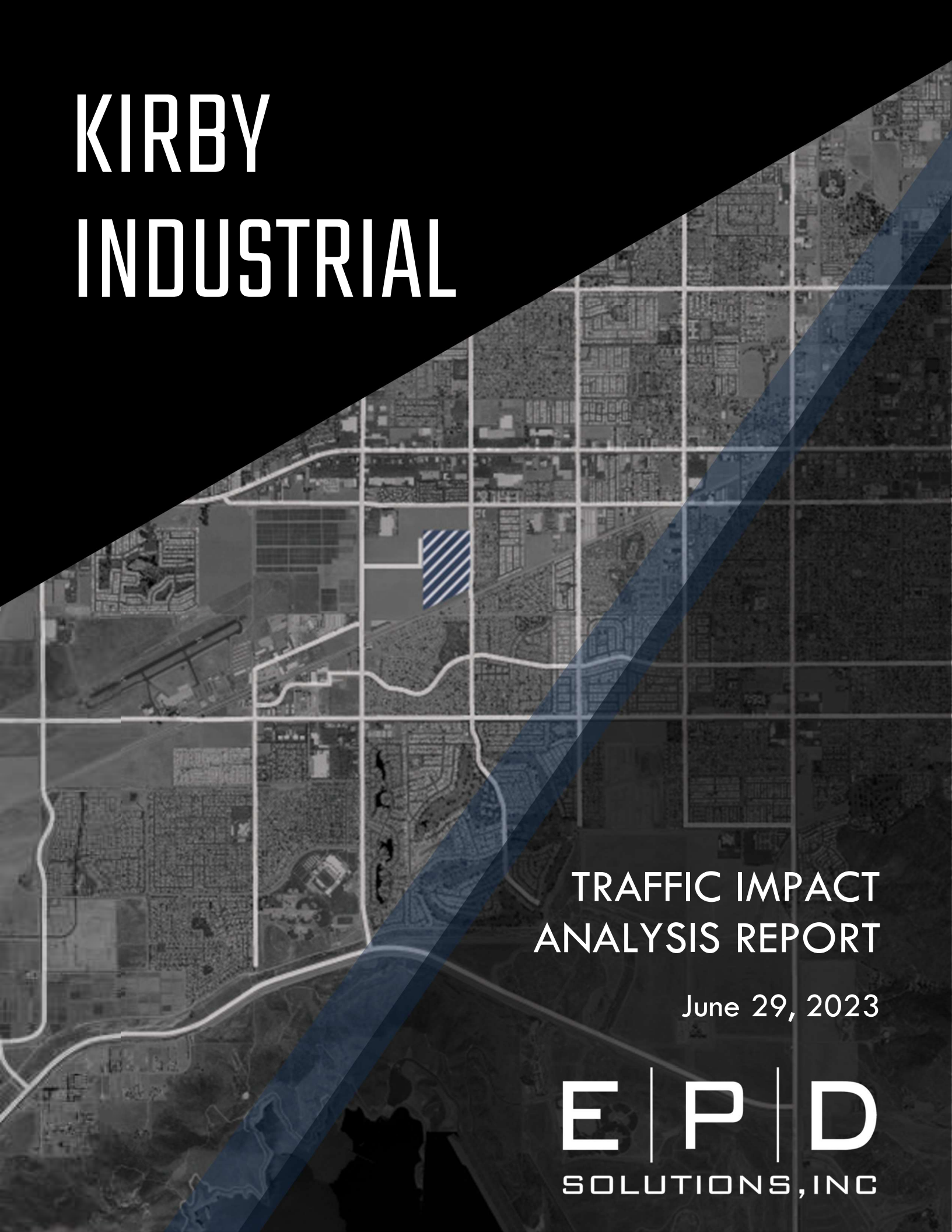
KIRBY INDUSTRIAL



TRAFFIC IMPACT ANALYSIS REPORT

June 29, 2023

EPD SOLUTIONS, INC

KIRBY INDUSTRIAL

Traffic Impact Analysis

City of Hemet

Prepared For

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1 EXECUTIVE SUMMARY

This Traffic Impact Analysis (TIA) has been prepared by EPD Solutions, Inc. (EPD) to analyze the potential transportation-related impacts of the proposed warehouse building (Project) located southwest of the intersection of Kirby Street and Acacia Avenue, to the immediate north of the Salt Creek Channel in the City of Hemet. The project site is identified by Assessor's Parcel Number (APN) 456-030-020 totaling an area of approximately 41.86 acres. The development proposes the construction of a one-story 850,640 square feet (SF) warehouse building which includes 831,348 Sf of warehouse space and 19,292 Sf of office space.

The trip generation for the proposed development was analyzed as per the TUMF High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019). The proposed Project is estimated to generate approximately 1,811 daily trips, 104 (80 inbound and 24 outbound) AM peak hour trips, and 141 (39 inbound and 102 outbound) PM peak hour trips. In terms of passenger car equivalent (PCE), the proposed Project is estimated to generate approximately 2,306 daily PCE trips, 135 (104 inbound and 31 outbound) PCE AM trips and 176 (49 inbound and 127 outbound) PCE PM trips. The following study area intersections were evaluated during the AM and PM peak hours, which are defined as the hours with the highest traffic volumes during the 7 AM to 9 AM and 4 PM to 6 PM peak commute periods.

1. Sanderson Ave/SR-74
2. Sanderson Ave/Acacia Ave
3. Sanderson Ave/Whittier Ave
4. Project Dwy-1/Whittier Ave
5. Kirby St/SR-74
6. Kirby St/Acacia Ave
7. Kirby St/Project Dwy-2
8. Kirby St/Project Dwy-3
9. Kirby St/Johnston Ave
10. Kirby St/Stetson Ave
11. Sanderson Ave/Stetson Ave
12. Project Dwy-4/Whittier Ave

The following roadway segments have been identified for inclusion in the TIA:

1. Sanderson Avenue between Acacia Avenue and Stetson Avenue
2. Stetson Avenue between Sanderson Avenue and Kirby Street

AM and PM peak hour traffic operations were evaluated for the following scenarios:

1. Existing Conditions
2. Project Completion (Existing plus Ambient Growth plus Project before the Construction of Whittier Avenue) Conditions without Whittier Avenue
3. Project Completion (Existing plus Ambient Growth plus Project post the Construction of Whittier Avenue) Conditions with Whittier Avenue

4. Cumulative (Existing plus Ambient Growth plus Project plus Cumulative Projects before the Construction of Whittier Avenue) Conditions without Whittier Avenue
5. Cumulative (Existing plus Ambient Growth plus Project plus Cumulative Projects post the Construction of Whittier Avenue) Conditions with Whittier Avenue

Existing Conditions (2023) Intersection Analysis Results

In this scenario, all intersections operate at an acceptable Level of Service (LOS). However, the segment of Sanderson Avenue between Acacia Avenue and Stetson Avenue operates at LOS F.

Project Completion (2024) Before the Construction of Whittier Avenue Analysis Results

In this scenario, all intersections operate at an acceptable LOS. However, the segment of Sanderson Avenue between Acacia Avenue and Stetson Avenue operates at LOS F.

Project Completion (2024) Post the Construction of Whittier Avenue Analysis Results

In this scenario, all intersections operate at an acceptable LOS. However, the segment of Sanderson Avenue between Acacia Avenue and Stetson Avenue operates at LOS F.

Cumulative Conditions (2024) Before the Construction of Whittier Avenue Analysis Results

The project would result in unsatisfactory LOS at the following intersection(s) and roadway segment(s):

- #1- Sanderson Ave/SR-74
- Sanderson Avenue between Acacia Avenue and Stetson Avenue

Cumulative Conditions (2024) Post the Construction of Whittier Avenue Analysis Results

The project would result in unsatisfactory LOS at the following intersection(s) and roadway segment(s):

- #1- Sanderson Ave/SR-74
- Sanderson Avenue between Acacia Avenue and Stetson Avenue

Recommended Improvements

Development of the proposed Project would result in unsatisfactory LOS at the intersection of Sanderson Avenue and SR-74 in Cumulative Conditions before and post the construction of Whittier Avenue. The project would also result in unsatisfactory roadway operations on the segment of Sanderson Avenue between Acacia Avenue and Stetson Avenue, both under Project Completion and Cumulative Conditions. Consistent with the findings of the Hemet General Plan FEIR, the roadway segment of Sanderson between Acacia Avenue and Stetson Avenue was noted to operate at LOS F in the existing conditions. Consistent with the City's General Plan, no improvements were identified for the intersection and the roadway segment.

Site Access and Safety Analyses

All site access and safety were reviewed for all project driveways and no safety or operational deficiencies are expected.

2 INTRODUCTION

This Traffic Impact Analysis (TIA) has been prepared by EPD Solutions, Inc. (EPD) to analyze the potential transportation-related impacts of the proposed warehouse building located southwest of the intersection of Kirby Street and Acacia Avenue, to the immediate north of the Salt Creek Channel in the City of Hemet. The scope of work for this TIA was reviewed and approved by the City of Hemet and is provided in *Appendix A*. The TIA was prepared according to the approved scope of work using methodologies and significance criteria consistent as per the Riverside County Transportation Analysis Guidelines for Level of Service (LOS) Vehicle Miles Traveled (VMT) (December 2020), the City of Hemet General Plan 2030 and the Final City of Hemet General Plan 2030, Environmental Report (January 12, 2012) (Hemet General Plan FEIR).

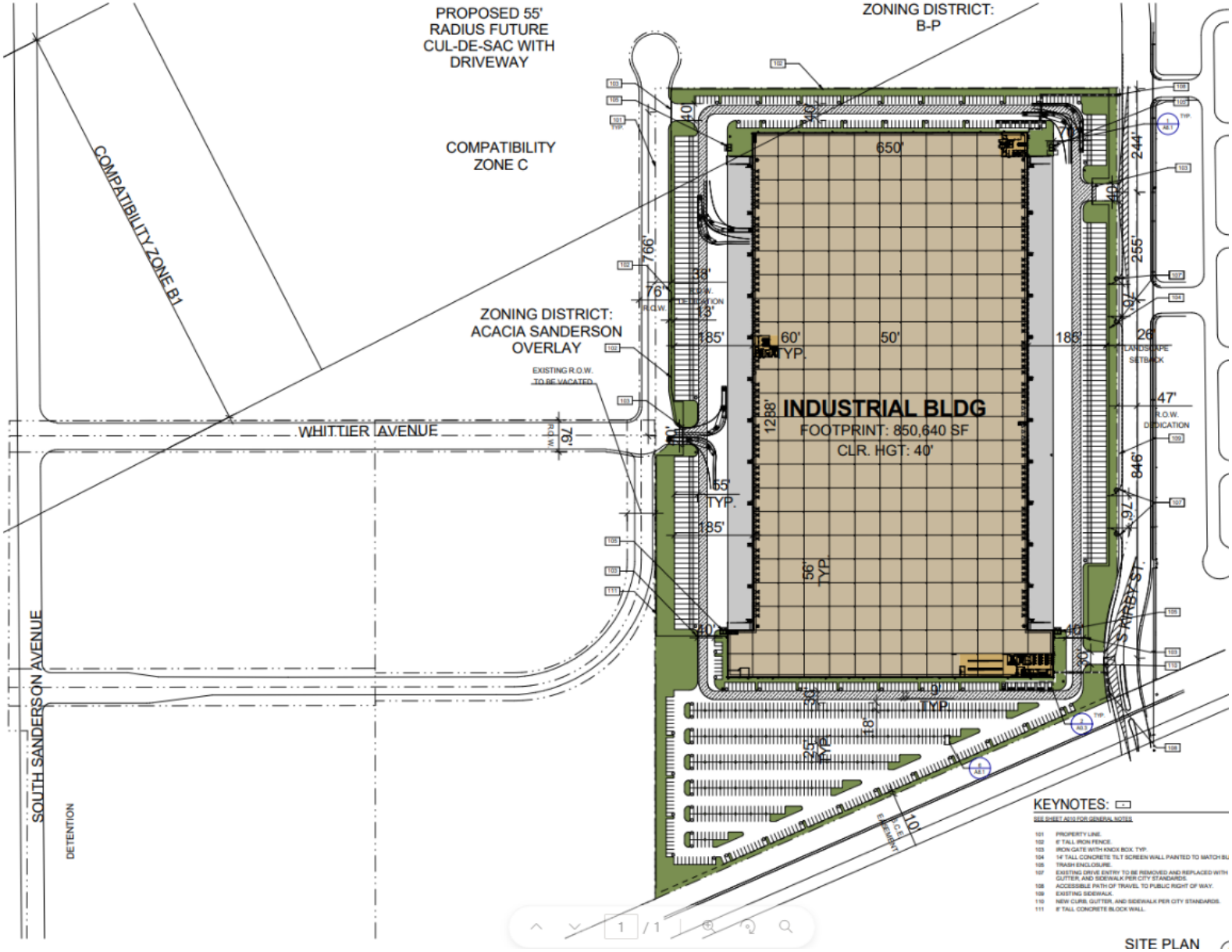
2.1 Project Description

The Project site is identified by Assessor's Parcel Number (APN) 456-030-020 totaling an area of approximately 41.86 acres. The development proposes the construction of a one-story 850,640 square feet (SF) warehouse building which includes 831,348 Sf of warehouse space and 19,292 Sf of office space. The existing site is currently vacant. This TIA utilizes the most updated project description for the purpose of analysis. The location of the project is shown in *Figure 2.1: Project Location* and the project site plan is shown in *Figure 2.2: Project Site Plan*. Passenger vehicle access to the site is provided through north and south driveways on the Project's easternly front located on Kirby Street. It is to be noted that the southernly driveway on Kirby St would allow right-in, right-out and left-out turn movements only. Planned truck access to the project site is provided on the Project's westerly front which can be accessed from Sanderson Avenue via Whittier Avenue. As Whittier Avenue between Sanderson Avenue and the project site is a planned roadway and currently not in existence, the project considers project truck access through the northerly driveway located on Kirby Street in the interim. Project truck trips will be routed through Sanderson Avenue and Whittier Ave to access the planned truck driveway on the Project's westerly front once Whittier Ave is constructed. This TIA analyses Project Completion and Cumulative Conditions for both before and after the construction of Whittier Avenue to provide a thorough analysis of operations at all study area intersections.

Figure 2.1: Project Location



Figure 2.2: Project Site Plan



2.2 Study Area and Analysis Scenarios

The County's Guidelines require that the traffic and circulation impacts of proposed development projects be analyzed. The study area was selected to include those intersections to which the project would add 50 or more peak hour trips. This TIA includes the analysis of signalized intersections, all-way stop controlled (AWSC) and two-way stop controlled (TWSC) intersections. The following intersections were included in the analysis:

1. Sanderson Ave/SR-74 (Existing-Signal)
2. Sanderson Ave/Acacia Ave (Existing-Signal)
3. Sanderson Ave/Whittier Ave (Proposed-TWSC)
4. Project Dwy-1/Whittier Ave (Proposed-AWSC)
5. Kirby St/SR-74 (Existing-Signal)
6. Kirby St/Acacia Ave (Existing-Signal)
7. Kirby St/Project Dwy-2 (Proposed-TWSC)
8. Kirby St/Project Dwy-3 (Proposed-TWSC)
9. Kirby St/Johnston Ave (Existing-AWSC)
10. Kirby St/Stetson Ave (Existing-Signal)
11. Sanderson Ave/Stetson Ave (Existing-Signal)
12. Project Dwy-4/Whittier Ave (Proposed-AWSC)

The following roadway segments have been identified for inclusion in the TIA:

1. Sanderson Avenue between Acacia Avenue and Stetson Avenue
2. Stetson Avenue between Sanderson Avenue and Kirby Street

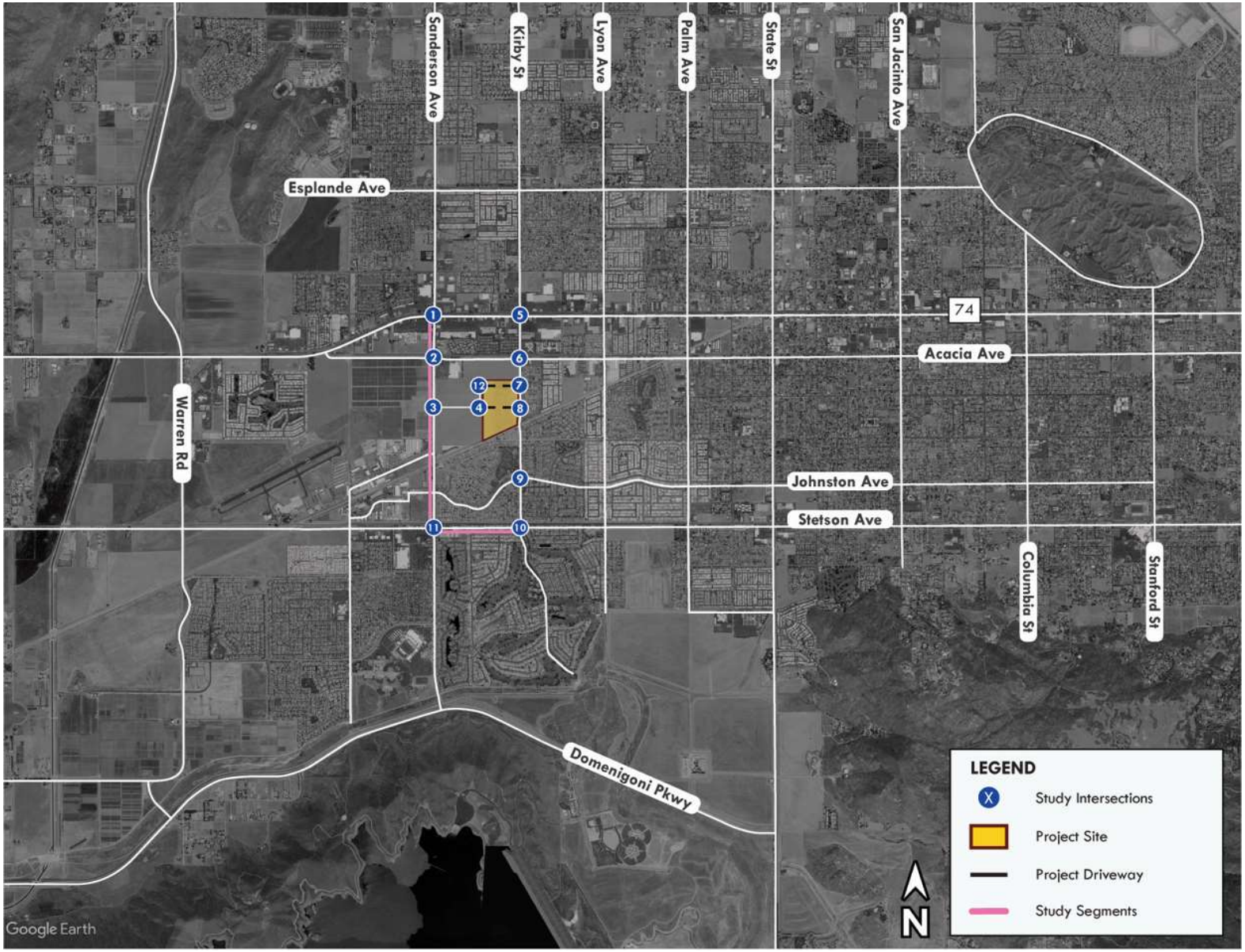
The locations of the study area intersections are shown on *Figure 2.3. Study area intersections* were evaluated during the AM and PM peak hours, which are defined as the hour with the highest traffic volumes during the 7 AM to 9 AM and 4 PM to 6 PM peak commute periods. AM and PM peak hour traffic operations were evaluated for the following scenarios:

- Existing Conditions
- Project Completion (Existing plus Ambient Growth plus Project before the Construction of Whittier Avenue) Conditions without Whittier Avenue
- Project Completion (Existing plus Ambient Growth plus Project post the Construction of Whittier Avenue) Conditions with Whittier Avenue
- Cumulative (Existing plus Ambient Growth plus Project plus Cumulative Projects before the Construction of Whittier Avenue) Conditions without Whittier Avenue
- Cumulative (Existing plus Ambient Growth plus Project plus Cumulative Projects post the Construction of Whittier Avenue) Conditions with Whittier Avenue

EPD collected counts for the study intersections on Thursday, May19th, 2022, and the average daily traffic (ADT) volumes for roadway segments on February 10, 2022. As per the County of Riverside Transportation Analysis Guidelines, Existing Conditions (2023) traffic volumes were developed by adding an ambient growth rate of two percent to the 2022 count volumes. Forecast traffic volumes for

the Project Completion (2024) baseline conditions were developed by adding the project trips to Existing conditions and adding an ambient growth rate of two percent per year to existing traffic volumes. Cumulative (2024) traffic volumes were developed by adding the project trips to Existing conditions, adding an ambient growth rate of two percent per year to existing traffic volumes and adding traffic generated by other approved and pending development projects. Both Project Completion and Cumulative conditions were analyzed before and post the construction of Whittier Avenue. All traffic count data are provided in *Appendix B*.

Figure 2.3: Project Study Area



2.3 Methodology

Intersection operations are evaluated using Level of Service (LOS), which is a measure of the delay experienced by drivers on a roadway facility. LOS A indicates free-flow traffic conditions and is generally the best operating condition. LOS F is an extremely congested condition and is the worst operating condition from the driver's perspective. In this report, LOS at signalized and unsignalized intersections is calculated using the *Highway Capacity Manual* (HCM), 7th Edition methodology.

LOS at signalized intersections is defined in terms of the weighted average control delay for the intersection as a whole. Control delay is a measure of the increase in travel time that is experienced due to traffic signal control and is expressed in terms of average control delay per vehicle (in seconds). Control delay is determined based on the intersection geometry and volume, signal cycle length, phasing and coordination along the arterial corridor. *Table 2.1* shows the relationship between control delay and LOS.

Table 2.1: Relationship between Control Delay and LOS at a Signalized Intersection

LOS	Delay (Seconds per Vehicle)
A	≤ 10
B	>10 – 20
C	>20 – 35
D	>35 – 55
E	>55 – 80
F	>80

Unsignalized intersections are categorized as either all-way stop control (AWSC) or two-way stop control (TWSC). LOS at AWSC intersections is determined by the weighted average control delay of the overall intersection. The HCM TWSC intersection methodology calculates LOS based on the delay experienced by drivers on the minor (stop-controlled) approaches to the intersection. For TWSC intersections, LOS is determined for each minor-street movement, as well as the major-street left-turns. The relationship between delay and LOS at unsignalized intersections is shown in *Table 2.2*.

Table 2.2: Relationship between Delay and LOS an Unsignalized Intersection

LOS	Delay (seconds)
A	0-10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F	>50

Volume-to-capacity (V/C) ratios are used to establish LOS categories describing the performance of roadway segments. This ratio (i.e., a ratio between traffic volume and theoretical capacity of the roadway) is used to measure the performance of roadway facilities. Volume is established either by a traffic count (in the case of current volumes) or by a forecast for a future point in time. Capacity refers to the vehicle carrying ability of a roadway at free-flow speed and is a critical component of roadway design. LOS at roadways is calculated using the *Highway Capacity Manual* (HCM), 7th Edition

methodology. The relationship between LOS at roadways is shown in *Table 2.3*. The capacity of roadway segments is provided from Riverside County Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled (December 2020) Appendix D and is shown in *Table 2.4*.

Table 2.3: LOS Definitions for Roadways

LOS	V/C
A	0-0.6
B	0.61-0.70
C	0.71-0.80
D	0.81-0.90
E	0.91-1.00
F	>1

Table 2.4: Capacity for Roadways

Roadway Classification	Number of Lanes	LOS C	LOS D	LOS E
Collector	2	10,400	11,700	13,000
Major	4	27,300	30,700	34,100
Urban Arterial	6	43,100	48,500	53,900

2.4 Significance Criteria

City of Hemet

The City of Hemet General Plan 2030 *Chapter 4.4* Roadway Circulation identifies LOS D as the lowest acceptable LOS for peak-hour intersection movements and LOS C as the lowest acceptable LOS for roadway segment operation. Therefore, any intersection operating at LOS E or F and any roadway segment operating at LOS D would be considered deficient. It is to be noted that the Hemet General Plan FEIR *Section 4.13.4* Threshold of Significance specifically identifies that the intersection of Sanderson Avenue and SR-74 would operate at unacceptable LOS E or LOS F, representing a significant impact and a potential conflict with the City's performance measures for the circulation system.

The City has identified additional thresholds for project impacts that go beyond acceptable operational LOS to address direct project impacts on roadway capacity. For purposes of compliance with the California Environmental Quality Act (CEQA), projects that increase V/C by .01 or more on affected roadway segments at intersections already experiencing or projected to experience LOS E or F conditions are considered to create potentially significant impacts, and a traffic analysis report and mitigation measures are required.

California Department of Transportation (Caltrans)

The Caltrans Guide for the Preparation of *Traffic Impact Studies* (December 2002) required that State Highway facilities be analyzed when project traffic was added to the facility. These guidelines were superseded by the *Caltrans Vehicle Miles Traveled-Focused Transportation Impact Study Guide* in May 2020. As noted in the updated guidelines, Caltrans is now focused on vehicle miles traveled (VMT) as a metric for transportation analysis and states the following: "With this guidance, the Department will transition away from requesting LOS or other vehicle operations analyses of land use projects."

3 BASELINE CONDITIONS

This section discusses the baseline (without project) conditions. Baseline conditions are those conditions that exist within the study area in the existing condition.

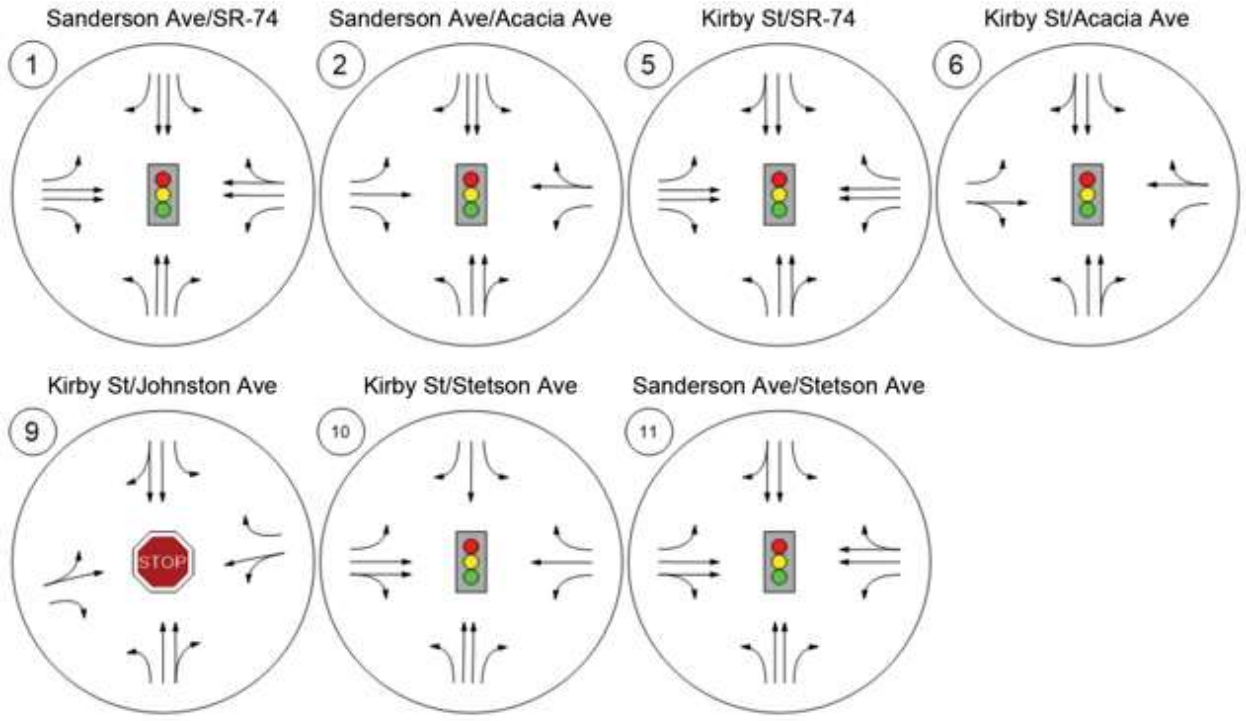
3.1 Existing Transportation System and Access

The proposed Project is located southwest of the intersection of Kirby Street and Acacia Avenue, to the immediate north of the Salt Creek Channel in the City of Hemet. Regional access to the project site is provided by State Route 74 (SR-74). Local access to the site is via Kirby Street, Sanderson Avenue, Stetson Avenue, Johnston Avenue and Acacia Avenue within the jurisdiction of the City of Hemet. The characteristics of each roadway are discussed below:

- Regional access is provided to the project via State Route 74 (SR-74). Which connects to Interstate 215 (I-215) providing connections to San Bernardino County, Los Angeles County and San Diego County.
- Sanderson Avenue and Stetson Avenue are designated as major arterial as per the City of Hemet General Plan 2030. In the immediate vicinity of the project, Sanderson Avenue and Stetson Avenue are 4-lane divided major arterial. Bike lanes and sidewalks are provided on both sides of Sanderson Avenue. Bike lanes and sidewalks are provided on the north side of Stetson Avenue. The posted speed limit on these two roads is 30 miles per hour (mph).
- Kirby Street and Acacia Avenue are classified as secondary as per the City of Hemet General Plan 2030. In the immediate vicinity of the project, Kirby Street is a 4-lane undivided secondary, and Acacia Avenue is a 2-lane undivided secondary. No bike lanes are provided on these two roads. Sidewalks are provided on both sides of Kirby Street and on the northside of Acacia Avenue. The posted speed limit on these two roads is 35 mph in the vicinity of the project site.
- Johnston Avenue is classified as collector as per the City of Hemet General Plan 2030. Johnston Avenue is a two-lane undivided collector in the vicinity of the project. Sidewalks are provided on both sides of Johnston Avenue. The posted speed limit on this road is 30 mph. No bike lanes are provided on this road in the vicinity of the project.

The existing traffic control and intersection geometrics at study area intersections is shown in *Figure 3.1*. Please note *Figure 3.1*. shows the geometrics at only existing intersections and therefore the intersections of Sanderson Ave/Whittier Ave, Project Dwy-1/Whittier Ave, Kirby St/Project Dwy-2, Kirby St/Project Dwy-3 and Project Dwy-4/Whittier Ave are not included in the figure.

Figure 3.1: Existing Lane Geometries and Traffic Control





3.2 Existing Traffic Volumes and Intersection Operations

Existing AM and PM peak hour traffic volumes at the study area intersections are shown in *Figure 3.2* and *Figure 3.3* respectively. As stated at *Section 2.3*, Existing Conditions (2023) traffic volumes were developed by adding an ambient growth rate of two percent to the 2022 count volumes. The existing Levels of Service at the study area are show in *Table 3.1*. All LOS calculations are provided in *Appendix C*. As shown in *Table 3.1*, all intersections operate at a satisfactory LOS during the existing peak hours.

