.7		47.7	47.7	47.7
Actuated g/C Ratio	0.57	0.57		0.57	0.57		0.35	0.35		0.35	0.35	0.35
v/c Ratio	0.28	0.57		0.48	0.46		0.90	0.04		0.56	0.00	0.03
Control Delay	23.5	19.3		31.0	12.4		62.8	0.1		38.9	24.5	7.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	23.5	19.3		31.0	12.4		62.8	0.1		38.9	24.5	7.7
LOS	C	B		C	B		E	A		D	C	A
Approach Delay		19.4			13.1			60.0			36.7	
Approach LOS		B			B			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 42 (31%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 23.6

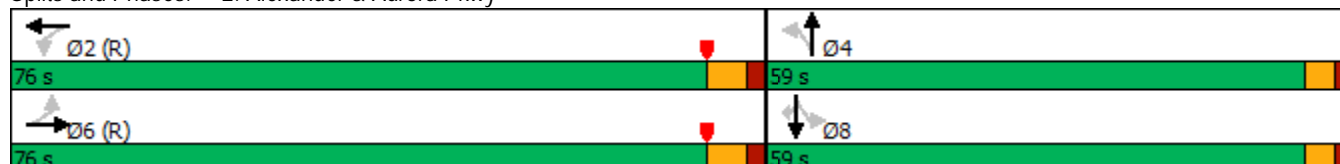
Intersection LOS: C

Intersection Capacity Utilization 76.8%

ICU Level of Service D

Analysis Period (min) 15






















Splits and Phases: 2: Alexander & Aurora Pkwy



HCM 2010 Signalized Intersection Summary

2: Alexander & Aurora Pkwy







07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	1136	388	50	847	374	367	0	17	234	2	17
Future Volume (veh/h)	46	1136	388	50	847	374	367	0	17	234	2	17
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	48	1183	404	53	901	398	448	0	21	272	2	20
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.94	0.94	0.94	0.82	0.82	0.82	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	2167	740	176	2000	882	523	0	539	512	634	539
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.34	0.00	0.34	0.34	0.34	0.34
Sat Flow, veh/h	423	3748	1279	320	3459	1525	1384	0	1583	1385	1863	1583
Grp Volume(v), veh/h	48	1070	517	53	883	416	448	0	21	272	2	20
Grp Sat Flow(s),veh/h/ln	423	1695	1637	320	1695	1594	1384	0	1583	1385	1863	1583
Q Serve(g_s), s	9.9	26.3	26.3	16.5	20.1	20.1	42.7	0.0	1.2	22.1	0.1	1.1
Cycle Q Clear(g_c), s	30.0	26.3	26.3	42.8	20.1	20.1	42.8	0.0	1.2	23.2	0.1	1.1
Prop In Lane	1.00		0.78	1.00		0.96	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	1960	947	176	1960	921	523	0	539	512	634	539
V/C Ratio(X)	0.20	0.55	0.55	0.30	0.45	0.45	0.86	0.00	0.04	0.53	0.00	0.04
Avail Cap(c_a), veh/h	235	1960	947	176	1960	921	606	0	633	595	745	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	17.5	17.6	30.7	16.2	16.2	43.5	0.0	29.8	37.5	29.4	29.8
Incr Delay (d2), s/veh	2.0	1.1	2.3	4.3	0.8	1.6	10.4	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	18.3	18.1	3.0	14.6	14.2	24.7	0.0	1.0	13.4	0.1	0.9
LnGrp Delay(d),s/veh	26.8	18.6	19.8	35.1	17.0	17.8	53.9	0.0	29.8	38.4	29.4	29.8
LnGrp LOS	C	B	B	D	B	B	D		C	D	C	C
Approach Vol, veh/h	1635			1352				469		294		
Approach Delay, s/veh	19.3			18.0				52.9		37.7		
Approach LOS	B			B				D		D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	84.1		50.9		84.1		50.9					
Change Period (Y+Rc), s	6.0		5.0		6.0		5.0					
Max Green Setting (Gmax), s	70.0		54.0		70.0		54.0					
Max Q Clear Time (g_c+I1), s	44.8		44.8		32.0		25.2					
Green Ext Time (p_c), s	10.7		1.2		15.4		0.9					
Intersection Summary												
HCM 2010 Ctrl Delay	24.4											
HCM 2010 LOS	C											

Lanes, Volumes, Timings

3: RIRO & Aurora Pkwy

07/03/2018

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↓			↑↑↑		↑
Traffic Volume (vph)	1239	149	0	1271	0	39
Future Volume (vph)	1239	149	0	1271	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Frt	0.984					0.865
Flt Protected						
Satd. Flow (prot)	5004	0	0	5085	0	1611
Flt Permitted						
Satd. Flow (perm)	5004	0	0	5085	0	1611
Link Speed (mph)	45			45	25	
Link Distance (ft)	1303			772	312	
Travel Time (s)	19.7			11.7	8.5	
Peak Hour Factor	0.95	0.95	0.93	0.93	0.92	0.92
Adj. Flow (vph)	1304	157	0	1367	0	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1461	0	0	1367	0	42
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	37.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 2010 TWSC

3: RIRO & Aurora Pkwy























07/03/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↗
Traffic Vol, veh/h	1239	149	0	1271	0	39
Future Vol, veh/h	1239	149	0	1271	0	39
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	95	95	93	93	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1304	157	0	1367	0	42
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	731
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	-	-	0	-	0	*644
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*644
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		11	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	644	-	-	-		
HCM Lane V/C Ratio	0.066	-	-	-		
HCM Control Delay (s)	11	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.2	-	-	-		
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Lanes, Volumes, Timings

4: Aurora Pkwy & Pronghorn Valley













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	26	177	35	28	22	272	1091	65	42	1188	50
Future Volume (vph)	157	26	177	35	28	22	272	1091	65	42	1188	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		250	150		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Frt		0.869			0.933				0.850		0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1619	0	1770	1738	0	1770	5085	1583	1770	5055	0
Flt Permitted	0.459			0.571			0.156			0.235		
Satd. Flow (perm)	855	1619	0	1064	1738	0	291	5085	1583	438	5055	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		190			24				105		5	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		543			517			676			270	
Travel Time (s)		12.3			11.8			10.2			4.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	169	28	190	38	30	24	286	1148	68	44	1251	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	169	218	0	38	54	0	286	1148	68	44	1304	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(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		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		

Lanes, Volumes, Timings

4: Aurora Pkwy & Pronghorn Valley

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	34.5		8.0	34.5		8.0	20.0	20.0	8.0	20.0	
Total Split (s)	14.0	40.6		8.0	34.6		34.0	78.4	78.4	8.0	52.4	
Total Split (%)	10.4%	30.1%		5.9%	25.6%		25.2%	58.1%	58.1%	5.9%	38.8%	
Maximum Green (s)	10.0	36.6		4.0	30.6		30.0	74.4	74.4	4.0	48.4	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		25.5			25.5			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effect Green (s)	20.2	13.8		11.0	8.1		106.8	98.4	98.4	89.9	83.6	
Actuated g/C Ratio	0.15	0.10		0.08	0.06		0.79	0.73	0.73	0.67	0.62	
v/c Ratio	0.87	0.65		0.36	0.43		0.65	0.31	0.06	0.12	0.42	
Control Delay	90.8	20.8		57.7	47.8		33.4	6.6	0.5	9.2	27.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	90.8	20.8		57.7	47.8		33.4	6.6	0.5	9.2	27.3	
LOS	F	C		E	D		C	A	A	A	C	
Approach Delay		51.3			51.9			11.4			26.7	
Approach LOS		D			D			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 23.4

Intersection LOS: C

Intersection Capacity Utilization 68.1%

ICU Level of Service C

Analysis Period (min) 15


























Splits and Phases: 4: Aurora Pkwy & Pronghorn Valley



HCM 2010 Signalized Intersection Summary

4: Aurora Pkwy & Pronghorn Valley

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	157	26	177	35	28	22	272	1091	65	42	1188	50
Future Volume (veh/h)	157	26	177	35	28	22	272	1091	65	42	1188	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	169	28	190	38	30	24	286	1148	68	44	1251	53
Adj No. of Lanes	1	1	0	1	1	0	1	3	1	1	3	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	32	219	126	103	82	405	3440	1071	379	3094	131
Arrive On Green	0.07	0.16	0.16	0.03	0.11	0.11	0.16	1.00	1.00	0.02	0.62	0.62
Sat Flow, veh/h	1774	207	1407	1774	960	768	1774	5085	1583	1774	5004	212
Grp Volume(v), veh/h	169	0	218	38	0	54	286	1148	68	44	848	456
Grp Sat Flow(s),veh/h/ln	1774	0	1614	1774	0	1727	1774	1695	1583	1774	1695	1825
Q Serve(g_s), s	10.0	0.0	17.8	2.6	0.0	3.9	8.3	0.0	0.0	1.2	17.2	17.2
Cycle Q Clear(g_c), s	10.0	0.0	17.8	2.6	0.0	3.9	8.3	0.0	0.0	1.2	17.2	17.2
Prop In Lane	1.00		0.87	1.00		0.44	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	290	0	251	126	0	185	405	3440	1071	379	2096	1129
V/C Ratio(X)	0.58	0.00	0.87	0.30	0.00	0.29	0.71	0.33	0.06	0.12	0.40	0.40
Avail Cap(c_a), veh/h	290	0	438	133	0	392	654	3440	1071	389	2096	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.88	0.88	0.88	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	0.0	55.7	52.4	0.0	55.6	9.3	0.0	0.0	8.9	13.1	13.1
Incr Delay (d2), s/veh	3.0	0.0	8.9	1.3	0.0	0.9	2.0	0.2	0.1	0.1	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.7	0.0	13.4	2.3	0.0	3.4	7.2	0.1	0.1	1.1	12.9	13.9
LnGrp Delay(d),s/veh	52.1	0.0	64.6	53.7	0.0	56.4	11.3	0.2	0.1	9.0	13.7	14.2
LnGrp LOS	D		E	D		E	B	A	A	A	B	B
Approach Vol, veh/h	387					92		1502			1348	
Approach Delay, s/veh	59.1					55.3		2.3			13.7	
Approach LOS	E					E		A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	95.3	7.5	25.0	15.1	87.5	14.0	18.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	74.4	4.0	36.6	30.0	48.4	10.0	30.6				
Max Q Clear Time (g_c+I1), s	3.2	2.0	4.6	19.8	10.3	19.2	12.0	5.9				
Green Ext Time (p_c), s	0.0	10.2	0.0	1.2	0.7	9.5	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	15.0											
HCM 2010 LOS	B											

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	72	137	30	65	177	136	1134	33	262	1018	119
Future Volume (vph)	117	72	137	30	65	177	136	1134	33	262	1018	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	190		0	280		0	290		100
Storage Lanes	1		1	1		1	1		0	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	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850		0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5065	0	1770	5085	1583
Flt Permitted	0.597			0.707			0.258			0.157		
Satd. Flow (perm)	1112	1863	1583	1317	1863	1583	481	5065	0	292	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			146			190		3				81
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		249			440			428			676	
Travel Time (s)		5.7			10.0			6.5			10.2	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	124	77	146	32	70	190	143	1194	35	273	1060	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	77	146	32	70	190	143	1229	0	273	1060	124
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	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		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	20	6	20	20	6		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	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		6			6

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	10.0		3.0	10.0	10.0
Minimum Split (s)	8.0	40.0	40.0	44.0	44.0	44.0	10.0	29.0		10.0	34.0	34.0
Total Split (s)	10.0	54.0	54.0	44.0	44.0	44.0	16.0	50.0		31.0	65.0	65.0
Total Split (%)	7.4%	40.0%	40.0%	32.6%	32.6%	32.6%	11.9%	37.0%		23.0%	48.1%	48.1%
Maximum Green (s)	6.0	49.0	49.0	39.0	39.0	39.0	12.0	44.0		27.0	59.0	59.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Flash Dont Walk (s)		29.0	29.0	33.0	33.0	33.0		17.0			22.0	22.0
Pedestrian Calls (#/hr)		10	10	10	10	10		0			0	0
Act Effect Green (s)	31.8	30.8	30.8	20.8	20.8	20.8	80.2	69.1		95.2	80.1	80.1
Actuated g/C Ratio	0.24	0.23	0.23	0.15	0.15	0.15	0.59	0.51		0.71	0.59	0.59
v/c Ratio	0.43	0.18	0.31	0.16	0.24	0.47	0.38	0.47		0.64	0.35	0.13
Control Delay	44.0	38.7	6.1	44.4	47.3	8.8	22.9	32.8		37.5	6.9	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	44.0	38.7	6.1	44.4	47.3	8.8	22.9	32.8		37.5	6.9	0.6
LOS	D	D	A	D	D	A	C	C		D	A	A
Approach Delay		26.9			21.9			31.8			12.1	
Approach LOS		C			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 22.2

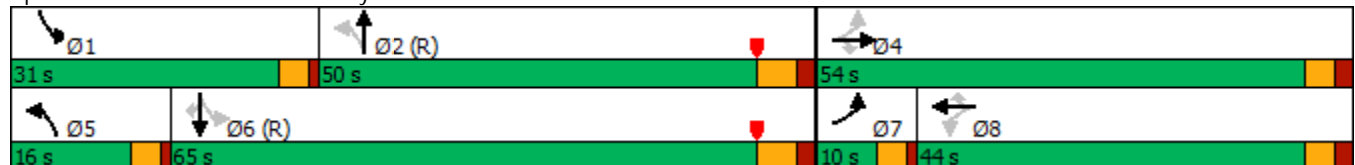
Intersection LOS: C

Intersection Capacity Utilization 62.8%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 5: Aurora Pkwy & Orchard



HCM 2010 Signalized Intersection Summary

























5: Aurora Pkwy & Orchard

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	72	137	30	65	177	136	1134	33	262	1018	119
Future Volume (veh/h)	117	72	137	30	65	177	136	1134	33	262	1018	119
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	124	77	146	32	70	190	143	1194	35	273	1060	124
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.95	0.95	0.95	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	399	339	215	261	222	416	3007	88	411	3191	993
Arrive On Green	0.04	0.21	0.21	0.14	0.14	0.14	0.05	0.59	0.59	0.17	1.00	1.00
Sat Flow, veh/h	1774	1863	1583	1153	1863	1583	1774	5078	149	1774	5085	1583
Grp Volume(v), veh/h	124	77	146	32	70	190	143	797	432	273	1060	124
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1153	1863	1583	1774	1695	1836	1774	1695	1583
Q Serve(g_s), s	6.0	4.6	10.8	3.3	4.5	15.8	4.3	16.9	16.9	8.5	0.0	0.0
Cycle Q Clear(g_c), s	6.0	4.6	10.8	3.3	4.5	15.8	4.3	16.9	16.9	8.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	251	399	339	215	261	222	416	2007	1087	411	3191	993
V/C Ratio(X)	0.49	0.19	0.43	0.15	0.27	0.86	0.34	0.40	0.40	0.66	0.33	0.12
Avail Cap(c_a), veh/h	251	676	575	386	538	457	490	2007	1087	619	3191	993
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	48.4	43.5	45.9	51.3	51.9	56.7	9.5	14.7	14.7	9.8	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.2	0.9	0.3	0.5	9.2	0.5	0.6	1.1	1.7	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.1	4.3	8.4	1.9	4.3	12.0	3.7	12.7	13.7	7.3	0.1	0.1
LnGrp Delay(d),s/veh	49.9	43.7	46.8	51.7	52.4	65.9	10.0	15.3	15.8	11.5	0.3	0.2
LnGrp LOS	D	D	D	D	D	E	B	B	B	B	A	A
Approach Vol, veh/h		347			292			1372			1457	
Approach Delay, s/veh		47.2			61.1			14.9			2.4	
Approach LOS		D			E			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.2	85.9		33.9	10.4	90.7	10.0	23.9				
Change Period (Y+Rc), s	4.0	6.0		5.0	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	27.0	44.0		49.0	12.0	59.0	6.0	39.0				
Max Q Clear Time (g_c+I1), s	10.5	18.9		12.8	6.3	2.0	8.0	17.8				
Green Ext Time (p_c), s	0.7	8.4		0.9	0.2	9.3	0.0	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				16.7								
HCM 2010 LOS				B								

Lanes, Volumes, Timings
6: Aurora Pkwy & Commons/Applewood













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	25	212	54	10	15	205	1226	83	34	1100	47
Future Volume (vph)	63	25	212	54	10	15	205	1226	83	34	1100	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	230		230	280		210	260		140
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	1.00	1.00	1.00	0.91	1.00	1.00	0.91	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	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.750			0.738			0.194			0.202		
Satd. Flow (perm)	1397	1863	1583	1375	1863	1583	361	5085	1583	376	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			244			57			87			48
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		610			552			1344			931	
Travel Time (s)		13.9			12.5			20.4			14.1	
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	72	29	244	64	12	18	216	1291	87	37	1183	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	29	244	64	12	18	216	1291	87	37	1183	51
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	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0	11.0	11.0
Minimum Split (s)	42.0	42.0	42.0	43.0	43.0	43.0	10.0	31.0	31.0	33.0	33.0	33.0
Total Split (s)	48.0	48.0	48.0	48.0	48.0	48.0	29.0	87.0	87.0	58.0	58.0	58.0
Total Split (%)	35.6%	35.6%	35.6%	35.6%	35.6%	35.6%	21.5%	64.4%	64.4%	43.0%	43.0%	43.0%
Maximum Green (s)	43.0	43.0	43.0	43.0	43.0	43.0	25.0	81.0	81.0	52.0	52.0	52.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Flash Dont Walk (s)	31.0	31.0	31.0	32.0	32.0	32.0		19.0	19.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)	10	10	10	10	10	10		0	0	0	0	0
Act Effect Green (s)	21.1	21.1	21.1	21.1	21.1	21.1	104.9	102.9	102.9	87.7	87.7	87.7
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.78	0.76	0.76	0.65	0.65	0.65
v/c Ratio	0.33	0.10	0.54	0.30	0.04	0.06	0.54	0.33	0.07	0.15	0.36	0.05
Control Delay	50.1	42.6	9.0	49.1	40.1	0.4	18.9	10.4	4.8	21.6	20.8	9.9
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	50.1	42.6	9.0	49.1	40.1	0.4	18.9	10.4	4.8	21.6	20.8	9.9
LOS	D	D	A	D	D	A	B	B	A	C	C	A
Approach Delay		20.4			38.6			11.2			20.4	
Approach LOS		C			D			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 61 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 16.5

Intersection LOS: B

Intersection Capacity Utilization 57.2%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 6: Aurora Pkwy & Commons/Applewood



HCM 2010 Signalized Intersection Summary

6: Aurora Pkwy & Commons/Applewood






















07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	25	212	54	10	15	205	1226	83	34	1100	47
Future Volume (veh/h)	63	25	212	54	10	15	205	1226	83	34	1100	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	72	29	244	64	12	18	216	1291	87	37	1183	51
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.95	0.95	0.95	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	324	275	230	324	275	403	3787	1179	311	3351	1043
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.06	0.74	0.74	0.66	0.66	0.66
Sat Flow, veh/h	1374	1863	1583	1102	1863	1583	1774	5085	1583	392	5085	1583
Grp Volume(v), veh/h	72	29	244	64	12	18	216	1291	87	37	1183	51
Grp Sat Flow(s),veh/h/ln	1374	1863	1583	1102	1863	1583	1774	1695	1583	392	1695	1583
Q Serve(g_s), s	6.2	1.8	20.3	7.0	0.7	1.3	5.1	11.7	2.0	4.8	14.0	1.5
Cycle Q Clear(g_c), s	6.9	1.8	20.3	8.8	0.7	1.3	5.1	11.7	2.0	5.0	14.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	324	275	230	324	275	403	3787	1179	311	3351	1043
V/C Ratio(X)	0.25	0.09	0.89	0.28	0.04	0.07	0.54	0.34	0.07	0.12	0.35	0.05
Avail Cap(c_a), veh/h	484	593	504	390	593	504	632	3787	1179	311	3351	1043
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	46.8	54.5	50.5	46.4	46.6	7.4	5.9	4.7	8.7	10.2	8.1
Incr Delay (d2), s/veh	0.5	0.1	9.3	0.6	0.0	0.1	1.1	0.2	0.1	0.8	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.3	1.7	14.7	3.9	0.7	1.0	4.5	9.3	1.6	1.0	10.8	1.2
LnGrp Delay(d),s/veh	49.7	46.9	63.8	51.1	46.4	46.7	8.5	6.1	4.8	9.5	10.5	8.2
LnGrp LOS	D	D	E	D	D	D	A	A	A	A	B	A
Approach Vol, veh/h	345					94		1594			1271	
Approach Delay, s/veh	59.5					49.7		6.4			10.4	
Approach LOS	E					D		A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	106.5		28.5		11.6		95.0		28.5			
Change Period (Y+Rc), s	6.0		5.0		4.0		6.0		5.0			
Max Green Setting (Gmax), s	81.0		43.0		25.0		52.0		43.0			
Max Q Clear Time (g_c+I1), s	13.7		22.3		7.1		16.0		10.8			
Green Ext Time (p_c), s	12.3		1.1		0.5		10.7		0.3			
Intersection Summary												
HCM 2010 Ctrl Delay			14.7									
HCM 2010 LOS			B									

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	36	210	5	36	71	226	1436	14	106	1203	58
Future Volume (vph)	57	36	210	5	36	71	226	1436	14	106	1203	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	180		0	390		0	215		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.872			0.900			0.999			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3086	0	1770	3185	0	1770	5080	0	1770	5050	0
Flt Permitted	0.672			0.433			0.158			0.148		
Satd. Flow (perm)	1252	3086	0	807	3185	0	294	5080	0	276	5050	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		256			84			1			6	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		497			563			925			311	
Travel Time (s)		11.3			12.8			14.0			4.7	
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.97	0.97	0.97	0.95	0.95	0.95
Adj. Flow (vph)	70	44	256	6	42	84	233	1480	14	112	1266	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	300	0	6	126	0	233	1494	0	112	1327	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
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	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(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	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	11.0		6.0	11.0	
Minimum Split (s)	42.0	42.0		43.0	43.0		10.0	28.0		10.0	34.0	
Total Split (s)	44.0	44.0		44.0	44.0		32.0	73.0		18.0	59.0	
Total Split (%)	32.6%	32.6%		32.6%	32.6%		23.7%	54.1%		13.3%	43.7%	
Maximum Green (s)	38.0	38.0		38.0	38.0		28.0	67.0		14.0	53.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Flash Dont Walk (s)	30.0	30.0		31.0	31.0			16.0			22.0	
Pedestrian Calls (/hr)	10	10		10	10			0			0	
Act Effect Green (s)	20.9	20.9		20.9	20.9		103.1	90.0		94.2	84.2	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.76	0.67		0.70	0.62	
v/c Ratio	0.36	0.43		0.05	0.22		0.62	0.44		0.40	0.42	
Control Delay	51.8	9.8		40.0	16.7		27.6	6.7		18.9	8.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.8	9.8		40.0	16.7		27.6	6.7		18.9	8.7	
LOS	D	A		D	B		C	A		B	A	
Approach Delay		17.8			17.8			9.5			9.5	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 88 (65%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 10.6

Intersection LOS: B

Intersection Capacity Utilization 60.2%

ICU Level of Service B

Analysis Period (min) 15






















Splits and Phases: 7: Aurora Pkwy & Southlands



HCM 2010 Signalized Intersection Summary

7: Aurora Pkwy & Southlands

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	36	210	5	36	71	226	1436	14	106	1203	58
Future Volume (veh/h)	57	36	210	5	36	71	226	1436	14	106	1203	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	70	44	256	6	42	84	233	1480	14	112	1266	61
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.97	0.97	0.97	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	328	294	84	328	294	380	3388	32	351	3122	150
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.14	1.00	1.00	0.04	0.63	0.63
Sat Flow, veh/h	1260	1770	1583	1075	1770	1583	1774	5195	49	1774	4971	239
Grp Volume(v), veh/h	70	44	256	6	42	84	233	966	528	112	863	464
Grp Sat Flow(s),veh/h/ln	1260	1770	1583	1075	1770	1583	1774	1695	1854	1774	1695	1820
Q Serve(g_s), s	6.8	2.8	21.2	0.7	2.7	6.2	6.6	0.0	0.0	3.0	17.2	17.2
Cycle Q Clear(g_c), s	13.0	2.8	21.2	21.9	2.7	6.2	6.6	0.0	0.0	3.0	17.2	17.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		0.13
Lane Grp Cap(c), veh/h	230	328	294	84	328	294	380	2211	1209	351	2129	1143
V/C Ratio(X)	0.30	0.13	0.87	0.07	0.13	0.29	0.61	0.44	0.44	0.32	0.41	0.41
Avail Cap(c_a), veh/h	350	498	446	187	498	446	627	2211	1209	457	2129	1143
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.49	0.49	0.49	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	45.9	53.4	64.1	45.9	47.3	8.8	0.0	0.0	7.8	12.5	12.5
Incr Delay (d2), s/veh	0.7	0.2	11.5	0.4	0.2	0.5	0.8	0.3	0.6	0.5	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	2.5	15.5	0.4	2.4	4.9	5.3	0.2	0.3	2.7	12.9	13.9
LnGrp Delay(d),s/veh	53.6	46.1	64.9	64.4	46.0	47.8	9.6	0.3	0.6	8.3	13.1	13.6
LnGrp LOS	D	D	E	E	D	D	A	A	A	A	B	B
Approach Vol, veh/h	370				132				1727			
Approach Delay, s/veh	60.6				48.0				1.6			
Approach LOS	E				D				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	94.0		31.0	13.2	90.8		31.0				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	14.0	67.0		38.0	28.0	53.0		38.0				
Max Q Clear Time (g_c+I1), s	5.0	2.0		23.2	8.6	19.2		23.9				
Green Ext Time (p_c), s	0.1	13.6		1.8	0.6	10.2		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	13.7											
HCM 2010 LOS	B											

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	545	979	242	60	660	436	271	695	83	484	528	406
Future Volume (vph)	545	979	242	60	660	436	271	695	83	484	528	406
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	335		395	260		260	380		465	235		0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor			0.98	1.00				1.00		1.00		
Frt			0.850			0.850		0.984				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	4995	0	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1555	3426	5085	1583	3433	4995	0	3428	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113			113			15			105
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1859			2698			936			925	
Travel Time (s)		28.2			40.9			14.2			14.0	
Confl. Peds. (#/hr)			5	5					5	5		
Peak Hour Factor	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.88	0.95	0.95	0.95
Adj. Flow (vph)	606	1088	269	64	702	464	308	790	94	509	556	427
Shared Lane Traffic (%)												
Lane Group Flow (vph)	606	1088	269	64	702	464	308	884	0	509	556	427
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			24			24	
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	1	1	1	1	1	1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	30	20	20	30	20	20	30		20	30	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	30	20	20	30	20	20	30		20	30	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
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	41.0	11.0	11.0	43.0	11.0	11.0	45.0		11.0	44.0	11.0
Total Split (s)	24.0	57.0	23.0	11.0	44.0	22.0	23.0	45.0		22.0	44.0	24.0
Total Split (%)	17.8%	42.2%	17.0%	8.1%	32.6%	16.3%	17.0%	33.3%		16.3%	32.6%	17.8%
Maximum Green (s)	19.0	51.0	18.0	6.0	38.0	17.0	18.0	39.0		17.0	38.0	19.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0		2.0	3.0	2.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max		None	Max	None
Walk Time (s)		6.0			6.0			6.0			6.0	
Flash Dont Walk (s)		29.0			31.0			33.0			32.0	
Pedestrian Calls (#/hr)		5			0			5			0	
Act Effect Green (s)	19.0	53.2	70.0	6.0	38.0	61.0	15.8	39.0		17.0	40.2	60.2
Actuated g/C Ratio	0.14	0.39	0.52	0.04	0.28	0.45	0.12	0.29		0.13	0.30	0.45
v/c Ratio	1.25	0.54	0.31	0.42	0.49	0.60	0.77	0.61		1.18	0.53	0.56
Control Delay	180.4	37.9	20.1	67.9	45.4	27.4	70.9	42.8		152.6	40.9	20.0
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	180.4	37.9	20.1	67.9	45.4	27.4	70.9	42.8		152.6	40.9	20.0
LOS	F	D	C	E	D	C	E	D		F	D	C
Approach Delay		79.5			39.8			50.0			73.0	
Approach LOS		E			D			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 22 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.25