Table 3.1: Existing AM and PM Peak Hour Level of Service

Intersection		Jurisdiction	Traffic Control	AM Peak		PM Peak		Threshold of Significance
				Delay[1]	LOS[2]	Delay[1]	LOS[2]	
1.	Sanderson Ave/SR-74	CalTrans/Cityof Hemet	Signal	34.3	C	43.8	D	D
2.	Sanderson Ave/Acacia Ave	Cityof Hemet	Signal	22.7	C	29.7	C	D
3.	Sanderson Ave/Whittier Ave	Cityof Hemet	TWSC	-	-	-	-	D
4.	Project Dwy-1/Whittier Ave	Cityof Hemet	AWSC	-	-	-	-	D
5.	Kirby St/SR-74	CalTrans/Cityof Hemet	Signal	16.7	B	23.1	C	D
6.	Kirby St/Acacia Ave	Cityof Hemet	Signal	22.2	C	27.8	C	D
7.	Kirby St/Project Dwy-2	Cityof Hemet	TWSC	-	-	-	-	D
8.	Kirby St/Project Dwy-3	Cityof Hemet	TWSC		-	-	-	D
9.	Kirby St/Johnston Ave	Cityof Hemet	AWSC	15.5	C	13.2	B	D
10.	Kirby St/Stetson Ave	Cityof Hemet	Signal	34.9	C	34.1	C	D
11.	Sanderson Ave/Stetson Ave	Cityof Hemet	Signal	44.1	D	42.5	D	D
12.	Project Dwy-4/Whittier Ave	Cityof Hemet	TWSC	-	-	-	-	D

=Unsatisfactory Level of Service

AWSC = All-Way Stop Control

TWSC = Two-Way Stop Control

[1]Delay in Seconds

[2]Level of Service

Figure 3.2: Existing AM Peak Hour Traffic Volumes

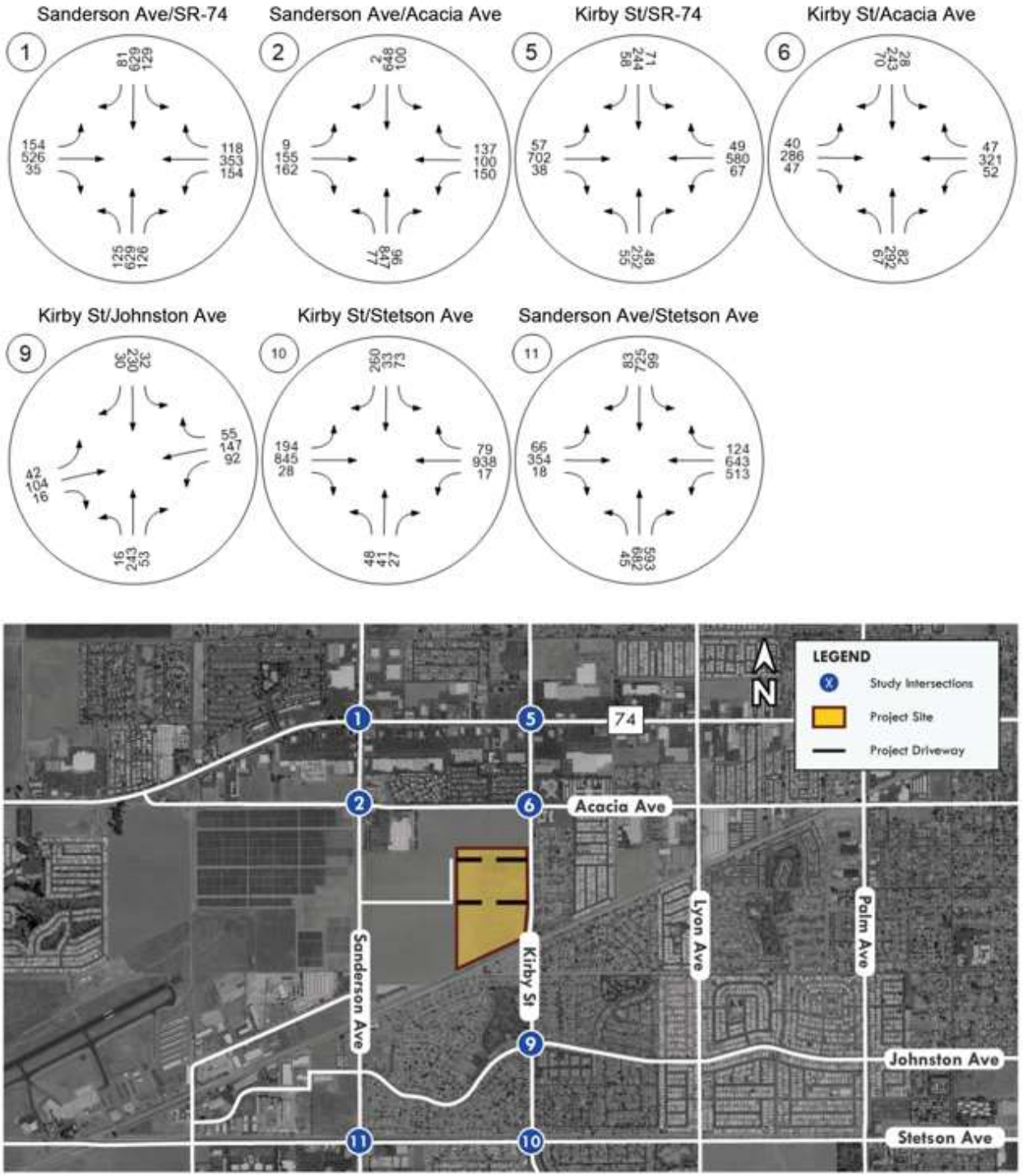
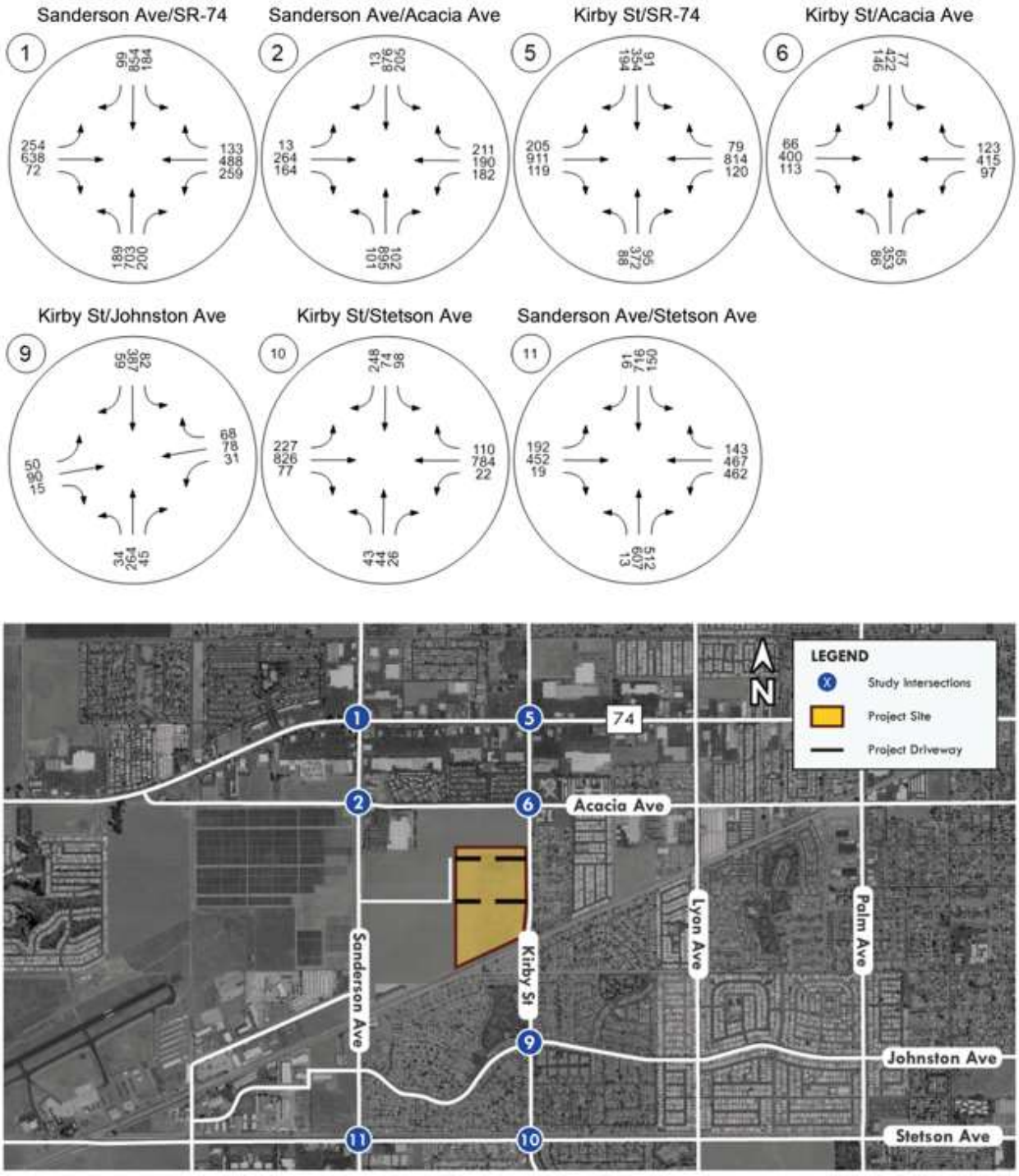


Figure 3.3: Existing PM Peak Hour Traffic Volumes



3.3 Existing Roadway Segment Operations

ADT volumes for roadway segment analysis were collected on February 10, 2022 for the following roadway segments:

1. Sanderson Avenue between Acacia Avenue and Stetson Avenue
2. Stetson Avenue between Sanderson Avenue and Kirby Street

It should be noted that a two percent ambient growth was added to the existing 2022 ADT roadway segments volumes to obtain existing 2023 roadway volumes. For the purpose of analysis, Sanderson Avenue is divided into two segments: 1) between SR-74 and Acacia Avenue; and 2) between Acacia Avenue and Stetson Avenue. The existing count was taken on Segment 2 (between Acacia Avenue and Stetson Avenue). Segment 1 was calculated by factoring the existing roadway volume from the validated 2018 conditions from the Riverside County Transportation Analysis Model (RIVCOM). The RIVCOM 2018 loaded network volumes for the study area are provided in *Appendix B*.

Similarly, Stetson Avenue is divided into three segments: 1) between Warren Road and the railroad track; 2) between the railroad track and Sanderson Avenue; and 3) between Sanderson Avenue and Kirby Street. The existing count was taken on Segment 2 (between the railroad track and Sanderson Avenue). Segments 1 and 3 were calculated by factoring the existing roadway volume from the validated 2018 conditions from RIVCOM. An evaluation of the existing roadway LOS was prepared using roadway capacities from the *County of Riverside General Plan Circulation Element, Figure* C3. The existing traffic volumes and roadway LOS are shown in *Table 3.2*.

Table 3.2: Existing Roadway Segment Volumes and Level of Service

Roadway	Limits	Classification	# of Lanes	Capacity[1]	Volume	V/C Ratio	LOS
Sanderson Ave	SR-74 and Acacia Ave	Major	4	30,700	23,587	0.768	C
Sanderson Ave	Acacia Ave and Stetson Ave	Major	4	30,700	31,361	1.022	F
Stetson Ave	Warren Rd and RR Tracks[2]	Collector	2	10,400	6,042	0.581	A
Stetson Ave	RR Tracks and Sanderson Ave	Arterial	6	43,100	9,006	0.209	A
Stetson Ave	Sanderson Ave and Kirby St[2]	Major	4	27,300	16,223	0.594	A

[1] Roadway Capacities from County of Riverside General Plan Circulation Element, Figure C-3.

[2] Daily Volume on these segments was derived from the ratio between roadway segments on Stetson in the RIVCOM 2018 volumes and actual count taken on February 10, 2022 on Stetson just east of the RR tracks.

=Unsatisfactory Level of Service

As discussed previously in *Section 2.4*, the acceptable roadway segment standard is LOS D for Sanderson Avenue and LOS C for Stetson Avenue. As shown in *Table 3.2*, the segment of Sanderson Avenue between Acacia Avenue and Stetson Avenue operates at LOS F with a volume of 31,361 vehicles per day in the existing conditions.

4 PROPOSED PROJECT

4.1 Project Trip Generation

Vehicle trips were generated for the proposed development using trip rates from the TUMF High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019). The project trip generation is shown in *Table 4.1*. The proposed Project is estimated to generate approximately 1,811 daily trips, 104 (80 inbound and 24 outbound) AM peak hour trips, and 141 (39 inbound and 102 outbound) PM peak hour trips. In terms of passenger car equivalent (PCE), the proposed Project is estimated to generate approximately 2,306 daily PCE trips, 135 (104 inbound and 31 outbound) PCE AM trips and 176 (49 inbound and 127 outbound) PCE PM trips.

4.2 Project Trips

Project trips were distributed to the study area intersections based on the location of the Project and logical routes of travel to and from the site. Project trips were assigned to the study area intersections by multiplying the project trip generation to the trip distribution percent at each location. The traffic control and intersection geometrics at study area intersections for Project Completion before and post the construction of Whittier Avenue are shown in *Figure 4.1* and *Figure 4.2* respectively. The passenger trip distribution for the proposed Project is shown in *Figure 4.3*. Depending on the construction of Whittier Avenue, the truck trip distribution for the proposed Project before and post the construction of Whittier Avenue are shown in *Figure 4.4*. and *Figure 4.5* respectively. The Project AM and PM Peak Hour Trip Assignment before/post the Construction of Whittier Avenue are shown in *Figure 4.6* through *4.9*.

Table 4.1: Project Trip Generation

					AM Peak Hour			PM Peak Hour		
Land Use			**Units**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Trip Rates										
TUMF Fulfillment Center Rates[1]			TSF	2.129	0.094	0.028	0.122	0.046	0.119	0.165
Proposed Project Trip Generation										
Kirby St Industrial		850.640	TSF	1,811	80	24	104	39	101	140
Vehicle Mix[1]	***% Daily***	***% AM***	***% PM***							
Passenger Vehicles	82.20%	84.40%	87.30%	1,489	67	20	87	34	88	122
2- Axle Trucks	3.80%	1.10%	1.10%	69	1	0	1	1	1	2
3-Axle Trucks	2.50%	2.20%	2.20%	45	2	1	3	1	2	3
4-Axle Trucks	1.30%	3.30%	3.30%	23	3	1	4	1	4	5
5+-Axle Trucks	10.20%	9.00%	6.10%	185	7	2	9	2	7	9
	100.00%	100.00%	100.00%	1,811	80	24	104	39	102	141
PCE Trip Generation[2]			***PCE Factor***							
Passenger Vehicles			1.0	1,489	67	20	87	34	88	122
2- Axle Trucks			1.5	103	2	0	2	2	2	4
3-Axle Trucks			2.0	91	4	2	6	2	4	6
4-Axle Trucks			3.0	69	9	3	12	4	12	16
5+-Axle Trucks			3.0	554	22	6	28	7	21	28
Total PCE Trip Generation				2,306	104	31	135	49	127	176

TSF = Thousand Square Feet

PCE = Passenger Car Equivalent

[1] Trip rates and truck percentages from Exhibit 6 of the TUMF High-Cube Warehouse Trip Generation Study, January 29, 2019.

[2] Passenger Car Equivalent (PCE) factors from the Riverside County Transportation Analysis Guidelines for Level of Service (LOS) Vehicle Miles Traveled (VMT) (December 2020)

Figure 4.1: Project Completion Before the Construction of Whittier Avenue Lane Geometries and Traffic Control

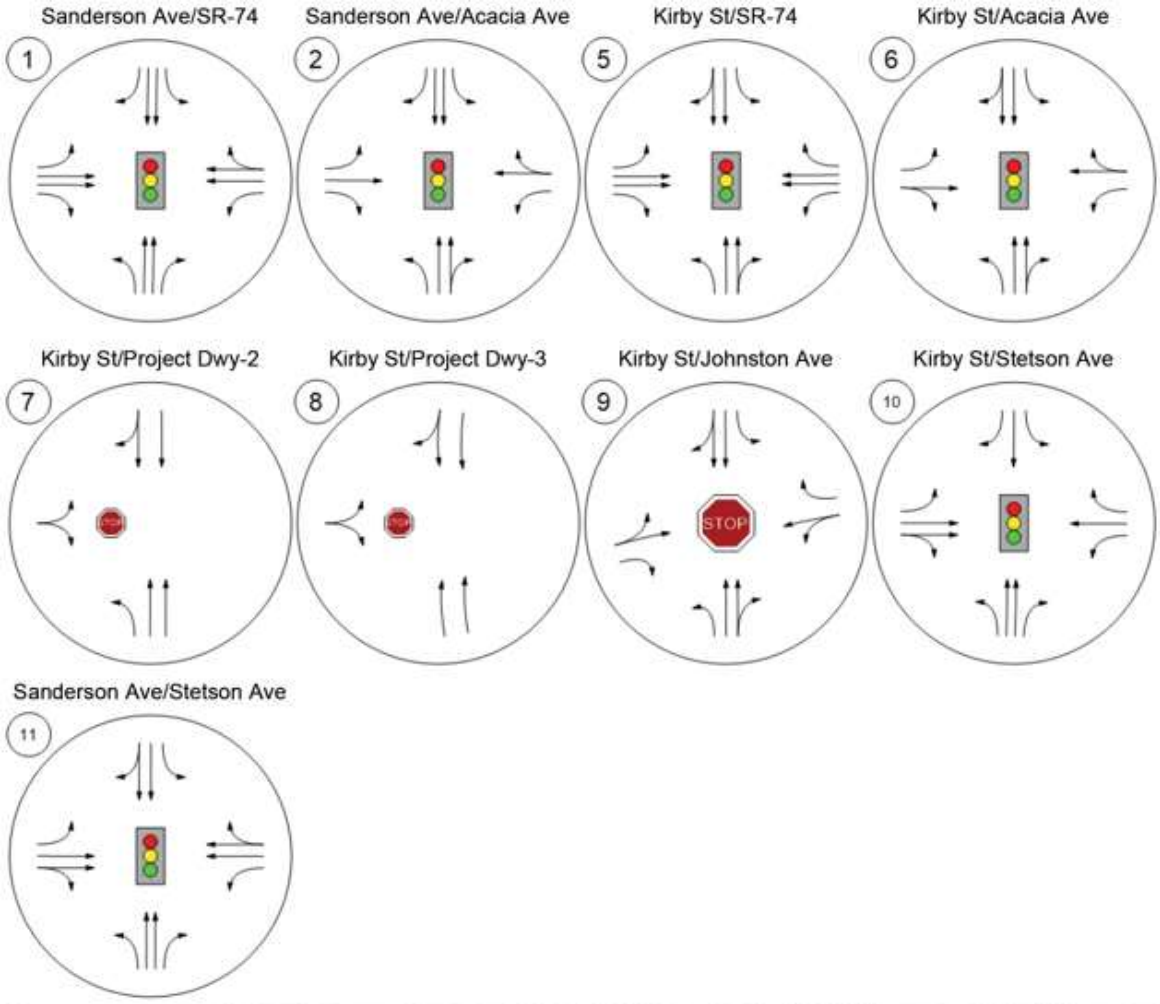




Figure 4.2: Project Completion Post the Construction of Whittier Avenue Lane Geometries and Traffic Control

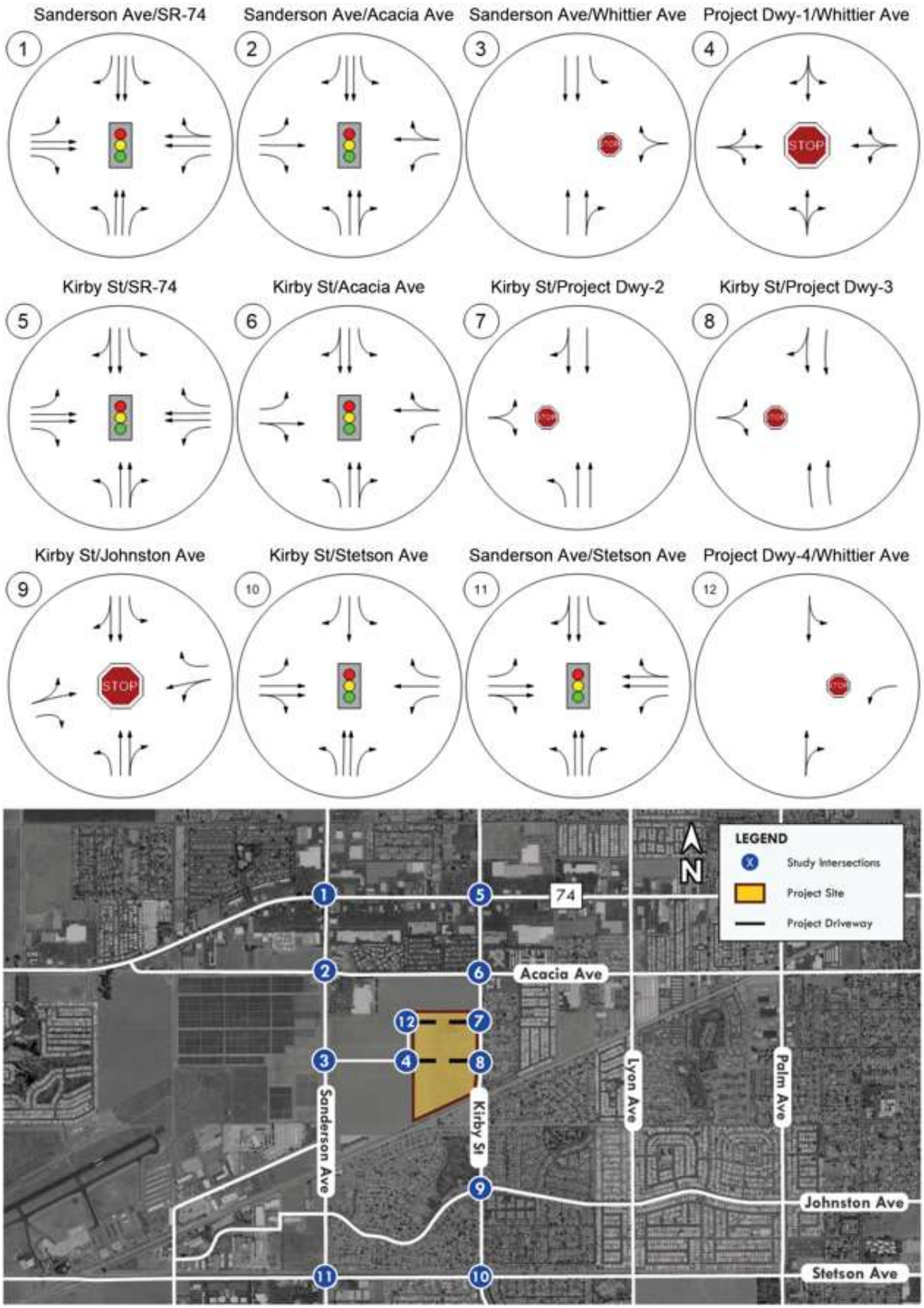


Figure 4.3: Proposed Project Passenger Vehicle Trip Distribution

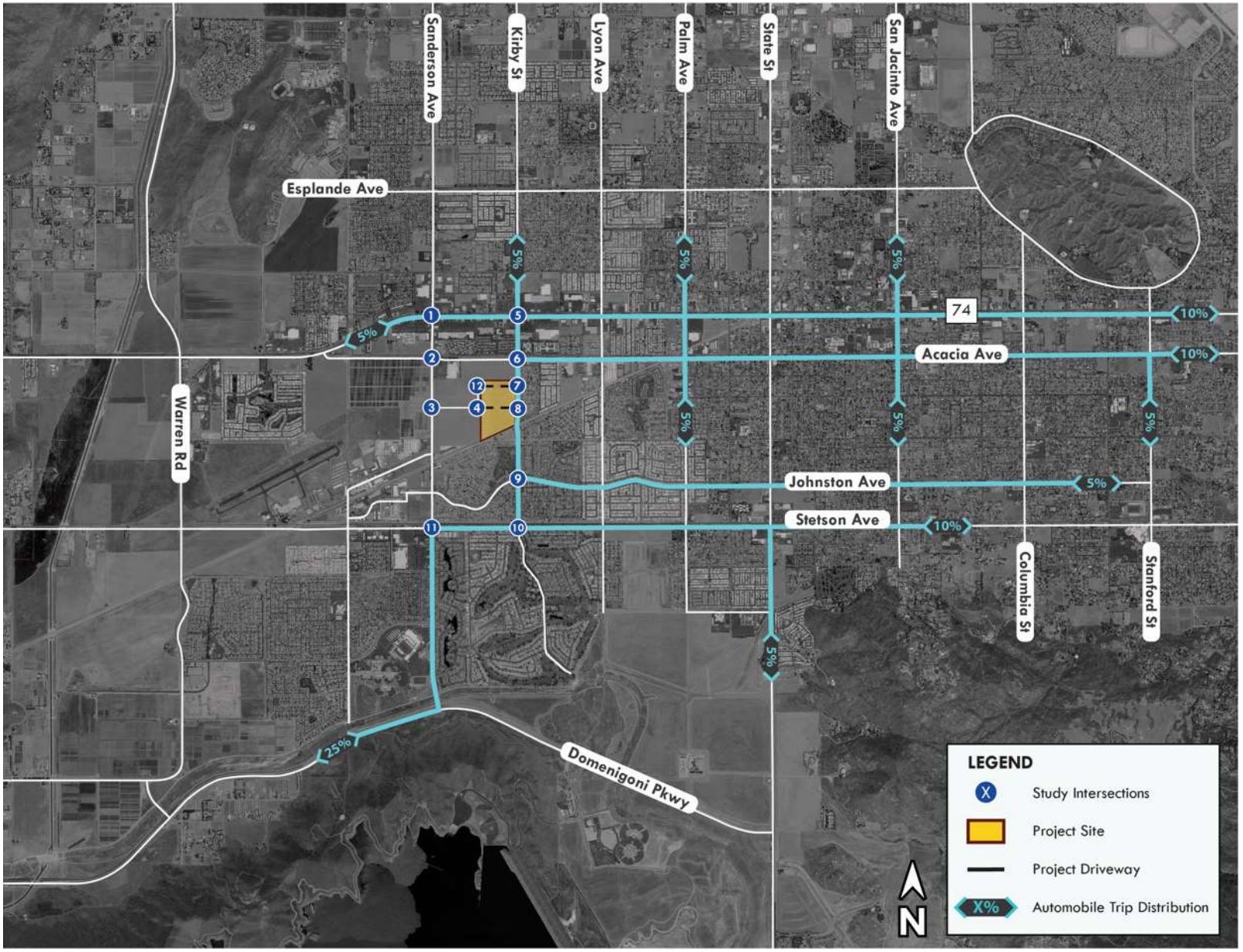


Figure 4.4: Proposed Truck Trip Distribution Before the Construction of Whittier Avenue



Figure 4.5: Proposed Truck Trip Distribution Post the Construction of Whittier Avenue



Figure 4.6: Project AM Peak Hour Trip Assignment Before the Construction of Whittier Avenue

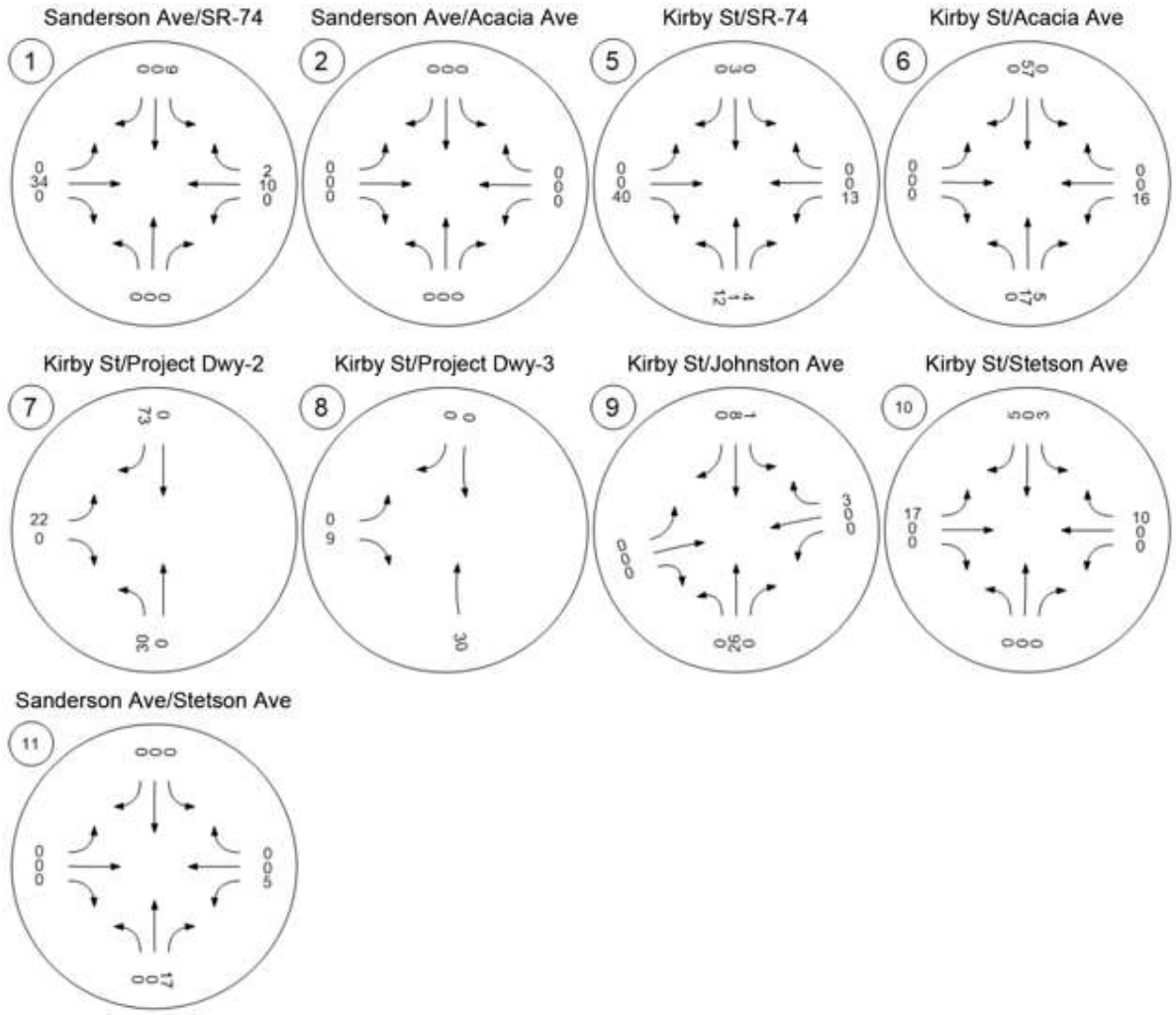




Figure 4.7: Project PM Peak Hour Trip Assignment Before the Construction of Whittier Avenue

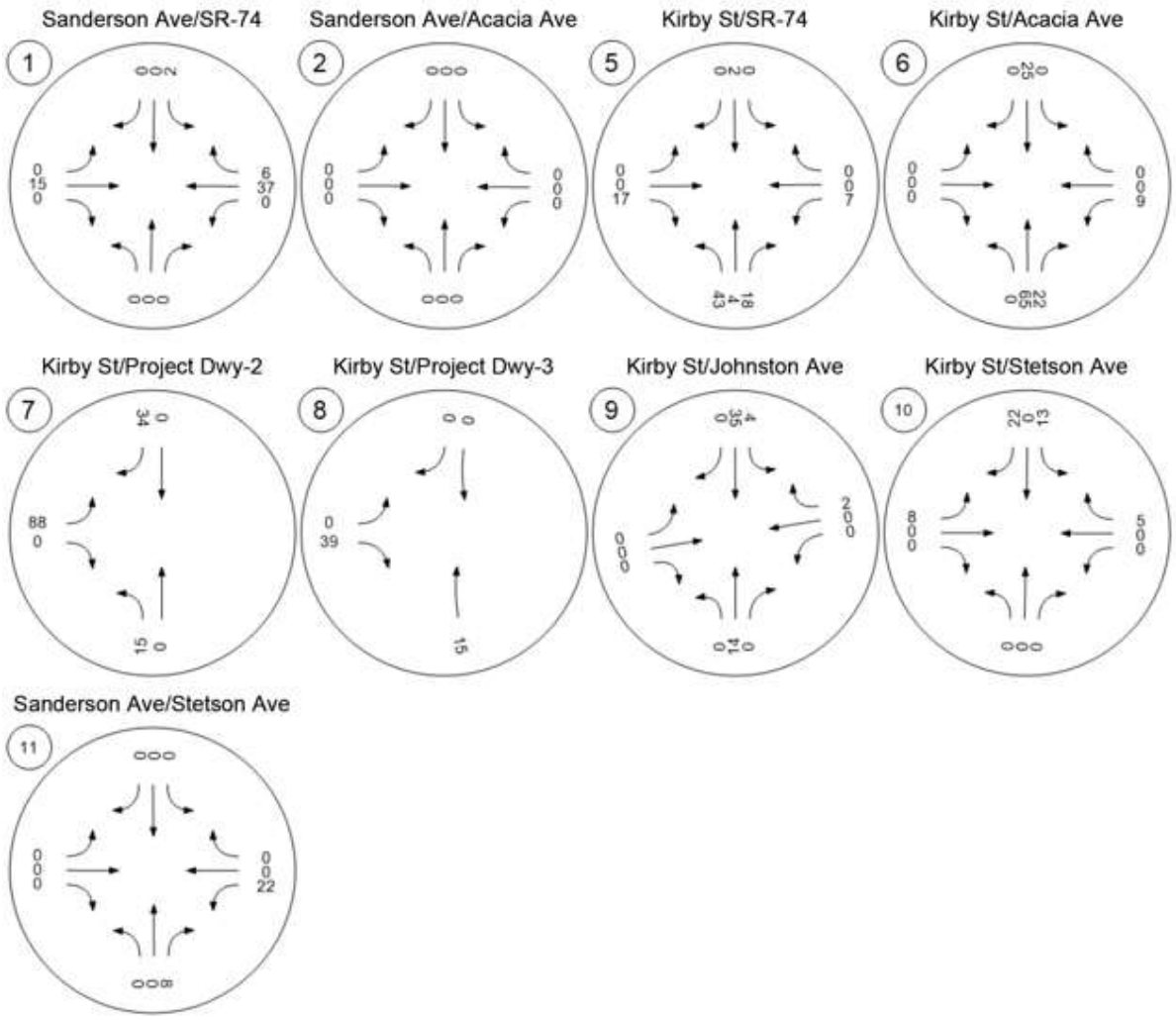




Figure 4.8: Project AM Peak Hour Trip Assignment Post the Construction of Whittier Avenue

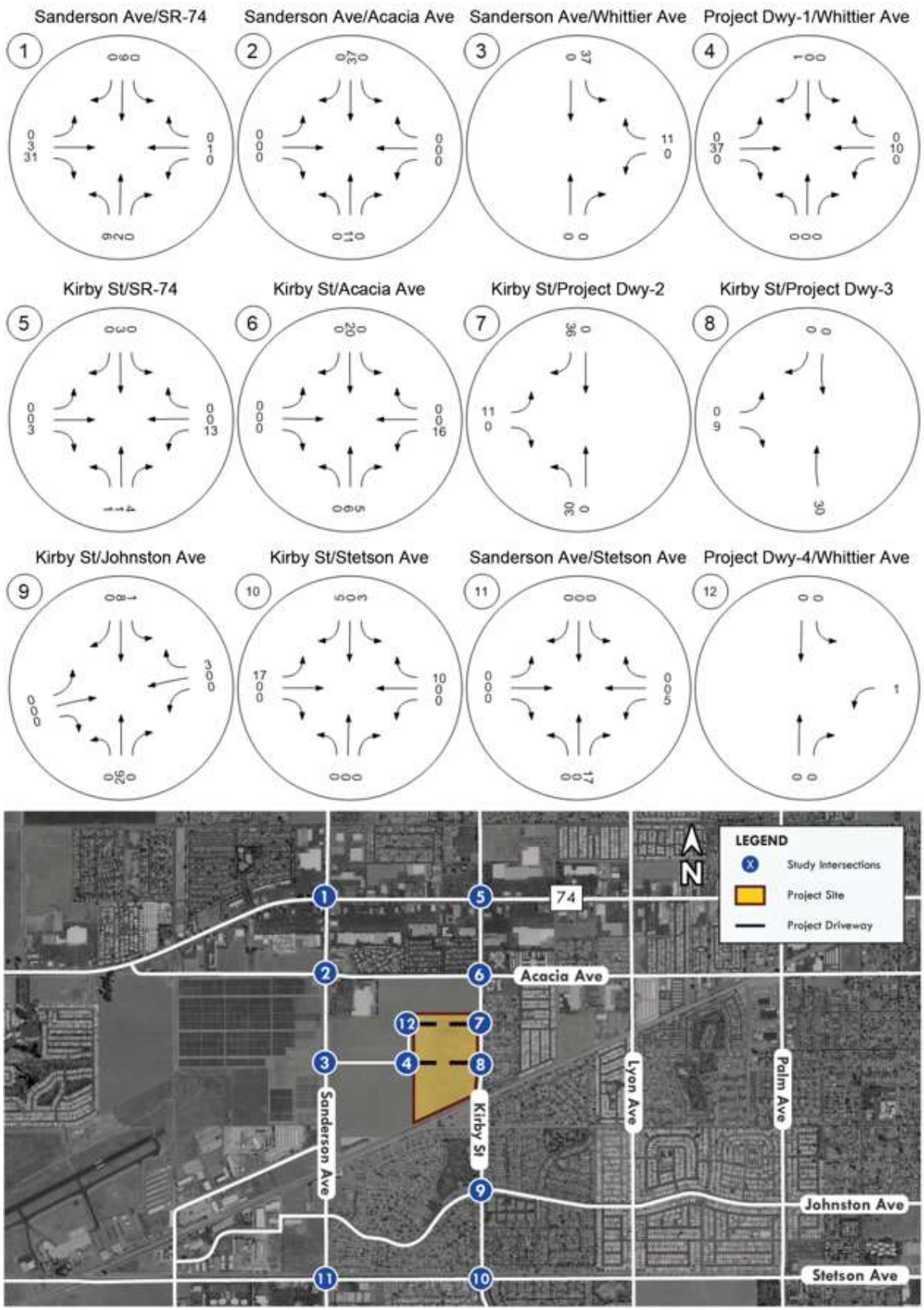
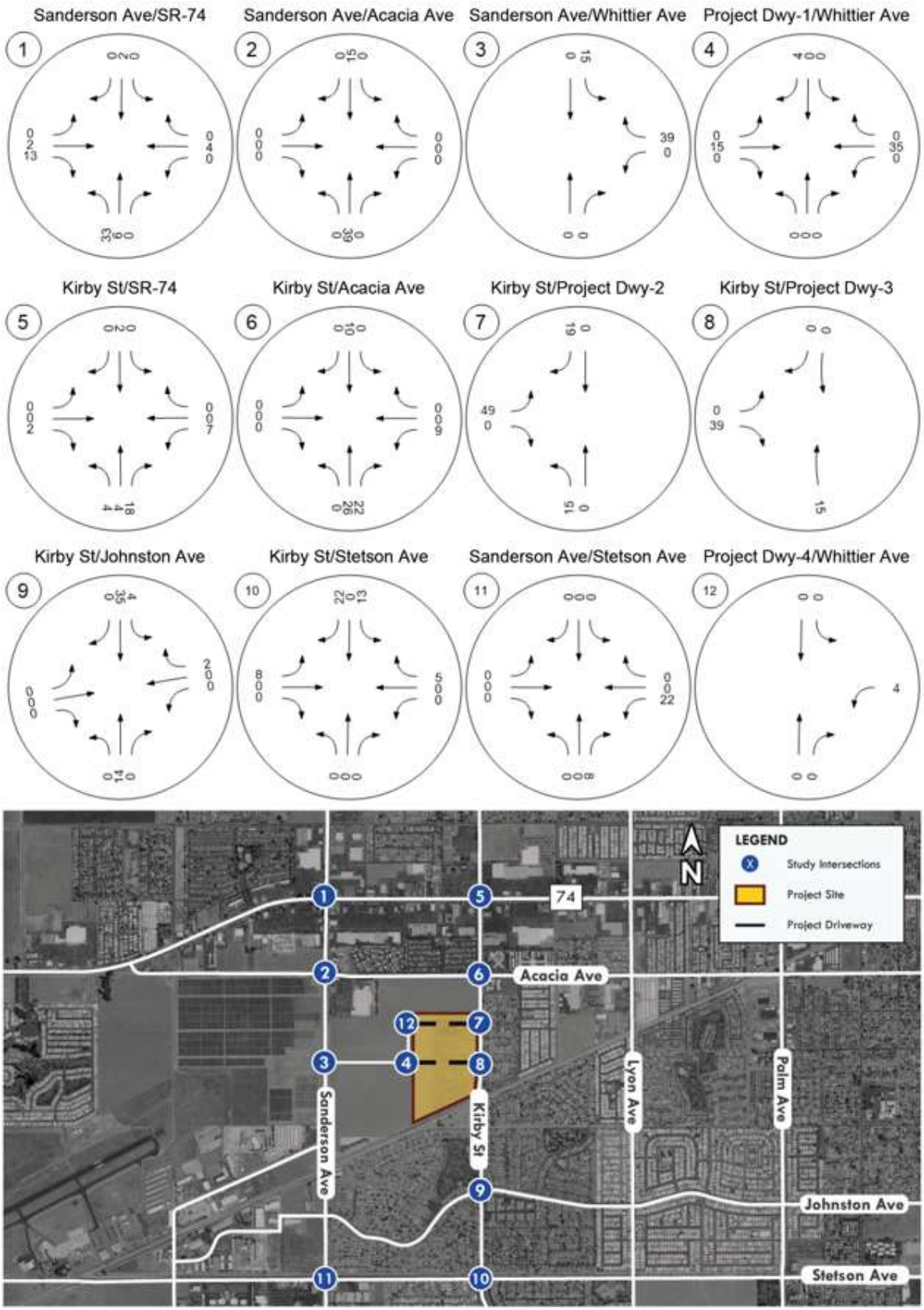


Figure 4.9: Project PM Peak Hour Trip Assignment Post the Construction of Whittier Avenue



5 PROJECT IMPACTS

5.1 Project Completion (2024) Conditions

5.1.1 Project Completion Before the Construction of Whittier Avenue Traffic Volumes and Intersection Operations

Project Completion (2024) Conditions before the construction of Whittier Avenue volumes were developed by adding the project trips to Existing conditions and adding an ambient growth rate of two percent per year to existing traffic volumes. The Project passenger and truck trip distribution for the proposed Project before the construction of Whittier Avenue were used in this scenario as shown earlier in *Figure 4.3* and *Figure 4.4*. Levels of Service at the study area intersections were determined using the HCM methodology, described previously in *Section 2.3*. The AM peak hour and PM peak hour traffic volumes for this scenario are shown in *Figure 5.1* and *Figure 5.2* respectively. *Table 5.1* shows the Project Completion before the construction of Whittier Avenue AM and PM peak hour levels of service at study intersections. All LOS calculations are provided in *Appendix C*. As shown in *Table 5.1*, all intersections would operate at a satisfactory LOS during both AM and PM peak hours.

Table 5.1: Project Completion Before the Construction of Whittier Avenue AM and PM Peak Hour Level of Service

Intersection		Jurisdiction	Traffic Control	AM Peak		PM Peak		Threshold of Significance
				Delay[1]	LOS[2]	Delay[1]	LOS[2]	
1.	Sanderson Ave/SR-74	CalTrans/Cityof Hemet	Signal	36.0	D	49.0	D	D
2.	Sanderson Ave/Acacia Ave	Cityof Hemet	Signal	23.0	C	31.8	C	D
3.	Sanderson Ave/Whittier Ave	Cityof Hemet	TWSC	-	-	-	-	D
4.	Project Dwy-1/Whittier Ave	Cityof Hemet	AWSC	-	-	-	-	D
5.	Kirby St/SR-74	CalTrans/Cityof Hemet	Signal	17.2	B	25.2	C	D
6.	Kirby St/Acacia Ave	Cityof Hemet	Signal	22.5	C	30.5	C	D
7.	Kirby St/Project Dwy-2	Cityof Hemet	TWSC	15.5	C	29.3	D	D
8.	Kirby St/Project Dwy-3	Cityof Hemet	TWSC	9.4	A	10.8	B	D
9.	Kirby St/Johnston Ave	Cityof Hemet	AWSC	16.5	C	14.0	B	D
10.	Kirby St/Stetson Ave	Cityof Hemet	Signal	41.4	D	37.3	D	D
11.	Sanderson Ave/Stetson Ave	Cityof Hemet	Signal	47.0	D	47.2	D	D
12.	Project Dwy-4/Whittier Ave	Cityof Hemet	TWSC	-	-	-	-	D

=Unsatisfactory Level of Service

AWSC = All-Way Stop Control

TWSC = Two-Way Stop Control

[1]Delay in Seconds

[2]Level of Service

Figure 5.1: Project Completion Before the Construction of Whittier Avenue AM Peak Hour Volumes

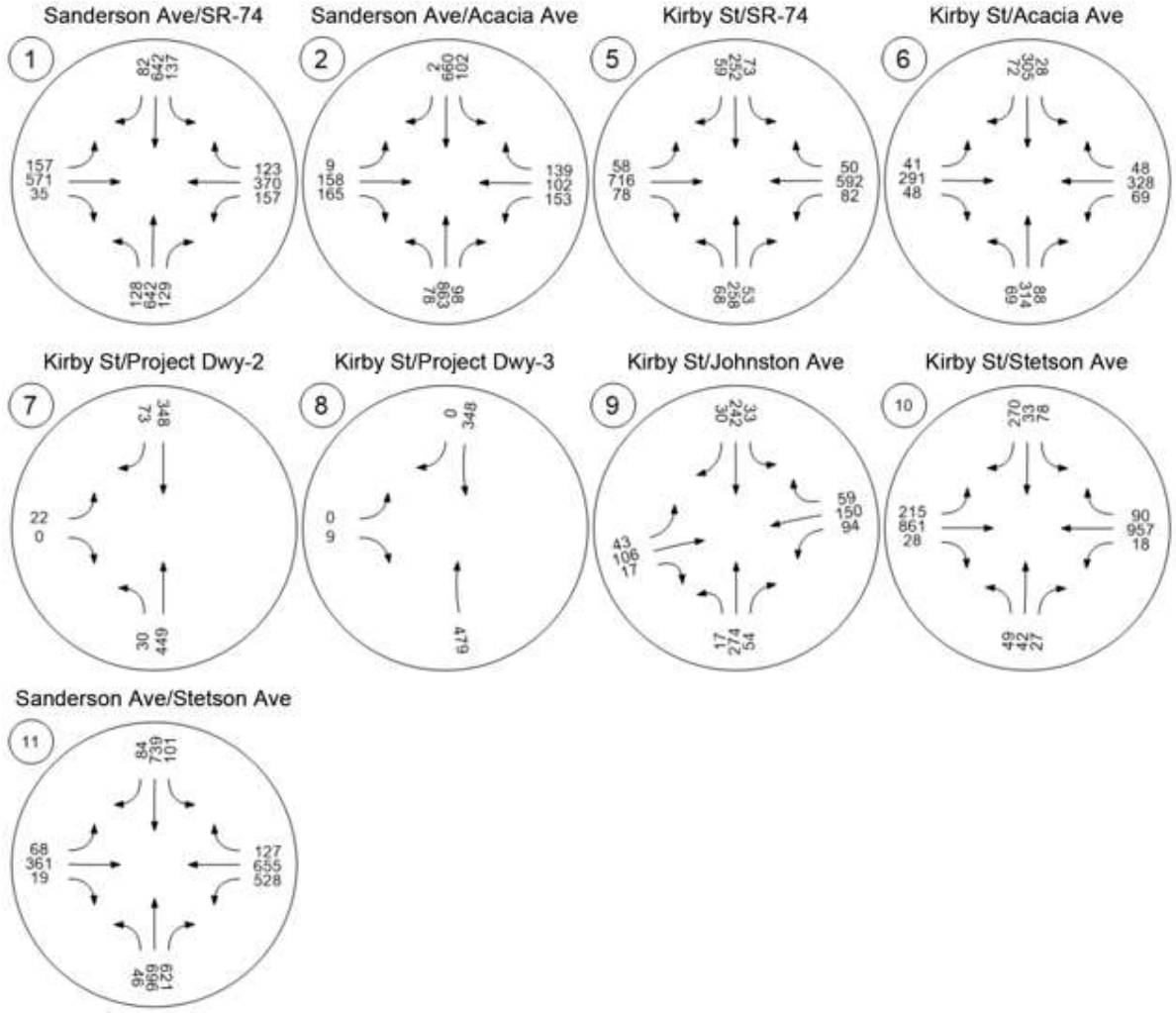
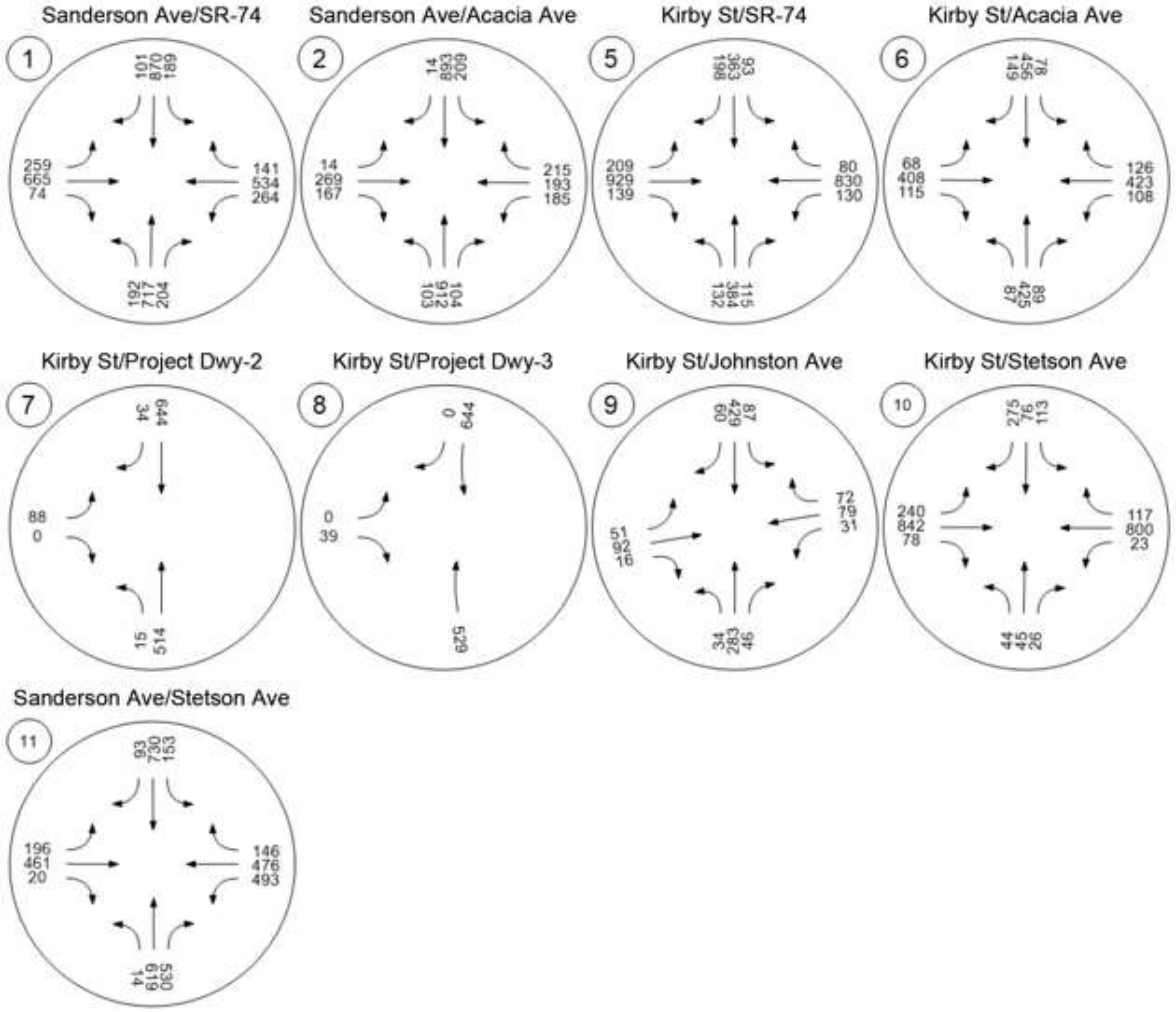




Figure 5.2: Project Completion Before the Construction of Whittier Avenue PM Peak Hour Volumes





5.1.2 Project Completion Before the Construction of Whittier Avenue Roadway Segment Operations

Project Completion (2024) Conditions before the construction of Whittier Avenue volumes were developed by adding the project trips to Existing conditions roadway volumes and adding an ambient growth rate of two percent per year to existing traffic volumes. The Project passenger and truck trip distribution for the proposed Project before the construction of Whittier Avenue were used in this scenario as shown earlier in *Figure 4.3* and *Figure 4.4*. 100% of the daily truck trips will go through Kirby Street and SR-74. In addition, 25% of passenger trips will go through Stetson Avenue between Sanderson Avenue and Kirby Street. No Project traffic would go through Sanderson Avenue between Acacia Avenue and Whittier Avenue. An evaluation of the roadway LOS was prepared using roadway capacities from the *County of Riverside General Plan Circulation Element, Figure C3*. The traffic volumes and roadway LOS are shown in *Table 5.2*.

Table 5.2: Project Completion Before the Construction of Whittier Avenue Roadway Segment Volumes and Level of Service

Roadway	Limits	Classification	# of Lanes	Capacity[1]	Volume	V/C Ratio	LOS
Sanderson Ave	SR-74 and Acacia Ave	Major	4	30,700	24,049	0.783	D
Sanderson Ave	Acacia Ave and Stetson Ave	Major	4	30,700	31,976	1.042	F
Stetson Ave	Warren Rd and RR Tracks[2]	Collector	2	10,400	6,160	0.592	A
Stetson Ave	RR Tracks and Sanderson Ave	Arterial	6	43,100	9,182	0.213	A
Stetson Ave	Sanderson Ave and Kirby St[2]	Major	4	27,300	16,914	0.620	B

[1] Roadway Capacities from County of Riverside General Plan Circulation Element, Figure C-3.

[2] Daily Volume on these segments was derived from the ratio between roadway segments on Sanderson Ave and Stetson Ave in the RIVCOM 2018 volumes and actual count taken on February 10, 2022

=Unsatisfactory Level of Service

As described previously in *Section 2.4*, the acceptable roadway segment standard is LOS D for Sanderson Avenue and LOS C for Stetson Avenue. As shown in *Table 5.2*, the segment of Sanderson Avenue between Acacia Avenue and Stetson Avenue operates at LOS F with a volume of 31,976 vehicles per day. The Project increases the existing V/C of 1.022 to 1.042, which is more than the identified increase of 0.01 per the City threshold.

5.1.3 Project Completion Post the Construction of Whittier Avenue Traffic Volumes and Intersection Operations

Project Completion (2024) Conditions post the construction of Whittier Avenue volumes were developed by adding the project trips to Existing conditions and adding an ambient growth rate of two percent per year to existing traffic volumes. The Project passenger and truck trip distribution for the proposed Project post the construction of Whittier Avenue were used in this scenario as shown earlier in *Figure 4.3* and *Figure 4.5*. Levels of Service at the study area intersections were determined using the HCM methodology, described previously in *Section 2.3*. The AM peak hour and PM peak hour traffic volumes for this scenario are shown in *Figure 5.3* and *Figure 5.4* respectively. *Table 5.3* shows the Project Completion post the construction of Whittier Avenue AM and PM peak hour levels of service at study intersections. All LOS calculations are provided in *Appendix C*. As shown in *Table 5.3*, all intersections would operate at a satisfactory LOS during both AM and PM peak hours.

Table 5.3: Project Completion Post the Construction of Whittier Avenue AM and PM Peak Hour Level of Service

Intersection		Jurisdiction	Traffic Control	AM Peak		PM Peak		Threshold of Significance
				Delay[1]	LOS[2]	Delay[1]	LOS[2]	
1.	Sanderson Ave/SR-74	CalTrans/Cityof Hemet	Signal	35.0	C	47.3	D	D
2.	Sanderson Ave/Acacia Ave	Cityof Hemet	Signal	23.0	C	31.7	C	D
3.	Sanderson Ave/Whittier Ave	Cityof Hemet	TWSC	12.6	B	13.7	B	D
4.	Project Dwy-1/Whittier Ave	Cityof Hemet	AWSC	7.0	A	7.0	A	D
5.	Kirby St/SR-74	CalTrans/Cityof Hemet	Signal	17.2	B	23.8	C	D
6.	Kirby St/Acacia Ave	Cityof Hemet	Signal	23.8	C	30.7	C	D
7.	Kirby St/Project Dwy-2	Cityof Hemet	TWSC	14.9	B	23.9	C	D
8.	Kirby St/Project Dwy-3	Cityof Hemet	TWSC	9.4	A	10.8	B	D
9.	Kirby St/Johnston Ave	Cityof Hemet	AWSC	16.5	C	14.0	B	D
10.	Kirby St/Stetson Ave	Cityof Hemet	Signal	37.8	D	36.7	D	D
11.	Sanderson Ave/Stetson Ave	Cityof Hemet	Signal	47.1	D	45.9	D	D
12.	Project Dwy-4/Whittier Ave	Cityof Hemet	TWSC	8.5	A	8.5	A	D

=Unsatisfactory Level of Service

AWSC = All-Way Stop Control

TWSC = Two-Way Stop Control

[1]Delay in Seconds

[2]Level of Service

Figure 5.3: Project Completion Post the Construction of Whittier Avenue AM Peak Hour Volumes

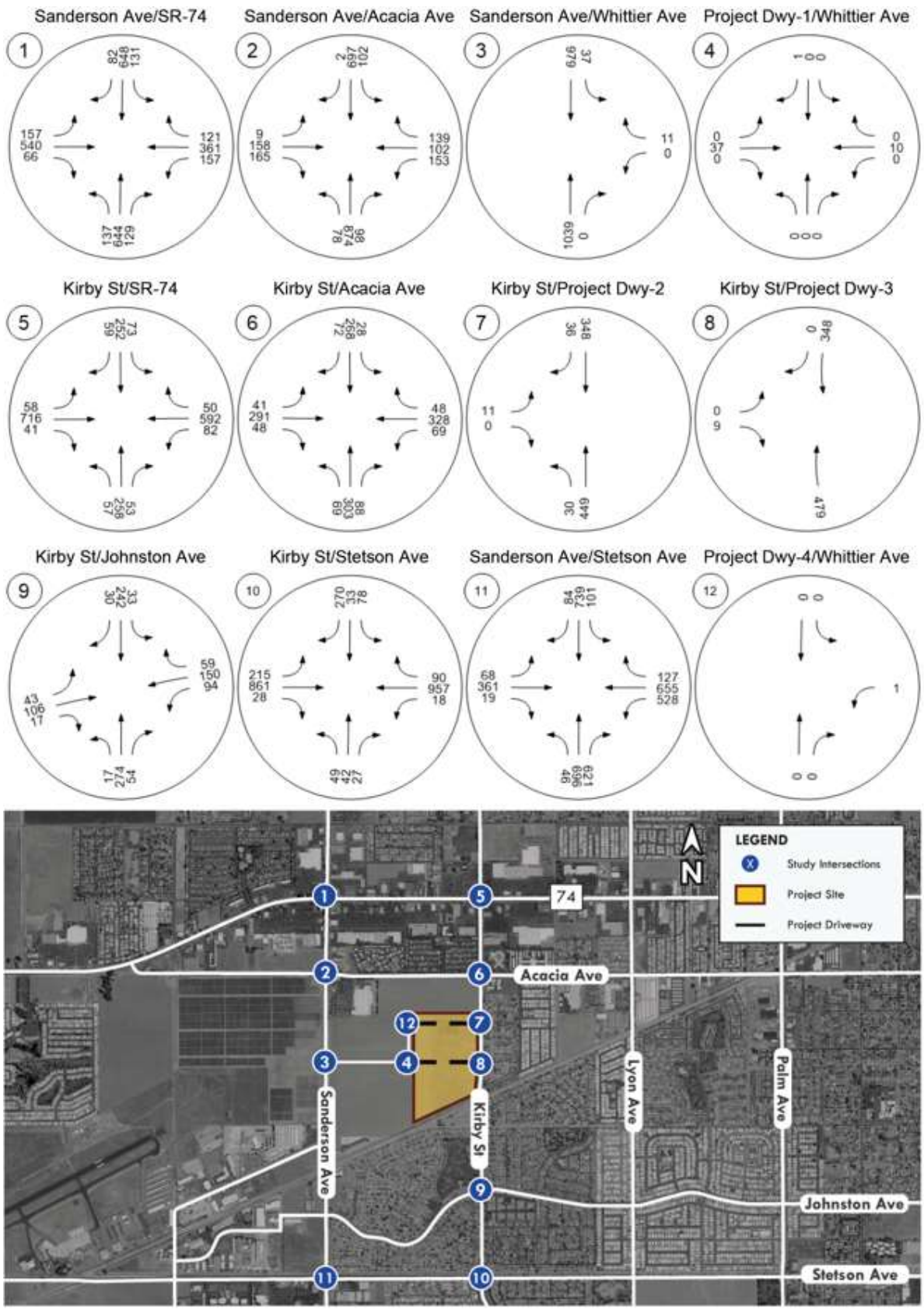
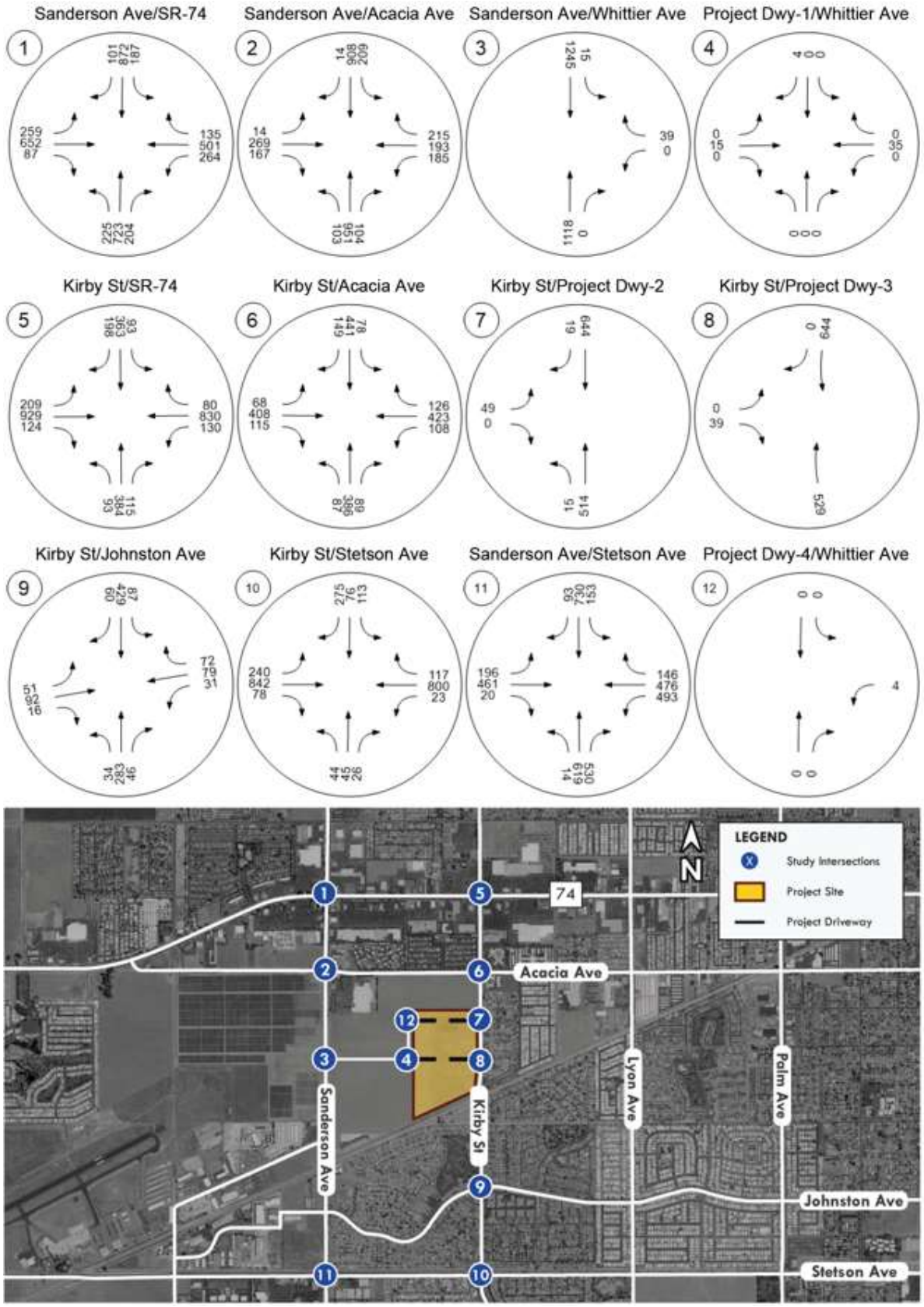


Figure 5.4: Project Completion Post the Construction of Whittier Avenue PM Peak Hour Volumes



5.1.4 Project Completion Post the Construction of Whittier Avenue Roadway Segment Operations

Project Completion (2024) Conditions Post the construction of Whittier Avenue volumes were developed by adding the project trips to Existing conditions and adding an ambient growth rate of two percent per year to existing traffic volumes. The Project passenger and truck trip distribution for the proposed Project post the construction of Whittier Avenue was used in this scenario as shown earlier in *Figure 4.3* and *Figure 4.5*. 100% of the daily truck trips will go through Sanderson Avenue between SR-74 and Acacia Avenue and Acacia Avenue and Stetson Avenue, and 25% of passenger trips will go through Stetson Avenue between Sanderson Avenue and Kirby Street. An evaluation of the existing roadway level of service (LOS) was prepared using roadway capacities from the County of Riverside General Plan Circulation Element, Figure C3. The traffic volumes and roadway LOS are shown in *Table 5.4*.