Intersection Signal Delay: 63.6

Intersection LOS: E

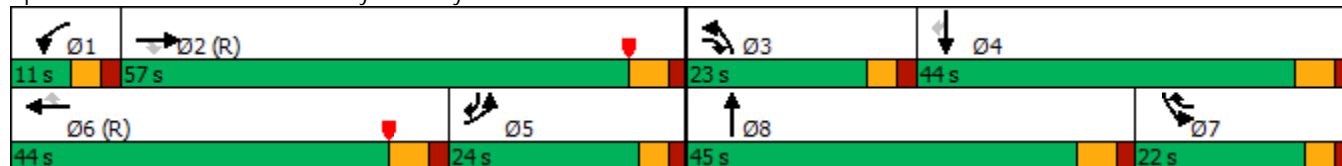
Intersection Capacity Utilization 98.8%

ICU Level of Service F

Analysis Period (min) 15

Description: Aurora
























Splits and Phases: 8: Aurora Pkwy & Smoky Hill Rd



HCM 2010 Signalized Intersection Summary

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018




												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	545	979	242	60	660	436	271	695	83	484	528	406
Future Volume (veh/h)	545	979	242	60	660	436	271	695	83	484	528	406
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	606	1088	269	64	702	464	308	790	94	509	556	427
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	2	2	1
Peak Hour Factor	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2167	4465	1554	139	1431	643	360	1331	157	433	1124	1497
Arrive On Green	0.21	0.29	0.29	0.04	0.28	0.28	0.10	0.29	0.29	0.04	0.10	0.10
Sat Flow, veh/h	3442	5085	1581	3442	5085	1575	3442	4608	545	3442	3539	1576
Grp Volume(v), veh/h	606	1088	269	64	702	464	308	580	304	509	556	427
Grp Sat Flow(s),veh/h/ln	1721	1695	1581	1721	1695	1575	1721	1695	1763	1721	1770	1576
Q Serve(g_s), s	20.0	22.1	2.5	2.5	15.5	16.3	11.9	19.8	20.0	17.0	20.0	7.5
Cycle Q Clear(g_c), s	20.0	22.1	2.5	2.5	15.5	16.3	11.9	19.8	20.0	17.0	20.0	7.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	2167	4465	1554	139	1431	643	360	979	509	433	1124	1497
V/C Ratio(X)	0.28	0.24	0.17	0.46	0.49	0.72	0.86	0.59	0.60	1.17	0.49	0.29
Avail Cap(c_a), veh/h	2167	4465	1554	153	1431	643	459	979	509	433	1124	1497
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.95	0.95	0.95	0.98	0.98	0.98	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	27.7	13.7	0.2	63.3	40.4	33.5	59.4	41.2	41.2	64.7	50.2	17.0
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.9	1.2	6.8	10.1	2.6	5.1	98.8	1.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.5	15.6	2.1	2.1	11.9	12.8	10.2	14.7	15.7	25.3	15.0	15.7
LnGrp Delay(d),s/veh	27.7	13.8	0.5	64.2	41.6	40.3	69.6	43.8	46.3	163.5	51.6	17.5
LnGrp LOS	C	B	A	E	D	D	E	D	D	F	D	B
Approach Vol, veh/h	1963			1230			1192			1492		
Approach Delay, s/veh	16.3			42.3			51.1			80.0		
Approach LOS	B			D			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	126.5	19.1	48.9	93.0	44.0	23.0	45.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	6.0	* 6	6.0	* 6				
Max Green Setting (Gmax), s	6.0	51.0	18.0	38.0	19.0	* 38	17.0	* 39				
Max Q Clear Time (g_c+I1), s	4.5	24.1	13.9	22.0	22.0	18.3	19.0	22.0				
Green Ext Time (p_c), s	0.0	5.9	0.2	3.4	0.0	4.5	0.0	3.0				
Intersection Summary												
HCM 2010 Ctrl Delay	45.0											
HCM 2010 LOS	D											
Notes												

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

Lanes, Volumes, Timings
9: Alexander/West MF Site Access




07/03/2018



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	330	0	0	29	54	338
Future Volume (vph)	330	0	0	29	54	338
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865		0.884	
Flt Protected		0.950			0.993	
Satd. Flow (prot)	0	1770	1611	0	1635	0
Flt Permitted		0.950			0.993	
Satd. Flow (perm)	0	1770	1611	0	1635	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		492	488		420	
Travel Time (s)		11.2	11.1		9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	0	0	32	59	367
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	359	32	0	426	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	55.5%			ICU Level of Service B		
Analysis Period (min)	15					

HCM 2010 TWSC
9: Alexander/West MF Site Access

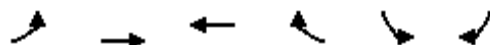
07/03/2018




Intersection						
Int Delay, s/veh	11.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	330	0	0	29	54	338
Future Vol, veh/h	330	0	0	29	54	338
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	359	0	0	32	59	367
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	32	0	-	0	734	16
Stage 1	-	-	-	-	16	-
Stage 2	-	-	-	-	718	-
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	1580	-	-	-	387	1063
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	483	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1580	-	-	-	299	1063
Mov Cap-2 Maneuver	-	-	-	-	299	-
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	483	-
Approach	EB	WB		SB		
HCM Control Delay, s	7.9	0		14.9		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1580	-	-	-	786	
HCM Lane V/C Ratio	0.227	-	-	-	0.542	
HCM Control Delay (s)	7.9	0	-	-	14.9	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.9	-	-	-	3.3	

Lanes, Volumes, Timings

10: Pronghorn Valley/East Site Access & DeGaulle

07/03/2018






Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	113	61	3	6	25
Future Volume (vph)	20	113	61	3	6	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.994		0.893	
Flt Protected		0.992			0.990	
Satd. Flow (prot)	0	1848	1852	0	1647	0
Flt Permitted		0.992			0.990	
Satd. Flow (perm)	0	1848	1852	0	1647	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		561	643		431	
Travel Time (s)		12.8	14.6		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	123	66	3	7	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	145	69	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 23.7%				ICU Level of Service A		
Analysis Period (min) 15						

HCM 2010 TWSC
10: Pronghorn Valley/East Site Access & DeGaulle

07/03/2018

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	113	61	3	6	25
Future Vol, veh/h	20	113	61	3	6	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	22	123	66	3	7	27

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	69	0	0 235 68
Stage 1	-	-	- 68 -
Stage 2	-	-	- 167 -
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	1532	-	- 753 995
Stage 1	-	-	- 955 -
Stage 2	-	-	- 863 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1532	-	- 742 995
Mov Cap-2 Maneuver	-	-	- 742 -
Stage 1	-	-	- 941 -
Stage 2	-	-	- 863 -

















Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1532	-	-	-	933
HCM Lane V/C Ratio	0.014	-	-	-	0.036
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lanes, Volumes, Timings

1: DeGaulle & Alexander

07/03/2018






















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	282	12	8	0	44	28	28	13	0	9	4	280
Future Volume (vph)	282	12	8	0	44	28	28	13	0	9	4	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.947						0.871	
Flt Protected		0.955						0.967			0.998	
Satd. Flow (prot)	0	1774	0	0	1764	0	0	1801	0	0	1619	0
Flt Permitted		0.955						0.967			0.998	
Satd. Flow (perm)	0	1774	0	0	1764	0	0	1801	0	0	1619	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		568			374			335			287	
Travel Time (s)		15.5			10.2			9.1			7.8	
Peak Hour Factor	0.78	0.78	0.78	0.83	0.83	0.83	0.80	0.80	0.80	0.83	0.83	0.83
Adj. Flow (vph)	362	15	10	0	53	34	35	16	0	11	5	337
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	387	0	0	87	0	0	51	0	0	353	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	48.0%											
Analysis Period (min)	15											
	ICU Level of Service A											

Intersection												
Int Delay, s/veh	10.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	282	12	8	0	44	28	28	13	0	9	4	280
Future Vol, veh/h	282	12	8	0	44	28	28	13	0	9	4	280
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	78	78	78	83	83	83	80	80	80	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	362	15	10	0	53	34	35	16	0	11	5	337
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	87	0	0	25	0	0	985	831	20	822	819	70
Stage 1	-	-	-	-	-	-	744	744	-	70	70	-
Stage 2	-	-	-	-	-	-	241	87	-	752	749	-
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	1509	-	-	1589	-	-	227	305	1058	293	310	993
Stage 1	-	-	-	-	-	-	407	421	-	940	837	-
Stage 2	-	-	-	-	-	-	762	823	-	402	419	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1509	-	-	1589	-	-	120	231	1058	226	234	993
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	231	-	226	234	-
Stage 1	-	-	-	-	-	-	308	318	-	711	837	-
Stage 2	-	-	-	-	-	-	500	823	-	288	317	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	7.6			0			44			12		
HCM LOS							E			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	142	1509	-	-	1589	-	-	865				
HCM Lane V/C Ratio	0.361	0.24	-	-	-	-	-	0.408				
HCM Control Delay (s)	44	8.1	0	-	0	-	-	12				
HCM Lane LOS	E	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	1.5	0.9	-	-	0	-	-	2				

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1514	0	17	1546	176	26	9	44	557	5	106
Future Volume (vph)	6	1514	0	17	1546	176	26	9	44	557	5	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	290		0	185		0	185		185
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.985			0.875				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	0	1770	5009	0	1770	1630	0	1770	1863	1583
Flt Permitted	0.111			0.111			0.754			0.714		
Satd. Flow (perm)	207	5085	0	207	5009	0	1405	1630	0	1330	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					26			4				36
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1377			2056			484			500	
Travel Time (s)		20.9			31.2			13.2			13.6	
Peak Hour Factor	0.93	0.93	0.25	0.93	0.93	0.93	0.80	0.80	0.80	0.88	0.88	0.88
Adj. Flow (vph)	6	1628	0	18	1662	189	33	11	55	633	6	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	1628	0	18	1851	0	33	66	0	633	6	120
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	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		8

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	26.0	26.0		28.0	28.0		41.0	41.0		41.0	41.0	41.0
Total Split (s)	42.0	42.0		42.0	42.0		48.0	48.0		48.0	48.0	48.0
Total Split (%)	46.7%	46.7%		46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	53.3%
Maximum Green (s)	36.0	36.0		36.0	36.0		43.0	43.0		43.0	43.0	43.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Flash Dont Walk (s)	14.0	14.0		16.0	16.0		30.0	30.0		30.0	30.0	30.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	36.0	36.0		36.0	36.0		43.0	43.0		43.0	43.0	43.0
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.48	0.48		0.48	0.48	0.48
v/c Ratio	0.07	0.80		0.22	0.92		0.05	0.08		1.00	0.01	0.15
Control Delay	19.7	27.5		12.9	19.3		12.9	12.6		60.5	12.4	9.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	19.7	27.5		12.9	19.3		12.9	12.6		60.5	12.4	9.9
LOS	B	C		B	B		B	B		E	B	A
Approach Delay		27.5			19.2			12.7			52.1	
Approach LOS		C			B			B			D	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 27.9

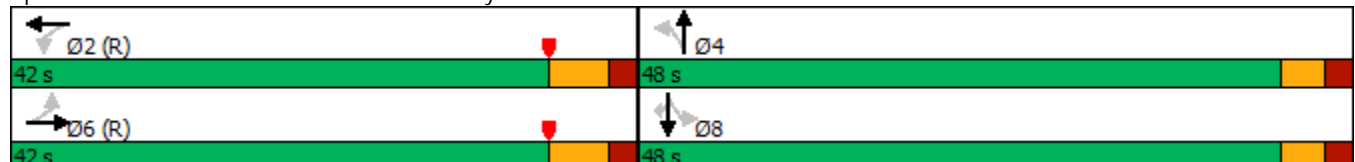
Intersection LOS: C

Intersection Capacity Utilization 80.5%

ICU Level of Service D

Analysis Period (min) 15






















Splits and Phases: 2: Alexander & Aurora Pkwy



HCM 2010 Signalized Intersection Summary

2: Alexander & Aurora Pkwy

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1514	0	17	1546	176	26	9	44	557	5	106
Future Volume (veh/h)	6	1514	0	17	1546	176	26	9	44	557	5	106
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	6	1628	0	18	1662	189	32	11	55	633	6	120
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.93	0.93	0.25	0.93	0.93	0.93	0.80	0.80	0.80	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	2034	0	116	1854	210	680	129	647	686	890	756
Arrive On Green	0.40	0.40	0.00	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	248	5253	0	308	4635	526	1260	271	1353	1330	1863	1583
Grp Volume(v), veh/h	6	1628	0	18	1215	636	32	0	66	633	6	120
Grp Sat Flow(s),veh/h/ln	248	1695	0	308	1695	1770	1260	0	1624	1330	1863	1583
Q Serve(g_s), s	2.1	25.4	0.0	4.9	30.1	30.3	1.2	0.0	2.0	41.0	0.2	3.9
Cycle Q Clear(g_c), s	32.4	25.4	0.0	30.4	30.1	30.3	1.4	0.0	2.0	43.0	0.2	3.9
Prop In Lane	1.00		0.00	1.00		0.30	1.00		0.83	1.00		1.00
Lane Grp Cap(c), veh/h	96	2034	0	116	1356	708	680	0	776	686	890	756
V/C Ratio(X)	0.06	0.80	0.00	0.15	0.90	0.90	0.05	0.00	0.09	0.92	0.01	0.16
Avail Cap(c_a), veh/h	96	2034	0	116	1356	708	680	0	776	686	890	756
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	23.8	0.0	37.2	25.2	25.3	12.7	0.0	12.8	25.4	12.3	13.3
Incr Delay (d2), s/veh	1.3	3.4	0.0	2.8	9.5	16.6	0.0	0.0	0.0	18.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	18.2	0.0	0.9	22.3	24.9	0.8	0.0	1.6	26.3	0.1	3.0
LnGrp Delay(d),s/veh	41.7	27.2	0.0	40.0	34.7	41.9	12.7	0.0	12.8	43.5	12.3	13.4
LnGrp LOS	D	C		D	C	D	B		B	D	B	B
Approach Vol, veh/h	1634			1869			98			759		
Approach Delay, s/veh	27.3			37.2			12.8			38.5		
Approach LOS	C			D			B			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	42.0		48.0		42.0		48.0					
Change Period (Y+Rc), s	6.0		5.0		6.0		5.0					
Max Green Setting (Gmax), s	36.0		43.0		36.0		43.0					
Max Q Clear Time (g_c+I1), s	32.4		4.0		34.4		45.0					
Green Ext Time (p_c), s	3.1		0.5		1.3		0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	33.2											
HCM 2010 LOS	C											

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	12	30	71	26	499	40	1142	16	355	1421	207
Future Volume (vph)	92	12	30	71	26	499	40	1142	16	355	1421	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	190		0	280		0	290		100
Storage Lanes	1		1	1		1	1		0	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	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850		0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5075	0	1770	5085	1583
Flt Permitted	0.631			0.749			0.186			0.157		
Satd. Flow (perm)	1175	1863	1583	1395	1863	1583	346	5075	0	292	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			341		2				121
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		249			440			428			609	
Travel Time (s)		5.7			10.0			6.5			9.2	
Peak Hour Factor	0.89	0.89	0.89	0.87	0.87	0.87	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	103	13	34	82	30	574	44	1255	18	386	1545	225
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	13	34	82	30	574	44	1273	0	386	1545	225
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	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		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	20	6	20	20	6		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	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	10.0		3.0	10.0	10.0
Minimum Split (s)	8.0	40.0	40.0	44.0	44.0	44.0	10.0	29.0		10.0	34.0	34.0
Total Split (s)	7.0	50.0	50.0	43.0	43.0	43.0	9.0	25.0		15.0	31.0	31.0
Total Split (%)	7.8%	55.6%	55.6%	47.8%	47.8%	47.8%	10.0%	27.8%		16.7%	34.4%	34.4%
Maximum Green (s)	3.0	45.0	45.0	38.0	38.0	38.0	5.0	19.0		11.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Flash Dont Walk (s)		29.0	29.0	33.0	33.0	33.0		17.0			22.0	22.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	30.2	29.2	29.2	23.6	23.6	23.6	30.3	22.3		51.8	43.6	43.6
Actuated g/C Ratio	0.34	0.32	0.32	0.26	0.26	0.26	0.34	0.25		0.58	0.48	0.48
v/c Ratio	0.25	0.02	0.06	0.22	0.06	0.86	0.21	1.01		0.70	0.63	0.27
Control Delay	18.8	14.2	0.2	23.5	19.8	24.7	12.6	56.7		37.3	17.9	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	18.8	14.2	0.2	23.5	19.8	24.7	12.6	56.7		37.3	17.9	7.6
LOS	B	B	A	C	B	C	B	E		D	B	A
Approach Delay		14.1			24.4			55.3			20.3	
Approach LOS		B			C			E			C	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 31.4

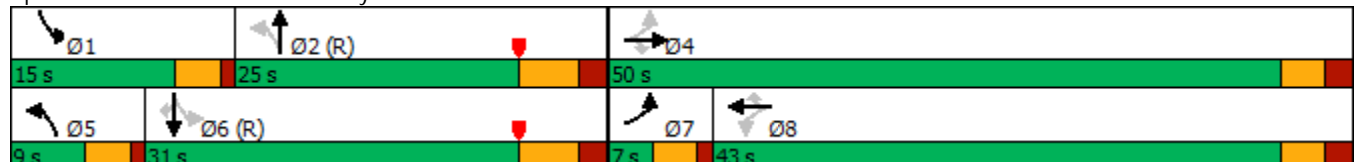
Intersection LOS: C

Intersection Capacity Utilization 70.9%

ICU Level of Service C

Analysis Period (min) 15
























Splits and Phases: 5: Aurora Pkwy & Orchard



HCM 2010 Signalized Intersection Summary

5: Aurora Pkwy & Orchard

07/03/2018

























																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	92	12	30	71	26	499	40	1142	16	355	1421	207						
Future Volume (veh/h)	92	12	30	71	26	499	40	1142	16	355	1421	207						
Number	7	4	14	3	8	18	5	2	12	1	6	16						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863						
Adj Flow Rate, veh/h	103	13	34	82	30	574	44	1255	18	386	1545	225						
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1						
Peak Hour Factor	0.89	0.89	0.89	0.87	0.87	0.87	0.91	0.91	0.91	0.92	0.92	0.92						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2						
Cap, veh/h	444	863	734	602	718	610	143	1280	18	300	1744	543						
Arrive On Green	0.03	0.46	0.46	0.39	0.39	0.39	0.03	0.25	0.25	0.12	0.34	0.34						
Sat Flow, veh/h	1774	1863	1583	1353	1863	1583	1774	5166	74	1774	5085	1583						
Grp Volume(v), veh/h	103	13	34	82	30	574	44	824	449	386	1545	225						
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1353	1863	1583	1774	1695	1850	1774	1695	1583						
Q Serve(g_s), s	3.0	0.3	1.1	3.6	0.9	31.4	1.7	21.7	21.7	11.0	25.8	9.8						
Cycle Q Clear(g_c), s	3.0	0.3	1.1	3.6	0.9	31.4	1.7	21.7	21.7	11.0	25.8	9.8						
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00						
Lane Grp Cap(c), veh/h	444	863	734	602	718	610	143	840	458	300	1744	543						
V/C Ratio(X)	0.23	0.02	0.05	0.14	0.04	0.94	0.31	0.98	0.98	1.29	0.89	0.41						
Avail Cap(c_a), veh/h	444	931	792	651	786	669	194	840	458	300	1744	543						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Uniform Delay (d), s/veh	15.0	13.1	13.2	18.1	17.3	26.7	26.2	33.6	33.6	23.4	27.9	22.7						
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	20.5	1.2	26.6	37.5	152.6	7.1	2.3						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(95%),veh/ln	2.7	0.3	0.8	2.4	0.8	24.0	1.5	19.3	22.4	32.4	19.1	8.1						
LnGrp Delay(d),s/veh	15.3	13.1	13.3	18.2	17.3	47.2	27.4	60.3	71.1	176.0	35.0	25.0						
LnGrp LOS	B	B	B	B	B	D	C	E	E	F	C	C						
Approach Vol, veh/h	150				686				1317									
Approach Delay, s/veh	14.6				42.4				62.9									
Approach LOS	B				D				E									
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	1	2	4		5	6	7	8										
Phs Duration (G+Y+Rc), s	15.0	28.3	46.7		6.4	36.9	7.0	39.7										
Change Period (Y+Rc), s	4.0	6.0	5.0		4.0	6.0	4.0	5.0										
Max Green Setting (Gmax), s	11.0	19.0	45.0		5.0	25.0	3.0	38.0										
Max Q Clear Time (g_c+I1), s	13.0	23.7	3.1		3.7	27.8	5.0	33.4										
Green Ext Time (p_c), s	0.0	0.0	0.2		0.0	0.0	0.0	1.2										
Intersection Summary																		
HCM 2010 Ctrl Delay	56.1																	
HCM 2010 LOS	E																	
Notes																		

User approved pedestrian interval to be less than phase max green.

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	5	63	174	19	75	127	1095	33	10	1465	47
Future Volume (vph)	26	5	63	174	19	75	127	1095	33	10	1465	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	230		230	280		210	260		140
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	1.00	1.00	1.00	0.91	1.00	1.00	0.91	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	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.743			0.754			0.101			0.228		
Satd. Flow (perm)	1384	1863	1583	1405	1863	1583	188	5085	1583	425	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			85			35			73
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		610			552			1344			931	
Travel Time (s)		13.9			12.5			20.4			14.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.93	0.93	0.93	0.94	0.94	0.94
Adj. Flow (vph)	30	6	72	198	22	85	137	1177	35	11	1559	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	6	72	198	22	85	137	1177	35	11	1559	50
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	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0	11.0	11.0
Minimum Split (s)	42.0	42.0	42.0	43.0	43.0	43.0	10.0	31.0	31.0	33.0	33.0	33.0
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0	10.0	47.0	47.0	37.0	37.0	37.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	47.8%	47.8%	11.1%	52.2%	52.2%	41.1%	41.1%	41.1%
Maximum Green (s)	38.0	38.0	38.0	38.0	38.0	38.0	6.0	41.0	41.0	31.0	31.0	31.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Flash Dont Walk (s)	31.0	31.0	31.0	32.0	32.0	32.0		19.0	19.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0	0	0	0
Act Effect Green (s)	18.4	18.4	18.4	18.4	18.4	18.4	62.6	60.6	60.6	48.1	48.1	48.1
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.70	0.67	0.67	0.53	0.53	0.53
v/c Ratio	0.11	0.02	0.18	0.69	0.06	0.22	0.49	0.34	0.03	0.05	0.57	0.06
Control Delay	26.9	24.6	5.7	44.7	25.8	7.4	12.5	8.8	4.4	34.0	31.4	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.9	24.6	5.7	44.7	25.8	7.4	12.5	8.8	4.4	34.0	31.4	16.7
LOS	C	C	A	D	C	A	B	A	A	C	C	B
Approach Delay		12.7			32.9			9.1			31.0	
Approach LOS		B			C			A			C	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 84 (93%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 21.9

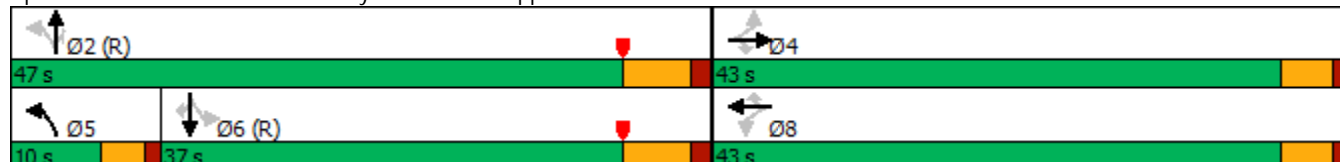
Intersection LOS: C

Intersection Capacity Utilization 64.1%

ICU Level of Service C

Analysis Period (min) 15

























Splits and Phases: 6: Aurora Pkwy & Commons/Applewood



HCM 2010 Signalized Intersection Summary

6: Aurora Pkwy & Commons/Applewood






















07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	5	63	174	19	75	127	1095	33	10	1465	47
Future Volume (veh/h)	26	5	63	174	19	75	127	1095	33	10	1465	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	30	6	72	198	22	85	137	1177	35	11	1559	50
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.93	0.93	0.93	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	300	338	287	315	338	287	322	3541	1103	350	2987	930
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.70	0.70	0.59	0.59	0.59
Sat Flow, veh/h	1281	1863	1583	1316	1863	1583	1774	5085	1583	459	5085	1583
Grp Volume(v), veh/h	30	6	72	198	22	85	137	1177	35	11	1559	50
Grp Sat Flow(s),veh/h/ln	1281	1863	1583	1316	1863	1583	1774	1695	1583	459	1695	1583
Q Serve(g_s), s	1.8	0.2	3.5	13.1	0.9	4.2	2.5	8.2	0.6	0.9	16.4	1.2
Cycle Q Clear(g_c), s	2.7	0.2	3.5	13.3	0.9	4.2	2.5	8.2	0.6	0.9	16.4	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	300	338	287	315	338	287	322	3541	1103	350	2987	930
V/C Ratio(X)	0.10	0.02	0.25	0.63	0.07	0.30	0.43	0.33	0.03	0.03	0.52	0.05
Avail Cap(c_a), veh/h	609	786	669	632	786	669	325	3541	1103	350	2987	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	30.3	31.6	35.7	30.5	31.9	8.5	5.4	4.2	7.8	11.0	7.9
Incr Delay (d2), s/veh	0.1	0.0	0.5	2.1	0.1	0.6	0.9	0.3	0.1	0.2	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.2	2.8	8.5	0.8	3.4	2.3	7.0	0.5	0.2	12.4	1.0
LnGrp Delay(d),s/veh	31.8	30.3	32.0	37.8	30.6	32.4	9.4	5.6	4.3	8.0	11.7	8.0
LnGrp LOS	C	C	C	D	C	C	A	A	A	A	B	A
Approach Vol, veh/h	108			305			1349			1620		
Approach Delay, s/veh	31.9			35.8			6.0			11.6		
Approach LOS	C			D			A			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	68.7			21.3			58.9			21.3		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	41.0			38.0			31.0			38.0		
Max Q Clear Time (g_c+I1), s	10.2			5.5			18.4			15.3		
Green Ext Time (p_c), s	9.2			0.3			8.0			1.0		
Intersection Summary												
HCM 2010 Ctrl Delay	12.2											
HCM 2010 LOS	B											

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	14	71	3	23	97	106	1104	26	99	1569	33
Future Volume (vph)	14	14	71	3	23	97	106	1104	26	99	1569	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	180		0	390		0	215		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.875			0.879			0.997			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3097	0	1770	3111	0	1770	5070	0	1770	5070	0
Flt Permitted	0.651			0.691			0.104			0.201		
Satd. Flow (perm)	1213	3097	0	1287	3111	0	194	5070	0	374	5070	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		81			129			4			4	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		497			563			925			311	
Travel Time (s)		11.3			12.8			14.0			4.7	
Peak Hour Factor	0.88	0.88	0.88	0.75	0.75	0.75	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	16	16	81	4	31	129	115	1200	28	109	1724	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	97	0	4	160	0	115	1228	0	109	1760	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
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	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(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	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	11.0		6.0	11.0	
Minimum Split (s)	42.0	42.0		43.0	43.0		10.0	28.0		10.0	34.0	
Total Split (s)	43.0	43.0		43.0	43.0		10.0	35.0		12.0	37.0	
Total Split (%)	47.8%	47.8%		47.8%	47.8%		11.1%	38.9%		13.3%	41.1%	
Maximum Green (s)	37.0	37.0		37.0	37.0		6.0	29.0		8.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Flash Dont Walk (s)	30.0	30.0		31.0	31.0			16.0			22.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effect Green (s)	7.1	7.1		7.1	7.1		69.0	61.4		70.4	62.1	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.77	0.68		0.78	0.69	
v/c Ratio	0.17	0.30		0.04	0.44		0.43	0.35		0.27	0.50	
Control Delay	42.0	15.0		38.0	15.2		9.7	7.0		3.1	2.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.0	15.0		38.0	15.2		9.7	7.0		3.1	2.9	
LOS	D	B		D	B		A	A		A	A	
Approach Delay		18.8			15.7			7.3			2.9	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 38 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 5.7