Table 5.4: Project Completion Post the Construction of Whittier Avenue Roadway Segment Volumes and Level of Service

Roadway	Limits	Classification	# of Lanes	Capacity[1]	Volume	V/C Ratio	LOS
Sanderson Ave	SR-74 and Acacia Ave	Major	4	30,700	24,866	0.810	D
Sanderson Ave	Acacia Ave and Stetson Ave	Major	4	30,700	32,793	1.068	F
Stetson Ave	Warren Rd and RR Tracks[2]	Collector	2	10,400	6,160	0.592	A
Stetson Ave	RR Tracks and Sanderson Ave	Arterial	6	43,100	9,182	0.213	A
Stetson Ave	Sanderson Ave and Kirby St[2]	Major	4	27,300	16,914	0.620	B

[1] Roadway Capacities from County of Riverside General Plan Circulation Element, Figure C-3.

[2] Daily Volume on these segments was derived from the ratio between roadway segments on Sanderson Ave and Stetson Ave in the RIVCOM 2018 volumes and actual count taken on February 10, 2022

=Unsatisfactory Level of Service

As described previously in *Section 2.4*, the acceptable roadway segment standard is LOS D for Sanderson Avenue and LOS C for Stetson Avenue. As shown in *Table 5.4*, the segment of Sanderson Avenue between Acacia Avenue and Stetson Avenue operates at LOS F with a volume of 32,793 vehicles per day. The Project increases the existing V/C of 1.022 to 1.068, which is more than the identified increase of 0.01 per the City threshold.

5.2 Cumulative (2024) Conditions

5.2.1 Cumulative Projects

The approved and pending development projects utilized in this scenario were referred from the *Cumulative Development Project Spreadsheet* document provided to EPD by the City of Hemet. A total of 30 cumulative development projects are included in this scenario, which include 16 residential and 14 industrial/commercial development projects. The location of the approved and pending cumulative projects is shown in *Figure 5.5*. The trip generation for each cumulative project was calculated using trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition, 2021) or cited from City approved TIA. The trip generation for the cumulative projects is shown in *Table 5.5*. The AM and PM peak hour traffic volumes generated by the cumulative projects is shown in *Figure 5.6* and *Figure 5.7*.

Figure 5.5: Cumulative Projects Locations

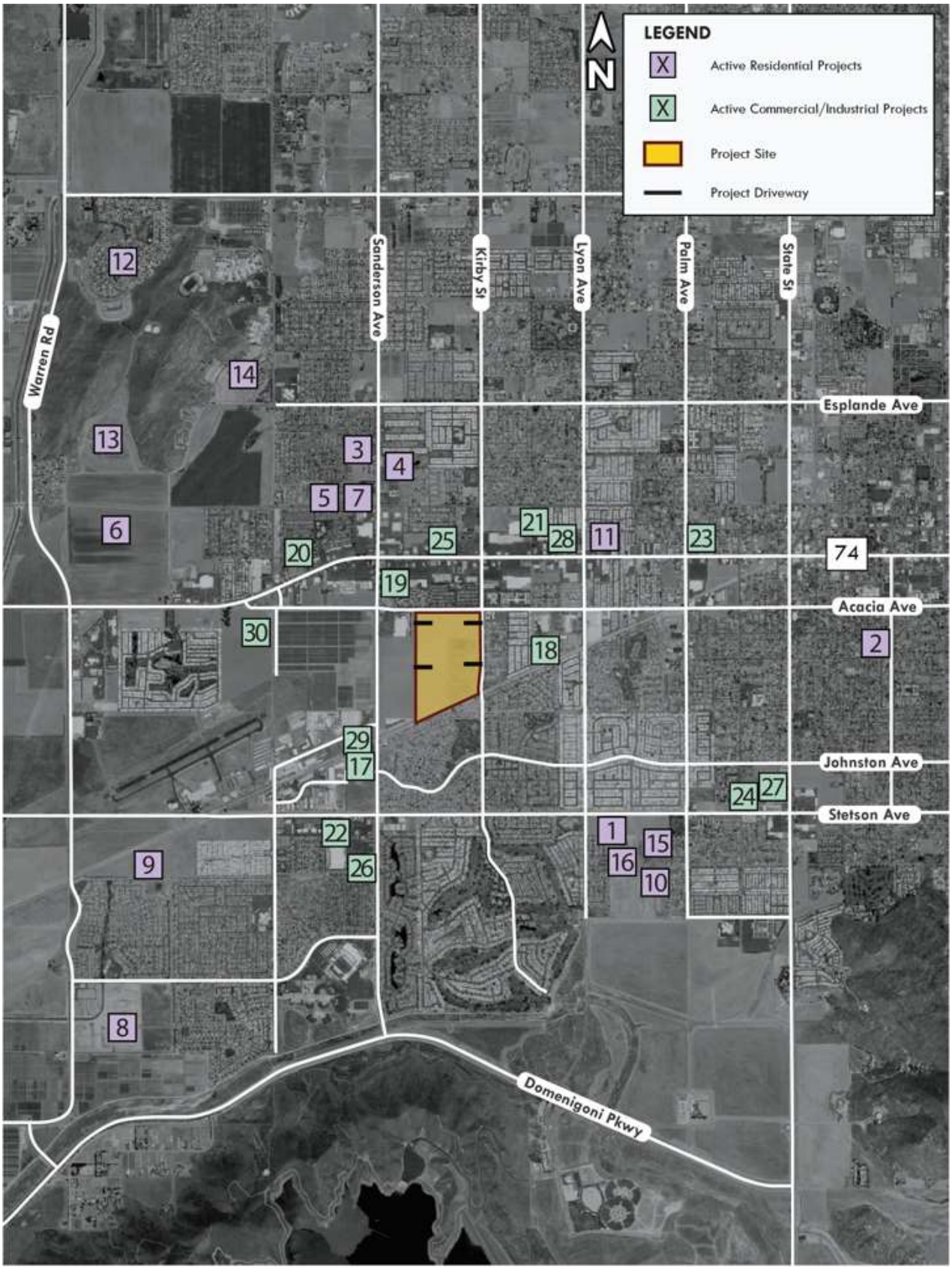


Table 5.5: Cumulative Projects Trip Generation

				AM Peak Hour			PM Peak Hour		
Land Use	**Units**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Trip Rates								
221 Multifamily Housing (Mid-Rise)[1]	DU	4.54	0.09	0.28	0.37	0.24	0.15	0.39
220 Multifamily Housing (Low-Rise)[2]	DU	6.74	0.10	0.30	0.40	0.32	0.19	0.51
210 Single-Family Detached Housing[3]	DU	9.43	0.18	0.52	0.70	0.59	0.35	0.94
252 Senior Adult Housing - Multifamily[4]	DU	3.24	0.07	0.13	0.20	0.14	0.11	0.25
251 Senior Adult Housing - Single-Family[5]	DU	4.31	0.08	0.16	0.24	0.18	0.12	0.30
712 Small Office Building [6]	TSF	14.39	1.37	0.30	1.67	0.73	1.43	2.16
150 Warehousing [7]	TSF	1.71	0.13	0.04	0.17	0.05	0.13	0.18
934 Fast-Food Resteraunt with Drive-Through Window[8]	TSF	467.48	22.75	21.86	44.61	17.18	15.85	33.03
937 Coffee/Donut Shop with Drive-Through Window[9]	TSF	533.57	48.09	37.79	85.88	19.88	19.11	38.99
310 Hotel[10]	Room	7.99	0.26	0.20	0.46	0.30	0.29	0.59
899 Liquor Store [11]	TSF	107.21	0.47	0.12	0.59	8.31	8.31	16.62
843 Automobile Parts Sales [12]	TSF	54.57	1.38	1.13	2.51	2.35	2.55	4.90
822 Strip Retail Plaza (<40k) [13]	TSF	54.45	1.42	0.94	2.36	3.30	3.30	6.59
875 Department Store [14]	TSF		0.37	0.21	0.58	0.98	0.98	1.95
948 Automated Car Wash [15]	TSF					38.75	38.75	77.50
Residential								
1. High Pointe (SDR 22-011) [1]	228 DU	1,036	19	65	84	54	34	88
2. Hemet 60 Unit (SDR 22-018) [1]	60 DU	272	5	17	22	15	9	24
3. Copenhagen (SDR14-001 (Project Extended)) [2]	40 DU	270	4	12	16	13	7	20
4. Montego Bay Apartments (SDR 22-009) [1]	96 DU	436	8	28	36	23	15	38
5. Villa Madrid (TTM 31864) [2]	104 DU	700	10	32	42	34	20	54
6. Ramona Creek (MAP21-005,TTM38309) [3]	363 DU	3,424	66	188	254	215	127	342
7. Delfinia at Devonshire (MAP21-002,TPM38141) [18]	4.1 Acres	5,829	78	90	168	95	91	186
8. Substantial Conformance #2 (MAP20-005, TTM35393, and EOT 22-002 SDR 22-002 MHC 22-001 Rancho Diamante II (Lennar Homes)) [3]	145 DU	1,368	27	75	102	86	50	136
9. Morgan Hill (MAP20-004, TTM35392, SDR22-007 and MHC22-002 and COAA22-001 and EOT 21-005) [3]	150 DU	1,414	28	78	106	89	53	142
10. River Oaks COA Amendment (MAP20-003, TTM36892) [3]	85 DU	802	16	44	60	50	30	80
11. The Latham (SDR 20-002 (Mod.1 - SDR21-018)) [4]	111 DU	360	7	15	22	16	12	28
12. Tract No. 291129 (SDR 19-006) [3]	92 DU	868	17	47	64	54	32	86
13. Tract 31513 (Tres Cerritos West) [3]	177 DU	1,670	32	92	124	105	61	166
14. Tract 29843 (EOT 08-001&2) [5]	456 DU	1,966	36	74	110	83	53	136
15. TTM 36890 (SDR 21-017) [3]	68 DU	642	12	36	48	40	24	64
16. TTM 36889, 36891 & 36892 (SDR 21-015) [3]	231 DU	2,178	42	120	162	137	81	218

Commercial/Industrial									
17. Rally's Drive Thru Resteraunt (CUP22-001) [8]	1.008	TSF	471	23	22	45	17	16	33
18. JD Fields & Company (SDR21-021)									
Office [6]	3	TSF	43	4	1	5	2	4	6
Warehouse [7]	22	TSF	38	3	1	4	1	3	4
Total Project Trip Generation (PCE)			98	9	2	11	3	9	12
19. Dutch Bros (CUP21-013) [9]	0.871	TSF	465	42	33	75	17	17	34
20. Holiday Inn & Express (CUP19-015) [10]	80	Rooms	639	21	16	37	24	23	47
21. El Toro Express (CUP20-006 / PCN21-001 / APL21-001) [11]	5.040	TSF	540	2	1	3	42	42	84
22. O'Reilly's, new retail bldg & expansion (SDR20-015)									
Auto Parts Store [12]	7.453	TSF	406	10	8	18	17	19	36
Commercial Addition [13]	5.001	TSF	272	7	5	12	16	16	32
Department Store Addition [14]	10.000	TSF		3	1	4	7	7	14
Total Project Trip Generation			678	20	14	34	40	42	82
23. Express Car Wash - Palm (SDR20-010) [15]	5.500	TSF					213	213	426
24. Sunny Car Wash - Stetson (CUP20-005 / SDR20-008) [15]	5.580	TSF					216	216	432
25. Shamloo Drive Thru (CUP20-003) [8]	2.829	TSF	1,323	64	62	126	49	45	94
26. Dave's Hot Chicken (CUPA21-002) [8]	2.711	TSF	1,267	62	59	121	47	43	90
27. Warehouse and Drop ship (AUP20-001) [7]	83.020	TSF	142	11	3	14	4	11	15
Total Project Trip Generation (PCE)			202	16	5	21	5	16	21
28. Puff Time Tobacco Store - Boardwalk (CUP20-001 / VAR20-002) [11]	1.320	TSF	142	1	0	1	11	11	22
29. National Tube Steel (SDR 23-002) (PCE) [16]	90.030	TSF	219	18	6	24	7	18	25
30. Hemet 63 Warehouse & Industrial (ZC 22-002 & SDR 22-017) (PCE) [17]	1,140.401	TSF	3,022	136	41	177	64	165	229

TSF = Thousand Square Feet
DU = Dwelling Unit
RM = Rooms
PCE = Passenger Car Equivalent

[1]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 221 Multifamily Housing (Mid-Rise)
[2]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 220 Multifamily Housing (Low-Rise)
[3]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 210 Single-Family Detached Housing
[4]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 252 Senior Adult Housing - Multifamily
[5]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 251 Senior Adult Housing - Single-Family
[6]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 712 Small Office Building
[7]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 150 Warehousing
[8]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 934 Fast-Food Resteraunt with Drive-Through Window
[9]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 937 Coffee/Donut Shop with Drive-Through Window
[10]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 310 Hotel
[11]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 899 Liquor Store
[12]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 843 Automobile Parts Sales
[13]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 822 Strip Retail Plaza (<40k)
[14]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 875 Department Store
[15]Trip rates from the Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 948 Automated Car Wash
[16]Trip rates from Trip Generation and Level of Service (LOS) Screening Analysis memo for National Tube Steel Project, EPD Solutions, Inc., February, 2023
[17]Trip rates from Hemet 63 Warehouse Project Scoping, EPD Solutions, Inc., March, 2023
[18]Trip rates from City of Hemet Planing Department. This project includes 61-unit apartment complex, a 4,140 square foot convenience market with gas station (16-fueling positions) and a 2,240 square foot car wash (1 tunnel) with 10 vacuum stalls.

Figure 5.6: Cumulative Projects AM Peak Hour Trip Assignment

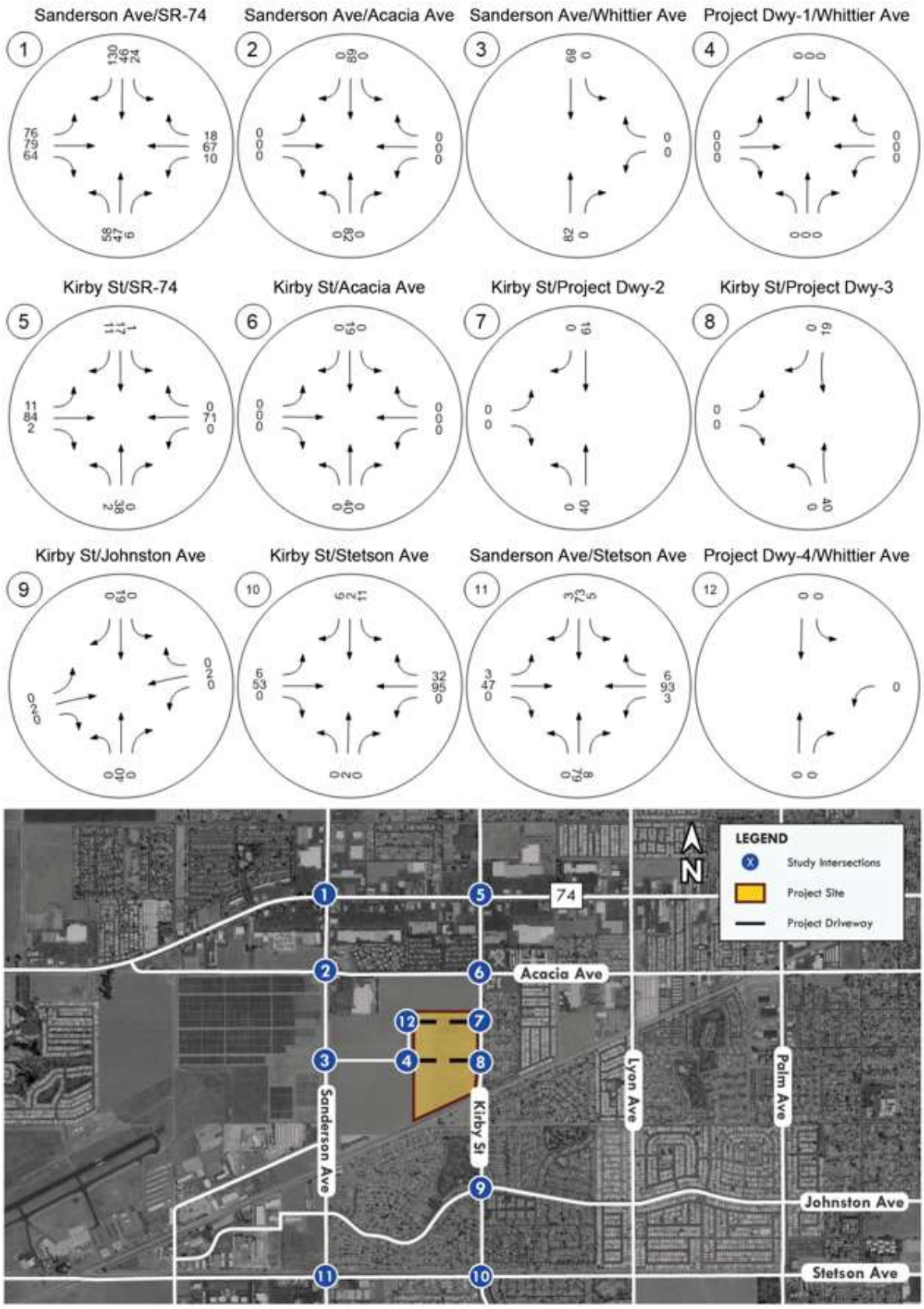
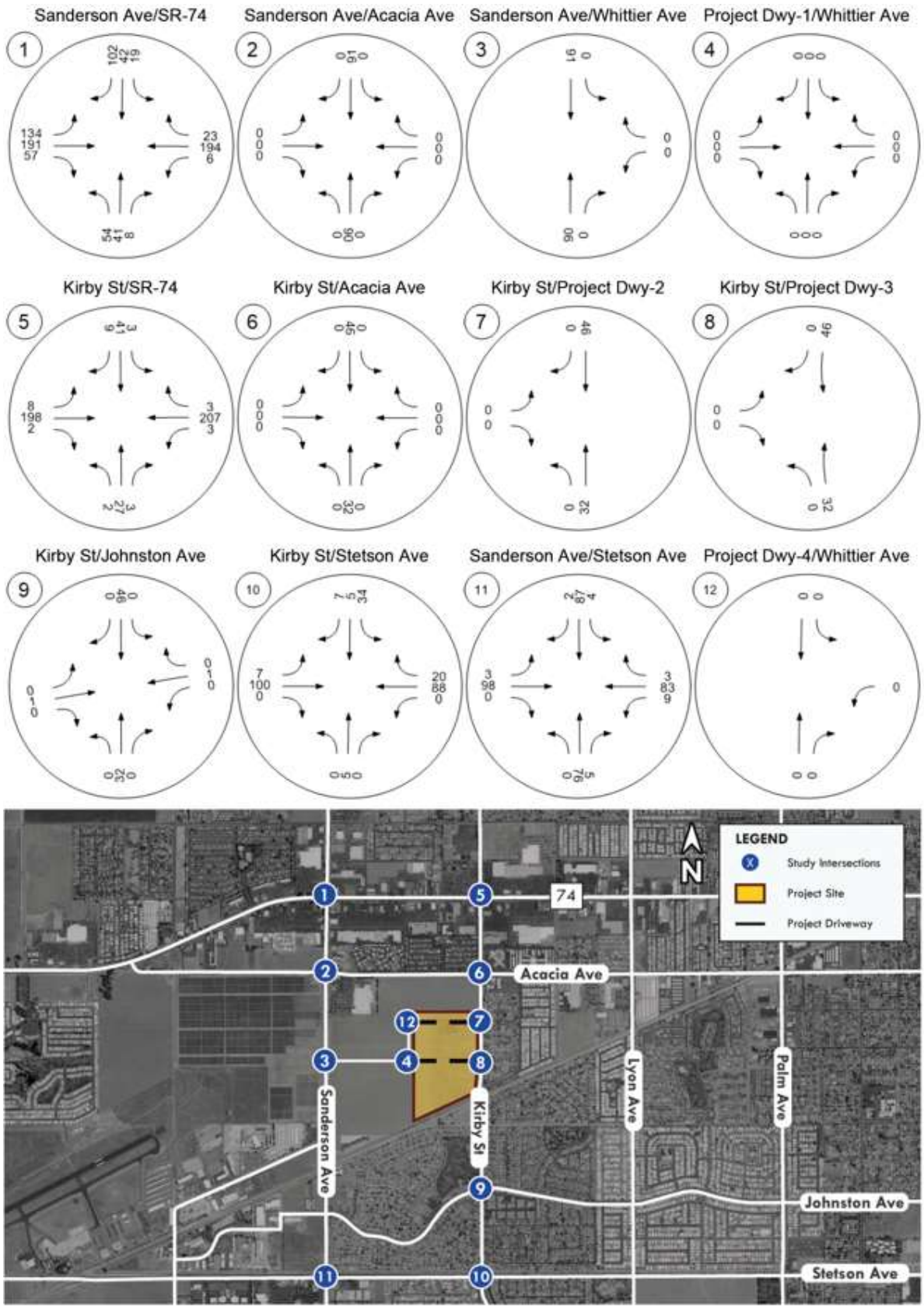


Figure 5.7: Cumulative Projects PM Peak Hour Trip Assignment



5.2.2 Cumulative Conditions Before the Construction of Whittier Avenue Traffic Volumes and Intersection Operations

Cumulative (2024) Conditions before the construction of Whittier Avenue volumes were developed by adding the project trips to Existing conditions, adding an ambient growth rate of two percent per year to existing traffic volumes and adding traffic generated by other approved and pending development projects. The AM peak hour and PM peak hour traffic volumes for this scenario are shown in *Figure 5.8* and *Figure 5.9* respectively. Levels of service at the study area intersections were determined using the HCM methodology, described previously in *Section 2.3*. *Table 5.6* shows the Cumulative Conditions before the construction of Whittier Avenue AM and PM peak hour levels of service at study intersections. All LOS calculations are provided in *Appendix* C. As shown in *Table 5.6*, all intersections would operate at a satisfactory LOS during both AM and PM peak hours except for the intersection of Sanderson Avenue and SR-74 which operates at LOS E during the PM peak hour.

Table 5.6: Cumulative Conditions Before the Construction of Whittier Avenue AM and PM Peak Hour Level of Service

Intersection		Jurisdiction	Traffic Control	AM Peak		PM Peak		Threshold of Significance
				Delay[1]	LOS[2]	Delay[1]	LOS[2]	
1.	Sanderson Ave/SR-74	CalTrans/Cityof Hemet	Signal	40.8	D	69.5	E	D
2.	Sanderson Ave/Acacia Ave	Cityof Hemet	Signal	23.2	C	33.7	C	D
3.	Sanderson Ave/Whittier Ave	Cityof Hemet	TWSC	-	-	-	-	D
4.	Project Dwy-1/Whittier Ave	Cityof Hemet	AWSC	-	-	-	-	D
5.	Kirby St/SR-74	CalTrans/Cityof Hemet	Signal	17.5	B	29.6	C	D
6.	Kirby St/Acacia Ave	Cityof Hemet	Signal	22.6	C	30.8	C	D
7.	Kirby St/Project Dwy-2	Cityof Hemet	TWSC	16.2	B	33.4	D	D
8.	Kirby St/Project Dwy-3	Cityof Hemet	TWSC	9.4	A	11.0	B	D
9.	Kirby St/Johnston Ave	Cityof Hemet	AWSC	18.0	C	15.2	C	D
10.	Kirby St/Stetson Ave	Cityof Hemet	Signal	52.6	D	49.1	D	D
11.	Sanderson Ave/Stetson Ave	Cityof Hemet	Signal	50.7	D	52.3	D	D
12.	Project Dwy-4/Whittier Ave	Cityof Hemet	TWSC	-	-	-	-	D

=Unsatisfactory Level of Service

AWSC = All-Way Stop Control

TWSC = Two-Way Stop Control

[1]Delay in Seconds

[2]Level of Service

Figure 5.8: Cumulative Conditions Before the Construction of Whittier Avenue AM Peak Hour Traffic Volumes

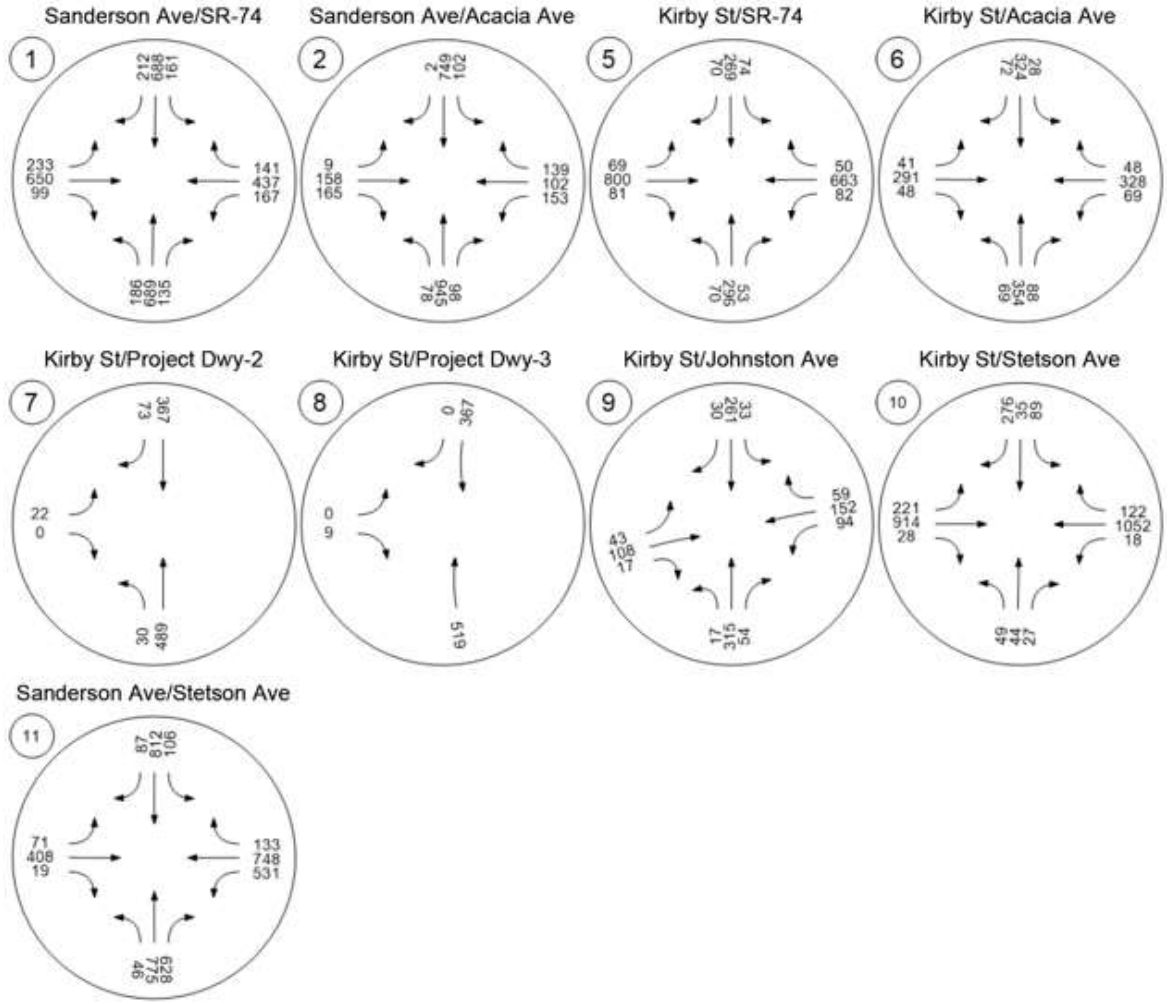
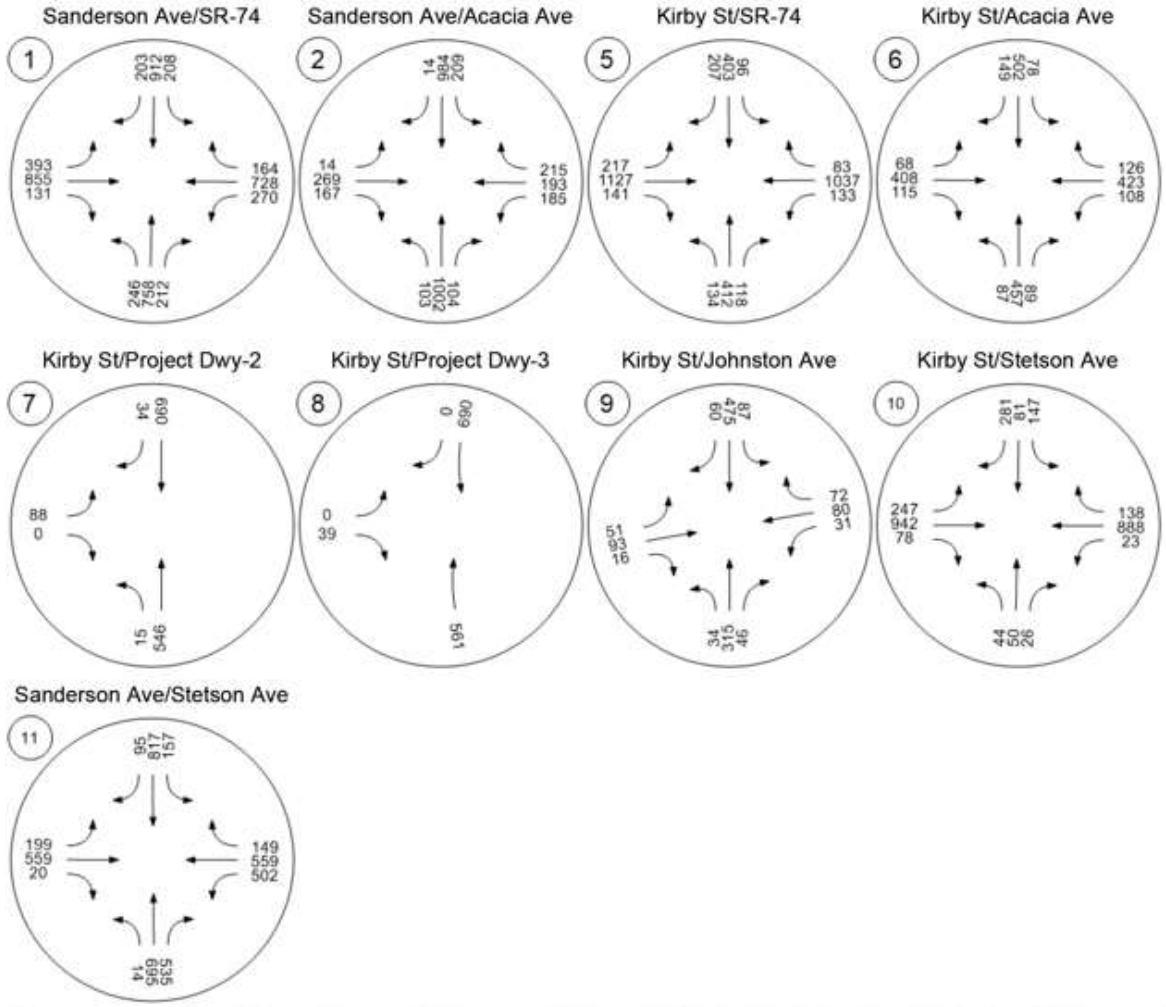




Figure 5.9: Cumulative Conditions Before the Construction of Whittier Avenue PM Peak Hour Traffic Volumes





5.2.3 Cumulative Conditions Before the Construction of Whittier Avenue Roadway Segment Operations

Cumulative (2024) Conditions before the construction of Whittier Avenue volumes were developed by adding the project trips to Existing conditions, adding an ambient growth rate of two percent per year to existing traffic volumes and adding traffic generated by other approved and pending development projects. The Project passenger and truck trip distribution for the proposed Project before the construction of Whittier Avenue were used in this scenario as shown earlier in *Figure 4.3* and *Figure 4.4*. 100% of the daily truck trips will go through Kirby Street and SR-74. In addition, 25% of passenger trips will go through Stetson Avenue between Sanderson Avenue and Kirby Street. No Project traffic would go through Sanderson Avenue between Acacia Avenue and Whittier Avenue. An evaluation of the roadway LOS was prepared using roadway capacities from the *County of Riverside General Plan Circulation Element, Figure* C3. The traffic volumes and roadway LOS are shown in *Table 5.7*.