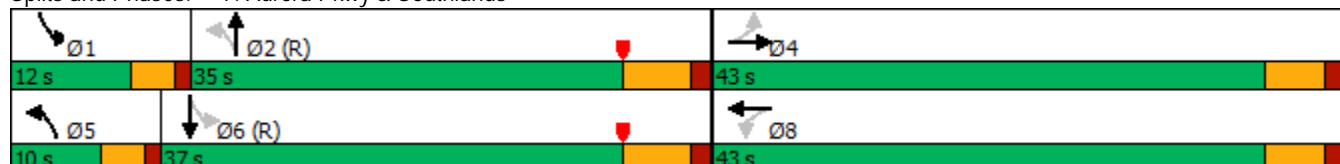
Intersection LOS: A

Intersection Capacity Utilization 57.7%

ICU Level of Service B

Analysis Period (min) 15





















Splits and Phases: 7: Aurora Pkwy & Southlands



HCM 2010 Signalized Intersection Summary
























7: Aurora Pkwy & Southlands

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	14	71	3	23	97	106	1104	26	99	1569	33
Future Volume (veh/h)	14	14	71	3	23	97	106	1104	26	99	1569	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	16	16	81	4	31	129	115	1200	28	109	1724	36
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.88	0.88	0.88	0.75	0.75	0.75	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	211	189	173	211	189	316	3275	76	430	3281	68
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.06	0.64	0.64	0.06	0.64	0.64
Sat Flow, veh/h	1221	1770	1583	1293	1770	1583	1774	5113	119	1774	5127	107
Grp Volume(v), veh/h	16	16	81	4	31	129	115	796	432	109	1140	620
Grp Sat Flow(s),veh/h/ln	1221	1770	1583	1293	1770	1583	1774	1695	1842	1774	1695	1844
Q Serve(g_s), s	1.1	0.7	4.3	0.3	1.4	7.0	1.9	9.9	9.9	1.8	16.4	16.4
Cycle Q Clear(g_c), s	8.2	0.7	4.3	4.5	1.4	7.0	1.9	9.9	9.9	1.8	16.4	16.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.06
Lane Grp Cap(c), veh/h	130	211	189	173	211	189	316	2172	1180	430	2169	1180
V/C Ratio(X)	0.12	0.08	0.43	0.02	0.15	0.68	0.36	0.37	0.37	0.25	0.53	0.53
Avail Cap(c_a), veh/h	487	728	651	550	728	651	322	2172	1180	477	2169	1180
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	35.2	36.8	38.9	35.5	38.0	6.9	7.6	7.6	5.0	8.8	8.8
Incr Delay (d2), s/veh	0.4	0.2	1.5	0.1	0.3	4.3	0.5	0.3	0.6	0.3	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.7	3.5	0.2	1.3	6.0	1.7	7.8	8.4	1.6	12.5	13.7
LnGrp Delay(d),s/veh	42.3	35.4	38.3	38.9	35.8	42.3	7.4	7.9	8.2	5.3	9.7	10.5
LnGrp LOS	D	D	D	D	D	D	A	A	A	A	A	B
Approach Vol, veh/h		113			164			1343			1869	
Approach Delay, s/veh		38.5			41.0			8.0			9.7	
Approach LOS		D			D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	63.6		16.7	9.7	63.6		16.7				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	8.0	29.0		37.0	6.0	31.0		37.0				
Max Q Clear Time (g_c+I1), s	3.8	11.9		10.2	3.9	18.4		9.0				
Green Ext Time (p_c), s	0.1	7.1		0.6	0.0	8.4		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				11.4								
HCM 2010 LOS				B								

Lanes, Volumes, Timings
8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	1101	209	99	1585	601	325	527	66	418	818	408
Future Volume (vph)	108	1101	209	99	1585	601	325	527	66	418	818	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	335		395	260		260	380		465	235		0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	1.00					0.98		1.00		1.00		
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	4989	0	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3431	5085	1583	3433	5085	1556	3433	4989	0	3426	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			105			121			16			113
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1859			2698			936			925	
Travel Time (s)		28.2			40.9			14.2			14.0	
Confl. Peds. (#/hr)	5					5			5	5		
Peak Hour Factor	0.88	0.88	0.88	0.90	0.90	0.90	0.84	0.84	0.84	0.91	0.91	0.91
Adj. Flow (vph)	123	1251	238	110	1761	668	387	627	79	459	899	448
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	1251	238	110	1761	668	387	706	0	459	899	448
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			24			24	
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	1	1	1	1	1	1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	30	20	20	30	20	20	30		20	30	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	30	20	20	30	20	20	30		20	30	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
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	41.0	11.0	11.0	43.0	11.0	11.0	45.0		11.0	44.0	11.0
Total Split (s)	11.0	52.0	21.0	14.0	55.0	24.0	21.0	45.0		24.0	48.0	11.0
Total Split (%)	8.1%	38.5%	15.6%	10.4%	40.7%	17.8%	15.6%	33.3%		17.8%	35.6%	8.1%
Maximum Green (s)	6.0	46.0	16.0	9.0	49.0	19.0	16.0	39.0		19.0	42.0	6.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0		2.0	3.0	2.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max		None	Max	None
Walk Time (s)		6.0			6.0			6.0			6.0	
Flash Dont Walk (s)		29.0			31.0			33.0			32.0	
Pedestrian Calls (#/hr)		0			5			5			0	
Act Effect Green (s)	6.0	46.9	63.9	8.1	49.0	69.0	16.0	39.0		19.0	42.0	54.0
Actuated g/C Ratio	0.04	0.35	0.47	0.06	0.36	0.51	0.12	0.29		0.14	0.31	0.40
v/c Ratio	0.81	0.71	0.30	0.54	0.95	0.78	0.95	0.49		0.95	0.82	0.64
Control Delay	99.2	40.9	8.3	70.6	52.8	21.8	93.2	40.1		87.6	50.1	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	99.2	40.9	8.3	70.6	52.8	21.8	93.2	40.1		87.6	50.1	28.7
LOS	F	D	A	E	D	C	F	D		F	D	C
Approach Delay		40.6			45.4			58.9			54.3	
Approach LOS		D			D			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 101 (75%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 48.7

Intersection LOS: D

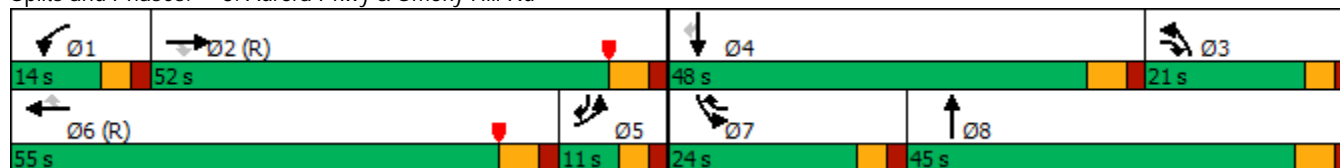
Intersection Capacity Utilization 98.6%

ICU Level of Service F

Analysis Period (min) 15

Description: Aurora
























Splits and Phases: 8: Aurora Pkwy & Smoky Hill Rd



HCM 2010 Signalized Intersection Summary

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	1101	209	99	1585	601	325	527	66	418	818	408
Future Volume (veh/h)	108	1101	209	99	1585	601	325	527	66	418	818	408
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	123	1251	238	110	1761	668	387	627	79	459	899	448
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	2	2	1
Peak Hour Factor	0.88	0.88	0.88	0.90	0.90	0.90	0.84	0.84	0.84	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1802	4315	1529	156	1846	795	408	1357	169	484	1101	1319
Arrive On Green	0.52	0.85	0.85	0.09	0.73	0.73	0.12	0.30	0.30	0.14	0.31	0.31
Sat Flow, veh/h	3442	5085	1581	3442	5085	1577	3442	4578	570	3442	3539	1576
Grp Volume(v), veh/h	123	1251	238	110	1761	668	387	462	244	459	899	448
Grp Sat Flow(s),veh/h/ln	1721	1695	1581	1721	1695	1577	1721	1695	1759	1721	1770	1576
Q Serve(g_s), s	2.4	6.7	2.0	4.2	41.7	49.0	15.1	15.0	15.3	17.9	31.7	0.0
Cycle Q Clear(g_c), s	2.4	6.7	2.0	4.2	41.7	49.0	15.1	15.0	15.3	17.9	31.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	1802	4315	1529	156	1846	795	408	1005	521	484	1101	1319
V/C Ratio(X)	0.07	0.29	0.16	0.70	0.95	0.84	0.95	0.46	0.47	0.95	0.82	0.34
Avail Cap(c_a), veh/h	1802	4315	1529	229	1846	795	408	1005	521	484	1101	1319
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	15.9	2.1	10.6	60.5	17.5	20.3	59.1	38.7	38.8	57.5	42.9	2.6
Incr Delay (d2), s/veh	0.0	0.2	0.2	2.0	12.0	9.8	31.4	1.5	3.0	25.2	5.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	5.5	2.4	3.7	28.1	39.6	13.8	11.6	12.5	15.0	22.5	7.0
LnGrp Delay(d),s/veh	15.9	2.2	10.8	62.5	29.5	30.1	90.5	40.2	41.8	82.7	48.8	3.2
LnGrp LOS	B	A	B	E	C	C	F	D	D	F	D	A
Approach Vol, veh/h	1612				2539				1093		1806	
Approach Delay, s/veh	4.5				31.1				58.4		46.1	
Approach LOS	A				C				E		D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	122.5	22.0	48.0	78.6	55.0	24.0	46.0				
Change Period (Y+Rc), s	5.0	6.0	6.0	* 6	6.0	* 6	5.0	6.0				
Max Green Setting (Gmax), s	9.0	46.0	16.0	* 42	6.0	* 49	19.0	39.0				
Max Q Clear Time (g_c+I1), s	6.2	8.7	17.1	33.7	4.4	51.0	19.9	17.3				
Green Ext Time (p_c), s	0.0	7.0	0.0	3.6	0.0	0.0	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay	33.1											
HCM 2010 LOS	C											
Notes												

















User approved pedestrian interval to be less than phase max green.





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

Lanes, Volumes, Timings

1: DeGaulle & Alexander






















07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	282	12	10	0	44	28	32	21	0	9	6	280
Future Volume (vph)	282	12	10	0	44	28	32	21	0	9	6	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.947						0.872	
Flt Protected		0.956						0.971			0.998	
Satd. Flow (prot)	0	1772	0	0	1764	0	0	1809	0	0	1621	0
Flt Permitted		0.956						0.971			0.998	
Satd. Flow (perm)	0	1772	0	0	1764	0	0	1809	0	0	1621	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		568			374			335			287	
Travel Time (s)		15.5			10.2			9.1			7.8	
Peak Hour Factor	0.78	0.78	0.78	0.83	0.83	0.83	0.80	0.80	0.80	0.83	0.83	0.84
Adj. Flow (vph)	362	15	13	0	53	34	40	26	0	11	7	333
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	390	0	0	87	0	0	66	0	0	351	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	49.4%											
Analysis Period (min)	15											
	ICU Level of Service A											

Intersection												
Int Delay, s/veh	11.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	282	12	10	0	44	28	32	21	0	9	6	280
Future Vol, veh/h	282	12	10	0	44	28	32	21	0	9	6	280
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	78	78	78	83	83	83	80	80	80	83	83	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	362	15	13	0	53	34	40	26	0	11	7	333
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	87	0	0	28	0	0	986	833	22	829	822	70
Stage 1	-	-	-	-	-	-	746	746	-	70	70	-
Stage 2	-	-	-	-	-	-	240	87	-	759	752	-
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	1509	-	-	1585	-	-	227	304	1055	290	309	993
Stage 1	-	-	-	-	-	-	405	421	-	940	837	-
Stage 2	-	-	-	-	-	-	763	823	-	399	418	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1509	-	-	1585	-	-	120	230	1055	216	234	993
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	230	-	216	234	-
Stage 1	-	-	-	-	-	-	306	318	-	711	837	-
Stage 2	-	-	-	-	-	-	502	823	-	277	316	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	7.5			0			47.7			12.3		
HCM LOS							E			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	148	1509	-	-	1585	-	-	843				
HCM Lane V/C Ratio	0.448	0.24	-	-	-	-	-	0.417				
HCM Control Delay (s)	47.7	8.1	0	-	0	-	-	12.3				
HCM Lane LOS	E	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	2	0.9	-	-	0	-	-	2.1				

Lanes, Volumes, Timings
2: Alexander & Aurora Pkwy

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1524	193	19	1777	176	148	9	50	557	5	110
Future Volume (vph)	8	1524	193	19	1777	176	148	9	50	557	5	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	290		0	185		0	185		185
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.986			0.872				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4999	0	1770	5014	0	1770	1624	0	1770	1863	1583
Flt Permitted	0.108			0.108			0.754			0.709		
Satd. Flow (perm)	201	4999	0	201	5014	0	1405	1624	0	1321	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			22			4				36
Link Speed (mph)		45			45			25				25
Link Distance (ft)		1377			1328			484				500
Travel Time (s)		20.9			20.1			13.2				13.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.80	0.80	0.80	0.88	0.88	0.88
Adj. Flow (vph)	9	1639	208	20	1911	189	185	11	63	633	6	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1847	0	20	2100	0	185	74	0	633	6	125
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	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			4				8
Permitted Phases	6			2			4			8		8

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy

07/03/2018

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	26.0	26.0		28.0	28.0		41.0	41.0		41.0	41.0	41.0
Total Split (s)	43.0	43.0		43.0	43.0		47.0	47.0		47.0	47.0	47.0
Total Split (%)	47.8%	47.8%		47.8%	47.8%		52.2%	52.2%		52.2%	52.2%	52.2%
Maximum Green (s)	37.0	37.0		37.0	37.0		42.0	42.0		42.0	42.0	42.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Flash Dont Walk (s)	14.0	14.0		16.0	16.0		30.0	30.0		30.0	30.0	30.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	37.0	37.0		37.0	37.0		42.0	42.0		42.0	42.0	42.0
Actuated g/C Ratio	0.41	0.41		0.41	0.41		0.47	0.47		0.47	0.47	0.47
v/c Ratio	0.11	0.89		0.24	1.01		0.28	0.10		1.03	0.01	0.17
Control Delay	20.5	31.1		27.7	51.6		16.2	13.2		69.6	13.0	10.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	20.5	31.1		27.7	51.6		16.2	13.2		69.6	13.0	10.5
LOS	C	C		C	D		B	B		E	B	B
Approach Delay		31.0			51.3			15.4			59.4	
Approach LOS		C			D			B			E	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 43.2

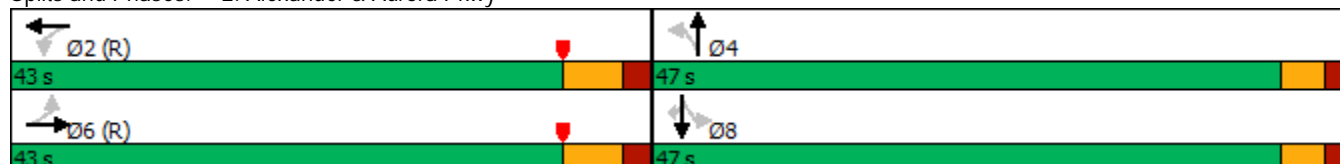
Intersection LOS: D

Intersection Capacity Utilization 84.9%

ICU Level of Service E

Analysis Period (min) 15






















Splits and Phases: 2: Alexander & Aurora Pkwy



HCM 2010 Signalized Intersection Summary

2: Alexander & Aurora Pkwy

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1524	193	19	1777	176	148	9	50	557	5	110
Future Volume (veh/h)	8	1524	193	19	1777	176	148	9	50	557	5	110
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	9	1639	208	20	1911	189	185	11	62	633	6	125
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.80	0.80	0.80	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	1880	238	100	1936	190	663	114	642	663	869	739
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	194	4572	579	249	4708	463	1254	244	1376	1322	1863	1583
Grp Volume(v), veh/h	9	1214	633	20	1373	727	185	0	73	633	6	125
Grp Sat Flow(s),veh/h/ln	194	1695	1761	249	1695	1781	1254	0	1620	1322	1863	1583
Q Serve(g_s), s	0.4	29.6	29.7	7.2	36.1	36.6	8.3	0.0	2.3	39.7	0.2	4.1
Cycle Q Clear(g_c), s	37.0	29.6	29.7	37.0	36.1	36.6	8.5	0.0	2.3	42.0	0.2	4.1
Prop In Lane	1.00		0.33	1.00		0.26	1.00		0.85	1.00		1.00
Lane Grp Cap(c), veh/h	81	1394	724	100	1394	732	663	0	756	663	869	739
V/C Ratio(X)	0.11	0.87	0.87	0.20	0.98	0.99	0.28	0.00	0.10	0.95	0.01	0.17
Avail Cap(c_a), veh/h	81	1394	724	100	1394	732	663	0	756	663	869	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	24.3	24.4	41.4	26.2	26.4	15.1	0.0	13.4	26.7	12.8	13.9
Incr Delay (d2), s/veh	2.8	7.7	13.9	4.4	20.8	31.7	0.2	0.0	0.1	24.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	21.7	24.0	1.1	28.3	32.3	5.3	0.0	1.8	27.4	0.1	3.3
LnGrp Delay(d),s/veh	47.7	32.0	38.3	45.8	47.0	58.0	15.3	0.0	13.5	50.8	12.8	14.0
LnGrp LOS	D	C	D	D	D	E	B		B	D	B	B
Approach Vol, veh/h	1856			2120			258			764		
Approach Delay, s/veh	34.2			50.8			14.8			44.5		
Approach LOS	C			D			B			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	43.0		47.0		43.0		47.0					
Change Period (Y+Rc), s	6.0		5.0		6.0		5.0					
Max Green Setting (Gmax), s	37.0		42.0		37.0		42.0					
Max Q Clear Time (g_c+I1), s	39.0		10.5		39.0		44.0					
Green Ext Time (p_c), s	0.0		1.1		0.0		0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	41.8											
HCM 2010 LOS	D											

Lanes, Volumes, Timings

3: RIRO & Aurora Pkwy

07/03/2018

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↘			↑↑↑		↗
Traffic Volume (vph)	2014	115	0	1972	0	49
Future Volume (vph)	2014	115	0	1972	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Frt	0.992					0.865
Flt Protected						
Satd. Flow (prot)	5045	0	0	5085	0	1611
Flt Permitted						
Satd. Flow (perm)	5045	0	0	5085	0	1611
Link Speed (mph)	45			45	25	
Link Distance (ft)	1328			734	357	
Travel Time (s)	20.1			11.1	9.7	
Peak Hour Factor	0.93	0.93	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2166	124	0	2143	0	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2290	0	0	2143	0	53
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	51.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 2010 TWSC

3: RIRO & Aurora Pkwy



























07/03/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↗
Traffic Vol, veh/h	2014	115	0	1972	0	49
Future Vol, veh/h	2014	115	0	1972	0	49
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	93	93	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2166	124	0	2143	0	53
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1145
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	-	-	0	-	0	*450
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*450
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		14.1	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	450	-	-	-		
HCM Lane V/C Ratio	0.118	-	-	-		
HCM Control Delay (s)	14.1	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.4	-	-	-		
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Lanes, Volumes, Timings

4: Aurora Pkwy & Pronghorn Valley













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (vph)	196	26	221	66	25	42	212	1734	17	11	2014	38
Future Volume (vph)	196	26	221	66	25	42	212	1734	17	11	2014	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		250	150		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Frt		0.866			0.905				0.850		0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1613	0	1770	1686	0	1770	5085	1583	1770	5070	0
Flt Permitted	0.624			0.421			0.092			0.107		
Satd. Flow (perm)	1162	1613	0	784	1686	0	171	5085	1583	199	5070	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		195			46				170			3
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		501			450			674			289	
Travel Time (s)		11.4			10.2			10.2			4.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	213	28	240	72	27	46	230	1885	18	12	2166	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	213	268	0	72	73	0	230	1885	18	12	2207	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(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		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		

Lanes, Volumes, Timings

4: Aurora Pkwy & Pronghorn Valley

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	35.5		8.0	35.5		8.0	22.0	22.0	20.0	22.0	
Total Split (s)	8.0	35.5		8.0	35.5		8.0	26.5	26.5	20.0	38.5	
Total Split (%)	8.9%	39.4%		8.9%	39.4%		8.9%	29.4%	29.4%	22.2%	42.8%	
Maximum Green (s)	4.0	30.5		4.0	30.5		4.0	20.5	20.5	16.0	32.5	
Yellow Time (s)	3.5	3.0		3.5	3.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	0.5	2.0		0.5	2.0		1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)		5.0			5.0			5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		25.5			25.5			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0			0			0	0	0	0	
Act Effect Green (s)	14.8	10.6		14.3	10.6		64.0	59.9	59.9	48.2	40.4	
Actuated g/C Ratio	0.16	0.12		0.16	0.12		0.71	0.67	0.67	0.54	0.45	
v/c Ratio	0.96	0.74		0.43	0.31		0.53	0.56	0.02	0.06	0.97	
Control Delay	86.0	24.0		35.3	19.1		25.0	19.2	0.0	4.1	22.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	86.0	24.0		35.3	19.1		25.0	19.2	0.0	4.1	22.6	
LOS	F	C		D	B		C	B	A	A	C	
Approach Delay		51.5			27.1			19.6			22.5	
Approach LOS		D			C			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 24.2

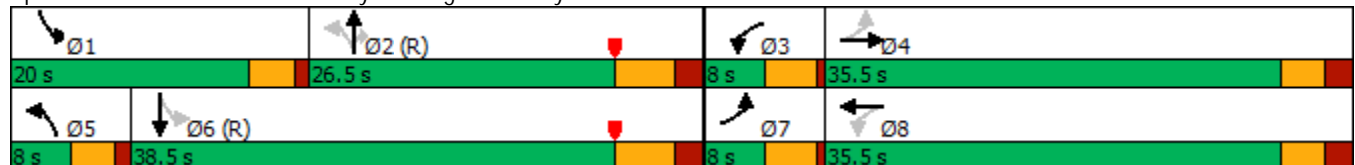
Intersection LOS: C

Intersection Capacity Utilization 86.0%

ICU Level of Service E

Analysis Period (min) 15























Splits and Phases: 4: Aurora Pkwy & Pronghorn Valley



HCM 2010 Signalized Intersection Summary

4: Aurora Pkwy & Pronghorn Valley

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	26	221	66	25	42	212	1734	17	11	2014	38
Future Volume (veh/h)	196	26	221	66	25	42	212	1734	17	11	2014	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	213	28	240	72	27	46	230	1885	18	12	2166	41
Adj No. of Lanes	1	1	0	1	1	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	372	33	285	201	123	209	183	2552	795	277	2579	49
Arrive On Green	0.04	0.20	0.20	0.04	0.20	0.20	0.09	1.00	1.00	0.04	0.50	0.50
Sat Flow, veh/h	1774	168	1440	1774	620	1056	1774	5085	1583	1774	5139	97
Grp Volume(v), veh/h	213	0	268	72	0	73	230	1885	18	12	1428	779
Grp Sat Flow(s),veh/h/ln	1774	0	1609	1774	0	1676	1774	1695	1583	1774	1695	1846
Q Serve(g_s), s	4.0	0.0	14.4	2.9	0.0	3.3	4.0	0.0	0.0	0.3	32.6	32.8
Cycle Q Clear(g_c), s	4.0	0.0	14.4	2.9	0.0	3.3	4.0	0.0	0.0	0.3	32.6	32.8
Prop In Lane	1.00		0.90	1.00		0.63	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	372	0	319	201	0	332	183	2552	795	277	1702	926
V/C Ratio(X)	0.57	0.00	0.84	0.36	0.00	0.22	1.26	0.74	0.02	0.04	0.84	0.84
Avail Cap(c_a), veh/h	372	0	545	201	0	568	183	2552	795	514	1702	926
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	0.0	34.7	28.1	0.0	30.3	24.0	0.0	0.0	9.3	19.3	19.3
Incr Delay (d2), s/veh	2.1	0.0	6.0	1.1	0.0	0.3	119.8	0.2	0.0	0.1	5.1	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.9	0.0	11.2	2.6	0.0	2.8	15.6	0.1	0.0	0.2	22.9	25.9
LnGrp Delay(d),s/veh	33.7	0.0	40.7	29.2	0.0	30.6	143.8	0.2	0.0	9.4	24.4	28.4
LnGrp LOS	C		D	C		C	F	A	A	A	C	C
Approach Vol, veh/h		481			145			2133			2219	
Approach Delay, s/veh		37.6			29.9			15.7			25.8	
Approach LOS		D			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	51.2	8.0	22.8	8.0	51.2	8.0	22.8				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.0	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	16.0	20.5	4.0	30.5	4.0	32.5	4.0	30.5				
Max Q Clear Time (g_c+I1), s	2.3	2.0	4.9	16.4	6.0	34.8	6.0	5.3				
Green Ext Time (p_c), s	0.0	12.4	0.0	1.4	0.0	0.0	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				22.7								
HCM 2010 LOS				C								

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	12	84	71	26	499	54	1416	16	355	1859	87
Future Volume (vph)	47	12	84	71	26	499	54	1416	16	355	1859	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	190		0	280		0	290		100
Storage Lanes	1		1	1		1	1		0	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	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850		0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5075	0	1770	5085	1583
Flt Permitted	0.641			0.749			0.198			0.165		
Satd. Flow (perm)	1194	1863	1583	1395	1863	1583	369	5075	0	307	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			94			282		2				121
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		249			440			428			674	
Travel Time (s)		5.7			10.0			6.5			10.2	
Peak Hour Factor	0.89	0.89	0.89	0.87	0.87	0.87	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	53	13	94	82	30	574	59	1556	18	386	2021	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	13	94	82	30	574	59	1574	0	386	2021	95
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	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		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	20	6	20	20	6		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	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	10.0		3.0	10.0	10.0
Minimum Split (s)	8.0	40.0	40.0	44.0	44.0	44.0	10.0	29.0		10.0	34.0	34.0
Total Split (s)	7.0	50.0	50.0	43.0	43.0	43.0	9.0	27.0		13.0	31.0	31.0
Total Split (%)	7.8%	55.6%	55.6%	47.8%	47.8%	47.8%	10.0%	30.0%		14.4%	34.4%	34.4%
Maximum Green (s)	3.0	45.0	45.0	38.0	38.0	38.0	5.0	21.0		9.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Flash Dont Walk (s)		29.0	29.0	33.0	33.0	33.0		17.0			22.0	22.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effect Green (s)	33.0	32.0	32.0	26.4	26.4	26.4	29.3	21.0		49.0	38.5	38.5
Actuated g/C Ratio	0.37	0.36	0.36	0.29	0.29	0.29	0.33	0.23		0.54	0.43	0.43
v/c Ratio	0.12	0.02	0.15	0.20	0.05	0.86	0.27	1.33		0.74	0.93	0.13
Control Delay	14.7	13.3	3.5	21.6	18.5	27.8	11.8	178.2		39.6	26.2	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	14.7	13.3	3.5	21.6	18.5	27.8	11.8	178.2		39.6	26.2	2.2
LOS	B	B	A	C	B	C	B	F		D	C	A
Approach Delay		8.0			26.6			172.2			27.3	
Approach LOS		A			C			F			C	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.33

Intersection Signal Delay: 74.1

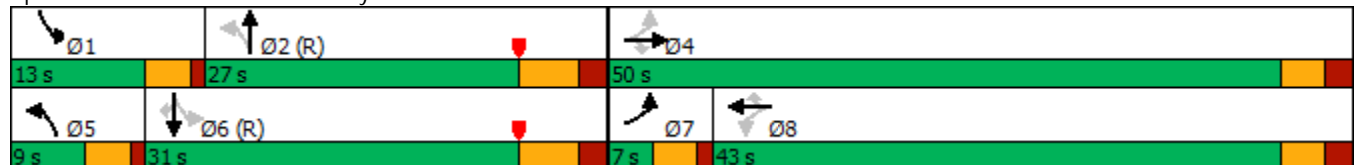
Intersection LOS: E

Intersection Capacity Utilization 74.4%

ICU Level of Service D

Analysis Period (min) 15
























Splits and Phases: 5: Aurora Pkwy & Orchard



HCM 2010 Signalized Intersection Summary

5: Aurora Pkwy & Orchard

07/03/2018

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	12	84	71	26	499	54	1416	16	355	1859	87
Future Volume (veh/h)	47	12	84	71	26	499	54	1416	16	355	1859	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	53	13	94	82	30	574	59	1556	18	386	2021	95
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1
Peak Hour Factor	0.89	0.89	0.89	0.87	0.87	0.87	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	437	855	727	574	718	611	143	1421	16	257	1723	536
Arrive On Green	0.03	0.46	0.46	0.39	0.39	0.39	0.04	0.27	0.27	0.20	0.68	0.68
Sat Flow, veh/h	1774	1863	1583	1281	1863	1583	1774	5182	60	1774	5085	1583
Grp Volume(v), veh/h	53	13	94	82	30	574	59	1018	556	386	2021	95
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1281	1863	1583	1774	1695	1852	1774	1695	1583
Q Serve(g_s), s	1.6	0.3	3.1	3.8	0.9	31.4	2.1	24.7	24.7	9.0	30.5	2.0
Cycle Q Clear(g_c), s	1.6	0.3	3.1	3.8	0.9	31.4	2.1	24.7	24.7	9.0	30.5	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	437	855	727	574	718	611	143	930	508	257	1723	536
V/C Ratio(X)	0.12	0.02	0.13	0.14	0.04	0.94	0.41	1.09	1.09	1.50	1.17	0.18
Avail Cap(c_a), veh/h	444	931	792	621	786	669	179	930	508	257	1723	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.20	0.20	0.20
Uniform Delay (d), s/veh	14.8	13.3	14.0	18.1	17.3	26.6	25.6	32.7	32.7	22.0	14.5	9.9
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.1	0.0	20.5	1.9	58.9	68.2	229.0	79.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.3	2.4	2.5	0.8	24.0	2.0	34.4	39.9	37.7	47.4	1.6
LnGrp Delay(d),s/veh	14.9	13.3	14.1	18.3	17.3	47.1	27.5	91.5	100.9	251.0	93.9	10.1
LnGrp LOS	B	B	B	B	B	D	C	F	F	F	F	B
Approach Vol, veh/h		160			686			1633			2502	
Approach Delay, s/veh		14.3			42.4			92.4			114.9	
Approach LOS		B			D			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	30.7		46.3	7.2	36.5	6.6	39.7				
Change Period (Y+Rc), s	4.0	6.0		5.0	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	9.0	21.0		45.0	5.0	25.0	3.0	38.0				
Max Q Clear Time (g_c+I1), s	11.0	26.7		5.1	4.1	32.5	3.6	33.4				
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	0.0	0.0	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay			94.3									
HCM 2010 LOS			F									
Notes												

User approved pedestrian interval to be less than phase max green.