Table 5.7: Cumulative Conditions Before the Construction of Whittier Avenue Roadway Segment Volumes and Level of Service

Roadway	Limits	Classification	# of Lanes	Capacity[1]	Volume	V/C Ratio	LOS
Sanderson Ave	SR-74 and Acacia Ave	Major	4	30,700	26,651	0.868	D
Sanderson Ave	Acacia Ave and Stetson Ave	Major	4	30,700	34,205	1.114	F
Stetson Ave	Warren Rd and RR Tracks[2]	Collector	2	10,400	8,158	0.784	C
Stetson Ave	RR Tracks and Sanderson Ave	Arterial	6	43,100	11,180	0.259	A
Stetson Ave	Sanderson Ave and Kirby St[2]	Major	4	27,300	19,082	0.699	B

[1] Roadway Capacities from County of Riverside General Plan Circulation Element, Figure C-3.

[2] Daily Volume on these segments was derived from the ratio between roadway segments on Sanderson Ave and Stetson Ave in the RIVCOM 2018 volumes and actual count taken on February 10, 2022

=Unsatisfactory Level of Service

As described previously in *Section 2.4*, the acceptable roadway segment standard is LOS D for Sanderson Avenue and LOS C for Stetson Avenue. As shown in *Table 5.7*, the segment of Sanderson Avenue between Acacia Avenue and Stetson Avenue operates at LOS F with a volume of 34,205 vehicles per day. The Project increases the existing V/C of 1.022 to 1.114, which is more than the identified increase of 0.01 per the City threshold.

5.2.4 Cumulative Conditions Post the Construction of Whittier Avenue Traffic Volumes and Intersection Operations

Cumulative (2024) Conditions post the construction of Whittier Avenue volumes were developed by adding the project trips to Existing conditions, adding an ambient growth rate of two percent per year to existing traffic volumes and adding traffic generated by other approved and pending development projects. The AM peak hour and PM peak hour traffic volumes for this scenario are shown in *Figure 5.10* and *Figure 5.11* respectively. Levels of service at the study area intersections were determined using the HCM methodology, described previously in section 2.3. *Table 5.8* shows the Cumulative Conditions post the construction of Whittier Avenue AM and PM peak hour levels of service at study intersections. All LOS calculations are provided in *Appendix* C. As shown in *Table 5.8*, all intersections would operate at a satisfactory LOS during both AM and PM peak hours except for the intersection of Sanderson Avenue and SR-74 which operates at LOS E during the PM peak hour.

Table 5.8: Cumulative Conditions Post the Construction of Whittier Avenue AM and PM Peak Hour Level of Service

Intersection		Jurisdiction	Traffic Control	AM Peak		PM Peak		Threshold of Significance
				Delay[1]	LOS[2]	Delay[1]	LOS[2]	
1.	Sanderson Ave/SR-74	CalTrans/Cityof Hemet	Signal	38.1	D	68.8	E	D
2.	Sanderson Ave/Acacia Ave	Cityof Hemet	Signal	23.2	C	33.5	C	D
3.	Sanderson Ave/Whittier Ave	Cityof Hemet	TWSC	13.1	B	14.4	B	D
4.	Project Dwy-1/Whittier Ave	Cityof Hemet	AWSC	7.0	A	7.0	A	D
5.	Kirby St/SR-74	CalTrans/Cityof Hemet	Signal	17.6	B	28.2	C	D
6.	Kirby St/Acacia Ave	Cityof Hemet	Signal	22.3	C	28.9	C	D
7.	Kirby St/Project Dwy-2	Cityof Hemet	TWSC	15.5	C	26.4	D	D
8.	Kirby St/Project Dwy-3	Cityof Hemet	TWSC	9.4	A	11.0	B	D
9.	Kirby St/Johnston Ave	Cityof Hemet	AWSC	18.0	C	15.2	C	D
10.	Kirby St/Stetson Ave	Cityof Hemet	Signal	50.3	D	46.7	D	D
11.	Sanderson Ave/Stetson Ave	Cityof Hemet	Signal	50.5	D	50.7	D	D
12.	Project Dwy-4/Whittier Ave	Cityof Hemet	TWSC	8.5	A	8.5	A	D

=Unsatisfactory Level of Service

AWSC = All-Way Stop Control

TWSC = Two-Way Stop Control

[1]Delay in Seconds

[2]Level of Service

Figure 5.10: Cumulative Conditions Post the Construction of Whittier Avenue AM Peak Hour Traffic Volumes

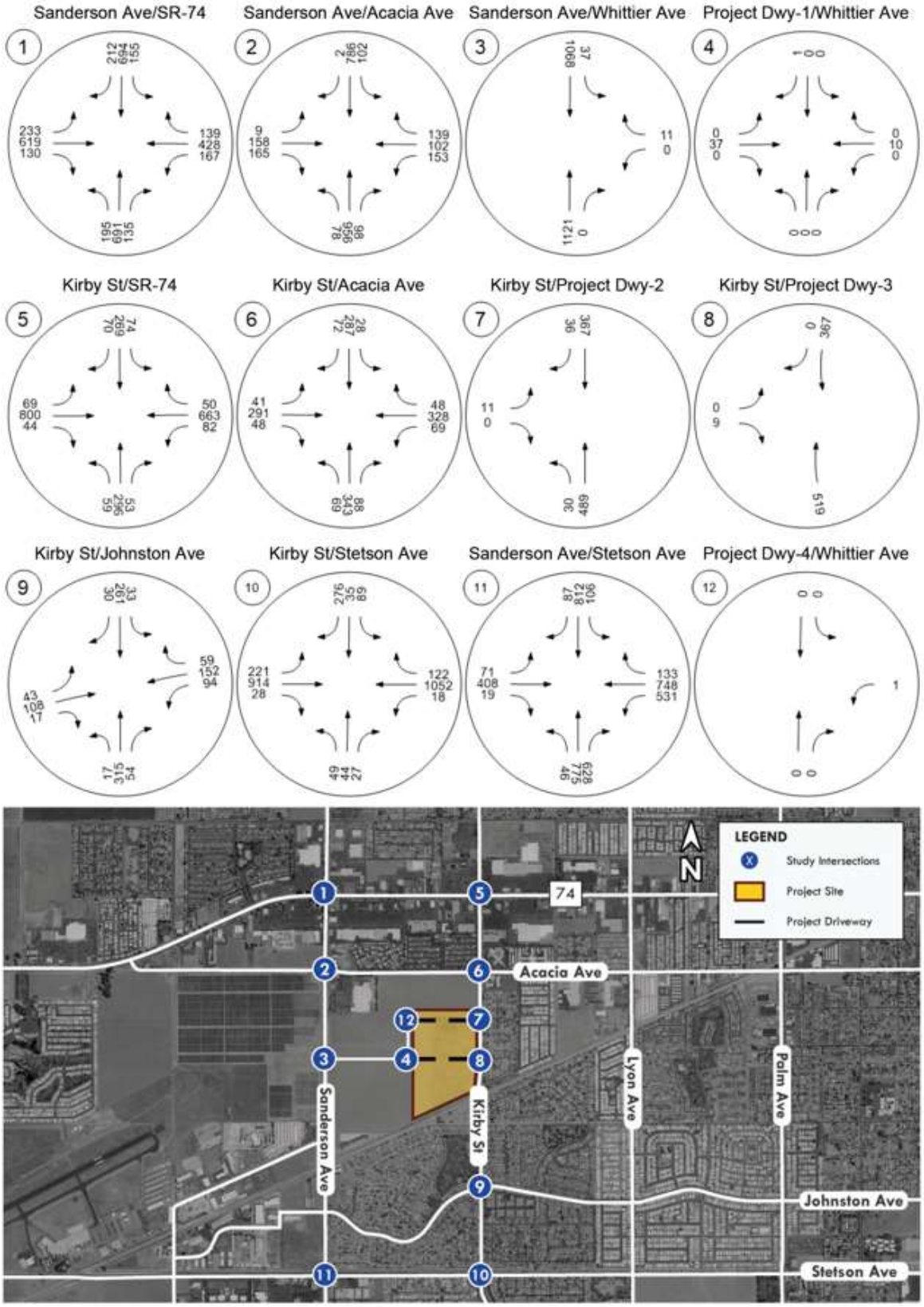
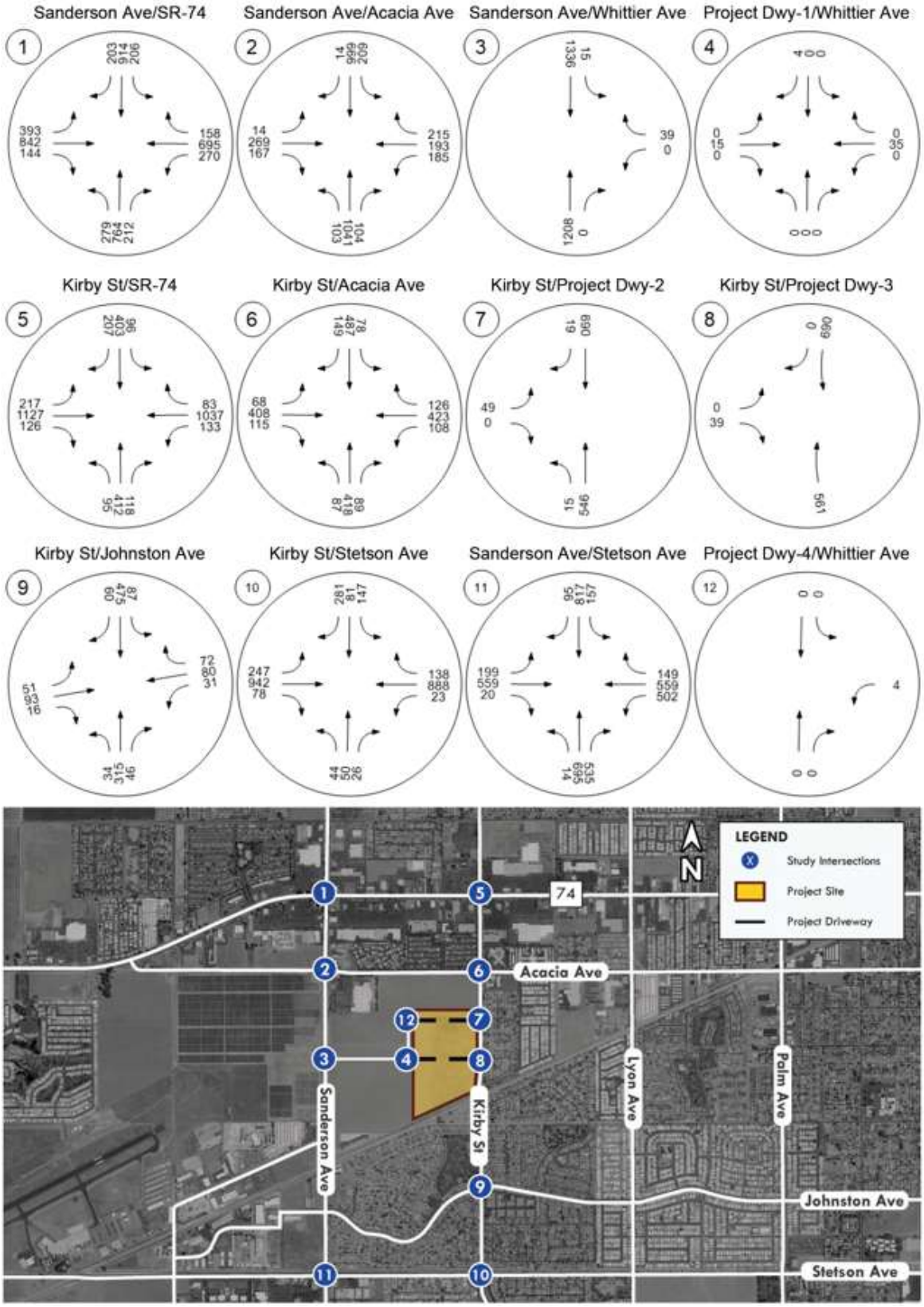


Figure 5.11: Cumulative Conditions Post the Construction of Whittier Avenue PM Peak Hour Traffic Volumes



5.2.5 Cumulative Conditions Post the Construction of Whittier Avenue Roadway Segment Operations

Cumulative (2024) Conditions post the construction of Whittier Avenue volumes were developed by adding the project trips to Existing conditions, adding an ambient growth rate of two percent per year to existing traffic volumes and adding traffic generated by other approved and pending development projects. The Project passenger and truck trip distribution for the proposed Project before the construction of Whittier Avenue were used in this scenario as shown earlier in *Figure 4.3* and *Figure 4.5*. 100% of the daily truck trips will go through Sanderson Avenue between SR-74 and Acacia Avenue and 25% of passenger trips will go through Stetson Avenue between Sanderson Avenue and Kirby Street. An evaluation of roadway LOS was prepared using roadway capacities from the County of Riverside General Plan Circulation Element, Figure C3. The traffic volumes and roadway LOS are shown in *Table 5.9*.

Table 5.9: Cumulative Conditions Post the Construction of Whittier Avenue Roadway Segment Volumes and Level of Service

Roadway	Limits	Classification	# of Lanes	Capacity[1]	Volume	V/C Ratio	LOS
Sanderson Ave	SR-74 and Acacia Ave	Major	4	30,700	27,468	0.895	D
Sanderson Ave	Acacia Ave and Stetson Ave	Major	4	30,700	35,022	1.141	F
Stetson Ave	Warren Rd and RR Tracks[2]	Collector	2	10,400	8,158	0.784	C
Stetson Ave	RR Tracks and Sanderson Ave	Arterial	6	43,100	11,180	0.259	A
Stetson Ave	Sanderson Ave and Kirby St[2]	Major	4	27,300	19,082	0.699	B

[1] Roadway Capacities from County of Riverside General Plan Circulation Element, Figure C-3.

[2] Daily Volume on these segments was derived from the ratio between roadway segments on Sanderson Ave and Stetson Ave in the RIVCOM 2018 volumes and actual count taken on February 10, 2022

=Unsatisfactory Level of Service

As described previously in *Section 2.4*, the acceptable roadway segment standard is LOS D for Sanderson Avenue and LOS C for Stetson Avenue. As shown in *Table 5.9*, the segment of Sanderson Avenue between Acacia Avenue and Stetson Avenue operates at LOS F with a volume of 35,022 vehicles per day. The Project increases the existing V/C of 1.022 to 1.141, which is more than the identified increase of 0.01 per the City threshold.

6 RECOMMENDED PROJECT IMPROVEMENTS

6.1 Recommended Project Improvements

Development of the proposed Project would result in unsatisfactory LOS at the intersection of Sanderson Avenue and SR-74 in Cumulative Conditions before and post the construction of Whittier Avenue. As discussed previously in *Section 2.4*, this is consistent with the findings of the *Hemet General Plan FEIR*. The City has historically made exception to its LOS standard at the intersection of Sanderson Avenue and SR-74. Furthermore, SR-74 is part of the CMP, and the portion of the SR-74 from Sanderson Avenue to Hemet Street is exempt from CMP LOS requirements because of its LOS F operation conditions in 1991.

The development of the proposed Project would also result in an unsatisfactory LOS for the roadway segment of Sanderson Avenue between Acacia Avenue and Stetson Avenue, both under Project Completion and Cumulative Conditions. Peak hour intersection operations are more indicative of transportation network performance. Since the signalized intersections on either end of the impacted roadway segment operate at acceptable levels of service for the AM and PM peak hours under all scenarios, mitigation is not required to address the roadway segment impact. The roadway segment of Sanderson Avenue between Acacia Avenue and Stetson Avenue is built out to its maximum width per the *City of Hemet General Plan Circulation Element* as a Major. This segment of Sanderson was noted to operate at LOS F in the existing conditions.

Furthermore, the *City of Hemet General Plan 2030 Section 4.4.1 Measuring Traffic Flow* states that 'The City accepts a Level of Service below "D" for roadways and intersections at Florida and Sanderson Avenues, and at Devonshire and Sanderson Avenues, where Level of Service is affected by delays at Florida and Sanderson Avenues. The City has recognized that certain segments and intersections would exceed Level of Service "D" as early as 1992 during a comprehensive General Plan update. These segments included portions of Florida Avenue, Stetson Avenue, and Sanderson Avenue. Measure C incorporated these problematic roads in the measure language, and portions of Florida, Sanderson and Stetson do not need to comply with Measure C's standard. The land uses and circulation system in this General Plan have resolved the service level problems identified for Stetson Avenue; however, Florida Avenue and Sanderson Avenue would still operate below Level of Service "D" with implementation of the General Plan.' Therefore, consistent with the City's General Plan, no improvements are recommended.

7 SITE ACCESS AND SAFETY ANALYSES

Passenger vehicle access to the Kirby Industrial Project site will be provided via two access driveways on Kirby Street (Driveway 2 and Driveway 3). Prior to the construction of Whittier Avenue between Sanderson Avenue and the Project site, truck access will be provided through the northern driveway on Kirby Street. After the construction of Whittier Avenue, truck access will be provided via two additional access driveways on Whittier Avenue (Driveway 1 and Driveway 4).

7.1 Intersection Sight Distance

According to the criteria contained in the *2023 County of Riverside Road Standards and County Standard Specifications, Std. No. 821*, as shown in *Table 7.1* below, the posted speed limit on Kirby Street is 35 mph, and the required sight distance to cross a two-lane highway is 385 feet. For making a left-turn from the project driveways on Kirby Street, the vehicles would have to cross an additional two lanes, which would result in a total gap time of 8.5 seconds per footnote #1 of Std. No 821, shown in *Table 7.1* below. As such, a minimum sight distance of 385 feet for a right turn is recommended, and a minimum sight distance of 440 feet for a left turn is recommended for Project Driveways 2 and 3. Based on virtual street survey from Google and Microsoft Bing Street View, there appears to be sufficient sight distance for both driveways on Kirby Street. Following the construction of Whittier Avenue and assuming a maximum allowable speed of 25 mph, Project Driveways 1 and 4 should maintain a minimum sight distance of 150 feet while constructing Whittier Avenue.

Table 7.1: County of Riverside Intersection Sight Distance

DESIGN SPEED (MPH)	SIGHT DISTANCE (FT)	
	PUBLIC STREETS[1]	PRIVATE STREETS[2]
20	220	125
25	275	150
30	330	200
35	385	250
40	440	300
45	495	360
50	550	430
55	605	500
60	660	580
65	715	660

1. BASED ON 7.5 S GAP TIME FOR CROSSING 2-LANE HIGHWAY; ADD 0.5 S FOR EACH ADDITIONAL LANE TO BE CROSSED; AND ADD 0.2 S FOR EACH PERCENT GRADE WHEN MINOR ROAD'S APPROACH EXCEEDS 3% UPGRADE. SIGHT DISTANCE = 1.47 x DESIGN SPEED (MPH) x GAP TIME (S).

2. PER CALTRANS HIGHWAY DESIGN MANUAL INDEX 405.1(2)(C), THE MIN. CORNER SIGHT DISTANCE SHALL BE EQUAL TO STOPPING SIGHT DISTANCE AS SHOWN ON TABLE 201.1 .

7.2 Driveway Length and Gated Entrance

Sufficient driveway length allows vehicles to enter the Project area without causing subsequent vehicles to back out on the City Street system. The minimum unsignalized driveway length should be 25 ft and should increase at a rate of 1 ft of storage per peak-hour vehicle (in 25 ft increments). As shown in Figure 4.6 and Figure 4.7 (Before the Construction of Whittier Avenue), there are 103 AM and 49 PM peak-hour vehicles entering Project Driveway 2, and no vehicles entering Project Driveway 3. As such, a minimum driveway throat length of 103 ft for Project Driveway 2, and 25 ft for Project Driveway 3 should be maintained respectively. Similarly, as shown in Figure 4.8 and Figure 4.9 (Post the Construction of Whittier Avenue), there are 66 AM and 43 PM peak-hour vehicles entering Project Driveway 2 and no vehicles entering Project Driveway 3. Thus, a minimum driveway throat length of 103 ft and 25 ft should be maintained for Project Driveway 2 and Project Driveway 3 respectively as mentioned above. As shown in the site plan, Project Driveway 2 and Project Driveway 3 would provide more than sufficient driveway length for vehicles to enter the project site without backing out to the City streets.

Similarly, as shown in Figure 4.8 and Figure 4.9 (Post the Construction of Whittier Avenue), there are 37 AM and 15 PM peak-hour vehicles entering Project Driveway 1 and no vehicles entering Project Driveway 4. Thus, a minimum driveway throat length of 37 ft and 25 ft should be maintained for Project Driveway 1 and Project Driveway 4 respectively as mentioned above. As shown in the site plan, Project Driveway 1 and Project Driveway 4 would provide sufficient driveway length for vehicles to enter the project site without backing out to the City streets.

7.3 Limit Driveway Impacts

As shown in previous sections and detailed LOS provided in Appendix C, all Project Driveway intersections operate at acceptable LOS and have sufficient distance from an adjacent intersection and/or driveways. In addition, no proposed driveways are located across existing driveways.

7.4 Corner Clearance

Per the site plan, Project Driveway 2 was observed to have approximately 895 feet of distance from the signalized intersection of Kirby St/Acacia Ave. The right-turn egress at Project Driveway 2 will not interfere with the right-turn queue at Kirby St/Acacia Ave. The right-turn egress from Project Driveway 2 and 3 right-would have more than sufficient distance to enter the left-turn pocket at the closest southern signalized intersection of Kirby St/Johnston Ave, located approximately 1,700 feet south of Project Driveway 3. As shown in previous sections and per the detailed LOS sheets provided in Appendix C, no queueing deficiencies were observed at any of the intersections per the 95th percentile output for the study intersections turn movements, and no interference to right turn queues of adjacent signalized intersections is expected.

7.5 Right Turn Lanes at Driveways

The Project right turns at peak hours across all project driveways were observed to be less than 50 vehicles, and therefore no right-turn deceleration lanes are recommended.

7.6 Adequacy of Pedestrian Facilities

Passenger vehicle entrances are located on the eastern project frontage on Kirby Steet and the Project would provide sidewalks along Kirby Street connecting to existing sidewalks.

7.7 Bicycle Accessibility

Currently, no bike lanes are provided on Kirby Street and Whittier Avenue. There are existing bike lanes on Sanderson Avenue. The *City of Hemet General Plan 2030 Figure 4.5 Bikeway Circulation Plan* identifies Kirby Street as secondary which accommodates Class 2 bike lanes. Currently, Kirby Street accommodates a two-way left turn lane and does not have bike lanes. The project will provide dedication for Class 2 bike lanes along the project frontage. Bike racks will be provided at the southeast corner of the project site in proximity to the warehouse office area.

7.8 Accessibility from Adjacent Transit Stops

The closest existing bus stops are located on Sanderson Avenue approximately 530 feet south of Whittier Avenue for RTA Route 74 and 79. Both RTA Route 74 (Route: Perris Transit Center to Hemet Valley Mall) and RTA Route 79 (Route: Pujol Ns Main to Hemet Valley Mall) travel along Sanderson Avenue.

7.9 Safety and Operational Analysis

As shown in previous sections and per the detailed LOS sheets provided in Appendix C, all study intersections operate at acceptable LOS after implementation of improvements. No safety and/or operational improvements are necessary apart from the recommended improvements in Section 6.1.

7.10 Intersection Turn Lane Queuing Analysis

As shown in previous sections and per the detailed LOS sheets provided in Appendix C, no queueing deficiencies were observed at any of the intersections per the 95th percentile output for the study intersections turn movements.

APPENDIX A – SCOPE OF WORK

PROJECT SCOPING FORM FOR TRAFFIC ANALYSIS

This letter acknowledges the City of Hemet Engineering Department requirements for traffic impact analysis of the following project. The analysis must follow the Riverside County Transportation Department Transportation Analysis Guidelines dated August 2020.

Case No. CUP22-022
Related Cases - PR-22-011
SP No.
GPA No.
CZ No.

Project Name: Kirby Industrial Project
Project Address: APN 456-030-020, Southwest corner of Kirby Street and W Acacia Ave, Hemet, CA
Project Description: 850,640 SF of industrial building

	Consultant	Developer
Name:	EPD Solutions	Newland Capital Group
Address:	2355 Main St, Suite #100	200 Spectrum Center Drive, Suite #300
	Irvine, CA 92614	Irvine, CA 92618
Telephone:	(949) 794 -1180	
Fax:		

A. Trip Generation Source: ITE 11th Edition

Current GP Land Use: Business Park
Proposed Land Use: Business Park
Current Zoning: Business Park
Proposed Zoning: Business Park

	Current Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
Weekday AM Trips	0	0	0	104	31	135
Weekday PM Trips	0	0	0	49	127	176

Internal Trip Allowance ☐ Yes ☑ No (_____% Trip Discount)
Pass-By Trip Allowance ☐ Yes ☑ No (_____% Trip Discount)

A passby trip discount of 25% is allowed for appropriate land uses. The passby trips at adjacent study area intersections and project driveways shall be indicated on a report figure.

B. Trip Geographic

Distribution:(Please see attached exhibit) Passenger Cars	N 15 %	S 20 %	E 35 %	W 30 %
Trucks	N 15 %	S 0 %	E 0 %	W 85 %

C. Background Traffic

Project Build-out Year: *2024*
Annual Ambient Growth Rate: 2 %
Phase Year(s) _____

Other area projects to be analyzed:
Model/Forecast methodology: Build-Up Method

D. **Study intersections:** *(NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)*

1. Sanderson Ave/SR-74
2. Sanderson Ave/Acacia Ave
3. Sanderson Ave/Whittier Ave
4. Project Dwy-1/Whittier Ave
5. Kirby St/SR-74
6. Kirby St/Acacia Ave
7. Kirby St/Project Dwy-2
8. Kirby St/Project Dwy-3
9. Kirby St/Johnston Ave
10. Kirby St/Stetson Ave
11. Sanderson Ave/Stetson Ave
12. Project Dwy-2/Whittier Ave

Sanderson Ave/Johnston will be analyzed separately to review existing LOS operations at the intersection.

E. **Study Roadway Segments:** *(NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)*

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

E. Other Jurisdictional Impacts

Is this project within a City's Sphere of Influence or one-mile radius of City boundaries? ☐ Yes ☑ No

If so, name of City Jurisdiction: _____

F. Site Plan Please see attached

G. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Transportation Department)
(NOTE: If the traffic study states that "a traffic signal is warranted" (or "a traffic signal appears to be warranted," or similar statement) at an existing unsignalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection.)

Review of internal circulation will be provided in TIA. Southernly driveway on east of project site will be RIRO. Queuing analysis of project driveways will be conducted. Two Opening Year Scenarios have been considered for Truck Trip Distribution, one without Whittier Avenue and one with Whittier Avenue, considering Whittier Avenue might still be in construction after Project Opening.

H. Existing Conditions

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts. Date of counts.

New Counts will be collected at the study intersections.

*** NOTE* Traffic Study Submittal Form and appropriate fee must be submitted with, or prior to submittal of this form. Transportation Department staff will not process the Scoping Agreement prior to receipt of the fee.**

Recommended by:

Abby Pal — 4/28/2023

Consultant's Representative — Date

Project Scoping Form Submitted on 8/29/22,10/14/22, 1/20/23

Revised on 4/28/2023

Approved Project Scoping Form:

_____ — _____

City of Hemet Engineering Department — Date

Table 1: Proposed Trip Generation

				AM Peak Hour			PM Peak Hour		
Land Use		**Units**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Trip Rates									
TUMF Fulfillment Center Rates[1]		TSF	2.129	0.094	0.028	0.122	0.046	0.119	0.165
Proposed Project Trip Generation									
Kirby St Industrial	850.640	TSF	1,811	80	24	104	39	101	140
Vehicle Mix [1]	*% AM*	*% PM*							
Passenger Vehicles	84.40%	87.30%	1,555	67	20	87	34	88	122
2- Axle Trucks	1.10%	1.10%	20	1	0	1	1	1	2
3-Axle Trucks	2.20%	2.20%	40	2	1	3	1	2	3
4-Axle Trucks	3.30%	3.30%	60	3	1	4	1	4	5
5+-Axle Trucks	9.00%	6.10%	137	7	2	9	2	7	9
	100.00%	100.00%	1,811	80	24	104	39	102	141
PCE Trip Generation [2]		*PCE Factor*							
Passenger Vehicles		1.0	1,555	67	20	87	34	88	122
2- Axle Trucks		1.5	30	2	0	2	2	2	4
3-Axle Trucks		2.0	80	4	2	6	2	4	6
4-Axle Trucks		3.0	179	9	3	12	4	12	16
5+-Axle Trucks		3.0	410	22	6	28	7	21	28
Total PCE Trip Generation			2,254	104	31	135	49	127	176

TSF = Thousand Square Feet

PCE = Passenger Car Equivalent

[1] Trip rates and truck percentages from Exhibit 6 of the TUMF High-Cube Warehouse Trip Generation Study, January 29, 2019. 2, 3 and 4 axle trucks were split as follows: 16.7% 2-axle, 33.3% 3-axle, and 50% 4-axle.