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	5	69	174	19	75	127	1365	33	10	1937	68
Future Volume (vph)	45	5	69	174	19	75	127	1365	33	10	1937	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	230		230	280		210	260		140
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	1.00	1.00	1.00	0.91	1.00	1.00	0.91	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	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.743			0.754			0.077			0.168		
Satd. Flow (perm)	1384	1863	1583	1405	1863	1583	143	5085	1583	313	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			85			35			73
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		610			552			1344			931	
Travel Time (s)		13.9			12.5			20.4			14.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.93	0.93	0.93	0.94	0.94	0.94
Adj. Flow (vph)	51	6	78	198	22	85	137	1468	35	11	2061	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	6	78	198	22	85	137	1468	35	11	2061	72
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	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0	11.0	11.0
Minimum Split (s)	42.0	42.0	42.0	43.0	43.0	43.0	10.0	31.0	31.0	33.0	33.0	33.0
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0	10.0	47.0	47.0	37.0	37.0	37.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	47.8%	47.8%	11.1%	52.2%	52.2%	41.1%	41.1%	41.1%
Maximum Green (s)	38.0	38.0	38.0	38.0	38.0	38.0	6.0	41.0	41.0	31.0	31.0	31.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Flash Dont Walk (s)	31.0	31.0	31.0	32.0	32.0	32.0		19.0	19.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0	0	0	0
Act Effect Green (s)	18.4	18.4	18.4	18.4	18.4	18.4	62.6	60.6	60.6	48.1	48.1	48.1
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.70	0.67	0.67	0.53	0.53	0.53
v/c Ratio	0.18	0.02	0.20	0.69	0.06	0.22	0.54	0.43	0.03	0.07	0.76	0.08
Control Delay	28.4	24.6	6.5	44.7	25.8	7.4	13.7	8.4	2.6	36.9	38.2	21.2
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	28.4	24.6	6.5	44.7	25.8	7.4	13.7	8.4	2.6	36.9	38.2	21.2
LOS	C	C	A	D	C	A	B	A	A	D	D	C
Approach Delay		15.6			32.9			8.7			37.6	
Approach LOS		B			C			A			D	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 84 (93%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 25.4

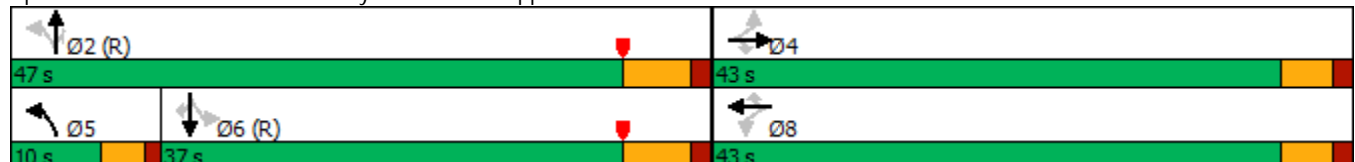
Intersection LOS: C

Intersection Capacity Utilization 73.3%

ICU Level of Service D

Analysis Period (min) 15

























Splits and Phases: 6: Aurora Pkwy & Commons/Applewood



HCM 2010 Signalized Intersection Summary

6: Aurora Pkwy & Commons/Applewood






















07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	5	69	174	19	75	127	1365	33	10	1937	68
Future Volume (veh/h)	45	5	69	174	19	75	127	1365	33	10	1937	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	51	6	78	198	22	85	137	1468	35	11	2061	72
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.93	0.93	0.93	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	339	288	315	339	288	252	3537	1101	279	2983	929
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.70	0.70	0.59	0.59	0.59
Sat Flow, veh/h	1281	1863	1583	1308	1863	1583	1774	5085	1583	347	5085	1583
Grp Volume(v), veh/h	51	6	78	198	22	85	137	1468	35	11	2061	72
Grp Sat Flow(s),veh/h/ln	1281	1863	1583	1308	1863	1583	1774	1695	1583	347	1695	1583
Q Serve(g_s), s	3.1	0.2	3.8	13.2	0.9	4.2	2.5	11.1	0.6	1.3	25.4	1.8
Cycle Q Clear(g_c), s	4.0	0.2	3.8	13.4	0.9	4.2	2.5	11.1	0.6	2.6	25.4	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	339	288	315	339	288	252	3537	1101	279	2983	929
V/C Ratio(X)	0.17	0.02	0.27	0.63	0.06	0.29	0.54	0.42	0.03	0.04	0.69	0.08
Avail Cap(c_a), veh/h	609	786	669	629	786	669	256	3537	1101	279	2983	929
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	30.2	31.7	35.7	30.5	31.8	16.1	5.9	4.3	8.5	12.9	8.1
Incr Delay (d2), s/veh	0.3	0.0	0.5	2.1	0.1	0.6	2.3	0.4	0.1	0.3	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	0.2	3.1	8.5	0.8	3.4	4.0	9.1	0.5	0.3	17.9	1.5
LnGrp Delay(d),s/veh	32.4	30.2	32.2	37.8	30.5	32.4	18.4	6.2	4.3	8.8	14.3	8.2
LnGrp LOS	C	C	C	D	C	C	B	A	A	A	B	A
Approach Vol, veh/h	135			305			1640			2144		
Approach Delay, s/veh	32.1			35.7			7.2			14.0		
Approach LOS	C			D			A			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4		5	6	8				
Phs Duration (G+Y+Rc), s	68.6			21.4		9.8	58.8	21.4				
Change Period (Y+Rc), s	6.0			5.0		4.0	6.0	5.0				
Max Green Setting (Gmax), s	41.0			38.0		6.0	31.0	38.0				
Max Q Clear Time (g_c+I1), s	13.1			6.0		4.5	27.4	15.4				
Green Ext Time (p_c), s	11.9			0.4		0.0	3.3	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay	13.5											
HCM 2010 LOS	B											

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	14	77	3	23	97	108	1349	26	99	2014	66
Future Volume (vph)	41	14	77	3	23	97	108	1349	26	99	2014	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	180		0	390		0	215		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.873			0.879			0.997			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3090	0	1770	3111	0	1770	5070	0	1770	5060	0
Flt Permitted	0.651			0.686			0.068			0.140		
Satd. Flow (perm)	1213	3090	0	1278	3111	0	127	5070	0	261	5060	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			129			3			6	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		497			563			925			311	
Travel Time (s)		11.3			12.8			14.0			4.7	
Peak Hour Factor	0.88	0.88	0.88	0.75	0.75	0.75	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	47	16	88	4	31	129	117	1466	28	109	2213	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	104	0	4	160	0	117	1494	0	109	2286	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
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	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(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	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	11.0		6.0	11.0	
Minimum Split (s)	42.0	42.0		43.0	43.0		10.0	28.0		10.0	34.0	
Total Split (s)	43.0	43.0		43.0	43.0		10.0	37.0		10.0	37.0	
Total Split (%)	47.8%	47.8%		47.8%	47.8%		11.1%	41.1%		11.1%	41.1%	
Maximum Green (s)	37.0	37.0		37.0	37.0		6.0	31.0		6.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Flash Dont Walk (s)	30.0	30.0		31.0	31.0			16.0			22.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effect Green (s)	9.1	9.1		9.1	9.1		67.2	59.4		68.1	59.9	
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.75	0.66		0.76	0.67	
v/c Ratio	0.38	0.27		0.03	0.37		0.53	0.45		0.34	0.68	
Control Delay	45.8	12.7		35.0	12.9		20.2	8.9		9.0	5.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.8	12.7		35.0	12.9		20.2	8.9		9.0	5.5	
LOS	D	B		C	B		C	A		A	A	
Approach Delay		23.0			13.5			9.7			5.7	
Approach LOS		C			B			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 38 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 8.1

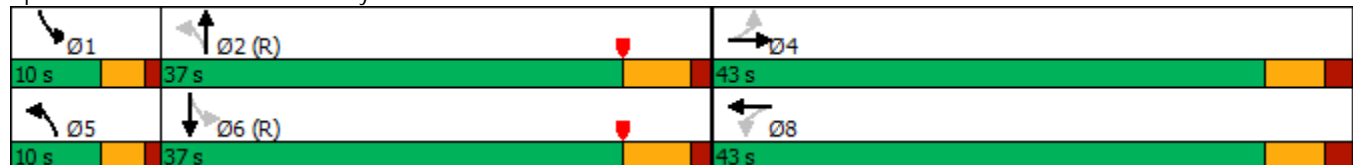
Intersection LOS: A

Intersection Capacity Utilization 68.6%

ICU Level of Service C

Analysis Period (min) 15





















Splits and Phases: 7: Aurora Pkwy & Southlands



HCM 2010 Signalized Intersection Summary

7: Aurora Pkwy & Southlands
























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	14	77	3	23	97	108	1349	26	99	2014	66
Future Volume (veh/h)	41	14	77	3	23	97	108	1349	26	99	2014	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	47	16	88	4	31	129	117	1466	28	109	2213	73
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.88	0.88	0.88	0.75	0.75	0.75	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	254	227	200	254	227	243	3167	60	353	3113	102
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.06	0.62	0.62	0.06	0.62	0.62
Sat Flow, veh/h	1221	1770	1583	1285	1770	1583	1774	5138	98	1774	5057	166
Grp Volume(v), veh/h	47	16	88	4	31	129	117	967	527	109	1481	805
Grp Sat Flow(s),veh/h/ln	1221	1770	1583	1285	1770	1583	1774	1695	1845	1774	1695	1833
Q Serve(g_s), s	3.4	0.7	4.5	0.3	1.4	6.8	2.0	13.8	13.8	1.9	26.8	27.1
Cycle Q Clear(g_c), s	10.2	0.7	4.5	4.8	1.4	6.8	2.0	13.8	13.8	1.9	26.8	27.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		0.09
Lane Grp Cap(c), veh/h	163	254	227	200	254	227	243	2090	1137	353	2087	1129
V/C Ratio(X)	0.29	0.06	0.39	0.02	0.12	0.57	0.48	0.46	0.46	0.31	0.71	0.71
Avail Cap(c_a), veh/h	489	728	651	543	728	651	249	2090	1137	361	2087	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.50	0.50	0.50	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	33.3	35.0	37.1	33.6	35.9	15.9	9.3	9.3	6.5	11.8	11.9
Incr Delay (d2), s/veh	1.0	0.1	1.1	0.0	0.2	2.2	0.7	0.4	0.7	0.5	2.1	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.6	3.7	0.2	1.2	5.6	3.3	9.5	10.3	1.7	18.8	20.9
LnGrp Delay(d),s/veh	41.7	33.4	36.0	37.2	33.8	38.2	16.6	9.6	9.9	7.0	13.9	15.7
LnGrp LOS	D	C	D	D	C	D	B	A	A	A	B	B
Approach Vol, veh/h		151			164			1611			2395	
Approach Delay, s/veh		37.5			37.3			10.2			14.2	
Approach LOS		D			D			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	61.5		18.9	9.7	61.4		18.9				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	6.0	31.0		37.0	6.0	31.0		37.0				
Max Q Clear Time (g_c+I1), s	3.9	15.8		12.2	4.0	29.1		8.8				
Green Ext Time (p_c), s	0.0	8.2		0.7	0.0	1.8		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				14.4								
HCM 2010 LOS				B								

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	266	1101	209	99	1585	690	325	527	66	577	818	701
Future Volume (vph)	266	1101	209	99	1585	690	325	527	66	577	818	701
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	335		395	260		260	380		465	235		0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	1.00					0.98		1.00		1.00		
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	4989	0	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3431	5085	1583	3433	5085	1556	3433	4989	0	3426	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			105			121			16			113
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1859			2698			936			925	
Travel Time (s)		28.2			40.9			14.2			14.0	
Confl. Peds. (#/hr)	5					5			5	5		
Peak Hour Factor	0.88	0.88	0.88	0.90	0.90	0.90	0.84	0.84	0.84	0.91	0.91	0.91
Adj. Flow (vph)	302	1251	238	110	1761	767	387	627	79	634	899	770
Shared Lane Traffic (%)												
Lane Group Flow (vph)	302	1251	238	110	1761	767	387	706	0	634	899	770
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			24			24	
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	1	1	1	1	1	1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	30	20	20	30	20	20	30		20	30	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	30	20	20	30	20	20	30		20	30	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
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	41.0	11.0	11.0	43.0	11.0	11.0	45.0		11.0	44.0	11.0
Total Split (s)	15.0	52.0	23.0	13.0	50.0	25.0	23.0	45.0		25.0	47.0	15.0
Total Split (%)	11.1%	38.5%	17.0%	9.6%	37.0%	18.5%	17.0%	33.3%		18.5%	34.8%	11.1%
Maximum Green (s)	10.0	46.0	18.0	8.0	44.0	20.0	18.0	39.0		20.0	41.0	10.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0		2.0	3.0	2.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max		None	Max	None
Walk Time (s)		6.0			6.0			6.0			6.0	
Flash Dont Walk (s)		29.0			31.0			33.0			32.0	
Pedestrian Calls (#/hr)		0			5			5			0	
Act Effect Green (s)	10.0	46.5	65.5	7.5	44.0	65.0	18.0	39.0		20.0	41.0	57.0
Actuated g/C Ratio	0.07	0.34	0.49	0.06	0.33	0.48	0.13	0.29		0.15	0.30	0.42
v/c Ratio	1.19	0.71	0.29	0.58	1.06	0.94	0.85	0.49		1.25	0.84	1.05
Control Delay	169.3	41.4	8.0	74.4	82.8	39.7	74.7	40.1		173.6	52.1	79.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	169.3	41.4	8.0	74.4	82.8	39.7	74.7	40.1		173.6	52.1	79.9
LOS	F	D	A	E	F	D	E	D		F	D	E
Approach Delay		58.5			69.9			52.3			94.8	
Approach LOS		E			E			D			F	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 101 (75%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.25

Intersection Signal Delay: 72.2

Intersection LOS: E

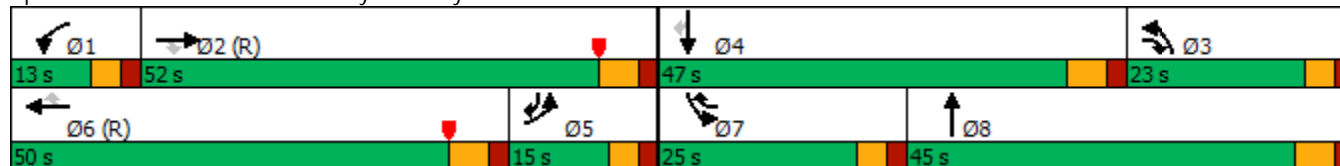
Intersection Capacity Utilization 105.7%

ICU Level of Service G

Analysis Period (min) 15

Description: Aurora
























Splits and Phases: 8: Aurora Pkwy & Smoky Hill Rd



HCM 2010 Signalized Intersection Summary

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	1101	209	99	1585	690	325	527	66	577	818	701
Future Volume (veh/h)	266	1101	209	99	1585	690	325	527	66	577	818	701
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	302	1251	238	110	1761	767	387	627	79	634	899	770
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	2	2	1
Peak Hour Factor	0.88	0.88	0.88	0.90	0.90	0.90	0.84	0.84	0.84	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1136	3143	1176	156	1657	748	435	1324	165	510	1075	1001
Arrive On Green	0.33	0.62	0.62	0.09	0.65	0.65	0.13	0.29	0.29	0.15	0.30	0.30
Sat Flow, veh/h	3442	5085	1579	3442	5085	1576	3442	4578	570	3442	3539	1576
Grp Volume(v), veh/h	302	1251	238	110	1761	767	387	462	244	634	899	770
Grp Sat Flow(s),veh/h/ln	1721	1695	1579	1721	1695	1576	1721	1695	1759	1721	1770	1576
Q Serve(g_s), s	8.7	16.8	2.0	4.2	44.0	44.0	14.9	15.2	15.4	20.0	32.0	2.3
Cycle Q Clear(g_c), s	8.7	16.8	2.0	4.2	44.0	44.0	14.9	15.2	15.4	20.0	32.0	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	1136	3143	1176	156	1657	748	435	981	509	510	1075	1001
V/C Ratio(X)	0.27	0.40	0.20	0.71	1.06	1.03	0.89	0.47	0.48	1.24	0.84	0.77
Avail Cap(c_a), veh/h	1136	3143	1176	204	1657	748	459	981	509	510	1075	1001
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00	0.68	0.68	0.68
Uniform Delay (d), s/veh	33.2	13.1	10.2	60.5	23.5	37.6	58.1	39.5	39.6	57.5	43.9	17.6
Incr Delay (d2), s/veh	0.0	0.4	0.4	3.8	40.2	38.4	17.7	1.6	3.2	120.7	5.4	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.5	12.6	1.7	3.8	47.3	14.4	12.8	11.8	12.6	32.5	21.9	3.3
LnGrp Delay(d),s/veh	33.3	13.4	10.6	64.4	63.7	76.0	75.7	41.1	42.8	178.2	49.3	21.5
LnGrp LOS	C	B	B	E	F	F	E	D	D	F	D	C
Approach Vol, veh/h	1791				2638				1093			
Approach Delay, s/veh	16.4				67.3				53.7			
Approach LOS	B				E				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	90.5	23.0	47.0	51.6	50.0	25.0	45.0				
Change Period (Y+Rc), s	5.0	6.0	6.0	* 6	6.0	* 6	5.0	6.0				
Max Green Setting (Gmax), s	8.0	46.0	18.0	* 41	10.0	* 44	20.0	39.0				
Max Q Clear Time (g_c+I1), s	6.2	18.8	16.9	34.0	10.7	46.0	22.0	17.4				
Green Ext Time (p_c), s	0.0	6.7	0.1	4.0	0.0	0.0	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay	56.2											
HCM 2010 LOS	E											
Notes												




User approved pedestrian interval to be less than phase max green.

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

Lanes, Volumes, Timings
9: Alexander/West MF Site Access




07/03/2018



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	74	0	0	54	14	181
Future Volume (vph)	74	0	0	54	14	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865		0.875	
Flt Protected		0.950			0.996	
Satd. Flow (prot)	0	1770	1611	0	1623	0
Flt Permitted		0.950			0.996	
Satd. Flow (perm)	0	1770	1611	0	1623	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		591	465		314	
Travel Time (s)		13.4	10.6		7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	0	0	59	15	197
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	80	59	0	212	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 29.4%						
ICU Level of Service A						
Analysis Period (min) 15						

HCM 2010 TWSC
9: Alexander/West MF Site Access

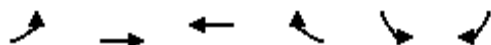
07/03/2018




Intersection						
Int Delay, s/veh	7.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	0	0	54	14	181
Future Vol, veh/h	74	0	0	54	14	181
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	80	0	0	59	15	197
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	59	0	-	0	190	30
Stage 1	-	-	-	-	30	-
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	1545	-	-	-	799	1044
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	869	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1545	-	-	-	757	1044
Mov Cap-2 Maneuver	-	-	-	-	757	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	869	-
Approach	EB	WB		SB		
HCM Control Delay, s	7.5	0		9.5		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1545	-	-	-	1016	
HCM Lane V/C Ratio	0.052	-	-	-	0.209	
HCM Control Delay (s)	7.5	0	-	-	9.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.8	

Lanes, Volumes, Timings

10: Pronghorn Valley/East Site Access & DeGaulle

07/03/2018






Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	29	114	6	2	19
Future Volume (vph)	25	29	114	6	2	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.877	
Flt Protected		0.978			0.996	
Satd. Flow (prot)	0	1822	1850	0	1627	0
Flt Permitted		0.978			0.996	
Satd. Flow (perm)	0	1822	1850	0	1627	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		434	421		335	
Travel Time (s)		9.9	9.6		9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	32	124	7	2	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	59	131	0	23	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 19.6%				ICU Level of Service A		
Analysis Period (min) 15						

HCM 2010 TWSC
10: Pronghorn Valley/East Site Access & DeGaulle

07/03/2018

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	29	114	6	2	19
Future Vol, veh/h	25	29	114	6	2	19
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	27	32	124	7	2	21

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	131	0	0 214 128
Stage 1	-	-	- 128 -
Stage 2	-	-	- 86 -
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	1454	-	- 774 922
Stage 1	-	-	- 898 -
Stage 2	-	-	- 937 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1454	-	- 759 922
Mov Cap-2 Maneuver	-	-	- 759 -
Stage 1	-	-	- 881 -
Stage 2	-	-	- 937 -

















Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1454	-	-	-	904
HCM Lane V/C Ratio	0.019	-	-	-	0.025
HCM Control Delay (s)	7.5	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Lanes, Volumes, Timings

1: DeGaulle & Alexander

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	71	36	0	28	9	25	2	0	12	13	298
Future Volume (vph)	390	71	36	0	28	9	25	2	0	12	13	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.967						0.876	
Flt Protected		0.962						0.956			0.998	
Satd. Flow (prot)	0	1774	0	0	1801	0	0	1781	0	0	1629	0
Flt Permitted		0.962						0.956			0.998	
Satd. Flow (perm)	0	1774	0	0	1801	0	0	1781	0	0	1629	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		552			404			431			425	
Travel Time (s)		15.1			11.0			11.8			11.6	
Peak Hour Factor	0.94	0.94	0.94	0.76	0.76	0.76	0.75	0.75	0.75	0.94	0.94	0.94
Adj. Flow (vph)	415	76	38	0	37	12	33	3	0	13	14	317
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	529	0	0	49	0	0	36	0	0	344	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	60.3%											
Analysis Period (min)	15											
	ICU Level of Service B											

Intersection												
Int Delay, s/veh	10.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	390	71	36	0	28	9	25	2	0	12	13	298
Future Vol, veh/h	390	71	36	0	28	9	25	2	0	12	13	298
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	94	94	94	76	76	76	75	75	75	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	415	76	38	0	37	12	33	3	0	13	14	317

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	114	0	0	1134	974	95	970	987	43
Stage 1	-	-	-	-	-	-	925	925	-	43	43	-
Stage 2	-	-	-	-	-	-	209	49	-	927	944	-
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	1558	-	-	1475	-	-	180	252	962	233	247	1027
Stage 1	-	-	-	-	-	-	323	348	-	971	859	-
Stage 2	-	-	-	-	-	-	793	854	-	322	341	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1558	-	-	1475	-	-	91	180	962	180	176	1027
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	180	-	180	176	-
Stage 1	-	-	-	-	-	-	231	248	-	693	859	-
Stage 2	-	-	-	-	-	-	539	854	-	227	243	-


























Approach	EB	WB	NB	SB
HCM Control Delay, s	6.4	0	65.3	13.8
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	94	1558	-	-	1475	-	-	750
HCM Lane V/C Ratio	0.383	0.266	-	-	-	-	-	0.458
HCM Control Delay (s)	65.3	8.1	0	-	0	-	-	13.8
HCM Lane LOS	F	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	1.5	1.1	-	-	0	-	-	2.4

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	71	1964	3	73	1601	616	17	0	23	386	3	25
Future Volume (vph)	71	1964	3	73	1601	616	17	0	23	386	3	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	290		0	185		0	185		185
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.958			0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	0	1770	4872	0	1770	1583	0	1770	1863	1583
Flt Permitted	0.046			0.057			0.756			0.740		
Satd. Flow (perm)	86	5085	0	106	4872	0	1408	1583	0	1378	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					144			24				28
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1377			2056			484			448	
Travel Time (s)		20.9			31.2			13.2			12.2	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	76	2089	3	78	1722	662	20	0	26	434	3	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	2092	0	78	2384	0	20	26	0	434	3	28
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	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		8

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	26.0	26.0		28.0	28.0		41.0	41.0		41.0	41.0	41.0
Total Split (s)	93.0	93.0		93.0	93.0		42.0	42.0		42.0	42.0	42.0
Total Split (%)	68.9%	68.9%		68.9%	68.9%		31.1%	31.1%		31.1%	31.1%	31.1%
Maximum Green (s)	87.0	87.0		87.0	87.0		37.0	37.0		37.0	37.0	37.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Flash Dont Walk (s)	14.0	14.0		16.0	16.0		30.0	30.0		30.0	30.0	30.0
Pedestrian Calls (#/hr)	0	0		0	0		5	5		5	5	5
Act Effct Green (s)	87.0	87.0		87.0	87.0		37.0	37.0		37.0	37.0	37.0
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.27	0.27		0.27	0.27	0.27
v/c Ratio	1.38	0.64		1.15	0.75		0.05	0.06		1.15	0.01	0.06
Control Delay	278.9	15.6		136.3	17.3		36.8	14.4		138.0	35.7	12.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	278.9	15.6		136.3	17.3		36.8	14.4		138.0	35.7	12.3
LOS	F	B		F	B		D	B		F	D	B
Approach Delay		24.9			21.1			24.1			129.8	
Approach LOS		C			C			C			F	
Intersection Summary												
Area Type:	Other											
Cycle Length: 135												
Actuated Cycle Length: 135												
Offset: 42 (31%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow												
Natural Cycle: 110												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 1.38												
Intersection Signal Delay: 32.5				Intersection LOS: C								
Intersection Capacity Utilization 91.9%				ICU Level of Service F								
Analysis Period (min) 15												






















Splits and Phases: 2: Alexander & Aurora Pkwy



HCM 2010 Signalized Intersection Summary

2: Alexander & Aurora Pkwy

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	1964	3	73	1601	616	17	0	23	386	3	25
Future Volume (veh/h)	71	1964	3	73	1601	616	17	0	23	386	3	25
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	76	2089	3	78	1722	662	20	0	26	434	3	28
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.87	0.87	0.87	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	3380	5	133	2366	867	428	0	434	415	511	434
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.27	0.00	0.27	0.27	0.27	0.27
Sat Flow, veh/h	147	5244	8	196	3671	1345	1373	0	1583	1379	1863	1583
Grp Volume(v), veh/h	76	1350	742	78	1584	800	20	0	26	434	3	28
Grp Sat Flow(s),veh/h/ln	147	1695	1861	196	1695	1625	1373	0	1583	1379	1863	1583
Q Serve(g_s), s	40.5	31.8	31.8	52.8	42.1	46.5	1.5	0.0	1.6	35.4	0.2	1.8
Cycle Q Clear(g_c), s	87.0	31.8	31.8	84.6	42.1	46.5	1.6	0.0	1.6	37.0	0.2	1.8
Prop In Lane	1.00		0.00	1.00		0.83	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	97	2185	1200	133	2185	1048	428	0	434	415	511	434
V/C Ratio(X)	0.78	0.62	0.62	0.58	0.72	0.76	0.05	0.00	0.06	1.05	0.01	0.06
Avail Cap(c_a), veh/h	97	2185	1200	133	2185	1048	428	0	434	415	511	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.8	14.2	14.2	39.2	16.0	16.8	36.2	0.0	36.2	52.1	35.6	36.2
Incr Delay (d2), s/veh	45.2	1.3	2.4	17.4	2.1	5.3	0.0	0.0	0.1	57.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.3	21.6	23.8	6.3	27.6	29.9	1.0	0.0	1.3	39.6	0.1	1.4
LnGrp Delay(d),s/veh	101.0	15.5	16.6	56.5	18.1	22.1	36.3	0.0	36.2	109.1	35.6	36.3
LnGrp LOS	F	B	B	E	B	C	D		D	F	D	D
Approach Vol, veh/h	2168			2462			46			465		
Approach Delay, s/veh	18.9			20.7			36.2			104.2		
Approach LOS	B			C			D			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	93.0			42.0			93.0			42.0		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	87.0			37.0			87.0			37.0		
Max Q Clear Time (g_c+I1), s	86.6			3.6			89.0			39.0		
Green Ext Time (p_c), s	0.4			0.2			0.0			0.0		
Intersection Summary												
HCM 2010 Ctrl Delay 27.6												
HCM 2010 LOS C												

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	506	118	172	49	108	292	136	1364	54	432	1362	543
Future Volume (vph)	506	118	172	49	108	292	136	1364	54	432	1362	543
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	190		0	280		0	290		100
Storage Lanes	1		1	1		1	1		0	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	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850		0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5055	0	1770	5085	1583
Flt Permitted	0.509			0.676			0.171			0.090		
Satd. Flow (perm)	948	1863	1583	1259	1863	1583	319	5055	0	168	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			314		4				239
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		249			440			428			609	
Travel Time (s)		5.7			10.0			6.5			9.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.94	0.94
Adj. Flow (vph)	544	127	185	53	116	314	146	1467	58	460	1449	578
Shared Lane Traffic (%)												
Lane Group Flow (vph)	544	127	185	53	116	314	146	1525	0	460	1449	578
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	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		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	20	6	20	20	6		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	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	10.0		3.0	10.0	10.0
Minimum Split (s)	8.0	40.0	40.0	44.0	44.0	44.0	10.0	29.0		10.0	34.0	34.0
Total Split (s)	19.0	63.0	63.0	44.0	44.0	44.0	13.0	42.0		30.0	59.0	59.0
Total Split (%)	14.1%	46.7%	46.7%	32.6%	32.6%	32.6%	9.6%	31.1%		22.2%	43.7%	43.7%
Maximum Green (s)	15.0	58.0	58.0	39.0	39.0	39.0	9.0	36.0		26.0	53.0	53.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Flash Dont Walk (s)		29.0	29.0	33.0	33.0	33.0		17.0			22.0	22.0
Pedestrian Calls (#/hr)		10	10	10	10	10		0			0	0
Act Effect Green (s)	42.6	41.6	41.6	22.6	22.6	22.6	51.6	40.2		84.4	69.0	69.0
Actuated g/C Ratio	0.32	0.31	0.31	0.17	0.17	0.17	0.38	0.30		0.63	0.51	0.51
v/c Ratio	1.39	0.22	0.30	0.25	0.37	0.60	0.65	1.01		0.82	0.56	0.62
Control Delay	226.1	32.8	5.4	46.5	49.8	8.8	47.3	70.8		43.9	41.7	34.1
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	226.1	32.8	5.4	46.5	49.8	8.8	47.3	70.8		43.9	41.7	34.1
LOS	F	C	A	D	D	A	D	E		D	D	C
Approach Delay		149.7			22.8			68.7			40.4	
Approach LOS		F			C			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.39

Intersection Signal Delay: 64.5

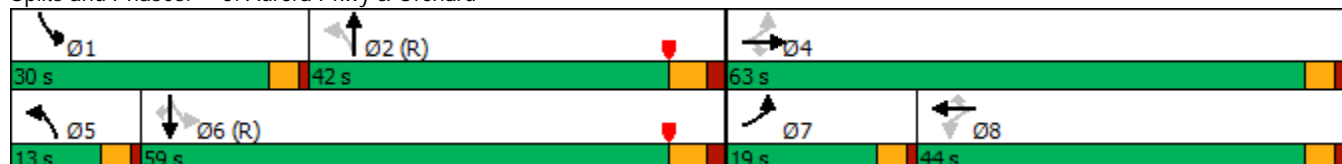
Intersection LOS: E

Intersection Capacity Utilization 98.7%

ICU Level of Service F

Analysis Period (min) 15
























Splits and Phases: 5: Aurora Pkwy & Orchard



HCM 2010 Signalized Intersection Summary

5: Aurora Pkwy & Orchard

























07/03/2018

																	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR					
Lane Configurations																	
Traffic Volume (veh/h)	506	118	172	49	108	292	136	1364	54	432	1362	543					
Future Volume (veh/h)	506	118	172	49	108	292	136	1364	54	432	1362	543					
Number	7	4	14	3	8	18	5	2	12	1	6	16					
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0					
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00					
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863					
Adj Flow Rate, veh/h	544	127	185	53	116	314	146	1467	58	460	1449	578					
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1					
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.94	0.94					
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2					
Cap, veh/h	410	671	570	287	409	347	223	1688	67	416	2350	732					
Arrive On Green	0.11	0.36	0.36	0.22	0.22	0.22	0.07	0.34	0.34	0.19	0.46	0.46					
Sat Flow, veh/h	1774	1863	1583	1063	1863	1583	1774	5019	198	1774	5085	1583					
Grp Volume(v), veh/h	544	127	185	53	116	314	146	991	534	460	1449	578					
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1063	1863	1583	1774	1695	1828	1774	1695	1583					
Q Serve(g_s), s	15.0	6.3	11.4	5.5	7.0	26.1	7.2	37.0	37.0	26.0	28.9	41.7					
Cycle Q Clear(g_c), s	15.0	6.3	11.4	5.5	7.0	26.1	7.2	37.0	37.0	26.0	28.9	41.7					
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		1.00					
Lane Grp Cap(c), veh/h	410	671	570	287	409	347	223	1140	614	416	2350	732					
V/C Ratio(X)	1.33	0.19	0.32	0.18	0.28	0.90	0.65	0.87	0.87	1.11	0.62	0.79					
Avail Cap(c_a), veh/h	410	800	680	360	538	457	223	1140	614	416	2350	732					
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Uniform Delay (d), s/veh	44.3	29.7	31.3	43.3	43.9	51.3	28.0	42.0	42.0	40.9	27.3	30.8					
Incr Delay (d2), s/veh	162.8	0.1	0.3	0.3	0.4	17.6	6.7	9.1	15.4	75.8	1.2	8.5					
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
%ile BackOfQ(95%),veh/ln	54.3	5.9	8.7	3.0	6.6	19.1	7.1	25.9	28.9	43.7	19.9	27.2					
LnGrp Delay(d),s/veh	207.1	29.8	31.6	43.6	44.2	68.9	34.6	51.1	57.5	116.8	28.5	39.2					
LnGrp LOS	F	C	C	D	D	E	C	D	E	F	C	D					
Approach Vol, veh/h	856				483			1671			2487						
Approach Delay, s/veh	142.9				60.2			51.7			47.3						
Approach LOS	F				E			D			D						
Timer	1	2	3	4	5	6	7	8									
Assigned Phs	1	2			4	5	6	7	8								
Phs Duration (G+Y+Rc), s	30.0	51.4			53.6	13.0	68.4	19.0	34.6								
Change Period (Y+Rc), s	4.0	6.0			5.0	4.0	6.0	4.0	5.0								
Max Green Setting (Gmax), s	26.0	36.0			58.0	9.0	53.0	15.0	39.0								
Max Q Clear Time (g_c+I1), s	28.0	39.0			13.4	9.2	43.7	17.0	28.1								
Green Ext Time (p_c), s	0.0	0.0			1.4	0.0	6.9	0.0	1.5								
Intersection Summary																	
HCM 2010 Ctrl Delay																	
HCM 2010 LOS																	

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	42	345	89	16	24	327	1367	137	56	1405	121
Future Volume (vph)	162	42	345	89	16	24	327	1367	137	56	1405	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	230		230	280		210	260		140
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	1.00	1.00	1.00	0.91	1.00	1.00	0.91	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	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.746			0.726			0.096			0.167		
Satd. Flow (perm)	1390	1863	1583	1352	1863	1583	179	5085	1583	311	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			383			57			147			67
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		610			552			1344			931	
Travel Time (s)		13.9			12.5			20.4			14.1	
Peak Hour Factor	0.90	0.90	0.90	0.88	0.88	0.88	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	180	47	383	101	18	27	352	1470	147	61	1527	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	180	47	383	101	18	27	352	1470	147	61	1527	132
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	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0	11.0	11.0
Minimum Split (s)	42.0	42.0	42.0	43.0	43.0	43.0	10.0	31.0	31.0	33.0	33.0	33.0
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0	35.0	92.0	92.0	57.0	57.0	57.0
Total Split (%)	31.9%	31.9%	31.9%	31.9%	31.9%	31.9%	25.9%	68.1%	68.1%	42.2%	42.2%	42.2%
Maximum Green (s)	38.0	38.0	38.0	38.0	38.0	38.0	31.0	86.0	86.0	51.0	51.0	51.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Flash Dont Walk (s)	31.0	31.0	31.0	32.0	32.0	32.0		19.0	19.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)	10	10	10	10	10	10		0	0	0	0	0
Act Effect Green (s)	26.8	26.8	26.8	26.8	26.8	26.8	99.2	97.2	97.2	68.2	68.2	68.2
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.73	0.72	0.72	0.51	0.51	0.51
v/c Ratio	0.65	0.13	0.62	0.38	0.05	0.07	0.83	0.40	0.12	0.39	0.59	0.16
Control Delay	59.2	41.0	8.2	48.2	38.6	1.4	42.4	17.8	8.3	42.6	37.4	19.2
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	59.2	41.0	8.2	48.2	38.6	1.4	42.4	17.8	8.3	42.6	37.4	19.2
LOS	E	D	A	D	D	A	D	B	A	D	D	B
Approach Delay		25.8			38.3			21.5			36.2	
Approach LOS		C			D			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 61 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 28.3

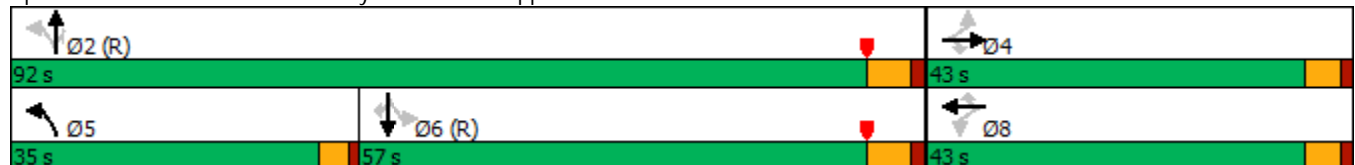
Intersection LOS: C

Intersection Capacity Utilization 73.4%

ICU Level of Service D

Analysis Period (min) 15

























Splits and Phases: 6: Aurora Pkwy & Commons/Applewood



HCM 2010 Signalized Intersection Summary

6: Aurora Pkwy & Commons/Applewood






















07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	42	345	89	16	24	327	1367	137	56	1405	121
Future Volume (veh/h)	162	42	345	89	16	24	327	1367	137	56	1405	121
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	180	47	383	101	18	27	352	1470	147	61	1527	132
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.90	0.90	0.90	0.88	0.88	0.88	0.93	0.93	0.93	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	482	409	282	482	409	382	3356	1045	206	2497	777
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.14	0.66	0.66	0.49	0.49	0.49
Sat Flow, veh/h	1356	1863	1583	954	1863	1583	1774	5085	1583	311	5085	1583
Grp Volume(v), veh/h	180	47	383	101	18	27	352	1470	147	61	1527	132
Grp Sat Flow(s),veh/h/ln	1356	1863	1583	954	1863	1583	1774	1695	1583	311	1695	1583
Q Serve(g_s), s	15.5	2.6	31.9	12.2	1.0	1.7	16.0	18.7	4.7	16.7	29.5	6.2
Cycle Q Clear(g_c), s	16.5	2.6	31.9	14.8	1.0	1.7	16.0	18.7	4.7	16.7	29.5	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	394	482	409	282	482	409	382	3356	1045	206	2497	777
V/C Ratio(X)	0.46	0.10	0.94	0.36	0.04	0.07	0.92	0.44	0.14	0.30	0.61	0.17
Avail Cap(c_a), veh/h	425	524	446	304	524	446	542	3356	1045	206	2497	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	38.1	49.0	43.7	37.5	37.8	31.2	11.0	8.6	21.7	25.0	19.1
Incr Delay (d2), s/veh	0.8	0.1	26.2	0.8	0.0	0.1	16.8	0.4	0.3	3.6	1.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.9	2.4	23.7	5.9	0.9	1.4	20.9	13.7	3.8	3.0	20.1	5.1
LnGrp Delay(d),s/veh	44.5	38.2	75.1	44.5	37.5	37.8	48.1	11.4	8.9	25.4	26.1	19.5
LnGrp LOS	D	D	E	D	D	D	D	B	A	C	C	B
Approach Vol, veh/h		610			146			1969			1720	
Approach Delay, s/veh		63.2			42.4			17.8			25.6	
Approach LOS		E			D			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		95.1		39.9	22.8	72.3		39.9				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		86.0		38.0	31.0	51.0		38.0				
Max Q Clear Time (g_c+I1), s		20.7		33.9	18.0	31.5		16.8				
Green Ext Time (p_c), s		15.7		1.0	0.8	11.8		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				27.8								
HCM 2010 LOS				C								

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	59	341	9	59	117	362	1705	23	174	1530	134
Future Volume (vph)	93	59	341	9	59	117	362	1705	23	174	1530	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	180		0	390		0	215		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.872			0.900			0.998			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3086	0	1770	3185	0	1770	5075	0	1770	5024	0
Flt Permitted	0.606			0.254			0.061			0.089		
Satd. Flow (perm)	1129	3086	0	473	3185	0	114	5075	0	166	5024	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		365			131			2			12	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		497			563			925			311	
Travel Time (s)		11.3			12.8			14.0			4.7	
Peak Hour Factor	0.87	0.87	0.87	0.89	0.89	0.89	0.94	0.94	0.94	0.93	0.93	0.93
Adj. Flow (vph)	107	68	392	10	66	131	385	1814	24	187	1645	144
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	460	0	10	197	0	385	1838	0	187	1789	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
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	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(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	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	11.0		6.0	11.0	
Minimum Split (s)	42.0	42.0		43.0	43.0		10.0	28.0		10.0	34.0	
Total Split (s)	43.0	43.0		43.0	43.0		34.0	68.0		24.0	58.0	
Total Split (%)	31.9%	31.9%		31.9%	31.9%		25.2%	50.4%		17.8%	43.0%	
Maximum Green (s)	37.0	37.0		37.0	37.0		30.0	62.0		20.0	52.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Flash Dont Walk (s)	30.0	30.0		31.0	31.0			16.0			22.0	
Pedestrian Calls (#/hr)	10	10		10	10			0			0	
Act Effect Green (s)	23.6	23.6		23.6	23.6		101.4	80.7		85.6	68.9	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.75	0.60		0.63	0.51	
v/c Ratio	0.54	0.55		0.12	0.30		0.94	0.61		0.67	0.70	
Control Delay	58.2	12.1		43.2	16.0		60.8	16.6		52.5	11.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	58.2	12.1		43.2	16.0		60.8	16.6		52.5	11.6	
LOS	E	B		D	B		E	B		D	B	
Approach Delay		20.8			17.3			24.2			15.5	
Approach LOS		C			B			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 88 (65%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 20.1

Intersection LOS: C

Intersection Capacity Utilization 88.6%

ICU Level of Service E

Analysis Period (min) 15





















Splits and Phases: 7: Aurora Pkwy & Southlands



HCM 2010 Signalized Intersection Summary

7: Aurora Pkwy & Southlands

























07/03/2018

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	93	59	341	9	59	117	362	1705	23	174	1530	134						
Future Volume (veh/h)	93	59	341	9	59	117	362	1705	23	174	1530	134						
Number	7	4	14	3	8	18	5	2	12	1	6	16						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900						
Adj Flow Rate, veh/h	107	68	392	10	66	131	385	1814	24	187	1645	144						
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0						
Peak Hour Factor	0.87	0.87	0.87	0.89	0.89	0.89	0.94	0.94	0.94	0.93	0.93	0.93						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2						
Cap, veh/h	291	473	423	78	473	423	410	2788	37	275	2063	180						
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.24	0.72	0.72	0.08	0.43	0.43						
Sat Flow, veh/h	1181	1770	1583	928	1770	1583	1774	5172	68	1774	4763	416						
Grp Volume(v), veh/h	107	68	392	10	66	131	385	1189	649	187	1170	619						
Grp Sat Flow(s),veh/h/ln	1181	1770	1583	928	1770	1583	1774	1695	1851	1774	1695	1789						
Q Serve(g_s), s	10.7	4.0	32.5	1.4	3.8	8.9	21.8	25.1	25.1	7.8	40.3	40.5						
Cycle Q Clear(g_c), s	19.7	4.0	32.5	34.0	3.8	8.9	21.8	25.1	25.1	7.8	40.3	40.5						
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		0.23						
Lane Grp Cap(c), veh/h	291	473	423	78	473	423	410	1827	998	275	1468	775						
V/C Ratio(X)	0.37	0.14	0.93	0.13	0.14	0.31	0.94	0.65	0.65	0.68	0.80	0.80						
Avail Cap(c_a), veh/h	299	485	434	84	485	434	483	1827	998	405	1468	775						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00						
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.17	0.17	0.17	1.00	1.00	1.00						
Uniform Delay (d), s/veh	47.4	37.7	48.2	64.7	37.6	39.5	35.4	12.4	12.4	19.9	33.1	33.2						
Incr Delay (d2), s/veh	0.8	0.1	25.6	0.7	0.1	0.4	6.4	0.3	0.6	2.9	4.6	8.4						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(95%),veh/ln	6.4	3.5	24.1	0.7	3.4	7.1	17.3	13.9	15.2	7.2	27.1	29.4						
LnGrp Delay(d),s/veh	48.1	37.8	73.7	65.4	37.8	39.9	41.8	12.7	12.9	22.9	37.7	41.6						
LnGrp LOS	D	D	E	E	D	D	D	B	B	C	D	D						
Approach Vol, veh/h	567				207				2223									
Approach Delay, s/veh	64.6				40.5				17.8									
Approach LOS	E				D				B									
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	1	2			4	5	6	8										
Phs Duration (G+Y+Rc), s	14.1	78.8			42.1	28.4	64.5	42.1										
Change Period (Y+Rc), s	4.0	6.0			6.0	4.0	6.0	6.0										
Max Green Setting (Gmax), s	20.0	62.0			37.0	30.0	52.0	37.0										
Max Q Clear Time (g_c+I1), s	9.8	27.1			34.5	23.8	42.5	36.0										
Green Ext Time (p_c), s	0.3	16.5			0.9	0.6	6.9	0.1										
Intersection Summary																		
HCM 2010 Ctrl Delay	31.9																	
HCM 2010 LOS	C																	

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	465	1613	398	99	1088	481	447	1145	137	636	870	374
Future Volume (vph)	465	1613	398	99	1088	481	447	1145	137	636	870	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	335		395	260		260	380		465	235		0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor			0.98	1.00				1.00		1.00		
Frt			0.850			0.850		0.984				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	4995	0	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1555	3430	5085	1583	3433	4995	0	3431	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113			113			15			105
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1859			2698			936			925	
Travel Time (s)		28.2			40.9			14.2			14.0	
Confl. Peds. (#/hr)			5	5					5	5		
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	511	1773	437	106	1170	517	497	1272	152	684	935	402
Shared Lane Traffic (%)												
Lane Group Flow (vph)	511	1773	437	106	1170	517	497	1424	0	684	935	402
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			24			24	
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	1	1	1	1	1	1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	30	20	20	30	20	20	30		20	30	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	30	20	20	30	20	20	30		20	30	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
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	41.0	11.0	11.0	43.0	11.0	11.0	45.0		11.0	44.0	11.0
Total Split (s)	21.0	54.0	25.0	11.0	44.0	25.0	25.0	45.0		25.0	45.0	21.0
Total Split (%)	15.6%	40.0%	18.5%	8.1%	32.6%	18.5%	18.5%	33.3%		18.5%	33.3%	15.6%
Maximum Green (s)	16.0	48.0	20.0	6.0	38.0	20.0	20.0	39.0		20.0	39.0	16.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0		2.0	3.0	2.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max		None	Max	None
Walk Time (s)		6.0			6.0			6.0			6.0	
Flash Dont Walk (s)		29.0			31.0			33.0			32.0	
Pedestrian Calls (#/hr)		5			0			5			0	
Act Effect Green (s)	16.0	48.0	69.0	6.0	38.0	64.0	20.0	39.0		20.0	39.0	56.0
Actuated g/C Ratio	0.12	0.36	0.51	0.04	0.28	0.47	0.15	0.29		0.15	0.29	0.41
v/c Ratio	1.26	0.98	0.51	0.70	0.82	0.64	0.98	0.98		1.35	0.91	0.56
Control Delay	184.1	62.8	23.5	84.7	53.6	26.9	91.9	66.3		203.3	45.7	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	184.1	62.8	23.5	84.7	53.6	26.9	91.9	66.3		203.3	45.7	13.3
LOS	F	E	C	F	D	C	F	E		F	D	B
Approach Delay		79.3			47.8			72.9			92.6	
Approach LOS		E			D			E			F	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 22 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.35

Intersection Signal Delay: 74.3

Intersection LOS: E

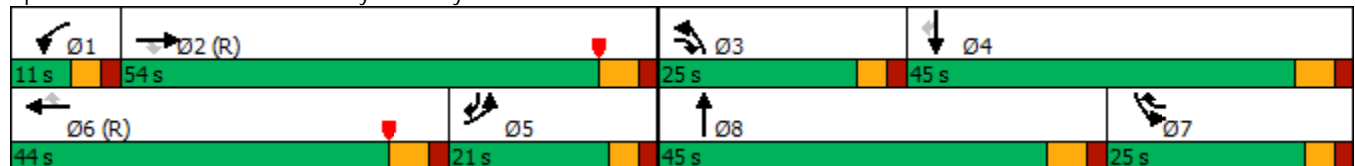
Intersection Capacity Utilization 105.1%

ICU Level of Service G

Analysis Period (min) 15

Description: Aurora
























Splits and Phases: 8: Aurora Pkwy & Smoky Hill Rd



HCM 2010 Signalized Intersection Summary

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	465	1613	398	99	1088	481	447	1145	137	636	870	374
Future Volume (veh/h)	465	1613	398	99	1088	481	447	1145	137	636	870	374
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	511	1773	437	106	1170	517	497	1272	152	684	935	402
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	2	2	1
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.90	0.90	0.90	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2090	4332	1581	153	1431	678	510	1330	159	510	1049	1428
Arrive On Green	0.20	0.28	0.28	0.03	0.19	0.19	0.15	0.29	0.29	0.05	0.10	0.10
Sat Flow, veh/h	3442	5085	1581	3442	5085	1575	3442	4603	550	3442	3539	1575
Grp Volume(v), veh/h	511	1773	437	106	1170	517	497	937	487	684	935	402
Grp Sat Flow(s),veh/h/ln	1721	1695	1581	1721	1695	1575	1721	1695	1762	1721	1770	1575
Q Serve(g_s), s	16.9	38.2	7.5	4.1	29.8	20.3	19.4	36.7	36.7	20.0	35.3	8.9
Cycle Q Clear(g_c), s	16.9	38.2	7.5	4.1	29.8	20.3	19.4	36.7	36.7	20.0	35.3	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	2090	4332	1581	153	1431	678	510	979	509	510	1049	1428
V/C Ratio(X)	0.24	0.41	0.28	0.69	0.82	0.76	0.97	0.96	0.96	1.34	0.89	0.28
Avail Cap(c_a), veh/h	2090	4332	1581	153	1431	678	510	979	509	510	1049	1428
HCM Platoon Ratio	0.33	0.33	0.33	0.67	0.67	0.67	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.95	0.95	0.95	0.98	0.98	0.98	1.00	1.00	1.00	0.66	0.66	0.66
Uniform Delay (d), s/veh	27.9	20.9	2.5	64.6	51.4	38.5	57.2	47.2	47.2	64.2	58.8	17.7
Incr Delay (d2), s/veh	0.0	0.3	0.4	10.5	5.2	7.8	33.2	20.0	30.5	162.3	8.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.6	24.9	14.6	3.9	20.9	23.7	17.2	27.2	29.9	37.9	24.2	13.4
LnGrp Delay(d),s/veh	27.9	21.2	2.9	75.1	56.6	46.2	90.4	67.2	77.6	226.5	66.8	18.0
LnGrp LOS	C	C	A	E	E	D	F	E	E	F	E	B
Approach Vol, veh/h	2721				1793				1921			
Approach Delay, s/veh	19.5				54.7				75.8			
Approach LOS	B				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	123.0	25.0	46.0	90.0	44.0	26.0	45.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	6.0	* 6	6.0	* 6				
Max Green Setting (Gmax), s	6.0	48.0	20.0	39.0	16.0	* 38	20.0	* 39				
Max Q Clear Time (g_c+I1), s	6.1	40.2	21.4	37.3	18.9	31.8	22.0	38.7				
Green Ext Time (p_c), s	0.0	5.4	0.0	1.0	0.0	3.6	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	61.7											
HCM 2010 LOS	E											
Notes												

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

Lanes, Volumes, Timings

1: DeGaulle & Alexander

07/03/2018




























												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	71	40	0	28	9	27	4	0	12	21	298
Future Volume (vph)	390	71	40	0	28	9	27	4	0	12	21	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.967						0.878	
Flt Protected		0.963						0.958			0.998	
Satd. Flow (prot)	0	1774	0	0	1801	0	0	1785	0	0	1632	0
Flt Permitted		0.963						0.958			0.998	
Satd. Flow (perm)	0	1774	0	0	1801	0	0	1785	0	0	1632	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		552			404			431			425	
Travel Time (s)		15.1			11.0			11.8			11.6	
Peak Hour Factor	0.94	0.94	0.94	0.76	0.76	0.76	0.75	0.75	0.75	0.94	0.94	0.94
Adj. Flow (vph)	415	76	43	0	37	12	36	5	0	13	22	317
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	534	0	0	49	0	0	41	0	0	352	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	61.0%											
Analysis Period (min)	15											
	ICU Level of Service B											