[2] Passenger Car Equivalent (PCE) factors from San Bernardino County CMP, Appendix B - Guidelines for CMP Traffic Impact Analysis Reports in San Bernardino County, 2016

Figure 1: Site Plan

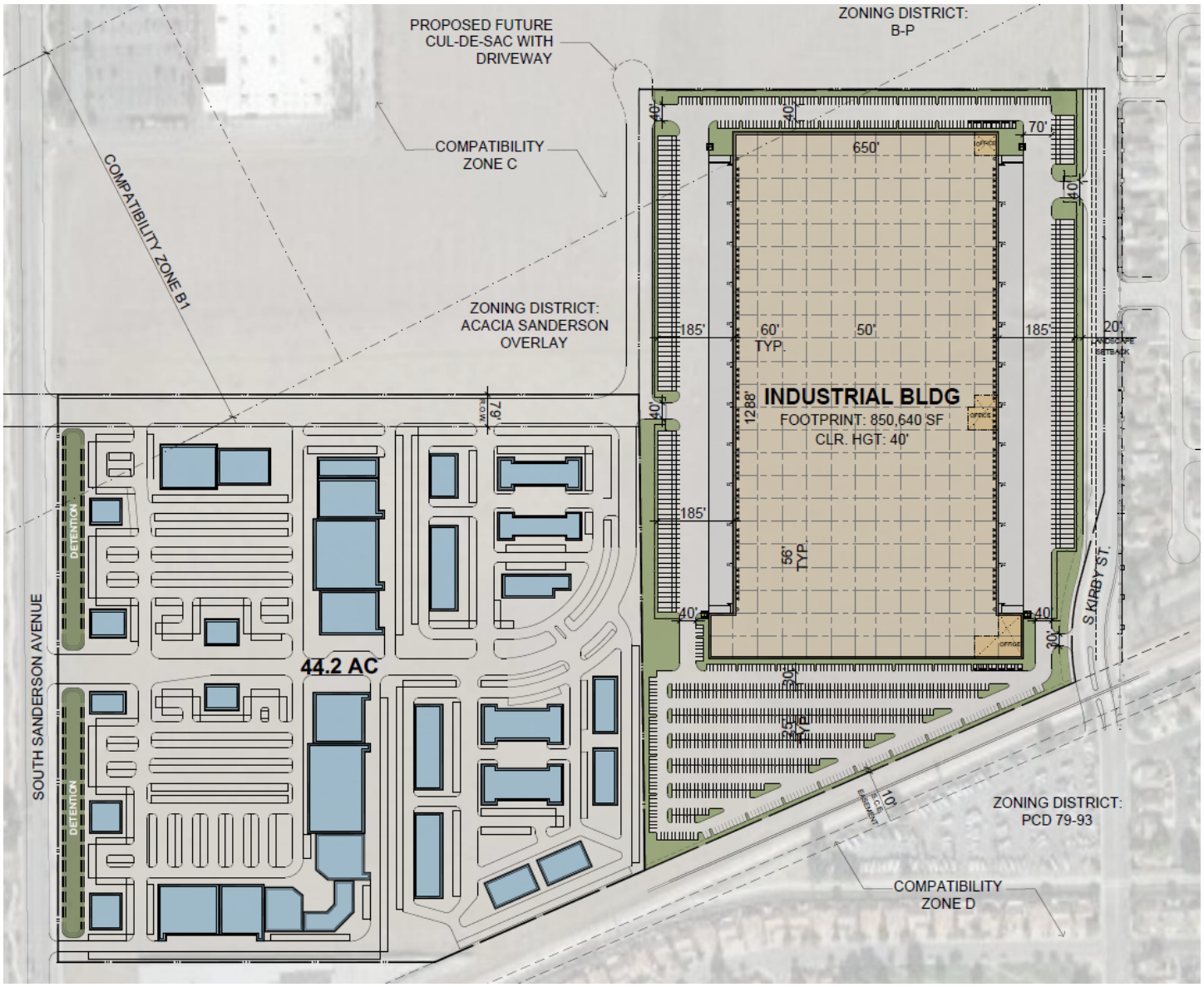


Figure 2: Proposed Passenger Vehicle Trip Distribution

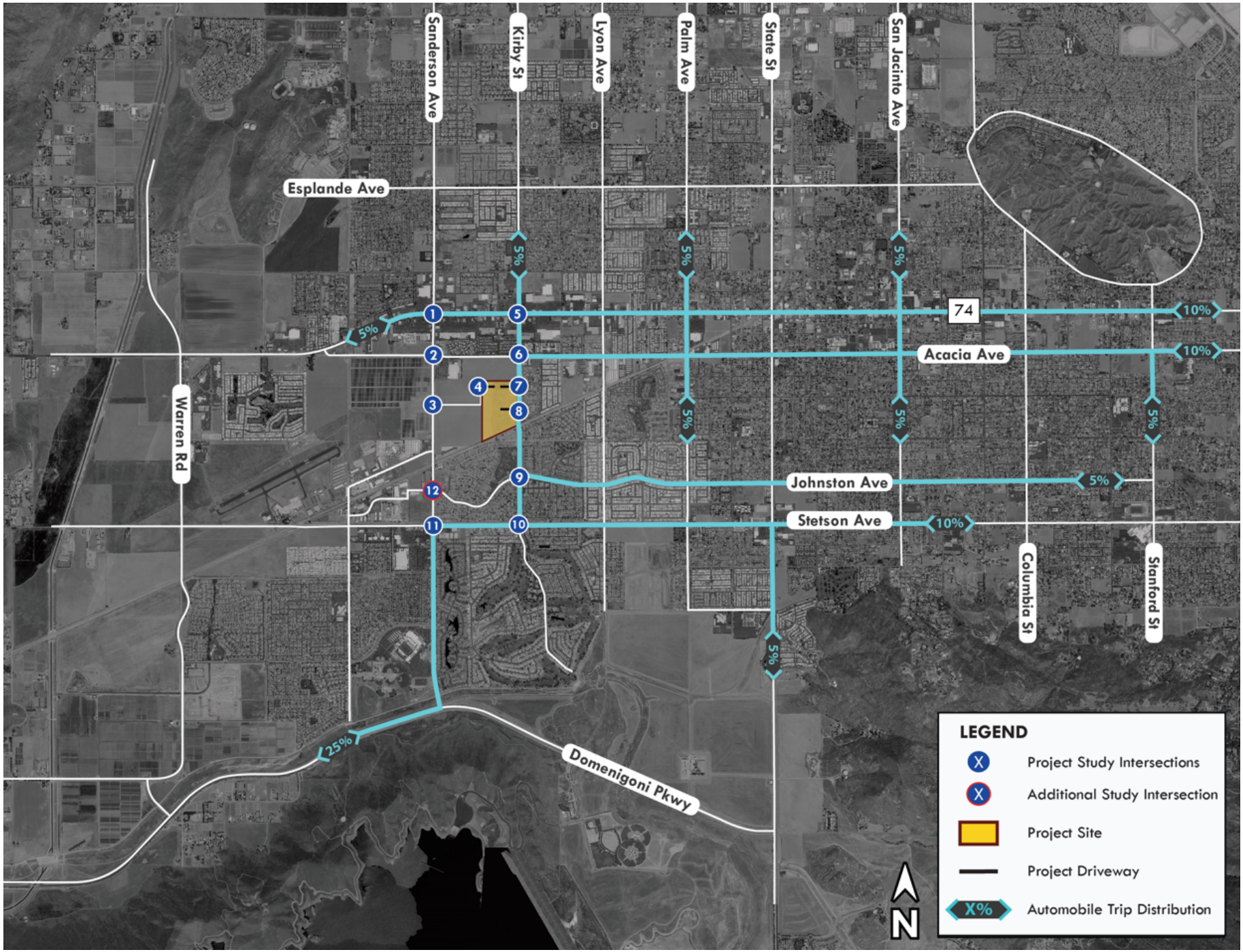


Figure 3: Proposed Truck Trip Distribution before the Construction of Whittier Avenue

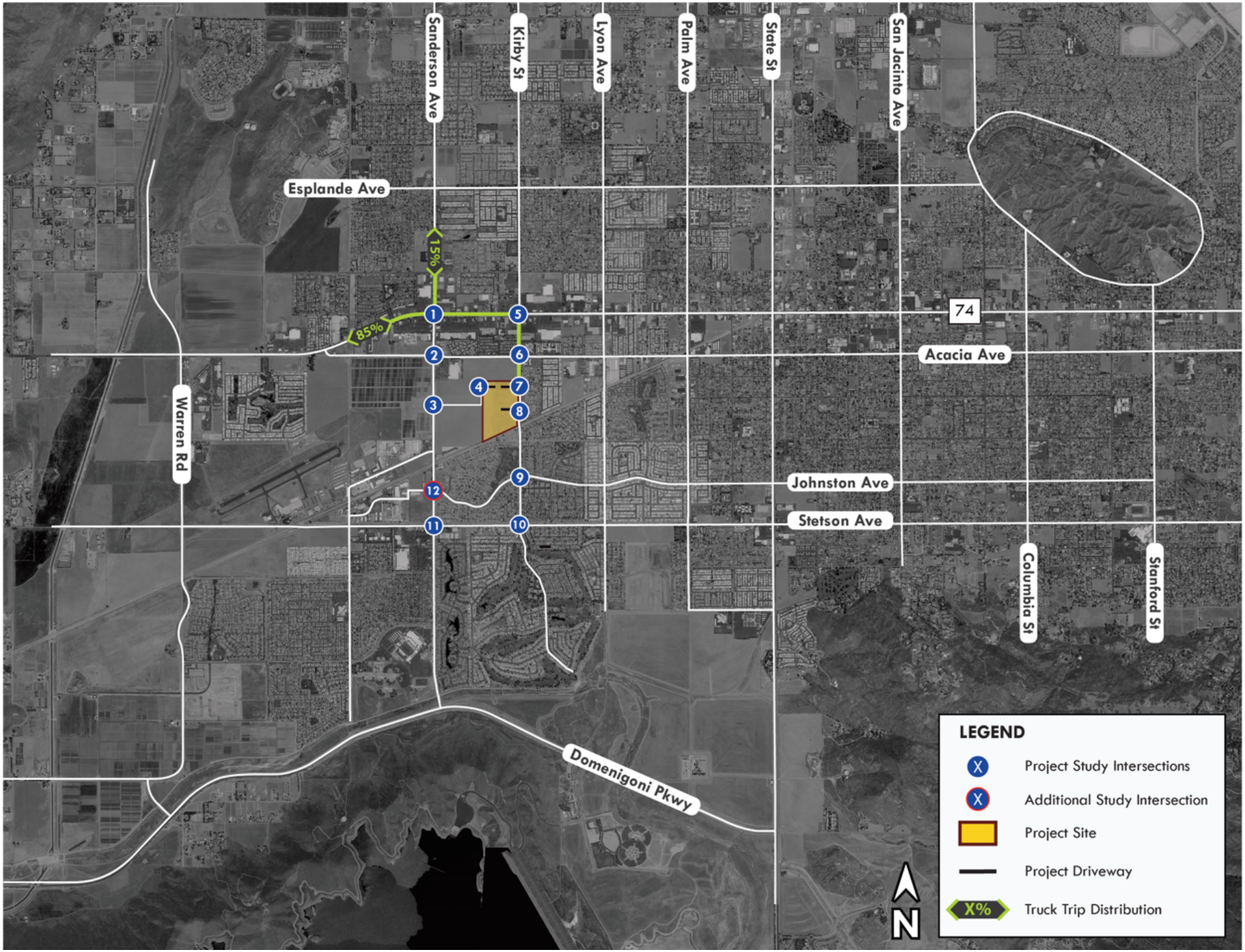
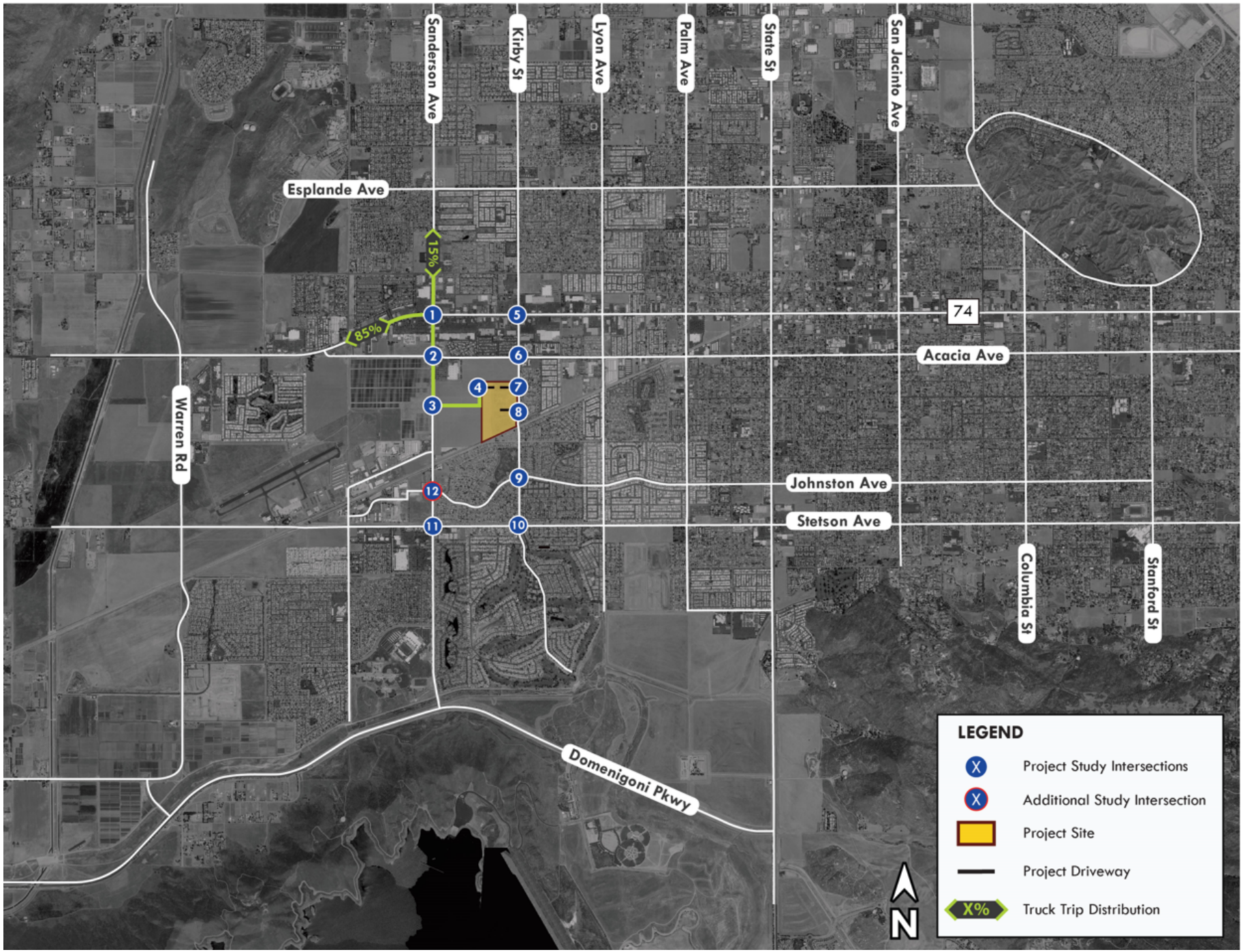


Figure 4: Proposed Truck Trip Distribution Post the Construction of Whittier Avenue



From:	Noah Rau
To:	Jeremy Krout; Abby Pal; Charlie Cisakowski; Fernandez, Carolina
Cc:	Meghan Macias; Rocio Valentin
Subject:	RE: CUP22-002 Kirby Industrial Traffic Scoping agreement
Date:	Friday, January 27, 2023 1:16:10 PM
Attachments:	image002.png image003.png

[NON-EPD]
Understood Jeremy. Thanks for clarifying.

Noah Rau |**Public Works Director/City Engineer**
CITY OF HEMET| **445 E. Florida Avenue, Hemet, CA 92543**
(951) 765-2360 | nrau@hemetca.gov

From: Jeremy Krout <jeremy@epdsolutions.com>
Sent: Friday, January 27, 2023 12:03 PM
To: Noah Rau <NRau@hemetca.gov>; Abby Pal <abby@epdsolutions.com>; Charlie Cisakowski <Charlie@epdsolutions.com>; Fernandez, Carolina <cfernandez@hrgreen.com>
Cc: Meghan Macias <meghan@epdsolutions.com>; Rocio Valentin <rocio@epdsolutions.com>
Subject: RE: CUP22-002 Kirby Industrial Traffic Scoping agreement

Warning: This email originated from outside the City of Hemet. Think before you click!

Thanks, Noah.
Doh, I missed a critical word ("not") in my email! I added it below and it should make more sense now, but what we plan on doing will still address what you're looking for since we'll have the info about the intersection.

Thank you,

Jeremy Krout
E | P | D SOLUTIONS, INC.

jeremy@epdsolutions.com
949.794.1181 direct
949.751.8993 cell
2355 Main Street, Suite 100
Irvine, CA 92614
www.epdsolutions.com

www.linkedin.com/in/jeremy-krout

EPD is Moving! As of Monday February 20, 2023, EPD will be located at our new office: 3333 Michelson Dr. Suite 500 Irvine, CA 92612

From: Noah Rau <NRau@hemetca.gov>
Sent: Friday, January 27, 2023 11:13 AM
To: Jeremy Krout <jeremy@epdsolutions.com>; Abby Pal <abby@epdsolutions.com>; Charlie Cisakowski <Charlie@epdsolutions.com>; Fernandez, Carolina <cfernandez@hrgreen.com>
Cc: Meghan Macias <meghan@epdsolutions.com>; Rocio Valentin <rocio@epdsolutions.com>
Subject: RE: CUP22-002 Kirby Industrial Traffic Scoping agreement

[NON-EPD]
Thank you for the explanation Jeremy. Also, I appreciate your study of the intersection for the project impact analysis.

Sincerely,

Noah Rau |**Public Works Director/City Engineer**
CITY OF HEMET| **445 E. Florida Avenue, Hemet, CA 92543**
(951) 765-2360 | nrau@hemetca.gov

From: Jeremy Krout <jeremy@epdsolutions.com>
Sent: Friday, January 27, 2023 9:56 AM
To: Abby Pal <abby@epdsolutions.com>; Noah Rau <NRau@hemetca.gov>; Charlie Cisakowski <Charlie@epdsolutions.com>; Fernandez, Carolina <cfernandez@hrgreen.com>
Cc: Meghan Macias <meghan@epdsolutions.com>; Rocio Valentin <rocio@epdsolutions.com>
Subject: RE: CUP22-002 Kirby Industrial Traffic Scoping agreement

Warning: This email originated from outside the City of Hemet. Think before you click!

Hi Noah,
Good to talk to you. Thank you for taking my call.
Abby and I talked and we looked at the trip distribution pattern with and without Kirby truck access and confirmed that both send trucks north to get to the 74 due to the anticipated tenant so no truck or passenger trips will hit the Johnston/Sanderson intersection. Truck trips will travel north in both scenarios and passenger cars will only use Kirby due to the site configuration and go north and south but not travel on Sanderson north from Stetson or south from Acacia since that would be an

inefficient route.
However, so you have information on the Johnston/Sanderson intersection operation, we can do a separate special study on the existing operations for that intersection but **not** include it in the project impact analysis. That way you have the info available should questions come up but there won't be a question of why we studied it despite the trip distribution not showing trips going through the intersection.
With that, we'll kick off traffic counts and the modeling effort.
Thank you again!

Jeremy Krout
E | P | D SOLUTIONS, INC.

jeremy@epdsolutions.com
949.794.1181 direct
949.751.8993 cell
2355 Main Street, Suite 100
Irvine, CA 92614
www.epdsolutions.com
www.linkedin.com/in/jeremy-krout

EPD is Moving! As of Monday February 20, 2023, EPD will be located at our new office:
3333 Michelson Dr. Suite 500 Irvine, CA 92612

From: Abby Pal <abby@epdsolutions.com>
Sent: Thursday, January 26, 2023 10:21 AM
To: Noah Rau <NRau@hemetca.gov>; Charlie Cisakowski <Charlie@epdsolutions.com>; Fernandez, Carolina <cfernandez@hrgreen.com>
Cc: Jeremy Krout <jeremy@epdsolutions.com>; Meghan Macias <meghan@epdsolutions.com>; Rocio Valentin <rocio@epdsolutions.com>
Subject: RE: CUP22-002 Kirby Industrial Traffic Scoping agreement

Good Morning,

I understand your concern regarding questions from the public in the area.

We can go ahead and add the intersection of Sanderson Ave/Stetson Ave into the Scoping Agreement.

However, there are no project trips going through the intersection of Sanderson Ave/Johnston Ave, so there is nothing to analyze in terms of project effect on LOS operations for that intersection.

If we have your confirmation that the addition of Sanderson Ave/Stetson Ave would suffice, we can go ahead and send you the revised Scoping Agreement for approval.

Best,

Abby Pal
E | P | D Solutions, Inc.

abby@epdsolutions.com
412.636.2713 cell
2355 Main Street, Suite 100
Irvine CA 92614
www.epdsolutions.com

EPD is Moving! As of Monday February 20, 2023, EPD will be located at our new office: 3333 Michelson Dr. Suite 500 Irvine, CA 92612

From: Noah Rau <NRau@hemetca.gov>
Sent: Thursday, January 26, 2023 6:56 AM
To: Charlie Cisakowski <Charlie@epdsolutions.com>; Abby Pal <abby@epdsolutions.com>; Fernandez, Carolina <cfernandez@hrgreen.com>
Cc: Jeremy Krout <jeremy@epdsolutions.com>; Meghan Macias <meghan@epdsolutions.com>; Rocio Valentin <rocio@epdsolutions.com>
Subject: RE: CUP22-002 Kirby Industrial Traffic Scoping agreement

[NON-EPD]
Good morning,

Even though guidelines may exclude the two intersection at Sanderson Ave/Johnson Ave and Sanderson Ave/Stetson, I foresee questions from the public in this area and would like to have the data available to reference.

With those two intersections added to the scope, the form can be approved.

Sincerely,

Noah Rau |**Public Works Director/City Engineer**
CITY OF HEMET| 445 E. Florida Avenue, Hemet, CA 92543
(951) 765-2360 | nrau@hemetca.gov

From: Charlie Cisakowski <Charlie@epdsolutions.com>

Sent: Wednesday, January 25, 2023 12:00 PM
To: Abby Pal <abby@epdsolutions.com>; Noah Rau <NRau@hemetca.gov>; Fernandez, Carolina <cfernandez@hrgreen.com>
Cc: Jeremy Krout <jeremy@epdsolutions.com>; Meghan Macias <meghan@epdsolutions.com>; Rocio Valentin <rocio@epdsolutions.com>
Subject: RE: CUP22-002 Kirby Industrial Traffic Scoping agreement

Warning: This email originated from outside the City of Hemet. Think before you click!

Good Moring Noah,

Just checking in on the status of this – we would like to kick off counts as soon as possible.

Thanks!

Charlie Cisakowski | Project Manager
E | P | D Solutions, Inc.
Charlie@epdsolutions.com
253-753-4928 | cell
2355 Main Street | Suite 100
Irvine CA 92614
www.epdsolutions.com
EPD is Moving! As of Monday February 20, 2023, EPD will be located at our new office: 3333 Michelson Dr. Suite 500 Irvine, CA 92612

From: Charlie Cisakowski
Sent: Monday, January 23, 2023 2:20 PM
To: Abby Pal <abby@epdsolutions.com>; Noah Rau <NRau@hemetca.gov>; Fernandez, Carolina <cfernandez@hrgreen.com>
Cc: Jeremy Krout <jeremy@epdsolutions.com>; Meghan Macias <meghan@epdsolutions.com>; Rocio Valentin <rocio@epdsolutions.com>
Subject: RE: CUP22-002 Kirby Industrial Traffic Scoping agreement

Good Afternoon Noah and Carolina,

Just wanted to touch base with you on Abby's remarks below – we would like to kick off our consultant to get counts on these intersections booked to keep this project moving. Please let us know if you are in agreement and that we can move forward with these counts.

Thanks!

Charlie Cisakowski | Project Manager
E | P | D Solutions, Inc.

Charlie@epdsolutions.com
253-753-4928 | cell
2355 Main Street | Suite 100
Irvine CA 92614
www.epdsolutions.com
EPD is Moving! As of Monday February 20, 2023, EPD will be located at our new office: 3333 Michelson Dr. Suite 500 Irvine, CA 92612

From: Abby Pal <abby@epdsolutions.com>
Sent: Friday, January 20, 2023 11:39 AM
To: Noah Rau <NRau@hemetca.gov>; Charlie Cisakowski <Charlie@epdsolutions.com>; Fernandez, Carolina <cfernandez@hrgreen.com>
Cc: Jeremy Krout <jeremy@epdsolutions.com>; Meghan Macias <meghan@epdsolutions.com>; Rocio Valentin <rocio@epdsolutions.com>
Subject: RE: CUP22-002 Kirby Industrial Traffic Scoping agreement

Good Morning Noah,

We had reviewed the comments regarding the two additional intersections, namely Sanderson Ave/Stetson and Sanderson Ave/Johnston Ave. I believe these intersections were added by Carolina considering the interim truck access would be via Sanderson Ave/ Whittier Ave. Now that we have confirmed that interim access would be via Kirby St, there is no need to analyze those two intersections.

As shown in the *Figure 2 – Proposed Passenger Vehicle Trip Distribution*, no cars would pass through Sanderson Ave/Johnston Ave, and only 25% cars would pass through Sanderson Ave/Stetson Ave. A maximum number of passenger vehicles, which is 122 passenger vehicles are noted in the PM peak hour, 25% of which would be 31.

As per the County of Riverside Transportation Analysis (pg. 7),only intersections with more than 50 trips are required to be analyzed as a part of a TIA. Therefore, Sanderson Ave/Stetson Ave does not need to be analyzed.

As shown in the *Figure 3 – Proposed Truck Trip Distribution Before the Construction of Whittier Ave*, and *Figure 4 - Proposed Truck Trip Distribution Post the Construction of Whittier Ave*, no truck trips would pass through both Sanderson Ave/Stetson and Sanderson Ave/Johnston Ave.

Therefore, both these intersections do not need to be included in the study.

Please note I noticed a typo in the trip gen and have updated the Scoping Agreement with today's date. It should be ready for approval. Please let me know if you have any further questions or comments.

Best,

Abby Pal
E | P | D SOLUTIONS, INC.
abby@epdsolutions.com
412.636.2713 cell
2355 Main Street, Suite 100
Irvine CA 92614
www.epdsolutions.com

EPD is Moving! As of Monday February 20, 2023, EPD will be located at our new office: 3333 Michelson Dr. Suite 500 Irvine, CA 92612

From: Noah Rau <NRau@hemetca.gov>
Sent: Thursday, January 19, 2023 5:57 PM
To: Charlie Cisakowski <Charlie@epdsolutions.com>; Fernandez, Carolina <cfernandez@hrgreen.com>
Cc: Abby Pal <abby@epdsolutions.com>; Jeremy Krout <jeremy@epdsolutions.com>; Meghan Macias <meghan@epdsolutions.com>; Rocio Valentin <rocio@epdsolutions.com>
Subject: RE: CUP22-002 Kirby Industrial Traffic Scoping agreement

[NON-EPD]
Charlie,

I have attached the previous comments on the scoping agreement. There were a couple additional study intersection noted that don't seem to be addressed. Please review and advise.