Intersection												
Int Delay, s/veh	12.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	390	71	40	0	28	9	27	4	0	12	21	298
Future Vol, veh/h	390	71	40	0	28	9	27	4	0	12	21	298
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	94	94	94	76	76	76	75	75	75	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	415	76	43	0	37	12	36	5	0	13	22	317
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	119	0	0	1141	977	98	973	992	43
Stage 1	-	-	-	-	-	-	928	928	-	43	43	-
Stage 2	-	-	-	-	-	-	213	49	-	930	949	-
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	1558	-	-	1469	-	-	178	251	958	231	246	1027
Stage 1	-	-	-	-	-	-	321	347	-	971	859	-
Stage 2	-	-	-	-	-	-	789	854	-	321	339	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1469	-	-	87	179	958	176	175	1027
Mov Cap-2 Maneuver	-	-	-	-	-	-	87	179	-	176	175	-
Stage 1	-	-	-	-	-	-	229	247	-	692	859	-
Stage 2	-	-	-	-	-	-	531	854	-	224	242	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	6.3			0			71.6			15.5		
HCM LOS							F			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	93	1558	-	-	1469	-	-	692				
HCM Lane V/C Ratio	0.444	0.266	-	-	-	-	-	0.509				
HCM Control Delay (s)	71.6	8.1	0	-	0	-	-	15.5				
HCM Lane LOS	F	A	A	-	A	-	-	C				
HCM 95th %tile Q(veh)	1.9	1.1	-	-	0	-	-	2.9				

Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	 
Traffic Volume (vph)	75	1743	582	79	1315	616	551	0	26	386	3	27
Future Volume (vph)	75	1743	582	79	1315	616	551	0	26	386	3	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	290		0	185		0	185		185
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.952			0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4892	0	1770	4841	0	1770	1583	0	1770	1863	1583
Flt Permitted	0.053			0.053			0.756			0.738		
Satd. Flow (perm)	99	4892	0	99	4841	0	1408	1583	0	1375	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		100			141			24				30
Link Speed (mph)		45			45			25				25
Link Distance (ft)		1377			1303			484				448
Travel Time (s)		20.9			19.7			13.2				12.2
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	80	1854	619	85	1414	662	633	0	30	434	3	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	2473	0	85	2076	0	633	30	0	434	3	30
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	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		8

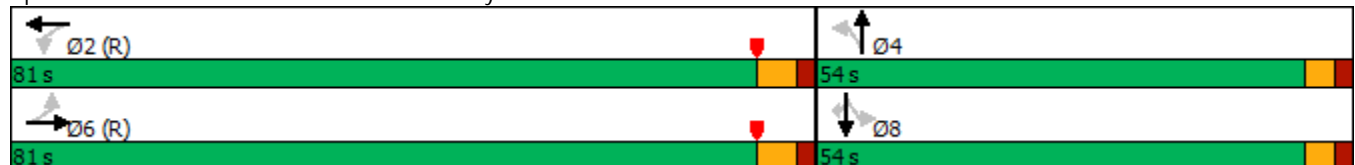
Lanes, Volumes, Timings

2: Alexander & Aurora Pkwy

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	26.0	26.0		28.0	28.0		41.0	41.0		41.0	41.0	41.0
Total Split (s)	81.0	81.0		81.0	81.0		54.0	54.0		54.0	54.0	54.0
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%		40.0%	40.0%	40.0%
Maximum Green (s)	75.0	75.0		75.0	75.0		49.0	49.0		49.0	49.0	49.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Flash Dont Walk (s)	14.0	14.0		16.0	16.0		30.0	30.0		30.0	30.0	30.0
Pedestrian Calls (#/hr)	0	0		0	0		5	5		5	5	5
Act Effct Green (s)	75.0	75.0		75.0	75.0		49.0	49.0		49.0	49.0	49.0
Actuated g/C Ratio	0.56	0.56		0.56	0.56		0.36	0.36		0.36	0.36	0.36
v/c Ratio	1.45	0.90		1.55	0.75		1.24	0.05		0.87	0.00	0.05
Control Delay	309.2	30.8		329.9	12.9		160.6	12.5		59.2	27.7	9.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	309.2	30.8		329.9	12.9		160.6	12.5		59.2	27.7	9.3
LOS	F	C		F	B		F	B		E	C	A
Approach Delay		39.5			25.3			153.9			55.8	
Approach LOS		D			C			F			E	
Intersection Summary												
Area Type:	Other											
Cycle Length: 135												
Actuated Cycle Length: 135												
Offset: 42 (31%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow												
Natural Cycle: 100												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 1.55												
Intersection Signal Delay: 48.6					Intersection LOS: D							
Intersection Capacity Utilization 103.0%					ICU Level of Service G							
Analysis Period (min) 15												






















Splits and Phases: 2: Alexander & Aurora Pkwy



HCM 2010 Signalized Intersection Summary

2: Alexander & Aurora Pkwy







07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	1743	582	79	1315	616	551	0	26	386	3	27
Future Volume (veh/h)	75	1743	582	79	1315	616	551	0	26	386	3	27
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	80	1854	619	85	1414	662	633	0	30	434	3	30
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.87	0.87	0.87	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	99	2125	675	66	1899	866	549	0	575	535	676	575
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.36	0.00	0.36	0.36	0.36	0.36
Sat Flow, veh/h	199	3825	1214	134	3419	1559	1370	0	1583	1374	1863	1583
Grp Volume(v), veh/h	80	1633	840	85	1402	674	633	0	30	434	3	30
Grp Sat Flow(s),veh/h/ln	199	1695	1648	134	1695	1588	1370	0	1583	1374	1863	1583
Q Serve(g_s), s	30.7	55.7	62.4	12.6	42.3	44.3	48.9	0.0	1.7	40.5	0.1	1.7
Cycle Q Clear(g_c), s	75.0	55.7	62.4	75.0	42.3	44.3	49.0	0.0	1.7	42.1	0.1	1.7
Prop In Lane	1.00		0.74	1.00		0.98	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	99	1883	916	66	1883	882	549	0	575	535	676	575
V/C Ratio(X)	0.81	0.87	0.92	1.29	0.74	0.76	1.15	0.00	0.05	0.81	0.00	0.05
Avail Cap(c_a), veh/h	99	1883	916	66	1883	882	549	0	575	535	676	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	25.7	27.2	66.3	22.7	23.2	45.4	0.0	27.9	41.6	27.4	27.9
Incr Delay (d2), s/veh	49.6	5.7	15.5	207.3	2.7	6.3	87.9	0.0	0.0	9.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.8	35.9	41.5	11.2	27.8	28.3	60.9	0.0	1.3	23.4	0.1	1.3
LnGrp Delay(d),s/veh	108.4	31.4	42.7	273.6	25.5	29.4	133.3	0.0	28.0	50.8	27.4	28.0
LnGrp LOS	F	C	D	F	C	C	F		C	D	C	C
Approach Vol, veh/h	2553			2161			663			467		
Approach Delay, s/veh	37.5			36.5			128.6			49.2		
Approach LOS	D			D			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	81.0			54.0			81.0			54.0		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	75.0			49.0			75.0			49.0		
Max Q Clear Time (g_c+I1), s	77.0			51.0			77.0			44.1		
Green Ext Time (p_c), s	0.0			0.0			0.0			0.8		
Intersection Summary												
HCM 2010 Ctrl Delay	48.4											
HCM 2010 LOS	D											

Lanes, Volumes, Timings

3: RIRO & Aurora Pkwy

07/03/2018

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↓			↑↑↑		↑
Traffic Volume (vph)	2006	149	0	2010	0	39
Future Volume (vph)	2006	149	0	2010	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Frt	0.990					0.865
Flt Protected						
Satd. Flow (prot)	5034	0	0	5085	0	1611
Flt Permitted						
Satd. Flow (perm)	5034	0	0	5085	0	1611
Link Speed (mph)	45			45	25	
Link Distance (ft)	1303			772	312	
Travel Time (s)	19.7			11.7	8.5	
Peak Hour Factor	0.94	0.94	0.93	0.93	0.92	0.92
Adj. Flow (vph)	2134	159	0	2161	0	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2293	0	0	2161	0	42
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	52.1%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 2010 TWSC

3: RIRO & Aurora Pkwy























07/03/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↗
Traffic Vol, veh/h	2006	149	0	2010	0	39
Future Vol, veh/h	2006	149	0	2010	0	39
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	94	94	93	93	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2134	159	0	2161	0	42
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1147
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	-	-	0	-	0	*452
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*452
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		13.8	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	452	-	-	-		
HCM Lane V/C Ratio	0.094	-	-	-		
HCM Control Delay (s)	13.8	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.3	-	-	-		
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Lanes, Volumes, Timings

4: Aurora Pkwy & Pronghorn Valley













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	26	177	35	28	22	272	1830	65	42	1955	50
Future Volume (vph)	157	26	177	35	28	22	272	1830	65	42	1955	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		250	150		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Frt		0.869			0.933				0.850		0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1619	0	1770	1738	0	1770	5085	1583	1770	5065	0
Flt Permitted	0.640			0.465			0.046			0.096		
Satd. Flow (perm)	1192	1619	0	866	1738	0	86	5085	1583	179	5065	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		190			24				73		4	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		543			517			676			270	
Travel Time (s)		12.3			11.8			10.2			4.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.94	0.94
Adj. Flow (vph)	169	28	190	38	30	24	292	1968	70	45	2080	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	169	218	0	38	54	0	292	1968	70	45	2133	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(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		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		

Lanes, Volumes, Timings

4: Aurora Pkwy & Pronghorn Valley

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	34.5		8.0	34.5		8.0	20.0	20.0	8.0	20.0	
Total Split (s)	8.0	35.2		8.0	35.2		26.0	81.8	81.8	10.0	65.8	
Total Split (%)	5.9%	26.1%		5.9%	26.1%		19.3%	60.6%	60.6%	7.4%	48.7%	
Maximum Green (s)	4.0	31.2		4.0	31.2		22.0	77.8	77.8	6.0	61.8	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		25.5			25.5			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effect Green (s)	12.9	9.7		12.6	9.7		110.9	102.5	102.5	90.9	84.6	
Actuated g/C Ratio	0.10	0.07		0.09	0.07		0.82	0.76	0.76	0.67	0.63	
v/c Ratio	1.28	0.74		0.36	0.37		0.84	0.51	0.06	0.23	0.67	
Control Delay	216.2	27.6		59.4	42.5		50.6	9.1	2.9	11.7	31.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1	0.0	0.0	0.0	
Total Delay	216.2	27.6		59.4	42.5		50.6	9.2	2.9	11.7	31.3	
LOS	F	C		E	D		D	A	A	B	C	
Approach Delay		109.9			49.5			14.2			30.9	
Approach LOS		F			D			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.28

Intersection Signal Delay: 29.6

Intersection LOS: C

Intersection Capacity Utilization 82.9%

ICU Level of Service E

Analysis Period (min) 15























Splits and Phases: 4: Aurora Pkwy & Pronghorn Valley



HCM 2010 Signalized Intersection Summary

4: Aurora Pkwy & Pronghorn Valley

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	26	177	35	28	22	272	1830	65	42	1955	50
Future Volume (veh/h)	157	26	177	35	28	22	272	1830	65	42	1955	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	169	28	190	38	30	24	292	1968	70	45	2080	53
Adj No. of Lanes	1	1	0	1	1	0	1	3	1	1	3	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	32	217	123	143	115	314	3450	1074	218	2998	76
Arrive On Green	0.03	0.15	0.15	0.02	0.15	0.15	0.23	1.00	1.00	0.02	0.59	0.59
Sat Flow, veh/h	1774	207	1407	1774	960	768	1774	5085	1583	1774	5100	130
Grp Volume(v), veh/h	169	0	218	38	0	54	292	1968	70	45	1381	752
Grp Sat Flow(s),veh/h/ln	1774	0	1614	1774	0	1727	1774	1695	1583	1774	1695	1840
Q Serve(g_s), s	4.0	0.0	17.8	2.4	0.0	3.7	13.0	0.0	0.0	1.4	38.3	38.4
Cycle Q Clear(g_c), s	4.0	0.0	17.8	2.4	0.0	3.7	13.0	0.0	0.0	1.4	38.3	38.4
Prop In Lane	1.00		0.87	1.00		0.44	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	270	0	249	123	0	258	314	3450	1074	218	1993	1082
V/C Ratio(X)	0.63	0.00	0.88	0.31	0.00	0.21	0.93	0.57	0.07	0.21	0.69	0.69
Avail Cap(c_a), veh/h	270	0	373	131	0	399	399	3450	1074	254	1993	1082
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	55.9	48.2	0.0	50.4	30.2	0.0	0.0	10.4	19.3	19.4
Incr Delay (d2), s/veh	4.5	0.0	14.3	1.4	0.0	0.4	11.0	0.2	0.0	0.5	2.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.5	0.0	13.8	2.2	0.0	3.2	14.6	0.1	0.0	1.2	25.4	28.0
LnGrp Delay(d),s/veh	57.9	0.0	70.2	49.6	0.0	50.8	41.1	0.2	0.0	10.9	21.4	23.1
LnGrp LOS	E		E	D		D	D	A	A	B	C	C
Approach Vol, veh/h	387			92			2330			2178		
Approach Delay, s/veh	64.8			50.3			5.4			21.7		
Approach LOS	E			D			A			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	95.6	7.4	24.8	19.5	83.4	8.0	24.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	77.8	4.0	31.2	22.0	61.8	4.0	31.2				
Max Q Clear Time (g_c+I1), s	3.4	2.0	4.4	19.8	15.0	40.4	6.0	5.7				
Green Ext Time (p_c), s	0.0	27.2	0.0	0.9	0.5	14.8	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	18.0											
HCM 2010 LOS	B											

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	118	201	49	108	292	190	1698	54	432	1553	183
Future Volume (vph)	177	118	201	49	108	292	190	1698	54	432	1553	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	190		0	280		0	290		100
Storage Lanes	1		1	1		1	1		0	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	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850		0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5060	0	1770	5085	1583
Flt Permitted	0.509			0.676			0.131			0.070		
Satd. Flow (perm)	948	1863	1583	1259	1863	1583	244	5060	0	130	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			216			314		4				81
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		249			440			428			676	
Travel Time (s)		5.7			10.0			6.5			10.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.94	0.94
Adj. Flow (vph)	190	127	216	53	116	314	204	1826	58	460	1652	195
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	127	216	53	116	314	204	1884	0	460	1652	195
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	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		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	20	6	20	20	6		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	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6

Lanes, Volumes, Timings

5: Aurora Pkwy & Orchard

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	10.0		3.0	10.0	10.0
Minimum Split (s)	8.0	40.0	40.0	44.0	44.0	44.0	10.0	29.0		10.0	34.0	34.0
Total Split (s)	8.0	52.0	52.0	44.0	44.0	44.0	24.0	51.0		32.0	59.0	59.0
Total Split (%)	5.9%	38.5%	38.5%	32.6%	32.6%	32.6%	17.8%	37.8%		23.7%	43.7%	43.7%
Maximum Green (s)	4.0	47.0	47.0	39.0	39.0	39.0	20.0	45.0		28.0	53.0	53.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Flash Dont Walk (s)		29.0	29.0	33.0	33.0	33.0		17.0			22.0	22.0
Pedestrian Calls (#/hr)		10	10	10	10	10		0			0	0
Act Effect Green (s)	31.6	30.6	30.6	22.6	22.6	22.6	69.6	52.8		95.4	74.6	74.6
Actuated g/C Ratio	0.23	0.23	0.23	0.17	0.17	0.17	0.52	0.39		0.71	0.55	0.55
v/c Ratio	0.77	0.30	0.41	0.25	0.37	0.60	0.70	0.95		0.86	0.59	0.21
Control Delay	65.3	42.1	6.2	46.5	49.8	8.8	42.7	51.0		61.6	9.1	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.1	0.0
Total Delay	65.3	42.1	6.2	46.5	49.8	8.8	42.7	51.0		61.6	9.2	2.5
LOS	E	D	A	D	D	A	D	D		E	A	A
Approach Delay		35.8			22.8			50.2			19.1	
Approach LOS		D			C			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 33.1

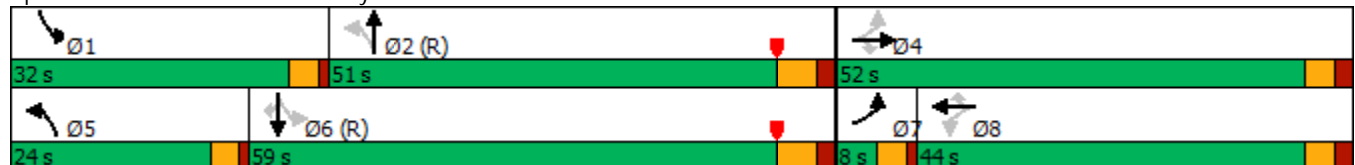
Intersection LOS: C

Intersection Capacity Utilization 86.9%

ICU Level of Service E

Analysis Period (min) 15

























Splits and Phases: 5: Aurora Pkwy & Orchard



HCM 2010 Signalized Intersection Summary

























5: Aurora Pkwy & Orchard

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	118	201	49	108	292	190	1698	54	432	1553	183
Future Volume (veh/h)	177	118	201	49	108	292	190	1698	54	432	1553	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	190	127	216	53	116	314	204	1826	58	460	1652	195
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	519	441	280	409	347	303	2040	65	437	2676	833
Arrive On Green	0.03	0.28	0.28	0.22	0.22	0.22	0.08	0.40	0.40	0.41	1.00	1.00
Sat Flow, veh/h	1774	1863	1583	1033	1863	1583	1774	5064	161	1774	5085	1583
Grp Volume(v), veh/h	190	127	216	53	116	314	204	1222	662	460	1652	195
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1033	1863	1583	1774	1695	1834	1774	1695	1583
Q Serve(g_s), s	4.0	7.1	15.4	5.7	7.0	26.1	9.0	45.4	45.5	28.0	0.0	0.0
Cycle Q Clear(g_c), s	4.0	7.1	15.4	5.7	7.0	26.1	9.0	45.4	45.5	28.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	266	519	441	280	409	347	303	1366	739	437	2676	833
V/C Ratio(X)	0.71	0.24	0.49	0.19	0.28	0.90	0.67	0.89	0.90	1.05	0.62	0.23
Avail Cap(c_a), veh/h	266	649	551	352	538	457	416	1366	739	437	2676	833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.69	0.69	0.69
Uniform Delay (d), s/veh	48.9	37.7	40.7	43.4	43.9	51.3	20.1	37.6	37.7	29.1	0.0	0.0
Incr Delay (d2), s/veh	8.8	0.2	0.8	0.3	0.4	17.6	2.6	9.4	15.7	50.5	0.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.1	6.7	11.1	3.0	6.6	19.1	8.1	30.9	34.6	40.1	0.3	0.2
LnGrp Delay(d),s/veh	57.7	37.9	41.5	43.7	44.2	68.9	22.7	47.0	53.4	79.6	0.7	0.5
LnGrp LOS	E	D	D	D	D	E	C	D	D	F	A	A
Approach Vol, veh/h		533			483			2088			2307	
Approach Delay, s/veh		46.4			60.2			46.6			16.4	
Approach LOS		D			E			D			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.0	60.4		42.6	15.3	77.0	8.0	34.6				
Change Period (Y+Rc), s	4.0	6.0		5.0	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	28.0	45.0		47.0	20.0	53.0	4.0	39.0				
Max Q Clear Time (g_c+I1), s	30.0	47.5		17.4	11.0	2.0	6.0	28.1				
Green Ext Time (p_c), s	0.0	0.0		1.5	0.3	18.7	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			35.0									
HCM 2010 LOS			C									

Lanes, Volumes, Timings
6: Aurora Pkwy & Commons/Applewood













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	42	348	89	16	24	333	1814	137	56	1670	77
Future Volume (vph)	103	42	348	89	16	24	333	1814	137	56	1670	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	230		230	280		210	260		140
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	1.00	1.00	1.00	0.91	1.00	1.00	0.91	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	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.746			0.726			0.062			0.100		
Satd. Flow (perm)	1390	1863	1583	1352	1863	1583	115	5085	1583	186	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			334			57			142			48
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		610			552			1344			931	
Travel Time (s)		13.9			12.5			20.4			14.1	
Peak Hour Factor	0.90	0.90	0.90	0.88	0.88	0.88	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	114	47	387	101	18	27	358	1951	147	61	1815	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	47	387	101	18	27	358	1951	147	61	1815	84
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	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lanes, Volumes, Timings

6: Aurora Pkwy & Commons/Applewood

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0	11.0	11.0
Minimum Split (s)	42.0	42.0	42.0	43.0	43.0	43.0	10.0	31.0	31.0	33.0	33.0	33.0
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0	29.0	92.0	92.0	63.0	63.0	63.0
Total Split (%)	31.9%	31.9%	31.9%	31.9%	31.9%	31.9%	21.5%	68.1%	68.1%	46.7%	46.7%	46.7%
Maximum Green (s)	38.0	38.0	38.0	38.0	38.0	38.0	25.0	86.0	86.0	57.0	57.0	57.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Flash Dont Walk (s)	31.0	31.0	31.0	32.0	32.0	32.0		19.0	19.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)	10	10	10	10	10	10		0	0	0	0	0
Act Effect Green (s)	23.3	23.3	23.3	23.3	23.3	23.3	102.7	100.7	100.7	71.7	71.7	71.7
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17	0.17	0.76	0.75	0.75	0.53	0.53	0.53
v/c Ratio	0.47	0.15	0.70	0.43	0.06	0.08	0.91	0.51	0.12	0.62	0.67	0.10
Control Delay	53.8	43.0	14.8	52.3	40.0	1.5	52.9	18.2	7.4	60.8	35.2	11.3
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	53.8	43.0	14.8	52.3	40.0	1.5	52.9	18.2	7.4	60.8	35.2	11.3
LOS	D	D	B	D	D	A	D	B	A	E	D	B
Approach Delay	25.3			41.4			22.6			35.0		
Approach LOS	C			D			C			C		

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 61 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 28.2

Intersection LOS: C

Intersection Capacity Utilization 75.6%

ICU Level of Service D

Analysis Period (min) 15

























Splits and Phases: 6: Aurora Pkwy & Commons/Applewood



HCM 2010 Signalized Intersection Summary






















6: Aurora Pkwy & Commons/Applewood

07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	42	348	89	16	24	333	1814	137	56	1670	77
Future Volume (veh/h)	103	42	348	89	16	24	333	1814	137	56	1670	77
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	114	47	387	101	18	27	358	1951	147	61	1815	84
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.90	0.90	0.90	0.88	0.88	0.88	0.93	0.93	0.93	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	484	412	282	484	412	383	3348	1043	140	2368	737
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.16	0.66	0.66	0.47	0.47	0.47
Sat Flow, veh/h	1356	1863	1583	951	1863	1583	1774	5085	1583	195	5085	1583
Grp Volume(v), veh/h	114	47	387	101	18	27	358	1951	147	61	1815	84
Grp Sat Flow(s),veh/h/ln	1356	1863	1583	951	1863	1583	1774	1695	1583	195	1695	1583
Q Serve(g_s), s	9.3	2.6	32.3	12.2	1.0	1.7	19.7	28.7	4.7	34.1	40.0	4.0
Cycle Q Clear(g_c), s	10.2	2.6	32.3	14.8	1.0	1.7	19.7	28.7	4.7	36.8	40.0	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	396	484	412	282	484	412	383	3348	1043	140	2368	737
V/C Ratio(X)	0.29	0.10	0.94	0.36	0.04	0.07	0.94	0.58	0.14	0.44	0.77	0.11
Avail Cap(c_a), veh/h	425	524	446	303	524	446	422	3348	1043	140	2368	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	37.9	48.9	43.5	37.3	37.6	39.1	12.8	8.7	30.2	30.0	20.4
Incr Delay (d2), s/veh	0.4	0.1	27.1	0.8	0.0	0.1	26.9	0.7	0.3	9.5	2.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.3	2.4	24.0	5.9	0.9	1.4	22.5	19.6	3.8	4.0	26.4	3.3
LnGrp Delay(d),s/veh	41.5	38.0	76.0	44.3	37.3	37.7	66.0	13.5	9.0	39.7	32.4	20.7
LnGrp LOS	D	D	E	D	D	D	E	B	A	D	C	C
Approach Vol, veh/h		548			146			2456			1960	
Approach Delay, s/veh		65.6			42.2			20.9			32.1	
Approach LOS		E			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		94.9		40.1	26.0	68.9		40.1				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		86.0		38.0	25.0	57.0		38.0				
Max Q Clear Time (g_c+I1), s		30.7		34.3	21.7	42.0		16.8				
Green Ext Time (p_c), s		25.0		0.8	0.4	11.4		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				30.6								
HCM 2010 LOS				C								

Lanes, Volumes, Timings
7: Aurora Pkwy & Southlands













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	59	344	9	59	117	368	2161	23	174	1839	93
Future Volume (vph)	90	59	344	9	59	117	368	2161	23	174	1839	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	180		0	390		0	215		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.872			0.900			0.998			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3086	0	1770	3185	0	1770	5075	0	1770	5050	0
Flt Permitted	0.606			0.246			0.056			0.059		
Satd. Flow (perm)	1129	3086	0	458	3185	0	104	5075	0	110	5050	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		309			131			2			7	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		497			563			925			311	
Travel Time (s)		11.3			12.8			14.0			4.7	
Peak Hour Factor	0.87	0.87	0.87	0.89	0.89	0.89	0.94	0.94	0.94	0.93	0.93	0.93
Adj. Flow (vph)	103	68	395	10	66	131	391	2299	24	187	1977	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	463	0	10	197	0	391	2323	0	187	2077	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
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	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(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	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

7: Aurora Pkwy & Southlands

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	11.0		6.0	11.0	
Minimum Split (s)	42.0	42.0		43.0	43.0		10.0	28.0		10.0	34.0	
Total Split (s)	43.0	43.0		43.0	43.0		30.0	74.0		18.0	62.0	
Total Split (%)	31.9%	31.9%		31.9%	31.9%		22.2%	54.8%		13.3%	45.9%	
Maximum Green (s)	37.0	37.0		37.0	37.0		26.0	68.0		14.0	56.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.5		3.0	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Flash Dont Walk (s)	30.0	30.0		31.0	31.0			16.0			22.0	
Pedestrian Calls (#/hr)	10	10		10	10			0			0	
Act Effect Green (s)	23.3	23.3		23.3	23.3		101.7	82.5		82.4	67.3	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.75	0.61		0.61	0.50	
v/c Ratio	0.53	0.59		0.13	0.30		0.91	0.75		0.82	0.82	
Control Delay	57.6	17.9		43.6	16.1		50.1	16.2		75.7	17.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	57.6	17.9		43.6	16.1		50.1	16.2		75.7	17.8	
LOS	E	B		D	B		D	B		E	B	
Approach Delay		25.2			17.4			21.0			22.5	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 88 (65%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 21.9

Intersection LOS: C

Intersection Capacity Utilization 94.1%

ICU Level of Service F

Analysis Period (min) 15





















Splits and Phases: 7: Aurora Pkwy & Southlands



HCM 2010 Signalized Intersection Summary

7: Aurora Pkwy & Southlands

























07/03/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	59	344	9	59	117	368	2161	23	174	1839	93
Future Volume (veh/h)	90	59	344	9	59	117	368	2161	23	174	1839	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	103	68	395	10	66	131	391	2299	24	187	1977	100
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.87	0.87	0.87	0.89	0.89	0.89	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	476	426	77	476	426	402	2787	29	213	2082	105
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.19	0.54	0.54	0.08	0.42	0.42
Sat Flow, veh/h	1181	1770	1583	925	1770	1583	1774	5189	54	1774	4959	250
Grp Volume(v), veh/h	103	68	395	10	66	131	391	1501	822	187	1350	727
Grp Sat Flow(s),veh/h/ln	1181	1770	1583	925	1770	1583	1774	1695	1853	1774	1695	1819
Q Serve(g_s), s	10.3	3.9	32.8	1.4	3.8	8.9	25.0	49.7	49.8	8.0	51.8	52.2
Cycle Q Clear(g_c), s	19.2	3.9	32.8	34.2	3.8	8.9	25.0	49.7	49.8	8.0	51.8	52.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		0.14
Lane Grp Cap(c), veh/h	293	476	426	77	476	426	402	1820	995	213	1423	764
V/C Ratio(X)	0.35	0.14	0.93	0.13	0.14	0.31	0.97	0.82	0.83	0.88	0.95	0.95
Avail Cap(c_a), veh/h	299	485	434	82	485	434	402	1820	995	263	1423	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	37.5	48.1	64.7	37.5	39.3	44.4	26.0	26.0	29.5	37.7	37.9
Incr Delay (d2), s/veh	0.7	0.1	25.9	0.7	0.1	0.4	8.4	0.4	0.8	23.0	14.4	22.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.1	3.5	24.3	0.7	3.4	7.1	17.3	25.6	28.0	9.0	35.5	40.0
LnGrp Delay(d),s/veh	47.7	37.6	73.9	65.5	37.6	39.7	52.8	26.4	26.8	52.6	52.1	60.7
LnGrp LOS	D	D	E	E	D	D	D	C	C	D	D	E
Approach Vol, veh/h	566				207				2714			
Approach Delay, s/veh	64.8				40.3				30.3			
Approach LOS	E				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	78.5		42.3	30.0	62.7		42.3				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	14.0	68.0		37.0	26.0	56.0		37.0				
Max Q Clear Time (g_c+I1), s	10.0	51.8		34.8	27.0	54.2		36.2				
Green Ext Time (p_c), s	0.2	12.8		0.8	0.0	1.6		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	43.7											
HCM 2010 LOS	D											

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd













07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	764	1613	398	99	1088	643	447	1145	137	746	870	576
Future Volume (vph)	764	1613	398	99	1088	643	447	1145	137	746	870	576
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	335		395	260		260	380		465	235		0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor			0.98	1.00				1.00		1.00		
Frt			0.850			0.850		0.984				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	4995	0	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1555	3430	5085	1583	3433	4995	0	3431	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113			113			15			105
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1859			2698			936			925	
Travel Time (s)		28.2			40.9			14.2			14.0	
Confl. Peds. (#/hr)			5	5					5	5		
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	840	1773	437	106	1170	691	497	1272	152	802	935	619
Shared Lane Traffic (%)												
Lane Group Flow (vph)	840	1773	437	106	1170	691	497	1424	0	802	935	619
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			24			24	
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	1	1	1	1	1	1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	30	20	20	30	20	20	30		20	30	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	30	20	20	30	20	20	30		20	30	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
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0

Lanes, Volumes, Timings

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	41.0	11.0	11.0	43.0	11.0	11.0	45.0		11.0	44.0	11.0
Total Split (s)	23.0	56.0	24.0	11.0	44.0	23.0	24.0	45.0		23.0	44.0	23.0
Total Split (%)	17.0%	41.5%	17.8%	8.1%	32.6%	17.0%	17.8%	33.3%		17.0%	32.6%	17.0%
Maximum Green (s)	18.0	50.0	19.0	6.0	38.0	18.0	19.0	39.0		18.0	38.0	18.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0		2.0	3.0	2.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max		None	Max	None
Walk Time (s)		6.0			6.0			6.0			6.0	
Flash Dont Walk (s)		29.0			31.0			33.0			32.0	
Pedestrian Calls (#/hr)		5			0			5			0	
Act Effect Green (s)	18.0	50.0	70.0	6.0	38.0	62.0	19.0	39.0		18.0	38.0	57.0
Actuated g/C Ratio	0.13	0.37	0.52	0.04	0.28	0.46	0.14	0.29		0.13	0.28	0.42
v/c Ratio	1.84	0.94	0.51	0.70	0.82	0.88	1.03	0.98		1.75	0.94	0.85
Control Delay	418.7	55.1	22.0	84.8	53.4	43.8	104.6	66.3		374.7	45.1	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	418.7	55.1	22.0	84.8	53.4	43.8	104.6	66.3		374.7	45.1	32.2
LOS	F	E	C	F	D	D	F	E		F	D	C
Approach Delay		150.5			51.7			76.2			153.9	
Approach LOS		F			D			E			F	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 22 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.84

Intersection Signal Delay: 115.1

Intersection LOS: F

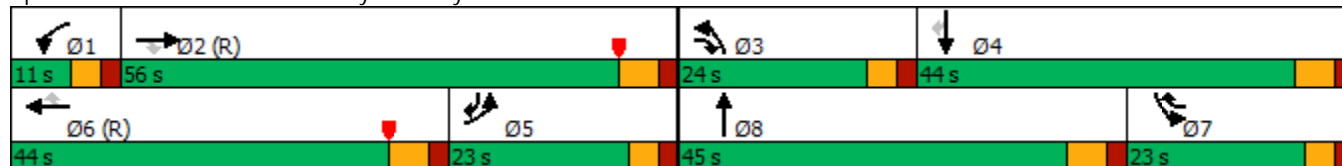
Intersection Capacity Utilization 114.9%

ICU Level of Service H

Analysis Period (min) 15

Description: Aurora
























Splits and Phases: 8: Aurora Pkwy & Smoky Hill Rd



HCM 2010 Signalized Intersection Summary

8: Aurora Pkwy & Smoky Hill Rd

07/03/2018




												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	764	1613	398	99	1088	643	447	1145	137	746	870	576
Future Volume (veh/h)	764	1613	398	99	1088	643	447	1145	137	746	870	576
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	840	1773	437	106	1170	691	497	1272	152	802	935	619
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	2	2	1
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.90	0.90	0.90	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2141	4407	1593	153	1431	654	484	1330	159	459	1022	1440
Arrive On Green	0.21	0.29	0.29	0.03	0.19	0.19	0.14	0.29	0.29	0.04	0.10	0.10
Sat Flow, veh/h	3442	5085	1581	3442	5085	1575	3442	4603	550	3442	3539	1575
Grp Volume(v), veh/h	840	1773	437	106	1170	691	497	937	487	802	935	619
Grp Sat Flow(s),veh/h/ln	1721	1695	1581	1721	1695	1575	1721	1695	1762	1721	1770	1575
Q Serve(g_s), s	28.5	38.0	8.4	4.1	29.8	38.0	19.0	36.7	36.7	18.0	35.3	13.8
Cycle Q Clear(g_c), s	28.5	38.0	8.4	4.1	29.8	38.0	19.0	36.7	36.7	18.0	35.3	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	2141	4407	1593	153	1431	654	484	979	509	459	1022	1440
V/C Ratio(X)	0.39	0.40	0.27	0.69	0.82	1.06	1.03	0.96	0.96	1.75	0.91	0.43
Avail Cap(c_a), veh/h	2141	4407	1593	153	1431	654	484	979	509	459	1022	1440
HCM Platoon Ratio	0.33	0.33	0.33	0.67	0.67	0.67	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.95	0.95	0.95	0.98	0.98	0.98	1.00	1.00	1.00	0.46	0.46	0.46
Uniform Delay (d), s/veh	31.6	20.0	2.8	64.6	51.4	45.7	58.0	47.2	47.2	64.5	59.4	22.4
Incr Delay (d2), s/veh	0.0	0.3	0.4	10.5	5.2	50.5	47.7	20.0	30.5	340.7	7.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	19.5	24.7	6.9	3.9	20.9	46.2	22.0	27.2	29.9	54.5	23.2	23.9
LnGrp Delay(d),s/veh	31.6	20.2	3.2	75.1	56.6	96.2	105.7	67.2	77.6	405.2	66.7	22.9
LnGrp LOS	C	C	A	E	E	F	F	E	E	F	E	C
Approach Vol, veh/h	3050			1967			1921			2356		
Approach Delay, s/veh	20.9			71.5			79.8			170.4		
Approach LOS	C			E			E			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	125.0	24.0	45.0	92.0	44.0	24.0	45.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	6.0	* 6	6.0	* 6				
Max Green Setting (Gmax), s	6.0	50.0	19.0	38.0	18.0	* 38	18.0	* 39				
Max Q Clear Time (g_c+I1), s	6.1	40.0	21.0	37.3	30.5	40.0	20.0	38.7				
Green Ext Time (p_c), s	0.0	6.5	0.0	0.5	0.0	0.0	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	81.7											
HCM 2010 LOS	F											
Notes												

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

Lanes, Volumes, Timings
9: Alexander/West MF Site Access




07/03/2018



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	508	0	0	29	54	531
Future Volume (vph)	508	0	0	29	54	531
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865		0.878	
Flt Protected		0.950			0.995	
Satd. Flow (prot)	0	1770	1611	0	1627	0
Flt Permitted		0.950			0.995	
Satd. Flow (perm)	0	1770	1611	0	1627	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		500	396		362	
Travel Time (s)		11.4	9.0		8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	552	0	0	32	59	577
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	552	32	0	636	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	77.3%			ICU Level of Service D		
Analysis Period (min)	15					

HCM 2010 TWSC
9: Alexander/West MF Site Access

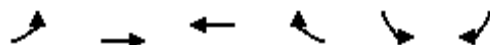
07/03/2018





Intersection						
Int Delay, s/veh	27.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	508	0	0	29	54	531
Future Vol, veh/h	508	0	0	29	54	531
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	552	0	0	32	59	577
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	32	0	-	0	1120	16
Stage 1	-	-	-	-	16	-
Stage 2	-	-	-	-	1104	-
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	1580	-	-	-	228	1063
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	317	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1580	-	-	-	148	1063
Mov Cap-2 Maneuver	-	-	-	-	148	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	317	-
Approach	EB	WB		SB		
HCM Control Delay, s	8.5	0		46		
HCM LOS				E		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1580	-	-	-	677	
HCM Lane V/C Ratio	0.349	-	-	-	0.939	
HCM Control Delay (s)	8.5	0	-	-	46	
HCM Lane LOS	A	A	-	-	E	
HCM 95th %tile Q(veh)	1.6	-	-	-	13.1	

Lanes, Volumes, Timings

10: Pronghorn Valley/East Site Access & DeGaulle

07/03/2018







Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	113	61	3	6	25
Future Volume (vph)	20	113	61	3	6	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.994			0.850
Flt Protected		0.992			0.950	
Satd. Flow (prot)	0	1848	1852	0	1770	1583
Flt Permitted		0.992			0.950	
Satd. Flow (perm)	0	1848	1852	0	1770	1583
Link Speed (mph)		30	30		25	
Link Distance (ft)		474	530		431	
Travel Time (s)		10.8	12.0		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	123	66	3	7	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	145	69	0	7	27
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 23.7%				ICU Level of Service A		
Analysis Period (min) 15						

HCM 2010 TWSC
10: Pronghorn Valley/East Site Access & DeGaulle

07/03/2018

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	113	61	3	6	25
Future Vol, veh/h	20	113	61	3	6	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	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	22	123	66	3	7	27

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	69	0	0 235 68
Stage 1	-	-	- 68 -
Stage 2	-	-	- 167 -
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	1532	-	- 753 995
Stage 1	-	-	- 955 -
Stage 2	-	-	- 863 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1532	-	- 742 995
Mov Cap-2 Maneuver	-	-	- 742 -
Stage 1	-	-	- 941 -
Stage 2	-	-	- 863 -

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1532	-	-	-	742	995
HCM Lane V/C Ratio	0.014	-	-	-	0.009	0.027
HCM Control Delay (s)	7.4	0	-	-	9.9	8.7
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	0.1

APPENDIX “C”

SIM TRAFFIC WORKSHEETS

Queuing and Blocking Report
Smoky Hill Rd - Aurora Pkwy AM Peak

Pomeroy
3/13/2018

Intersection: 1: DeGaulle & Alexander

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	52	41	71
Average Queue (ft)	22	27	56
95th Queue (ft)	62	51	86
Link Distance (ft)	510	307	259
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Alexander & Aurora Pkwy

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T
Maximum Queue (ft)	20	256	244	204	60	226	259	293	108	53	209	318
Average Queue (ft)	6	196	172	145	37	156	194	225	63	30	201	217
95th Queue (ft)	22	290	269	240	75	266	301	330	119	60	231	434
Link Distance (ft)		1332	1332	1332		1263	1263	1263		425		425
Upstream Blk Time (%)												0
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	275				290				185		185	
Storage Blk Time (%)		1				0					29	
Queuing Penalty (veh)		0				0					33	

Intersection: 2: Alexander & Aurora Pkwy

Movement	SB
Directions Served	R
Maximum Queue (ft)	76
Average Queue (ft)	40
95th Queue (ft)	93
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	185
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report Smoky Hill Rd - Aurora Pkwy AM Peak

Pomeroy
3/13/2018

Intersection: 3: RIRO & Aurora Pkwy

Movement	B24	B24	NB
Directions Served	T	T	R
Maximum Queue (ft)	3	4	41
Average Queue (ft)	1	1	26
95th Queue (ft)	8	10	51
Link Distance (ft)	233	233	298
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Aurora Pkwy & Pronghorn Valley

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	167	279	111	81	144	191	221	234	47	269	248	246
Average Queue (ft)	128	172	62	44	97	126	159	173	11	197	182	181
95th Queue (ft)	197	378	120	96	163	221	252	266	68	313	296	292
Link Distance (ft)		440		388		575	575	575		233	233	233
Upstream Blk Time (%)		5								9	8	8
Queuing Penalty (veh)		0								62	54	57
Storage Bay Dist (ft)	150		150		150				150			
Storage Blk Time (%)	18	4	1		3	4				21		
Queuing Penalty (veh)	45	9	0		15	7				2		

Intersection: 4: Aurora Pkwy & Pronghorn Valley

Movement	B24	B24	B24
Directions Served	T	T	T
Maximum Queue (ft)	75	56	54
Average Queue (ft)	26	21	21
95th Queue (ft)	140	117	120
Link Distance (ft)	670	670	670
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Please identify mitigating measure (additional length is an acceptable solution).

SimTraffic Queuing and Blocking Reports have been updated.

Queuing and Blocking Report
Smoky Hill Rd - Aurora Pkwy AM Peak

Pomeroy
3/13/2018

Intersection: 5: Aurora Pkwy & Orchard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	B20	SB
Directions Served	L	T	R	L	T	R	L	T	T	TR	T	L
Maximum Queue (ft)	43	13	64	60	36	208	116	268	304	317	8	209
Average Queue (ft)	22	3	31	34	14	152	42	181	199	211	2	150
95th Queue (ft)	52	15	70	69	45	229	142	333	358	374	19	234
Link Distance (ft)		140	140		341	341		325	325	325	839	
Upstream Blk Time (%)								1	1	3		
Queuing Penalty (veh)								5	7	14		
Storage Bay Dist (ft)	125			190			280					290
Storage Blk Time (%)								3				0
Queuing Penalty (veh)								2				0

Intersection: 5: Aurora Pkwy & Orchard

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (ft)	240	256	259	108
Average Queue (ft)	156	168	176	51
95th Queue (ft)	270	296	293	129
Link Distance (ft)	575	575	575	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				100
Storage Blk Time (%)	0		29	0
Queuing Penalty (veh)	0		25	0

Queuing and Blocking Report
Smoky Hill Rd - Aurora Pkwy AM Peak

Pomeroy
3/13/2018

Intersection: 6: Aurora Pkwy & Commons/Applewood

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	R	L	T	R	L	T	T	T	R	L
Maximum Queue (ft)	62	22	44	148	34	48	73	104	99	126	12	32
Average Queue (ft)	35	7	26	93	17	27	46	51	54	66	3	12
95th Queue (ft)	71	27	53	162	41	58	81	119	121	153	16	40
Link Distance (ft)		539	539		482			1261	1261	1261		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	130			230		230	280				210	260
Storage Blk Time (%)				0						0		
Queuing Penalty (veh)				0						0		

Intersection: 6: Aurora Pkwy & Commons/Applewood

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (ft)	285	276	268	125
Average Queue (ft)	204	196	183	40
95th Queue (ft)	328	319	307	132
Link Distance (ft)	839	839	839	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				140
Storage Blk Time (%)	5		12	0
Queuing Penalty (veh)	0		8	0

Queuing and Blocking Report
Smoky Hill Rd - Aurora Pkwy AM Peak

Pomeroy
3/13/2018

Intersection: 7: Aurora Pkwy & Southlands

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (ft)	71	30	66	5	33	72	96	113	118	118	82	165
Average Queue (ft)	43	15	42	2	12	41	58	61	67	76	44	86
95th Queue (ft)	86	39	75	12	38	76	114	124	135	130	91	175
Link Distance (ft)		433	433		496	496		803	803	803		233
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240			180			390				215	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 7: Aurora Pkwy & Southlands

Movement	SB	SB	B15
Directions Served	T	TR	T
Maximum Queue (ft)	164	175	128
Average Queue (ft)	77	90	26
95th Queue (ft)	175	191	320
Link Distance (ft)	233	233	1261
Upstream Blk Time (%)	0	0	0
Queuing Penalty (veh)	0	1	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
Smoky Hill Rd - Aurora Pkwy AM Peak

Pomeroy
3/13/2018

Intersection: 8: Aurora Pkwy & Smoky Hill Rd

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	177	203	296	257	204	90	62	239	430	485	558	281
Average Queue (ft)	128	145	230	186	157	52	36	125	350	362	413	246
95th Queue (ft)	238	256	322	267	228	113	79	302	488	555	671	357
Link Distance (ft)			1740	1740	1740				2575	2575	2575	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	335	335				395	260	260				260
Storage Blk Time (%)	0	1	0					0	20		16	4
Queuing Penalty (veh)	0	2	1					0	20		111	23

Intersection: 8: Aurora Pkwy & Smoky Hill Rd

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	TR	L	L	T	T	R
Maximum Queue (ft)	200	233	227	185	138	237	258	448	376	448
Average Queue (ft)	142	187	172	135	80	172	194	258	235	280
95th Queue (ft)	232	257	247	211	167	278	294	483	392	504
Link Distance (ft)			862	862				803	803	803
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	380	380			465	235	235			
Storage Blk Time (%)						2	9	5		
Queuing Penalty (veh)						8	38	27		

Zone Summary

Zone wide Queuing Penalty: 581

Queuing and Blocking Report

Smoky Hill - Aurora Pkwy PM Peak

Pomeroy
3/13/2018

Intersection: 1: DeGaulle & Alexander

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	51	37	117
Average Queue (ft)	16	20	69
95th Queue (ft)	54	48	156
Link Distance (ft)	504	403	397
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Alexander & Aurora Pkwy

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T
Maximum Queue (ft)	157	386	462	523	118	182	224	303	210	439	206	318
Average Queue (ft)	84	300	319	388	68	109	138	190	209	411	192	209
95th Queue (ft)	210	416	504	602	147	195	238	319	213	497	239	432
Link Distance (ft)		1332	1332	1332		1241	1241	1241		424		360
Upstream Blk Time (%)										26		3
Queuing Penalty (veh)										0		9
Storage Bay Dist (ft)	275				290				185		185	
Storage Blk Time (%)		9							56	0	25	0
Queuing Penalty (veh)		6							13	0	7	1

Intersection: 2: Alexander & Aurora Pkwy

Movement	SB	B33
Directions Served	R	T
Maximum Queue (ft)	39	14
Average Queue (ft)	14	3
95th Queue (ft)	44	24
Link Distance (ft)		342
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	185	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Smoky Hill - Aurora Pkwy PM Peak

Pomeroy
3/13/2018

Intersection: 3: RIRO & Aurora Pkwy

Movement	EB	NB
Directions Served	TR	R
Maximum Queue (ft)	130	50
Average Queue (ft)	26	31
95th Queue (ft)	310	64
Link Distance (ft)	1241	253
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Aurora Pkwy & Pronghorn Valley

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	174	380	77	87	160	206	193	233	133	279	269	269
Average Queue (ft)	157	243	40	48	103	108	112	148	55	239	205	203
95th Queue (ft)	207	461	90	110	182	246	228	275	150	343	318	313
Link Distance (ft)		485		458		578	578	578		219	219	219
Upstream Blk Time (%)		4								12	7	8
Queuing Penalty (veh)		0								84	44	51
Storage Bay Dist (ft)	150		150		150				150			
Storage Blk Time (%)	39	14		0	6	0				15		
Queuing Penalty (veh)	80	22		0	36	1				6		

Intersection: 4: Aurora Pkwy & Pronghorn Valley

Movement	B24	B24	B24
Directions Served	T	T	T
Maximum Queue (ft)	206	104	104
Average Queue (ft)	72	35	34
95th Queue (ft)	242	137	132
Link Distance (ft)	704	704	704
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
Smoky Hill - Aurora Pkwy PM Peak

Pomeroy
3/13/2018

Intersection: 5: Aurora Pkwy & Orchard

Movement	EB	EB	EB	B48	WB	WB	WB	NB	NB	NB	NB	B20
Directions Served	L	T	R	T	L	T	R	L	T	T	TR	T
Maximum Queue (ft)	135	197	121	46	65	129	172	274	392	392	408	34
Average Queue (ft)	107	123	69	16	32	78	101	129	248	266	291	7
95th Queue (ft)	159	242	141	76	73	154	193	284	422	430	455	50
Link Distance (ft)		140	140	580		341	341		325	325	325	839
Upstream Blk Time (%)	7	14	1						8	11	16	
Queuing Penalty (veh)	0	0	0						54	69	101	
Storage Bay Dist (ft)	125				190			280				
Storage Blk Time (%)	22	12				0		0	12			
Queuing Penalty (veh)	26	21				0		0	24			

Intersection: 5: Aurora Pkwy & Orchard

Movement	B20	B20	SB	SB	SB	SB	SB
Directions Served	T	T	L	T	T	T	R
Maximum Queue (ft)	39	54	305	408	325	276	86
Average Queue (ft)	8	11	215	216	147	134	40
95th Queue (ft)	54	65	385	497	340	283	108
Link Distance (ft)	839	839		578	578	578	
Upstream Blk Time (%)				0			
Queuing Penalty (veh)				2			
Storage Bay Dist (ft)			290			100	
Storage Blk Time (%)			16	0	7	0	
Queuing Penalty (veh)			84	1	12	0	

Intersection: 6: Aurora Pkwy & Commons/Applewood

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	R	L	T	R	L	T	T	T	R	L
Maximum Queue (ft)	106	75	222	126	36	26	252	338	334	344	214	240
Average Queue (ft)	71	33	144	76	15	10	147	177	183	199	79	69
95th Queue (ft)	124	86	254	142	42	30	277	361	357	372	246	229
Link Distance (ft)		539	539		482			1261	1261	1261		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	130			230		230	280				210	260
Storage Blk Time (%)	1						1	1		7	0	
Queuing Penalty (veh)	1						5	5		10	0	

Intersection: 6: Aurora Pkwy & Commons/Applewood

Movement	SB	SB	SB	SB	B20
Directions Served	T	T	T	R	T
Maximum Queue (ft)	420	400	372	134	23
Average Queue (ft)	268	246	235	48	5
95th Queue (ft)	503	466	454	158	58
Link Distance (ft)	839	839	839		325
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				140	
Storage Blk Time (%)	11		16	0	
Queuing Penalty (veh)	6		12	0	

Queuing and Blocking Report
Smoky Hill - Aurora Pkwy PM Peak

Pomeroy
3/13/2018

Intersection: 7: Aurora Pkwy & Southlands

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (ft)	147	106	242	29	64	80	262	291	280	286	215	303
Average Queue (ft)	88	49	160	10	39	52	187	234	224	238	127	216
95th Queue (ft)	166	124	292	37	82	100	294	320	311	320	228	349
Link Distance (ft)		433	433		496	496		803	803	803		233
Upstream Blk Time (%)			0								0	10
Queuing Penalty (veh)			0								0	70
Storage Bay Dist (ft)	240			180			390				215	
Storage Blk Time (%)											0	13
Queuing Penalty (veh)											1	22

Intersection: 7: Aurora Pkwy & Southlands

Movement	SB	SB	B29	B29	B29	B15	B15
Directions Served	T	TR	T	T	T	T	T
Maximum Queue (ft)	266	248	158	36	18	128	128
Average Queue (ft)	175	161	43	9	6	26	26
95th Queue (ft)	309	295	186	66	47	313	323
Link Distance (ft)	233	233	244	244	244	1261	1261
Upstream Blk Time (%)	3	3	2				0
Queuing Penalty (veh)	20	22	11				0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Queuing and Blocking Report
Smoky Hill - Aurora Pkwy PM Peak

Pomeroy
3/13/2018

Intersection: 8: Aurora Pkwy & Smoky Hill Rd

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	347	359	979	904	472	314	73	188	295	425	548	284
Average Queue (ft)	328	343	758	687	334	156	44	93	237	268	350	252
95th Queue (ft)	391	408	1200	1064	504	353	92	220	323	468	658	328
Link Distance (ft)			1740	1740	1740				2575	2575	2575	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	335	335				395	260	260				260
Storage Blk Time (%)	13	47	4		3	0		0	5		1	21
Queuing Penalty (veh)	67	251	28		10	0		0	5		7	78

Intersection: 8: Aurora Pkwy & Smoky Hill Rd

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	TR	L	L	T	T	R
Maximum Queue (ft)	285	391	630	573	341	247	259	756	526	276
Average Queue (ft)	233	339	498	428	278	207	230	470	308	189
95th Queue (ft)	344	472	763	664	382	307	309	881	576	308
Link Distance (ft)			862	862				803	803	803
Upstream Blk Time (%)			0	0				5	0	
Queuing Penalty (veh)			0	0				37	0	
Storage Bay Dist (ft)	380	380			465	235	235			
Storage Blk Time (%)	0	2	14	0		9	30	3		
Queuing Penalty (veh)	1	7	63	2		41	130	20		

Zone Summary

Zone wide Queuing Penalty: 1692

APPENDIX “D”

**TRAFFIC SIGNAL WARRANT ANALYSES
WORKSHEETS**

Warrant 1 2019 Total AM 8th hr west only

Warrant 1: Eight-hour Vehicular Volume 4: Aurora Pkwy & Pronghorn Valley

Intersection Information:

Major Street	Aurora Pkwy
Major Direction	NB/SB
Minor Direction	EB/WB

Warrant 1 Met?

Yes

Details:

Condition A or B Met?	Yes	8 Hours met (8 required)
Condition A and B Met?	Yes	8 Hours met (8 required)

Hour	Major Street Vehicles (total of both approaches)										70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
		Condition A		Condition B		Condition A		Condition B			Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
		Volume >= 70% column (420)?	Volume >= 56% column (336)?	Volume >= 70% column (630)?	Volume >= 56% column (504)?	High-volume Minor Approach Vehicles	Volume >= 70% column (140)?	Volume >= 56% column (112)?	Volume >= 70% column (70)?	Volume >= 56% column (56)?				
00:00 to 01:00	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
00:15 to 01:15	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Warrant 1: Eight-hour Vehicular Volume 4: Aurora Pkwy & Pronghorn Valley

00:30 to 01:30	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
00:45 to 01:45	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
01:00 to 02:00	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
01:15 to 02:15	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
01:30 to 02:30	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
01:45 to 02:45	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
02:00 to 03:00	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
02:15 to 03:15	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
02:30 to 03:30	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
02:45 to 03:45	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
03:00 to 04:00	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
03:15 to 04:15	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
03:30 to 04:30	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
03:45 to 04:45	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
04:00 to 05:00	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
04:15 to 05:15	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
04:30 to 05:30	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Warrant 1: Eight-hour Vehicular Volume 4: Aurora Pkwy & Pronghorn Valley

04:45 to 05:45	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
05:00 to 06:00	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
05:15 to 06:15	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
05:30 to 06:30	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
05:45 to 06:45	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
06:00 to 07:00	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
06:15 to 07:15	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
06:30 to 07:30	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
06:45 to 07:45	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
07:00 to 08:00	2075	Yes	Yes	Yes	Yes	256	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
07:15 to 08:15	1554	Yes	Yes	Yes	Yes	192	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
07:30 to 08:30	1036	Yes	Yes	Yes	Yes	128	No	Yes	Yes	Yes	Yes	No	Yes	Yes
07:45 to 08:45	518	Yes	Yes	No	Yes	64	No	No	No	Yes	Yes	No	No	Yes

Warrant 1 2019 Total AM 8th hr

Warrant 1: Eight-hour Vehicular Volume 4: Aurora Pkwy & Pronghorn Valley

Intersection Information:

Major Street	Aurora Pkwy
Major Direction	NB/SB
Minor Direction	EB/WB

Warrant 1 Met?