Thank you,

Noah Rau |**Public Works Director/City Engineer**
CITY OF HEMET| **445 E. Florida Avenue, Hemet, CA 92543**
(951) 765-2360 | nrau@hemetca.gov

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Hemet	PROJECT #:	SC3448
5/19/22	NORTH & SOUTH:	Kirby	LOCATION #:	1
THURSDAY	EAST & WEST:	Florida	CONTROL:	SIGNAL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM		▲ N
	Factor	1	1.5	2	3	2	2			PM MD	◄ W	E ►
										OTHER		S ▼
										OTHER		

		NORTHBOUND Kirby			SOUTHBOUND Kirby			EASTBOUND Florida			WESTBOUND Florida				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	6	41	6	10	40	12	13	93	8	8	99	6	341					0
	7:15 AM	4	51	2	11	43	6	13	85	7	16	74	4	314					0
	7:30 AM	10	46	17	25	53	13	12	171	21	22	129	17	533					0
	7:45 AM	24	84	14	22	65	18	14	185	9	16	141	18	608					0
	8:00 AM	9	53	11	20	52	9	22	154	8	21	127	8	493					0
	8:15 AM	7	51	13	11	69	12	13	178	10	16	152	11	541					0
	8:30 AM	15	59	9	17	55	18	7	172	10	14	149	11	533					0
	8:45 AM	17	64	12	15	65	21	20	158	14	16	144	13	555					0
	VOLUMES	90	448	83	130	438	109	113	1,195	86	128	1,013	87	3,917	0	0	0	0	0
	APPROACH %	15%	72%	13%	19%	65%	16%	8%	86%	6%	10%	83%	7%						
	APP/DEPART	621	/	648	677	/	651	1,393	/	1,407	1,227	/	1,212	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	54	247	47	70	239	57	56	688	37	66	569	48	2,175					
	APPROACH %	16%	71%	13%	19%	65%	15%	7%	88%	5%	10%	83%	7%						
	PEAK HR FACTOR		0.715			0.874			0.940			0.955		0.894					
	APP/DEPART	348	/	350	366	/	342	780	/	805	682	/	679	0					
PM	4:00 PM	25	81	30	32	107	59	56	239	30	35	191	23	906					0
	4:15 PM	20	85	20	18	86	43	50	232	32	28	231	18	860					0
	4:30 PM	26	114	24	28	87	49	48	211	27	26	166	19	822					0
	4:45 PM	16	86	20	12	69	40	47	212	28	29	211	17	784					0
	5:00 PM	21	78	13	23	99	35	47	212	29	42	197	16	811					0
	5:15 PM	20	76	17	13	69	42	39	224	28	45	201	14	786					0
	5:30 PM	33	104	22	31	81	52	36	212	41	31	181	18	840					0
	5:45 PM	31	78	11	24	82	38	53	200	27	36	241	11	830					0
	VOLUMES	191	700	156	180	677	357	375	1,741	240	271	1,616	136	6,638	0	0	0	0	0
	APPROACH %	18%	67%	15%	15%	56%	29%	16%	74%	10%	13%	80%	7%						
	APP/DEPART	1,047	/	1,210	1,214	/	1,188	2,356	/	2,077	2,023	/	2,164	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	86	365	93	89	347	190	201	893	117	118	798	77	3,371					
	APPROACH %	16%	67%	17%	14%	55%	30%	17%	74%	10%	12%	80%	8%						
	PEAK HR FACTOR		0.834			0.792			0.930			0.897		0.930					
	APP/DEPART	544	/	642	626	/	581	1,210	/	1,075	992	/	1,074	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Hemet	PROJECT #:	SC3448
5/19/22	NORTH & SOUTH:	Kirby	LOCATION #:	2
THURSDAY	EAST & WEST:	Acacia	CONTROL:	SIGNAL

NOTES:

PCE	Class	1	2	3	4	5	6		
Adjusted	Factor	1	1.5	2	3	2	2		

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Kirby			SOUTHBOUND Kirby			EASTBOUND Acacia			WESTBOUND Acacia				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	17	42	3	7	40	10	8	36	12	8	44	7	233					0
	7:15 AM	10	69	10	2	42	11	1	59	10	12	71	10	306					0
	7:30 AM	8	62	23	8	46	13	8	63	14	13	62	10	328					0
	7:45 AM	16	88	29	6	63	23	14	67	11	17	81	13	426					0
	8:00 AM	11	66	24	5	54	18	5	72	10	15	91	12	382					0
	8:15 AM	16	66	16	12	65	16	11	72	12	11	71	10	375					0
	8:30 AM	25	66	11	4	57	12	9	69	14	9	73	12	358					0
	8:45 AM	26	79	15	12	68	12	9	73	8	8	79	23	410					0
	VOLUMES	127	537	131	56	434	115	65	509	88	92	569	96	2,816	0	0	0	0	0
	APPROACH %	16%	68%	16%	9%	72%	19%	10%	77%	13%	12%	75%	13%						
	APP/DEPART	795	/	698	604	/	613	662	/	695	756	/	811	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	66	286	80	27	238	69	39	280	46	51	315	46	1,540					
	APPROACH %	15%	66%	18%	8%	71%	21%	11%	77%	13%	12%	76%	11%						
	PEAK HR FACTOR		0.816			0.900			0.969			0.876		0.905					
	APP/DEPART	431	/	371	333	/	335	365	/	386	412	/	449	0					
PM	4:00 PM	19	85	24	16	108	40	20	92	33	20	98	36	589					0
	4:15 PM	26	98	11	24	111	37	10	107	22	29	106	23	601					0
	4:30 PM	26	79	13	18	94	42	20	93	35	26	111	39	594					0
	4:45 PM	13	85	16	17	102	25	16	100	21	20	93	24	531					0
	5:00 PM	17	60	11	25	107	27	14	88	34	24	100	20	525					0
	5:15 PM	17	82	17	12	129	32	23	92	23	27	89	22	564					0
	5:30 PM	25	103	19	17	102	25	16	73	24	18	67	26	513					0
	5:45 PM	16	68	17	15	124	23	19	91	32	17	76	22	517					0
	VOLUMES	159	657	127	144	874	250	137	735	224	181	738	210	4,433	0	0	0	0	0
	APPROACH %	17%	70%	13%	11%	69%	20%	12%	67%	20%	16%	65%	19%						
	APP/DEPART	943	/	1,004	1,267	/	1,278	1,095	/	1,005	1,129	/	1,147	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	84	346	64	75	414	143	65	392	111	95	407	121	2,315					
	APPROACH %	17%	70%	13%	12%	66%	23%	11%	69%	19%	15%	65%	19%						
	PEAK HR FACTOR		0.917			0.923			0.958			0.890		0.963					
	APP/DEPART	494	/	532	631	/	619	567	/	531	623	/	634	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Hemet	PROJECT #:	SC3448
5/19/22	NORTH & SOUTH:	Kirby	LOCATION #:	3
THURSDAY	EAST & WEST:	Johnston	CONTROL:	STOP ALL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM / PM / MD / OTHER / OTHER	◄ W	▲ N S ▼ E ►
	Factor	1	1.5	2	3	2	2					

		NORTHBOUND Kirby			SOUTHBOUND Kirby			EASTBOUND Johnston			WESTBOUND Johnston				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	2	35	6	5	43	3	12	5	3	15	14	9	150					0
	7:15 AM	3	47	11	6	51	5	4	26	7	21	26	19	225					0
	7:30 AM	2	46	12	8	60	8	19	29	3	20	47	10	263					0
	7:45 AM	5	69	11	9	71	8	15	22	2	24	48	17	299					0
	8:00 AM	6	76	18	8	44	8	3	26	4	25	24	9	249					0
	8:15 AM	9	57	10	5	53	11	10	22	5	14	21	9	225					0
	8:30 AM	6	53	2	6	46	15	6	15	3	5	24	11	190					0
	8:45 AM	4	60	4	6	47	9	9	18	3	6	20	21	206					0
	VOLUMES	37	442	74	53	413	66	76	161	30	130	222	104	1,805	0	0	0	0	0
	APPROACH %	7%	80%	13%	10%	78%	12%	29%	60%	11%	28%	49%	23%						
	APP/DEPART	553	/	621	531	/	572	267	/	287	455	/	325	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	16	238	52	31	225	29	41	102	16	90	144	54	1,035					
	APPROACH %	5%	78%	17%	11%	79%	10%	26%	64%	10%	31%	50%	19%						
	PEAK HR FACTOR		0.764			0.811			0.790			0.817		0.865					
	APP/DEPART	306	/	332	284	/	331	158	/	184	288	/	188	0					
PM	4:00 PM	10	75	10	15	104	14	12	19	3	7	23	19	308					0
	4:15 PM	3	75	20	16	101	11	12	23	9	10	16	23	317					0
	4:30 PM	4	85	5	31	81	10	7	31	7	6	24	9	298					0
	4:45 PM	2	61	14	13	73	8	10	20	5	7	11	16	239					0
	5:00 PM	8	75	9	24	100	7	7	30	6	8	23	18	315					0
	5:15 PM	8	70	9	22	102	13	19	14	4	10	15	15	301					0
	5:30 PM	4	62	16	17	85	14	9	16	2	5	19	19	266					0
	5:45 PM	13	53	10	17	93	24	14	28	3	7	19	15	295					0
	VOLUMES	52	554	93	154	736	100	90	180	39	60	148	134	2,338	0	0	0	0	0
	APPROACH %	7%	79%	13%	16%	74%	10%	29%	58%	13%	17%	43%	39%						
	APP/DEPART	698	/	777	990	/	835	309	/	427	341	/	300	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	33	259	44	80	379	58	49	88	15	30	76	67	1,176					
	APPROACH %	10%	77%	13%	15%	73%	11%	32%	58%	10%	17%	44%	39%						
	PEAK HR FACTOR		0.913			0.946			0.842			0.878		0.933					
	APP/DEPART	336	/	375	517	/	424	152	/	212	172	/	167	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Hemet	PROJECT #:	SC3448
5/19/22	NORTH & SOUTH:	Kirby	LOCATION #:	4
THURSDAY	EAST & WEST:	Stetson	CONTROL:	SIGNAL

	NOTES:												
PCE	Class	1	2	3	4	5	6			AM		▲ N	
Adjusted	Factor	1	1.5	2	3	2	2			PM			
										MD	◄ W		E ►
										OTHER		S	
										OTHER		▼	

		NORTHBOUND (Kirby)			SOUTHBOUND (Kirby)			EASTBOUND (Stetson)			WESTBOUND (Stetson)				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 1	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	11	12	4	13	5	57	18	150	8	1	162	12	452					0
	7:15 AM	12	11	2	18	7	66	36	163	8	4	195	15	536					0
	7:30 AM	12	9	7	20	8	66	28	193	8	6	242	13	610					0
	7:45 AM	13	6	3	27	9	83	54	227	6	0	263	22	711					0
	8:00 AM	11	14	4	17	6	56	63	218	7	7	233	19	653					0
	8:15 AM	11	11	12	9	9	51	45	191	7	4	183	23	555					0
	8:30 AM	11	14	7	15	14	34	15	167	10	11	187	26	509					0
	8:45 AM	19	13	6	24	11	43	38	168	8	5	149	20	503					0
	VOLUMES	100	90	45	142	68	454	296	1,474	61	37	1,612	149	4,526	0	0	0	0	0
	APPROACH %	43%	38%	19%	21%	10%	68%	16%	81%	3%	2%	90%	8%						
	APP/DEPART	234	/	535	664	/	166	1,831	/	1,661	1,798	/	2,165	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	47	40	26	72	32	255	190	828	27	17	920	77	2,528					
	APPROACH %	42%	35%	23%	20%	9%	71%	18%	79%	3%	2%	91%	8%						
	PEAK HR FACTOR		0.827			0.755			0.906			0.890		0.889					
	APP/DEPART	113	/	306	358	/	75	1,044	/	926	1,013	/	1,222	0					
PM	4:00 PM	11	6	1	24	20	60	59	219	21	2	255	33	710					0
	4:15 PM	7	10	9	20	26	73	64	203	18	6	173	27	635					0
	4:30 PM	13	12	6	20	11	67	51	220	15	6	178	24	622					0
	4:45 PM	11	15	9	32	16	43	49	169	21	8	164	24	560					0
	5:00 PM	18	11	10	22	17	50	59	222	29	6	176	24	642					0
	5:15 PM	15	14	5	46	13	64	66	206	20	4	153	18	622					0
	5:30 PM	8	19	3	22	14	63	55	179	12	5	157	22	559					0
	5:45 PM	13	6	7	31	14	61	42	168	14	4	158	24	540					0
	VOLUMES	95	92	49	217	131	480	444	1,584	150	41	1,411	195	4,888	0	0	0	0	0
	APPROACH %	40%	39%	21%	26%	16%	58%	20%	73%	7%	2%	86%	12%						
	APP/DEPART	236	/	731	828	/	321	2,178	/	1,850	1,647	/	1,986	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	42	43	25	96	73	243	223	810	75	22	769	108	2,526					
	APPROACH %	38%	39%	23%	23%	18%	59%	20%	73%	7%	2%	86%	12%						
	PEAK HR FACTOR		0.798			0.864			0.929			0.775		0.890					
	APP/DEPART	109	/	374	412	/	169	1,107	/	930	899	/	1,053	0					

Kirby

NORTH SIDE

Stetson WEST SIDE EAST SIDE **Stetson**

SOUTH SIDE

Kirby

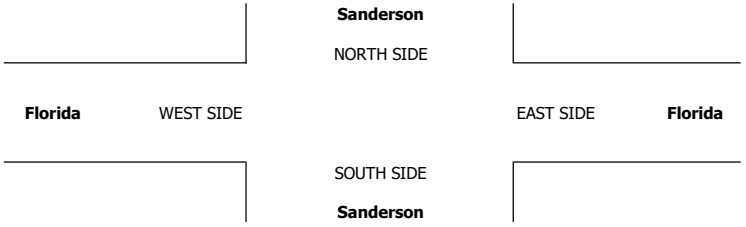
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Hemet	PROJECT #:	SC3448
5/19/22	NORTH & SOUTH:	Sanderson	LOCATION #:	5
THURSDAY	EAST & WEST:	Florida	CONTROL:	SIGNAL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼	
	Factor	1	1.5	2	3	2	2					

		NORTHBOUND Sanderson			SOUTHBOUND Sanderson			EASTBOUND Florida			WESTBOUND Florida				U-TURNS				
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 3	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	18	175	25	22	170	15	40	63	3	36	74	12	651					0
	7:15 AM	32	175	16	26	156	19	31	92	9	19	68	18	658					0
	7:30 AM	18	177	22	33	188	27	43	109	10	26	78	22	750					0
	7:45 AM	45	162	36	30	135	15	39	146	6	41	84	29	765					0
	8:00 AM	23	176	37	38	142	17	34	119	9	39	80	23	734					0
	8:15 AM	29	137	32	30	170	25	42	117	11	38	89	39	756					0
	8:30 AM	27	142	20	29	171	23	37	134	9	34	94	26	744					0
	8:45 AM	27	136	29	44	148	22	44	112	8	51	79	24	722					0
	VOLUMES	217	1,279	215	250	1,278	161	308	891	63	281	645	192	5,778	0	0	0	0	0
	APPROACH %	13%	75%	13%	15%	76%	10%	24%	71%	5%	25%	58%	17%						
	APP/DEPART	1,711	/	1,778	1,689	/	1,622	1,262	/	1,356	1,117	/	1,022	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	123	617	124	126	617	79	151	516	34	151	346	116	2,998					
	APPROACH %	14%	71%	14%	15%	75%	10%	22%	74%	5%	25%	56%	19%						
	PEAK HR FACTOR		0.891			0.919			0.921			0.925		0.980					
	APP/DEPART	864	/	884	822	/	802	700	/	766	613	/	548	0					
PM	4:00 PM	45	204	54	48	226	30	66	165	11	59	117	33	1,057					0
	4:15 PM	52	191	48	47	221	25	58	153	20	68	116	37	1,034					0
	4:30 PM	42	157	49	39	206	26	69	151	20	77	130	28	989					0
	4:45 PM	46	138	46	46	185	17	57	157	21	50	116	33	909					0
	5:00 PM	31	201	38	47	195	28	69	154	19	76	128	27	1,009					0
	5:15 PM	35	150	35	57	175	31	45	154	22	66	137	31	936					0
	5:30 PM	48	184	55	52	191	21	53	151	16	67	120	36	990					0
	5:45 PM	50	189	39	48	171	15	64	116	18	74	114	35	930					0
	VOLUMES	347	1,412	362	382	1,568	191	479	1,199	145	535	976	258	7,852	0	0	0	0	0
	APPROACH %	16%	67%	17%	18%	73%	9%	26%	66%	8%	30%	55%	15%						
	APP/DEPART	2,121	/	2,148	2,141	/	2,248	1,823	/	1,943	1,768	/	1,514	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	185	689	196	180	837	97	249	625	71	254	478	130	3,988					
	APPROACH %	17%	64%	18%	16%	75%	9%	26%	66%	7%	29%	55%	15%						
	PEAK HR FACTOR		0.882			0.917			0.979			0.922		0.944					
	APP/DEPART	1,070	/	1,068	1,113	/	1,161	944	/	1,000	862	/	759	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Hemet	PROJECT #:	SC3448
5/19/22	NORTH & SOUTH:	Sanderson	LOCATION #:	6
THURSDAY	EAST & WEST:	Acacia	CONTROL:	SIGNAL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM / PM / MD / OTHER / OTHER	◄ W	▲ N S ▼ / E ►
	Factor	1	1.5	2	3	2	2					

		NORTHBOUND Sanderson			SOUTHBOUND Sanderson			EASTBOUND Acacia			WESTBOUND Acacia				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	14	187	11	20	187	1	4	27	14	39	32	19	553					0
	7:15 AM	18	222	23	24	167	0	4	30	41	30	19	35	610					0
	7:30 AM	19	204	17	19	169	0	0	32	54	33	26	28	600					0
	7:45 AM	23	180	26	24	149	1	5	48	34	46	28	37	599					0
	8:00 AM	16	225	29	32	151	1	0	43	31	39	26	35	624					0
	8:15 AM	18	179	20	21	156	0	3	31	22	36	37	37	556					0
	8:30 AM	10	188	25	32	159	1	3	32	28	35	33	36	579					0
	8:45 AM	13	171	27	15	163	4	1	44	28	30	44	28	567					0
	VOLUMES	130	1,553	176	185	1,299	8	20	285	250	286	243	253	4,686	0	0	0	0	0
	APPROACH %	7%	84%	9%	12%	87%	1%	4%	51%	45%	37%	31%	32%						
	APP/DEPART	1,859	/	1,826	1,492	/	1,834	555	/	646	782	/	381	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	75	830	94	98	635	2	9	152	159	147	98	134	2,432					
	APPROACH %	8%	83%	9%	13%	86%	0%	3%	48%	50%	39%	26%	35%						
	PEAK HR FACTOR		0.926			0.964			0.920			0.861		0.974					
	APP/DEPART	999	/	973	735	/	941	320	/	344	379	/	175	0					
PM	4:00 PM	30	213	25	53	200	3	3	70	45	41	41	47	769					0
	4:15 PM	21	225	23	61	223	1	5	56	36	44	47	57	796					0
	4:30 PM	24	220	28	52	224	6	1	70	47	50	61	53	833					0
	4:45 PM	24	220	25	36	213	3	4	64	34	44	38	50	753					0
	5:00 PM	31	214	21	50	212	4	4	59	36	40	47	37	753					0
	5:15 PM	21	211	20	48	201	1	1	50	32	33	55	45	718					0
	5:30 PM	25	224	14	46	208	3	5	48	36	33	39	34	713					0
	5:45 PM	37	213	16	52	192	6	3	49	22	34	43	43	707					0
	VOLUMES	212	1,738	170	395	1,671	26	26	464	287	317	370	365	6,038	0	0	0	0	0
	APPROACH %	10%	82%	8%	19%	80%	1%	3%	60%	37%	30%	35%	35%						
	APP/DEPART	2,120	/	2,129	2,092	/	2,274	776	/	1,029	1,052	/	607	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	99	877	100	201	859	13	13	259	161	178	186	207	3,149					
	APPROACH %	9%	82%	9%	19%	80%	1%	3%	60%	37%	31%	33%	36%						
	PEAK HR FACTOR		0.990			0.943			0.923			0.872		0.946					
	APP/DEPART	1,075	/	1,097	1,072	/	1,197	432	/	559	571	/	297	0					

Sanderson

NORTH SIDE

Acacia WEST SIDE EAST SIDE **Acacia**

SOUTH SIDE

Sanderson

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Hemet	PROJECT #:	SC3448
5/19/22	NORTH & SOUTH:	Sanderson	LOCATION #:	7
THURSDAY	EAST & WEST:	Stetson	CONTROL:	SIGNAL

NOTES:

PCE Adjusted								
Class	1	2	3	4	5	6		
Factor	1	1.5	2	3	2	2		

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Sanderson			SOUTHBOUND Sanderson			EASTBOUND Stetson			WESTBOUND Stetson				U-TURNS				
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	10	168	82	15	159	16	15	73	1	109	87	27	761					0
	7:15 AM	2	145	104	27	209	18	11	76	7	135	112	22	865					0
	7:30 AM	11	183	143	26	221	21	22	79	4	119	159	32	1,018					0
	7:45 AM	20	188	151	27	145	24	12	98	6	121	201	32	1,024					0
	8:00 AM	11	154	184	18	136	18	21	95	1	129	159	36	960					0
	8:15 AM	4	144	121	19	164	27	32	90	2	106	108	29	843					0
	8:30 AM	10	119	86	24	127	24	26	92	1	96	95	47	743					0
	8:45 AM	15	125	103	28	142	37	27	81	2	92	80	29	758					0
	VOLUMES	82	1,224	973	182	1,302	185	164	681	24	905	999	253	6,970	0	0	0	0	0
	APPROACH %	4%	54%	43%	11%	78%	11%	19%	78%	3%	42%	46%	12%						
	APP/DEPART	2,278	/	1,640	1,668	/	2,230	868	/	1,835	2,156	/	1,265	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	44	669	581	97	711	81	65	347	18	503	630	122	3,865					
	APPROACH %	3%	52%	45%	11%	80%	9%	15%	81%	4%	40%	50%	10%						
	PEAK HR FACTOR		0.903			0.829			0.925			0.887		0.944					
	APP/DEPART	1,293	/	855	889	/	1,231	429	/	1,025	1,255	/	755	0					
PM	4:00 PM	4	160	132	30	162	21	47	125	2	115	138	38	971					0
	4:15 PM	2	131	135	46	177	16	52	121	3	114	115	40	949					0
	4:30 PM	3	149	123	32	197	29	46	105	10	127	125	34	978					0
	4:45 PM	4	156	113	40	167	23	44	93	4	97	81	29	849					0
	5:00 PM	3	141	131	39	163	35	52	135	10	103	100	33	943					0
	5:15 PM	5	125	122	42	171	20	44	129	3	115	102	41	917					0
	5:30 PM	7	159	99	29	164	24	54	112	2	98	95	29	871					0
	5:45 PM	3	146	123	24	167	22	41	82	0	108	88	38	841					0
	VOLUMES	31	1,164	975	281	1,367	190	377	901	34	876	843	281	7,317	0	0	0	0	0
	APPROACH %	1%	54%	45%	15%	74%	10%	29%	69%	3%	44%	42%	14%						
	APP/DEPART	2,170	/	1,822	1,837	/	2,277	1,312	/	2,157	1,999	/	1,063	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	13	595	502	147	702	89	188	443	19	453	458	140	3,746					
	APPROACH %	1%	54%	45%	16%	75%	9%	29%	68%	3%	43%	44%	13%						
	PEAK HR FACTOR		0.940			0.908			0.928			0.905		0.958					
	APP/DEPART	1,109	/	922	938	/	1,174	650	/	1,092	1,050	/	559	0					

Sanderson

NORTH SIDE

Stetson WEST SIDE EAST SIDE **Stetson**

SOUTH SIDE

Sanderson

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Hemet	PROJECT #:	SC3448
5/19/22	NORTH & SOUTH:	Lyon	LOCATION #:	8
THURSDAY	EAST & WEST:	Florida	CONTROL:	SIGNAL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼	
	Factor	1	1.5	2	3	2	2					

		NORTHBOUND Lyon			SOUTHBOUND Lyon			EASTBOUND Florida			WESTBOUND Florida				U-TURNS				
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	5	20	7	7	25	12	12	100	5	6	103	7	307					0
	7:15 AM	7	41	18	18	28	5	7	116	2	8	128	10	386					0
	7:30 AM	7	36	13	10	41	9	7	154	7	16	145	15	457					0
	7:45 AM	8	38	13	13	31	21	14	182	9	15	187	11	540					0
	8:00 AM	14	36	13	15	50	13	13	153	9	19	154	6	494					0
	8:15 AM	13	33	11	17	45	13	11	161	10	17	181	13	524					0
	8:30 AM	14	43	19	13	48	13	5	171	6	15	155	10	510					0
	8:45 AM	10	31	13	11	62	14	11	158	8	17	168	3	505					0
	VOLUMES	76	277	105	103	328	100	80	1,193	56	113	1,219	74	3,721	0	0	0	0	0
	APPROACH %	17%	61%	23%	19%	62%	19%	6%	90%	4%	8%	87%	5%						
	APP/DEPART	457	/	430	531	/	496	1,328	/	1,401	1,406	/	1,395	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	48	149	55	58	173	60	43	666	34	66	676	40	2,067					
	APPROACH %	19%	59%	22%	20%	60%	20%	6%	90%	5%	8%	87%	5%						
	PEAK HR FACTOR		0.846			0.937			0.906			0.919		0.957					
	APP/DEPART	252	/	232	291	/	273	743	/	779	782	/	784	0					
PM	4:00 PM	19	56	23	20	90	24	28	221	14	28	217	12	750					0
	4:15 PM	22	50	20	16	67	19	29	285	12	26	224	14	782					0
	4:30 PM	14	59	37	9	59	16	22	218	8	28	202	11	682					0
	4:45 PM	29	43	19	22	54	13	21	218	9	26	215	17	684					0
	5:00 PM	17	62	11	16	75	22	31	215	11	21	221	23	723					0
	5:15 PM	16	50	20	16	55	26	32	230	11	14	237	8	713					0
	5:30 PM	18	50	21	19	51	37	22	229	7	22	209	10	693					0
	5:45 PM	13	38	20	7	32	21	27	203	10	22	286	10	688					0
	VOLUMES	147	406	168	124	482	178	212	1,817	82	186	1,810	104	5,713	0	0	0	0	0
	APPROACH %	20%	56%	23%	16%	61%	23%	10%	86%	4%	9%	86%	5%						
	APP/DEPART	721	/	721	783	/	749	2,110	/	2,109	2,099	/	2,134	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	83	207	98	67	269	72	100	941	43	107	857	54	2,898					
	APPROACH %	21%	53%	25%	16%	66%	18%	9%	87%	4%	11%	84%	5%						
	PEAK HR FACTOR		0.890			0.764			0.832			0.968		0.926					
	APP/DEPART	388	/	361	408	/	419	1,084	/	1,106	1,018	/	1,012	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Hemet	PROJECT #:	SC3448
5/19/22	NORTH & SOUTH:	Lyon	LOCATION #:	9
THURSDAY	EAST & WEST:	Acacia	CONTROL:	SIGNAL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM		▲ N
	Factor	1	1.5	2	3	2	2			PM / MD	◄ W	E ►
										OTHER		S ▼
										OTHER		

		NORTHBOUND Lyon			SOUTHBOUND Lyon			EASTBOUND Acacia			WESTBOUND Acacia				U-TURNS				
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	14	21	3	7	24	6	7	28	6	5	38	3	161					0
	7:15 AM	17	45	3	4	18	10	14	37	14	5	66	16	248					0
	7:30 AM	27	41	6	9	36	8	3	63	15	4	62	13	286					0
	7:45 AM	21	45	8	1	36	10	15	69	16	7	81	23	328					0
	8:00 AM	28	53	5	4	40	18	6	62	19	4	78	9	323					0
	8:15 AM	21	44	6	8	56	10	7	71	20	4	70	20	336					0
	8:30 AM	23	42	3	12	33	11	9	59	24	8	66	13	301					0
	8:45 AM	34	40	12	6	58	11	10	64	25	8	55	14	335					0
	VOLUMES	183	329	46	50	299	83	70	451	139	45	513	111	2,317	0	0	0	0	0
	APPROACH %	33%	59%	8%	12%	69%	19%	11%	68%	21%	7%	77%	17%						
	APP/DEPART	557	/	509	432	/	483	659	/	546	669	/	779	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	105	177	26	30	186	50	32	255	88	24	267	56	1,295					
	APPROACH %	34%	57%	8%	11%	70%	19%	9%	68%	23%	7%	77%	16%						
	PEAK HR FACTOR		0.906			0.889			0.947			0.926		0.963					
	APP/DEPART	308	/	265	265	/	298	375	/	311	347	/	422	0					
PM	4:00 PM	26	46	11	24	66	17	20	99	29	10	107	15	467					0
	4:15 PM	9	56	12	13	73	18	17	100	33	14	109	26	478					0
	4:30 PM	34	48	5	10	57	18	29	94	42	15	78	11	439					0
	4:45 PM	24	58	12	12	75	17	15	104	34	5	80	15	449					0
	5:00 PM	23	39	7	19	65	21	14	89	21	7	94	13	410					0
	5:15 PM	18	43	13	8	58	18	14	89	24	8	79	13	384					0
	5:30 PM	14	37	10	14	50	7	7	84	23	8	66	14	334					0
	5:45 PM	18	25	11	7	36	11	13	66	15	6	73	15	294					0
	VOLUMES	166	349	81	106	478	127	128	724	219	73	685	122	3,255	0	0	0	0	0
	APPROACH %	28%	59%	14%	15%	67%	18%	12%	68%	20%	8%	78%	14%						
	APP/DEPART	595	/	599	711	/	769	1,070	/	910	879	/	977	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	93	206	40	59	271	70	80	397	136	44	373	67	1,833					
	APPROACH %	27%	61%	12%	15%	68%	18%	13%	65%	22%	9%	77%	14%						
	PEAK HR FACTOR		0.904			0.932			0.934			0.814		0.959					
	APP/DEPART	338	/	353	399	/	450	613	/	495	484	/	536	0					



A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thursday, February 10, 2022
JOB #: SC3285

CITY: Hemet
LOCATION: CLASS2 Sanderson Avenue between Acacia Avenue and Stetson Avenue

AM	NORTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	2	33	3	0	0	0	0	0	0	0	0	0	0	38
0:15	0	29	2	0	0	0	0	0	0	0	0	0	0	31
0:30	0	23	1	0	2	0	0	0	0	0	0	0	0	26
0:45	0	17	3	0	0	0	0	0	3	0	0	0	0	23
1:00	0	22	2	0	0	1	0	0	0	0	0	0	0	25
1:15	0	13	0	0	1	0	0	0	0	0	0	0	0	14
1:30	0	14	1	0	1	0	0	0	1	0	0	0	0	17
1:45	0	18	1	0	1	0	0	0	0	0	0	0	0	20
2:00	0	18	0	0	0	0	0	0	0	0	0	0	0	18
2:15	0	16	0	0	0	0	0	0	0	0	1	0	0	17
2:30	0	8	4	0	0	0	0	0	3	0	0	0	0	15
2:45	0	16	3	0	0	0	0	0	2	0	0	0	0	21
3:00	0	33	5	0	3	0	0	0	3	0	0	0	0	44
3:15	0	14	3	0	0	0	0	0	1	0	0	0	0	18
3:30	0	40	5	0	2	0	0	0	0	0	0	0	0	47
3:45	0	29	6	1	4	1	0	0	3	0	0	0	0	44
4:00	0	36	4	0	2	0	0	0	0	0	1	0	0	43
4:15	0	42	11	2	2	0	0	0	3	0	0	0	0	60
4:30	0	26	12	0	4	1	0	0	3	0	0	0	0	46
4:45	0	43	16	1	4	1	0	0	3	0	1	0	0	69
5:00	1	45	13	2	1	0	0	0	1	0	0	0	0	63
5:15	0	62	22	1	2	0	0	0	2	0	0	0	0	89
5:30	2	79	34	0	7	0	0	0	2	0	0	0	0	124
5:45	1	82	46	1	9	0	0	0	3	0	0	0	0	142
6:00	1	106	38	0	2	1	0	0	2	0	0	0	0	150
6:15	1	103	42	2	3	0	0	0	1	0	0	0	0	152
6:30	1	128	39	3	8	0	0	0	0	0	0	0	0	179
6:45	2	121	38	1	9	0	0	1	1	0	0	0	0	173
7:00	0	136	39	1	14	0	0	1	2	0	0	0	0	193
7:15	0	142	29	0	9	0	0	0	0	0	0	0	0	180
7:30	0	195	38	1	8	0	0	0	2	0	0	0	0	244
7:45	0	208	41	0	7	0	0	0	2	0	0	0	0	258
8:00	1	211	36	3	9	2	0	0	2	0	0	0	0	264
8:15	0	182	29	0	7	0	0	0	2	0	0	0	0	220
8:30	1	146	35	6	5	0	0	0	0	0	0	0	0	193
8:45	0	174	48	2	3	1	0	0	1	0	0	0	0	229
9:00	1	154	40	0	4	1	0	1	2	0	1	0	0	204
9:15	0	167	40	1	5	1	0	0	1	0	0	0	0	215
9:30	0	172	40	1	7	0	0	0	1	0	1	0	0	222
9:45	1	181	33	2	13	0	0	0	1	0	0	0	0	231
10:00	0	151	31	0	8	1	0	0	0	0	0	0	0	191
10:15	0	156	34	0	6	0	0	1	1	0	0	0	0	198
10:30	0	166	35	1	8	0	0	1	0	0	0	0	0	211
10:45	1	173	36	1	10	2	0	0	1	0	0	0	0	224
11:00	1	187	28	2	5	2	0	0	0	0	0	0	0	225
11:15	0	199	47	1	2	0	0	0	0	0	0	0	0	249
11:30	0	177	44	0	5	1	0	0	0	0	0	0	0	227
11:45	1	203	32	0	2	1	0	0	1	0	0	0	0	240
TOTAL	18	4,696	1,089	36	204	17	0	5	56	0	5	0	0	6,126