Yes

Details:

Condition A or B Met?	Yes	8 Hours met (8 required)
Condition A and B Met?	Yes	8 Hours met (8 required)

Hour											70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
	Major Street Vehicles (total of both approaches)	Condition A		Condition B		Condition A		Condition B			Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
		Volume >= 70% column (420)?	Volume >= 56% column (336)?	Volume >= 70% column (630)?	Volume >= 56% column (504)?	High-volume Minor Approach Vehicles	Volume >= 70% column (140)?	Volume >= 56% column (112)?	Volume >= 70% column (70)?	Volume >= 56% column (56)?				
00:00 to 01:00	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
00:15 to 01:15	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Warrant 1: Eight-hour Vehicular Volume 4: Aurora Pkwy & Pronghorn Valley

00:30 to 01:30	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
00:45 to 01:45	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
01:00 to 02:00	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
01:15 to 02:15	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
01:30 to 02:30	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
01:45 to 02:45	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
02:00 to 03:00	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
02:15 to 03:15	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
02:30 to 03:30	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
02:45 to 03:45	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
03:00 to 04:00	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
03:15 to 04:15	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
03:30 to 04:30	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
03:45 to 04:45	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
04:00 to 05:00	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
04:15 to 05:15	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
04:30 to 05:30	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Warrant 1: Eight-hour Vehicular Volume 4: Aurora Pkwy & Pronghorn Valley

04:45 to 05:45	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
05:00 to 06:00	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*	Yes*
05:15 to 06:15	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
05:30 to 06:30	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
05:45 to 06:45	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
06:00 to 07:00	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*	Yes*
06:15 to 07:15	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
06:30 to 07:30	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
06:45 to 07:45	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
07:00 to 08:00	2091	Yes	Yes	Yes	Yes	278	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*	Yes*
07:15 to 08:15	1565	Yes	Yes	Yes	Yes	209	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
07:30 to 08:30	1043	Yes	Yes	Yes	Yes	140	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
07:45 to 08:45	521	Yes	Yes	No	Yes	70	No	No	Yes	Yes	No	No	No	Yes

Warrant 1 2019 Total PM 8th hr

Warrant 1: Eight-hour Vehicular Volume 4: Aurora Pkwy & Pronghorn Valley

Intersection Information:

Major Street	Aurora Pkwy
Major Direction	NB/SB
Minor Direction	EB/WB

Warrant 1 Met?

Yes

Details:

Condition A or B Met?	Yes	8 Hours met (8 required)
Condition A and B Met?	Yes	8 Hours met (8 required)

Hour											70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
	Major Street Vehicles (total of both approaches)	Condition A		Condition B		Condition A		Condition B			Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
		Volume >= 70% column (420)?	Volume >= 56% column (336)?	Volume >= 70% column (630)?	Volume >= 56% column (504)?	High-volume Minor Approach Vehicles	Volume >= 70% column (140)?	Volume >= 56% column (112)?	Volume >= 70% column (70)?	Volume >= 56% column (56)?				
00:00 to 01:00	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
00:15 to 01:15	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Warrant 1: Eight-hour Vehicular Volume 4: Aurora Pkwy & Pronghorn Valley

00:30 to 01:30	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
00:45 to 01:45	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
01:00 to 02:00	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
01:15 to 02:15	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
01:30 to 02:30	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
01:45 to 02:45	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
02:00 to 03:00	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
02:15 to 03:15	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
02:30 to 03:30	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
02:45 to 03:45	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
03:00 to 04:00	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
03:15 to 04:15	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
03:30 to 04:30	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
03:45 to 04:45	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
04:00 to 05:00	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
04:15 to 05:15	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
04:30 to 05:30	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Warrant 1: Eight-hour Vehicular Volume 4: Aurora Pkwy & Pronghorn Valley

04:45 to 05:45	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
05:00 to 06:00	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
05:15 to 06:15	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
05:30 to 06:30	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
05:45 to 06:45	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
06:00 to 07:00	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
06:15 to 07:15	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
06:30 to 07:30	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
06:45 to 07:45	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
07:00 to 08:00	2207	Yes	Yes	Yes	Yes	227	Yes	Yes	Yes	Yes	Yes	Yes*	Yes*	Yes*
07:15 to 08:15	1653	Yes	Yes	Yes	Yes	170	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
07:30 to 08:30	1100	Yes	Yes	Yes	Yes	112	No	Yes	Yes	Yes	Yes	No	Yes	Yes
07:45 to 08:45	548	Yes	Yes	No	Yes	56	No	No	No	Yes	Yes	No	No	Yes

Warrant 2 2019 Total AM 4th hr west only

Warrant 2: Four-hour Vehicular Volume

4: Aurora Pkwy & Pronghorn Valley

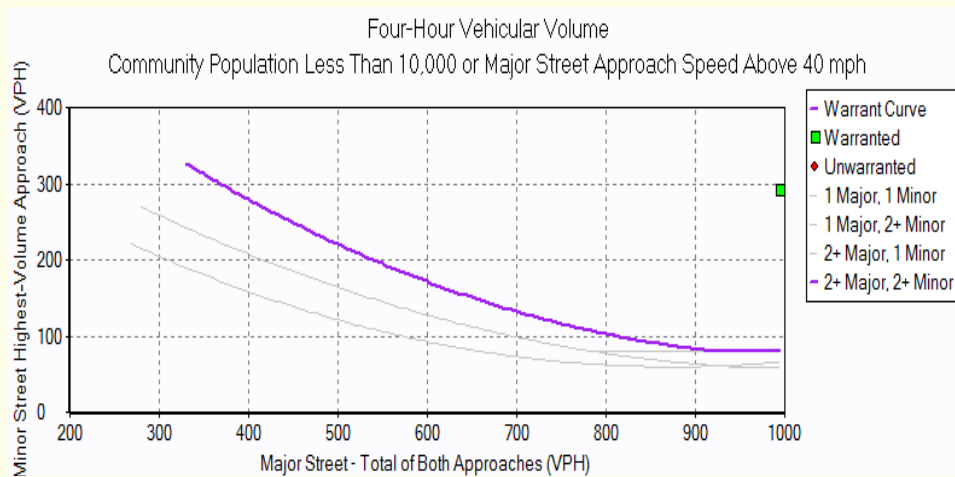
Intersection Information

	Major Street	Minor Street
Street Name	Aurora Pkwy	Pronghorn Valley
Direction	NB/SB	EB/WB
Number of Lanes	2	2
Approach Speed	45	30

Warrant 2 Met? Yes

Details:

Notes:	4 Hours met (4 required)
Low Population?	No



Warrant 2: Four-hour Vehicular Volume

4: Aurora Pkwy & Pronghorn Valley

Please update time-of-day distribution.

Hourly Volumes

Hour	Major Street Total of both Approaches (vph)	Minor Street Highest Volume Approach (vph)
00:00:00 - 01:00:00	2,350.00	291.00
01:00:00 - 02:00:00	2,350.00	291.00
02:00:00 - 03:00:00	2,350.00	291.00
03:00:00 - 04:00:00	2,350.00	291.00
04:00:00 - 05:00:00	0.00	0.00
05:00:00 - 06:00:00	0.00	0.00
06:00:00 - 07:00:00	0.00	0.00
07:00:00 - 08:00:00	0.00	0.00
08:00:00 - 09:00:00	0.00	0.00
09:00:00 - 10:00:00	0.00	0.00
10:00:00 - 11:00:00	0.00	0.00
11:00:00 - 12:00:00	0.00	0.00
12:00:00 - 13:00:00	0.00	0.00
13:00:00 - 14:00:00	0.00	0.00
14:00:00 - 15:00:00	0.00	0.00
15:00:00 - 16:00:00	0.00	0.00
16:00:00 - 17:00:00	0.00	0.00
17:00:00 - 18:00:00	0.00	0.00
18:00:00 - 19:00:00	0.00	0.00
19:00:00 - 20:00:00	0.00	0.00
20:00:00 - 21:00:00	0.00	0.00
21:00:00 - 22:00:00	0.00	0.00
22:00:00 - 23:00:00	0.00	0.00
23:00:00 - 00:00:00	0.00	0.00

Warrant 2: Four-hour Vehicular Volume

4: Aurora Pkwy & Pronghorn Valley

Warranted Hours		
Hour	Major Street Total of Both Approaches (VPH)	Minor Street Highest Volume Approach (VPH)
00:00:00 - 01:00:00	2,350	291
01:00:00 - 02:00:00	2,350	291
02:00:00 - 03:00:00	2,350	291
03:00:00 - 04:00:00	2,350	291

Note: Only data of hours warranted is represented in the above table.

Warrant 2 2019 Total AM 4th hr

Warrant 2: Four-hour Vehicular Volume

4: Aurora Pkwy & Pronghorn Valley

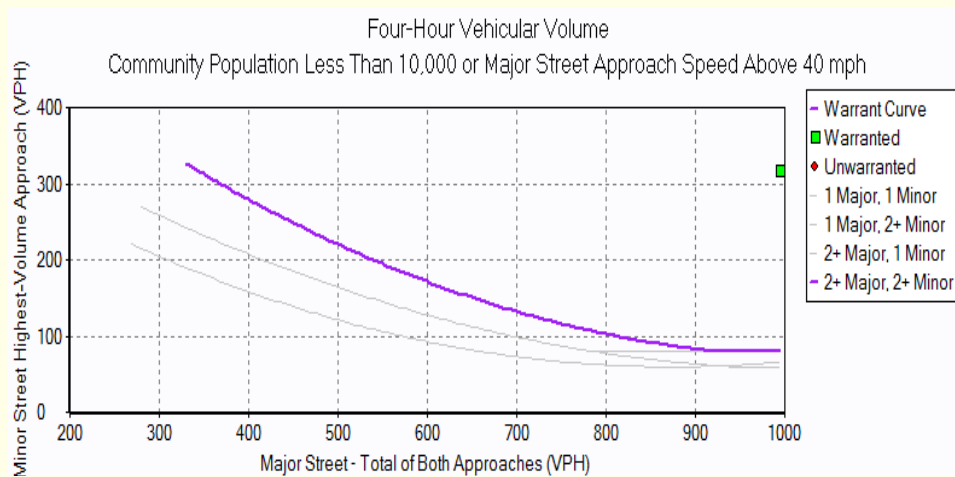
Intersection Information

	Major Street	Minor Street
Street Name	Aurora Pkwy	Pronghorn Valley
Direction	NB/SB	EB/WB
Number of Lanes	2	2
Approach Speed	45	30

Warrant 2 Met? Yes

Details:

Notes:	4 Hours met (4 required)
Low Population?	No



Warrant 2: Four-hour Vehicular Volume

4: Aurora Pkwy & Pronghorn Valley

This seems like very unrealistic time of day traffic distributions. Please update to ensure some trips in each vph (maybe not all between midnight and 4am?).

Hourly Volumes

	Major Street Total of both Approaches (vph)	Minor Street Highest Volume Approach (vph)
00:00	1,220.00	316.00
00:00	1,220.00	316.00
00:00	1,220.00	316.00
00:00	1,220.00	316.00
04:00:00 - 05:00:00	0.00	0.00
05:00:00 - 06:00:00	0.00	0.00
06:00:00 - 07:00:00	0.00	0.00
07:00:00 - 08:00:00	0.00	0.00
08:00:00 - 09:00:00	0.00	0.00
09:00:00 - 10:00:00	0.00	0.00
10:00:00 - 11:00:00	0.00	0.00
11:00:00 - 12:00:00	0.00	0.00
12:00:00 - 13:00:00	0.00	0.00
13:00:00 - 14:00:00	0.00	0.00
14:00:00 - 15:00:00	0.00	0.00
15:00:00 - 16:00:00	0.00	0.00
16:00:00 - 17:00:00	0.00	0.00
17:00:00 - 18:00:00	0.00	0.00
18:00:00 - 19:00:00	0.00	0.00
19:00:00 - 20:00:00	0.00	0.00
20:00:00 - 21:00:00	0.00	0.00
21:00:00 - 22:00:00	0.00	0.00
22:00:00 - 23:00:00	0.00	0.00
23:00:00 - 00:00:00	0.00	0.00

Warrant 2: Four-hour Vehicular Volume

4: Aurora Pkwy & Pronghorn Valley

Warranted Hours		
Hour	Major Street Total of Both Approaches (VPH)	Minor Street Highest Volume Approach (VPH)
00:00:00 - 01:00:00	1,220	316
01:00:00 - 02:00:00	1,220	316
02:00:00 - 03:00:00	1,220	316
03:00:00 - 04:00:00	1,220	316

Note: Only data of hours warranted is represented in the above table.

Warrant 2 2019 Total PM 4th hr

Warrant 2: Four-hour Vehicular Volume

4: Aurora Pkwy & Pronghorn Valley

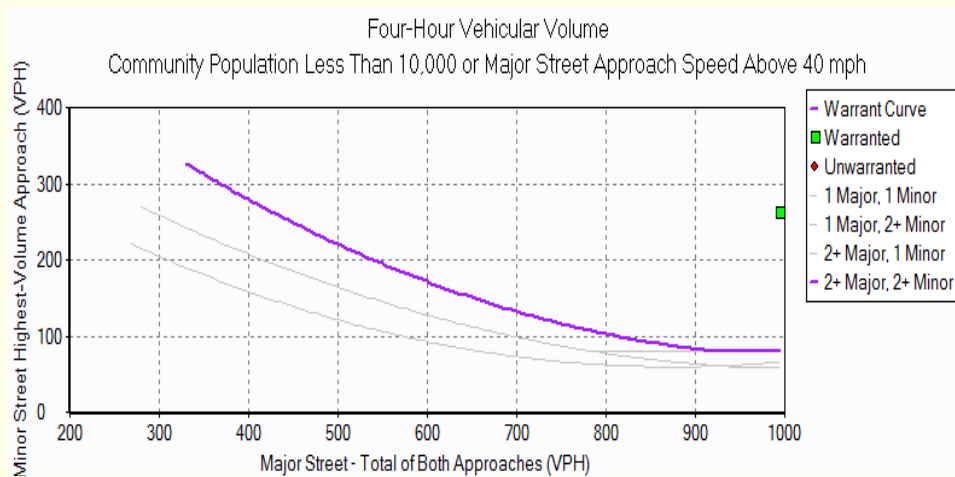
Intersection Information

	Major Street	Minor Street
Street Name	Aurora Pkwy	Pronghorn Valley
Direction	NB/SB	EB/WB
Number of Lanes	2	2
Approach Speed	45	30

Warrant 2 Met? Yes

Details:

Notes:	4 Hours met (4 required)
Low Population?	No



Warrant 2: Four-hour Vehicular Volume

4: Aurora Pkwy & Pronghorn Valley

Hourly Volumes

Hour	Major Street Total of both Approaches (vph)	Minor Street Highest Volume Approach (vph)
00:00:00 - 01:00:00	2,499.00	262.00
01:00:00 - 02:00:00	2,499.00	262.00
02:00:00 - 03:00:00	2,499.00	262.00
03:00:00 - 04:00:00	2,499.00	262.00
04:00:00 - 05:00:00	0.00	0.00
05:00:00 - 06:00:00	0.00	0.00
06:00:00 - 07:00:00	0.00	0.00
07:00:00 - 08:00:00	0.00	0.00
08:00:00 - 09:00:00	0.00	0.00
09:00:00 - 10:00:00	0.00	0.00
10:00:00 - 11:00:00	0.00	0.00
11:00:00 - 12:00:00	0.00	0.00
12:00:00 - 13:00:00	0.00	0.00
13:00:00 - 14:00:00	0.00	0.00
14:00:00 - 15:00:00	0.00	0.00
15:00:00 - 16:00:00	0.00	0.00
16:00:00 - 17:00:00	0.00	0.00
17:00:00 - 18:00:00	0.00	0.00
18:00:00 - 19:00:00	0.00	0.00
19:00:00 - 20:00:00	0.00	0.00
20:00:00 - 21:00:00	0.00	0.00
21:00:00 - 22:00:00	0.00	0.00
22:00:00 - 23:00:00	0.00	0.00
23:00:00 - 00:00:00	0.00	0.00

Warrant 2: Four-hour Vehicular Volume

4: Aurora Pkwy & Pronghorn Valley

Warranted Hours		
Hour	Major Street Total of Both Approaches (VPH)	Minor Street Highest Volume Approach (VPH)
00:00:00 - 01:00:00	2,499	262
01:00:00 - 02:00:00	2,499	262
02:00:00 - 03:00:00	2,499	262
03:00:00 - 04:00:00	2,499	262

Note: Only data of hours warranted is represented in the above table.

Warrant 3 2019 Total AM

Warrant 3: Peak Hour

4: Aurora Pkwy & Pronghorn Valley

Intersection Information:

Major Street		Minor Street
Street Name	Aurora Pkwy	Pronghorn Valley
Direction	NB/SB	EB/WB
Number of Lanes	2	2
Approach Speed	45	30

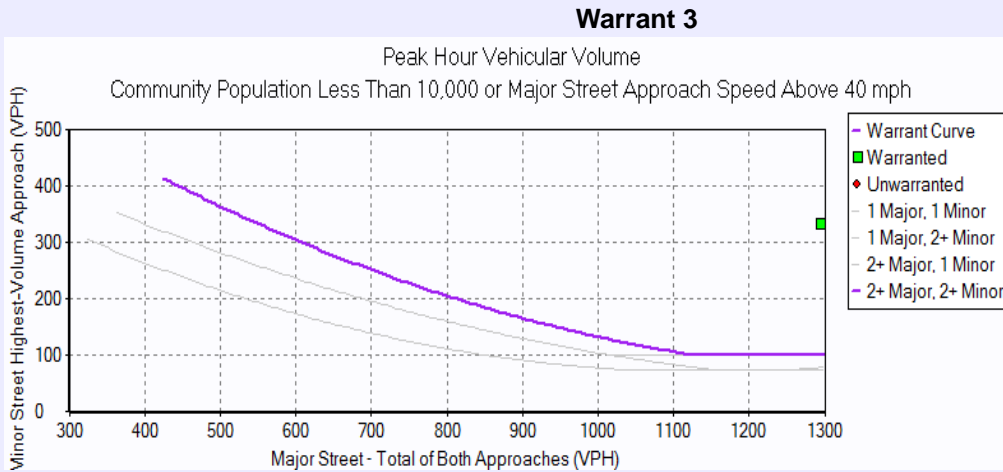
Warrant 3 Met? Yes

Details:

Low Population?	No
Condition A Met?	No
Notes:	0 Hours met (1 required)
Minor Approach Time Delay Condition	Not Met
Minor Approach Volume Condition	Met
Total Entering Intersection Volume Condition	Not Met
Condition B Met?	Yes
Notes:	1 Hours met (1 required)

Warrant 3: Peak Hour

4: Aurora Pkwy & Pronghorn Valley



Note: Please turn over for volume information.

Warrant 3: Peak Hour

4: Aurora Pkwy & Pronghorn Valley

Warranted / Unwarranted

Hour	Major Street Total of both approaches (VPH)	Minor Street Highest volume approach (VPH)
0:00	2500	333

Warrant 3 2019 Total PM

Warrant 3: Peak Hour

4: Aurora Pkwy & Pronghorn Valley

Intersection Information:

Major Street		Minor Street
Street Name	Aurora Pkwy	Pronghorn Valley
Direction	NB/SB	EB/WB
Number of Lanes	2	2
Approach Speed	45	30

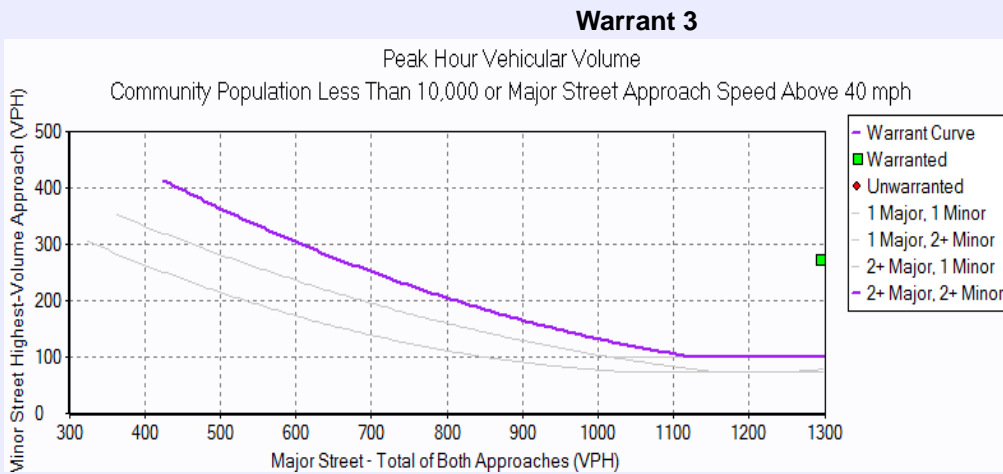
Warrant 3 Met? Yes

Details:

Low Population?	No
Condition A Met?	No
Notes:	0 Hours met (1 required)
Minor Approach Time Delay Condition	Not Met
Minor Approach Volume Condition	Met
Total Entering Intersection Volume Condition	Not Met
Condition B Met?	Yes
Notes:	1 Hours met (1 required)

Warrant 3: Peak Hour

4: Aurora Pkwy & Pronghorn Valley



Note: Please turn over for volume information.

Warrant 3: Peak Hour

4: Aurora Pkwy & Pronghorn Valley

Warranted / Unwarranted

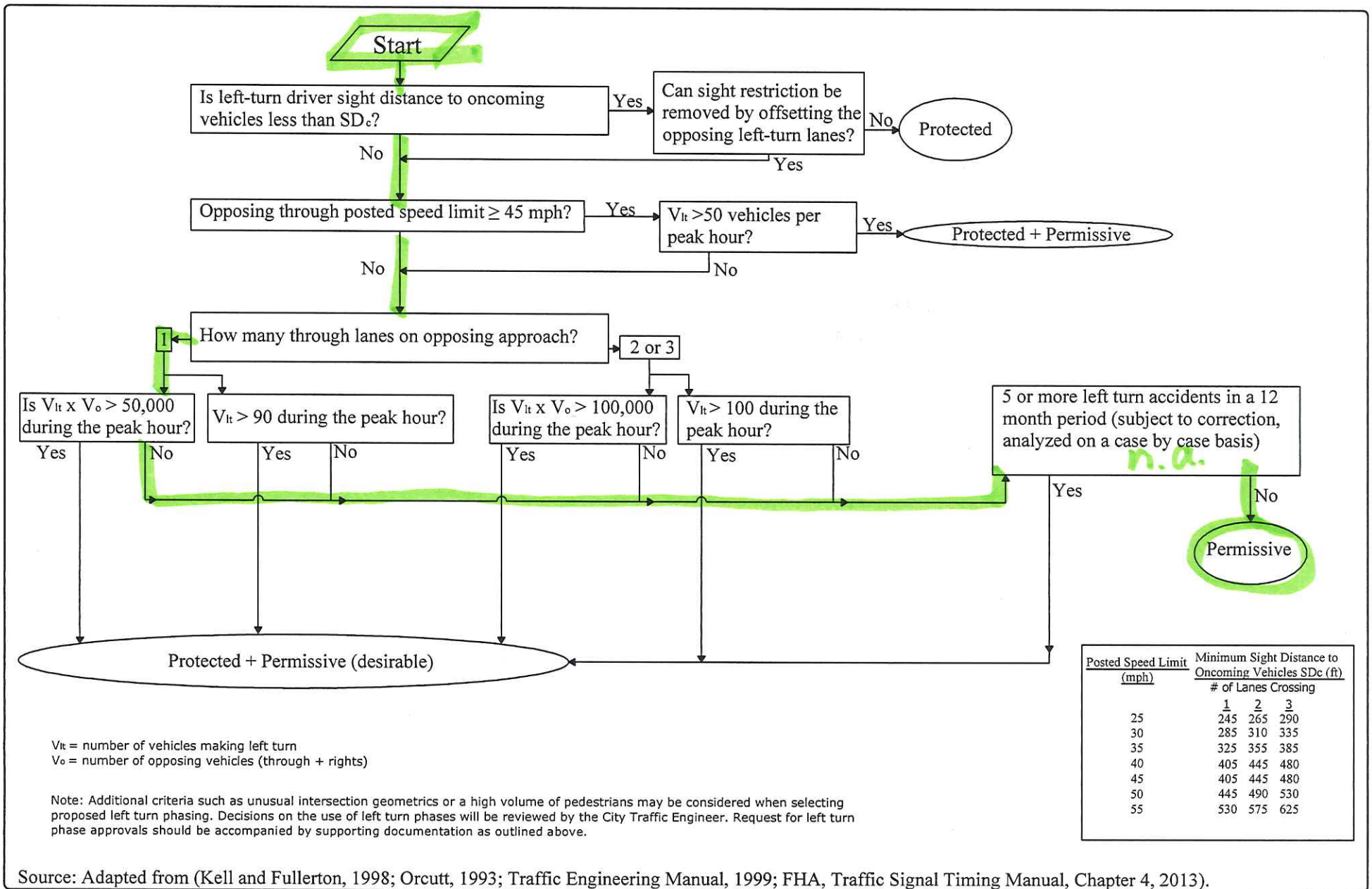
Hour	Major Street Total of both approaches (VPH)	Minor Street Highest volume approach (VPH)
0:00	2641	272



APPENDIX “E”

**CITY OF AURORA PROTECTED+PERMISSIVE
WORKSHEET**





EB/WB LEFT TURNS AT AURORA PKWY & PRONGHORN VALLEY RD

		VLT	VLT > 90?	V0	VLT x V0	> 50,000?
2019 Tot AM	EB L	196	YES	35	6860	NO
	WB L	66	NO	26	1716	NO
2019 Tot PM	EB L	157	YES	28	4396	NO
	WB L	35	NO	26	910	NO
2037 Tot AM	EB L	196	YES	25	4900	NO
	WB L	66	NO	26	1716	NO
2037 Tot PM	EB L	157	YES	28	4396	NO
	WB L	35	NO	26	910	NO

EB/WB LEFT TURNS AT AURORA PKWY & ALEXANDER

		VLT	VLT > 100?	V0	VLT x V0	> 100,000?
2019 Tot AM	EB L	5	NO	1263	6315	NO
	WB L	13	NO	1112	14456	NO
2019 Tot PM	EB L	46	NO	1221	56166	NO
	WB L	50	NO	1524	76200	NO
2037 Tot AM	EB L	8	NO	1953	15624	NO
	WB L	19	NO	1717	32623	NO
2037 Tot PM	EB L	75	NO	1931	144825	YES
	WB L	79	NO	2325	183675	YES

NB/SB LEFT TURNS AT AURORA PKWY & ALEXANDER

		VLT	VLT > 90?	V0	VLT x V0	> 50,000?
2019 Tot AM	NB L	125	YES	70	8750	NO
	SB L	338	YES	37	12506	NO
2019 Tot PM	NB L	367	YES	19	6973	NO
	SB L	234	YES	17	3978	NO
2037 Tot AM	NB L	148	YES	115	17020	NO
	SB L	557	YES	59	32863	NO
2037 Tot PM	NB L	551	YES	30	16530	NO
	SB L	386	YES	26	10036	NO