AM PEAK HOUR	7:30 AM
AM PEAK VOLUME	986

PM	NORTHBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	2	209	63	0	6	0	0	0	2	0	0	0	0	282
12:15	0	172	52	1	2	1	0	1	1	0	0	0	0	230
12:30	1	183	50	2	7	1	0	0	0	0	0	0	0	244
12:45	1	207	34	0	5	1	0	1	0	0	0	0	0	249
13:00	0	191	33	1	6	3	0	0	1	0	0	0	0	235
13:15	0	206	38	2	6	0	0	1	1	0	0	0	0	254
13:30	1	165	41	0	14	1	0	0	0	0	0	0	0	222
13:45	0	183	44	1	6	0	0	0	0	0	0	0	0	234
14:00	2	201	53	2	4	0	0	0	2	0	0	0	0	264
14:15	1	211	32	3	2	0	0	0	3	0	0	0	0	252
14:30	4	206	35	2	5	0	0	0	0	0	0	0	0	252
14:45	1	179	44	2	11	1	0	0	0	0	0	0	0	238
15:00	3	214	49	1	3	1	0	0	1	0	0	0	0	272
15:15	0	235	44	0	4	0	0	0	0	0	0	0	0	283
15:30	2	185	44	3	8	0	0	1	0	0	0	0	0	243
15:45	2	213	49	4	8	0	0	0	0	0	0	0	0	276
16:00	2	225	41	2	9	0	0	0	0	0	0	0	0	279
16:15	1	200	43	2	5	1	0	0	0	0	0	0	0	252
16:30	1	197	43	0	5	0	0	0	0	0	0	0	0	246
16:45	0	236	32	1	5	0	0	0	0	0	0	0	0	274
17:00	4	225	50	2	4	0	0	0	0	0	0	0	0	285
17:15	0	191	27	1	4	0	0	1	0	0	0	0	0	224
17:30	0	224	47	0	2	1	0	0	4	0	0	0	0	278
17:45	0	206	41	1	4	0	0	0	1	0	0	0	0	253
18:00	0	184	30	0	3	0	0	0	0	0	0	0	0	217
18:15	1	179	43	1	6	0	0	0	0	0	0	0	0	230
18:30	2	196	36	1	4	0	0	0	0	0	0	0	0	239
18:45	0	161	27	0	4	0	0	0	1	0	0	0	0	193
19:00	1	161	31	2	2	0	0	0	2	0	0	0	0	199
19:15	3	154	25	0	5	0	0	0	0	0	0	0	0	187
19:30	1	146	26	0	3	0	0	1	1	0	0	0	0	178
19:45	0	129	15	0	4	0	0	0	1	0	0	0	0	149
20:00	3	121	22	0	2	0	0	0	0	0	0	0	0	148
20:15	0	105	18	0	1	0	0	0	0	0	0	0	0	124
20:30	1	116	18	1	0	0	0	0	0	0	0	0	0	136
20:45	0	104	12	0	2	0	0	0	0	0	0	0	0	118
21:00	0	88	5	0	0	0	0	0	0	0	0	0	0	93
21:15	0	79	8	0	2	0	0	0	0	0	0	0	0	89
21:30	0	86	11	0	0	0	0	0	0	0	0	0	0	97
21:45	0	72	8	0	0	0	0	0	0	0	0	0	0	80
22:00	0	91	9	1	2	1	0	1	0	0	0	0	0	105
22:15	0	63	6	0	0	0	0	0	1	0	0	0	0	70
22:30	0	74	4	0	0	0	0	0	0	0	0	0	0	78
22:45	0	51	5	0	0	0	0	0	0	0	0	0	0	56
23:00	0	38	8	0	0	0	0	0	1	0	0	0	0	47
23:15	0	36	2	0	0	0	0	0	0	0	0	0	0	38
23:30	0	33	4	0	0	0	0	0	0	0	0	0	0	37
23:45	0	32	0	0	0	0	0	0	0	0	0	0	0	32
TOTAL	40	7,363	1,402	39	175	12	0	7	23	0	0	0	0	9,061

PM PEAK HOUR	3:15 PM
PM PEAK VOLUME	1,081

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: AM+PM	58	12,059	2,491	75	379	29	0	12	79	0	5	0	0	15,187
% OF TOTAL	0.4%	79.4%	16.4%	0.5%	2.5%	0.2%	0.0%	0.1%	0.5%	0.0%	0.0%	0.0%	0.0%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	107	24,519	4,918	164	765	63	1	29	155	0	24	1	0	30,746
% OF TOTAL	0.7%	161.4%	32.4%	1.1%	5.0%	0.4%	0.0%	0.2%	1.0%	0.0%	0.2%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thursday, February 10, 2022
JOB #: SC3285

CITY: Hemet
LOCATION: CLASS2 Sanderson Avenue between Acacia Avenue and Stetson Avenue

AM	SOUTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	25	4	0	3	0	0	0	1	0	0	0	0	33
0:15	0	20	3	1	2	1	0	0	0	0	0	0	0	27
0:30	0	13	2	1	1	0	0	0	2	0	0	0	0	19
0:45	0	12	2	0	0	0	0	0	1	0	0	0	0	15
1:00	0	11	2	0	0	0	0	0	2	0	0	0	0	15
1:15	0	11	2	0	0	0	0	0	0	0	0	0	0	13
1:30	0	14	3	0	0	0	0	0	0	0	0	0	0	17
1:45	0	16	0	0	0	0	0	0	2	0	0	0	0	18
2:00	0	21	2	0	0	0	0	0	0	0	0	0	0	23
2:15	0	30	3	1	2	0	0	0	1	0	0	0	0	37
2:30	0	24	2	0	0	0	0	0	1	0	1	0	0	28
2:45	1	29	4	0	0	0	0	0	0	0	1	0	0	35
3:00	0	28	2	0	3	0	0	0	0	0	0	0	0	33
3:15	0	23	6	1	2	0	0	0	0	0	1	0	0	33
3:30	0	23	11	0	1	0	0	0	0	0	2	0	0	37
3:45	1	34	8	0	2	0	0	0	1	0	1	0	0	47
4:00	0	40	9	0	2	0	0	0	0	0	1	0	0	52
4:15	1	40	17	0	3	1	0	0	3	0	2	0	0	67
4:30	0	51	12	0	4	0	0	0	1	0	0	0	0	68
4:45	0	50	13	1	6	0	0	0	1	0	1	0	0	72
5:00	0	68	21	0	3	1	0	0	1	0	1	0	0	95
5:15	0	94	16	1	2	0	0	0	3	0	0	0	0	116
5:30	1	102	30	0	13	0	0	0	2	0	0	0	0	148
5:45	0	101	40	1	3	0	0	0	1	0	2	0	0	148
6:00	0	108	40	5	4	0	0	0	4	0	1	0	0	162
6:15	0	117	47	2	4	0	0	0	1	0	0	0	0	171
6:30	1	110	53	3	7	2	0	2	1	0	1	0	0	180
6:45	0	143	42	1	8	0	0	0	1	0	0	0	0	195
7:00	0	144	39	2	8	2	0	0	1	0	0	0	0	196
7:15	2	176	37	1	8	2	0	1	2	0	0	0	0	229
7:30	0	227	34	5	8	0	0	1	2	0	0	0	0	277
7:45	1	168	38	1	3	2	1	0	0	0	0	0	0	214
8:00	0	172	30	3	3	1	0	0	0	0	0	0	0	209
8:15	0	133	35	2	4	1	0	0	2	0	0	0	0	177
8:30	0	175	33	1	11	0	0	1	1	0	0	0	0	222
8:45	0	158	37	1	3	0	0	0	1	0	0	0	0	200
9:00	1	166	28	0	7	1	0	0	0	0	0	0	0	203
9:15	1	164	31	1	7	0	0	1	2	0	0	0	0	207
9:30	1	142	24	0	15	0	0	1	0	0	0	0	0	183
9:45	1	174	28	1	8	2	0	0	0	0	1	0	0	215
10:00	2	165	35	0	4	0	0	0	1	0	0	0	0	207
10:15	1	176	33	3	8	1	0	0	1	0	0	0	0	223
10:30	0	158	37	0	13	2	0	0	0	0	0	0	0	210
10:45	0	185	37	2	10	1	0	0	0	0	0	0	0	235
11:00	2	181	32	1	8	0	0	0	1	0	0	0	0	225
11:15	2	163	36	1	7	1	0	0	0	0	1	0	0	211
11:30	1	186	29	0	6	1	0	0	1	0	0	0	0	224
11:45	1	185	41	0	5	1	0	1	0	0	0	0	0	234
TOTAL	21	4,756	1,070	43	221	23	1	8	45	0	16	1	0	6,205

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	929

PM	SOUTHBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	194	54	1	2	0	0	1	1	0	0	0	0	253
12:15	0	174	48	2	3	0	0	1	1	0	0	0	0	229
12:30	1	170	43	1	6	1	0	2	1	0	0	0	0	225
12:45	0	205	43	2	11	3	0	0	0	0	0	0	0	264
13:00	0	208	40	1	3	2	0	0	1	0	0	0	0	255
13:15	1	193	46	3	7	0	0	0	1	0	0	0	0	251
13:30	4	184	44	4	5	2	0	1	2	0	1	0	0	247
13:45	3	166	27	2	9	0	0	0	0	0	0	0	0	207
14:00	1	191	41	2	4	0	0	1	1	0	0	0	0	241
14:15	1	227	40	1	4	1	0	1	4	0	1	0	0	280
14:30	0	216	47	0	5	0	0	0	1	0	0	0	0	269
14:45	0	254	32	1	7	0	0	0	3	0	0	0	0	297
15:00	1	223	35	1	1	1	0	0	1	0	0	0	0	263
15:15	0	223	38	2	5	0	0	0	0	0	0	0	0	268
15:30	0	240	47	1	5	0	0	0	0	0	1	0	0	294
15:45	2	245	40	4	3	0	0	0	2	0	0	0	0	296
16:00	2	213	30	0	4	0	0	0	2	0	0	0	0	251
16:15	1	221	43	0	12	0	0	1	0	0	0	0	0	278
16:30	2	212	43	1	4	0	0	0	3	0	0	0	0	265
16:45	0	207	49	0	5	0	0	0	0	0	0	0	0	261
17:00	1	217	40	1	5	0	0	0	1	0	0	0	0	265
17:15	1	217	42	1	4	1	0	0	0	0	0	0	0	266
17:30	0	190	39	1	5	0	0	0	1	0	0	0	0	236
17:45	0	239	45	0	1	0	0	0	0	0	0	0	0	285
18:00	0	230	47	1	7	0	0	0	0	0	0	0	0	285
18:15	0	211	28	1	4	0	0	1	0	0	0	0	0	245
18:30	1	180	20	0	3	0	0	0	0	0	0	0	0	204
18:45	1	210	28	1	2	0	0	0	1	0	0	0	0	243
19:00	0	166	26	0	5	0	0	0	0	0	0	0	0	197
19:15	1	183	22	0	3	0	0	0	0	0	0	0	0	209
19:30	1	135	19	0	4	0	0	0	0	0	0	0	0	159
19:45	0	131	15	0	2	0	0	0	0	0	0	0	0	148
20:00	0	125	15	1	0	0	0	0	0	0	0	0	0	141
20:15	2	126	19	1	3	0	0	0	0	0	0	0	0	151
20:30	0	103	13	3	1	0	0	0	0	0	0	0	0	120
20:45	0	108	20	2	2	0	0	0	0	0	0	0	0	132
21:00	0	90	17	1	3	0	0	0	0	0	0	0	0	111
21:15	0	101	9	0	1	0	0	0	0	0	0	0	0	111
21:30	0	85	14	0	1	0	0	0	0	0	0	0	0	100
21:45	1	95	10	0	0	0	0	0	0	0	0	0	0	106
22:00	0	82	7	1	1	0	0	0	1	0	0	0	0	92
22:15	0	52	6	0	1	0	0	0	1	0	0	0	0	60
22:30	0	60	7	1	1	0	0	0	0	0	0	0	0	69
22:45	0	30	3	0	1	0	0	0	0	0	0	0	0	34
23:00	0	57	5	1	0	0	0	0	1	0	0	0	0	64
23:15	0	45	4	0	0	0	0	0	1	0	0	0	0	50
23:30	0	35	3	0	0	0	0	0	0	0	0	0	0	38
23:45	0	35	4	0	0	0	0	0	0	0	0	0	0	39
TOTAL	28	7,704	1,357	46	165	11	0	9	31	0	3	0	0	9,354

PM PEAK HOUR	2:45 PM
PM PEAK VOLUME	1,122

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	49	####	2,427	89	386	34	1	17	76	0	19	1	0	15,559
% OF TOTAL	0.3%	80.1%	15.6%	0.6%	2.5%	0.2%	0.0%	0.1%	0.5%	0.0%	0.1%	0.0%	0.0%	100.0%

Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**

A42621

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thursday, February 10, 2022 **CITY#** Hemet

JOB #: SC3285 CLASS6 Stetson Avenue between Warren Road and Kirby Street

AM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
0:15	1	8	1	0	0	0	0	0	0	0	0	0	0	10
0:30	0	5	1	0	0	0	0	0	0	0	0	0	0	6
0:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
1:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
1:45	0	5	3	0	0	0	0	0	0	0	0	0	0	8
2:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
2:15	0	5	0	0	2	0	0	0	0	0	0	0	0	7
2:30	0	7	1	0	0	0	0	0	0	0	0	0	0	8
2:45	0	3	2	0	0	0	0	0	0	0	0	0	0	5
3:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
3:15	0	5	1	0	0	0	0	0	0	0	0	0	0	6
3:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
3:45	0	7	2	0	0	0	0	0	0	0	0	0	0	9
4:00	0	7	1	0	1	0	0	0	1	0	0	0	0	10
4:15	0	4	2	0	0	0	0	0	1	0	0	0	0	7
4:30	0	8	2	0	0	0	0	0	0	0	0	0	0	10
4:45	0	9	4	0	1	0	0	0	0	0	0	0	0	14
5:00	0	7	4	0	1	0	0	0	0	0	0	0	0	12
5:15	0	8	3	0	0	0	0	0	0	0	0	0	0	11
5:30	0	13	2	0	1	0	0	0	0	0	0	0	0	16
5:45	0	27	6	0	2	0	0	0	0	0	0	0	0	35
6:00	0	12	11	0	2	0	0	0	1	0	0	0	0	26
6:15	0	16	17	0	0	0	0	1	0	0	0	0	0	34
6:30	0	25	11	0	2	1	0	0	0	0	0	0	0	39
6:45	1	39	6	0	0	1	0	0	0	0	0	0	0	47
7:00	1	31	8	0	1	0	0	0	1	0	0	0	0	42
7:15	0	45	15	0	5	0	0	0	1	0	0	0	0	66
7:30	0	49	15	0	0	3	0	0	0	0	0	0	0	67
7:45	0	69	19	0	1	0	0	0	0	0	0	0	0	89
8:00	0	40	7	0	3	0	0	0	0	0	0	0	0	50
8:15	0	39	16	0	2	0	0	0	0	0	0	0	0	57
8:30	0	38	11	0	3	0	0	0	0	0	0	0	0	52
8:45	0	46	12	0	0	0	0	0	1	0	0	0	0	59
9:00	0	39	12	0	4	1	0	0	0	0	0	0	0	56
9:15	0	37	19	0	2	0	0	0	0	0	0	0	0	58
9:30	0	46	18	0	0	0	0	0	0	0	0	0	0	64
9:45	0	49	14	0	4	0	0	0	0	0	0	0	0	67
10:00	0	41	13	0	3	0	0	0	0	0	0	0	0	57
10:15	0	42	17	0	2	0	0	0	0	0	0	0	0	61
10:30	0	35	17	0	3	0	0	0	0	0	0	0	0	55
10:45	0	59	11	0	1	0	0	0	0	0	0	0	0	71
11:00	0	49	15	0	1	0	0	0	1	0	0	0	0	66
11:15	0	35	10	0	4	0	0	0	1	0	0	0	0	50
11:30	2	47	14	0	3	0	0	0	0	0	0	0	0	66
11:45	0	41	11	0	3	1	0	1	0	0	0	0	0	57
TOTAL	5	1,122	357	0	57	7	0	2	8	0	0	0	0	1,558

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	272

PM	EASTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	1	46	16	0	2	0	0	0	0	0	0	0	0	65
12:15	0	34	11	0	0	0	0	0	0	0	0	0	0	45
12:30	0	46	12	0	3	0	0	0	1	0	0	0	0	62
12:45	1	41	11	0	2	1	0	0	0	0	0	0	0	56
13:00	0	67	19	0	1	0	0	0	0	0	0	0	0	87
13:15	0	47	17	0	2	0	0	0	0	0	0	0	0	66
13:30	0	53	20	0	3	1	0	1	0	0	0	0	0	78
13:45	0	57	15	0	2	2	0	0	0	0	0	0	0	76
14:00	0	65	15	1	2	0	0	0	1	0	0	0	0	84
14:15	0	63	12	0	0	0	0	0	3	0	0	0	0	78
14:30	0	56	18	0	1	0	0	1	0	0	0	0	0	76
14:45	0	63	17	0	2	0	0	0	0	0	0	0	0	82
15:00	0	66	17	0	2	0	0	0	4	0	0	0	0	89
15:15	1	40	14	0	1	0	0	0	0	0	0	0	0	56
15:30	0	56	10	1	2	0	0	0	1	0	0	0	0	70
15:45	0	75	28	0	4	0	0	0	0	0	0	0	0	107
16:00	0	61	21	0	4	0	0	0	0	0	0	0	0	86
16:15	0	66	21	0	2	0	0	0	0	0	0	0	0	89
16:30	0	68	20	1	2	0	0	0	0	0	0	0	0	91
16:45	2	59	23	0	4	0	0	0	0	0	0	0	0	88
17:00	0	66	22	0	1	0	0	0	0	0	0	0	0	89
17:15	0	69	18	0	0	0	0	0	0	0	0	0	0	87
17:30	0	57	22	0	1	1	0	0	0	0	0	0	0	81
17:45	0	58	16	0	0	0	0	0	0	0	0	0	0	74
18:00	2	73	17	0	1	0	0	0	0	0	0	0	0	93
18:15	1	51	19	0	0	0	0	0	0	0	0	0	0	71
18:30	1	46	12	0	0	0	0	0	0	0	0	0	0	59
18:45	0	36	10	0	0	0	0	0	0	0	0	0	0	46
19:00	0	39	11	0	0	0	0	0	0	0	0	0	0	50
19:15	1	37	11	0	0	0	0	0	1	0	0	0	0	50
19:30	1	26	8	0	0	0	0	0	0	0	0	0	0	35
19:45	0	22	7	0	1	0	0	0	0	0	0	0	0	30
20:00	0	25	4	0	1	0	0	0	0	0	0	0	0	30
20:15	0	18	5	0	2	0	0	0	0	0	0	0	0	25
20:30	0	19	5	0	0	0	0	0	0	0	0	0	0	24
20:45	1	13	9	0	0	0	0	0	0	0	0	0	0	23
21:00	0	17	5	0	0	0	0	0	0	0	0	0	0	22
21:15	0	16	4	0	1	0	0	0	0	0	0	0	0	21
21:30	0	26	8	0	0	0	0	0	0	0	0	0	0	34
21:45	0	21	5	0	0	0	0	0	0	0	0	0	0	26
22:00	0	16	0	0	0	0	0	0	0	0	0	0	0	16
22:15	0	13	1	0	0	0	0	0	0	0	0	0	0	14
22:30	0	13	3	0	1	0	0	0	0	0	0	0	0	17
22:45	1	12	3	0	0	0	0	0	0	0	0	0	0	16
23:00	0	13	5	0	0	0	0	0	0	0	0	0	0	18
23:15	1	9	0	0	0	0	0	0	0	0	0	0	0	10
23:30	0	11	2	0	0	0	0	0	0	0	0	0	0	13
23:45	0	12	1	0	0	0	0	0	0	0	0	0	0	13
TOTAL	14	1,963	570	3	50	5	0	2	11	0	0	0	0	2,618

PM PEAK HOUR	3:45 PM
PM PEAK VOLUME	373

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	19	3,085	927	3	107	12	0	4	19	0	0	0	0	4,176
% OF TOTAL	0.5%	73.9%	22.2%	0.1%	2.6%	0.3%	0.0%	0.1%	0.5%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	
TOTAL: ALL	45	6,531	1,961	5	230	23	0	4	30	0	0	0	0	8,829
% OF TOTAL	0.5%	74.0%	22.2%	0.1%	2.6%	0.3%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thursday, February 10, 2022
JOB #: SC3285

CITY# Hemet
CLASS6 Stetson Avenue between Warren Road and Kirby Street

AM	WESTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	6	3	0	0	0	0	0	0	0	0	0	0	9
0:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1
0:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
0:45	0	3	1	0	1	0	0	0	0	0	0	0	0	5
1:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
1:15	1	4	1	0	0	0	0	0	0	0	0	0	0	6
1:30	0	6	0	0	0	0	0	0	0	0	0	0	0	6
1:45	0	2	1	0	0	0	0	0	0	0	0	0	0	3
2:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
2:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
2:30	0	5	0	0	0	0	0	0	0	0	0	0	0	5
2:45	0	2	1	0	0	0	0	0	0	0	0	0	0	3
3:00	0	6	1	0	0	0	0	0	1	0	0	0	0	8
3:15	0	14	3	0	0	0	0	0	0	0	0	0	0	17
3:30	0	11	1	0	1	0	0	0	1	0	0	0	0	14
3:45	0	15	6	0	0	0	0	0	0	0	0	0	0	21
4:00	0	16	6	0	1	0	0	0	1	0	0	0	0	24
4:15	0	33	10	0	1	0	0	0	0	0	0	0	0	44
4:30	0	27	7	0	0	0	0	0	1	0	0	0	0	35
4:45	0	23	9	0	2	0	0	0	1	0	0	0	0	35
5:00	0	28	14	0	2	0	0	0	0	0	0	0	0	44
5:15	1	32	20	0	0	0	0	0	0	0	0	0	0	53
5:30	0	25	13	0	4	0	0	0	0	0	0	0	0	42
5:45	0	36	13	0	1	0	0	0	0	0	0	0	0	50
6:00	0	37	16	0	1	0	0	0	0	0	0	0	0	54
6:15	0	50	17	0	3	1	0	0	0	0	0	0	0	71
6:30	1	51	18	0	0	0	0	0	0	0	0	0	0	70
6:45	0	46	17	0	0	0	0	0	0	0	0	0	0	63
7:00	0	77	15	0	5	0	0	0	0	0	0	0	0	97
7:15	0	70	19	0	2	0	0	0	0	0	0	0	0	91
7:30	3	73	13	0	1	0	0	0	0	0	0	0	0	90
7:45	0	67	15	0	1	0	0	0	0	0	0	0	0	83
8:00	0	41	13	0	1	0	0	0	0	0	0	0	0	55
8:15	1	40	16	0	3	0	0	0	1	0	0	0	0	61
8:30	0	66	11	0	2	0	0	0	0	0	0	0	0	79
8:45	1	46	14	0	2	0	0	0	1	0	0	0	0	64
9:00	0	50	12	0	1	1	0	0	0	0	0	0	0	64
9:15	0	52	12	0	4	0	0	0	1	0	0	0	0	69
9:30	0	59	21	0	3	0	0	0	0	0	0	0	0	83
9:45	1	56	12	0	2	0	0	0	0	0	0	0	0	71
10:00	0	52	12	0	0	0	0	0	0	0	0	0	0	64
10:15	0	41	19	0	1	1	0	0	0	0	0	0	0	62
10:30	1	40	16	0	4	0	0	0	0	0	0	0	0	61
10:45	1	45	26	0	5	0	0	0	0	0	0	0	0	77
11:00	0	42	11	0	2	0	0	0	0	0	0	0	0	55
11:15	0	52	9	0	3	0	0	0	0	0	0	0	0	64
11:30	1	55	9	0	4	0	0	0	0	0	0	0	0	69
11:45	2	52	14	0	2	0	0	0	0	0	0	0	0	70
TOTAL	14	1,567	468	0	66	3	0	0	8	0	0	0	0	2,126

AM PEAK HOUR	7:00 AM
AM PEAK VOLUME	361

PM	WESTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	53	17	0	6	1	0	0	0	0	0	0	0	77
12:15	0	62	13	0	0	1	0	0	1	0	0	0	0	77
12:30	1	41	18	0	1	0	0	0	1	0	0	0	0	62
12:45	1	50	26	0	4	0	0	0	1	0	0	0	0	82
13:00	0	46	16	0	2	0	0	0	0	0	0	0	0	64
13:15	0	52	18	0	2	0	0	0	0	0	0	0	0	72
13:30	0	67	13	1	1	0	0	0	0	0	0	0	0	82
13:45	0	56	15	0	2	0	0	0	0	0	0	0	0	73
14:00	0	71	22	0	1	0	0	0	0	0	0	0	0	94
14:15	0	48	21	0	2	1	0	0	0	0	0	0	0	72
14:30	0	54	19	0	4	0	0	0	0	0	0	0	0	77
14:45	0	63	16	0	0	1	0	0	0	0	0	0	0	80
15:00	0	77	20	0	3	1	0	0	0	0	0	0	0	101
15:15	0	51	20	0	1	0	0	0	0	0	0	0	0	72
15:30	0	75	21	0	2	1	0	0	0	0	0	0	0	99
15:45	0	56	25	0	4	0	0	0	0	0	0	0	0	85
16:00	0	85	18	1	1	1	0	0	0	0	0	0	0	106
16:15	1	60	13	0	2	0	0	0	0	0	0	0	0	76
16:30	0	71	12	0	0	0	0	0	0	0	0	0	0	83
16:45	0	51	15	0	3	0	0	0	0	0	0	0	0	69
17:00	0	73	23	0	1	0	0	0	0	0	0	0	0	97
17:15	1	62	10	0	1	0	0	0	0	0	0	0	0	74
17:30	1	67	12	0	4	0	0	0	0	0	0	0	0	84
17:45	1	57	13	0	1	0	0	0	0	0	0	0	0	72
18:00	0	42	14	0	0	1	0	0	0	0	0	0	0	57
18:15	1	43	13	0	1	0	0	0	0	0	0	0	0	58
18:30	1	31	13	0	1	0	0	0	0	0	0	0	0	46
18:45	1	25	16	0	0	0	0	0	0	0	0	0	0	42
19:00	0	19	7	0	1	0	0	0	0	0	0	0	0	27
19:15	0	28	6	0	1	0	0	0	0	0	0	0	0	35
19:30	1	24	9	0	0	0	0	0	0	0	0	0	0	34
19:45	0	20	2	0	1	0	0	0	0	0	0	0	0	23
20:00	0	21	5	0	1	0	0	0	0	0	0	0	0	27
20:15	0	16	9	0	0	0	0	0	0	0	0	0	0	25
20:30	0	26	7	0	0	0	0	0	0	0	0	0	0	33
20:45	0	20	4	0	0	0	0	0	0	0	0	0	0	24
21:00	0	16	2	0	0	0	0	0	0	0	0	0	0	18
21:15	0	18	5	0	1	0	0	0	0	0	0	0	0	24
21:30	0	17	5	0	0	0	0	0	0	0	0	0	0	22
21:45	1	16	6	0	1	0	0	0	0	0	0	0	0	24
22:00	0	8	6	0	0	0	0	0	0	0	0	0	0	14
22:15	0	10	8	0	0	0	0	0	0	0	0	0	0	18
22:30	0	9	2	0	0	0	0	0	0	0	0	0	0	11
22:45	0	5	4	0	0	0	0	0	0	0	0	0	0	9
23:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
23:15	1	3	1	0	0	0	0	0	0	0	0	0	0	5
23:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
23:45	0	5	4	0	1	0	0	0	0	0	0	0	0	10
TOTAL	12	1,879	566	2	57	8	0	0	3	0	0	0	0	2,527

PM PEAK HOUR	3:30 PM
PM PEAK VOLUME	366

TOTAL: AM+PM	26	3,446	1,034	2	123	11	0	0	11	0	0	0	0	4,653
% OF TOTAL	0.6%	74.1%	22.2%	0.0%	2.6%	0.2%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

2018 RIVCOM Loaded Network ADT

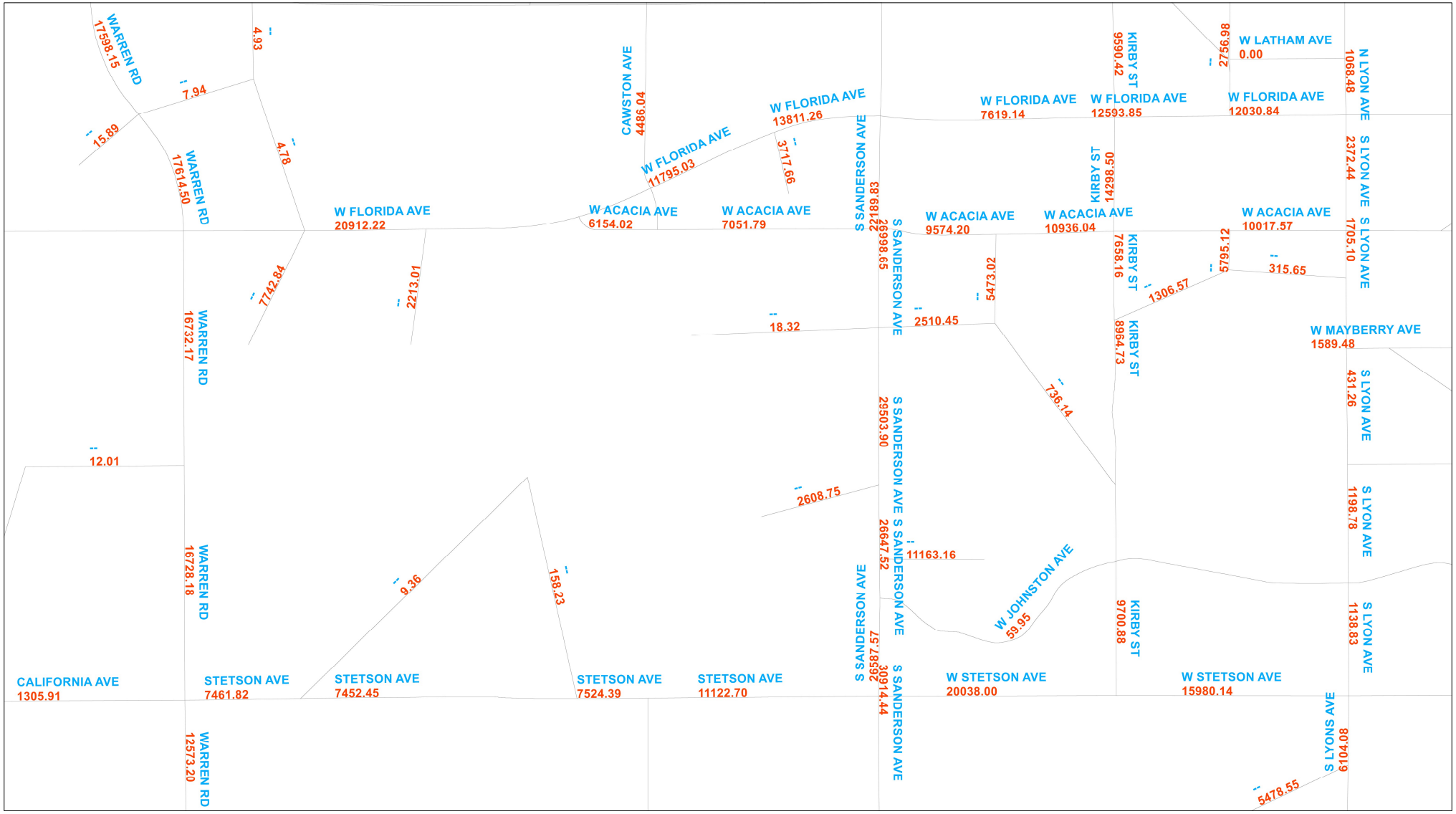


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Kirby Street

Vistro File: C:\...\Kirby Street_Add_Intersection_Update_Existing_Abby.vistro
Report File: C:\...\Existing AM.pdf

Scenario 1 Existing AM
4/25/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sanderson Ave/SR-74	Signalized	HCM 7th Edition	WB Left	0.522	34.3	C
2	Sanderson Ave/Acacia Ave	Signalized	HCM 7th Edition	EB Left	0.507	22.7	C
5	Kirby St/SR-74	Signalized	HCM 7th Edition	WB Left	0.354	16.7	B
6	Kirby St/Acacia Ave	Signalized	HCM 7th Edition	NB Left	0.375	22.2	C
9	Kirby St/Johnston Ave	All-way stop	HCM 7th Edition	WB Thru	0.601	15.5	C
10	Kirby St/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.833	34.9	C
11	Sanderson Ave/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.796	44.1	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sanderson Ave/SR-74

Control Type:	Signalized	Delay (sec / veh):	34.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.522

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	230.00	100.00	110.00	175.00	100.00	200.00	420.00	100.00	615.00	420.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	123	617	124	126	617	79	151	516	34	151	346	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	32	0	0	20	0	0	9	0	0	30
Total Hourly Volume [veh/h]	125	629	94	129	629	61	154	526	26	154	353	88
Peak Hour Factor	0.8910	0.8910	0.8910	0.9190	0.9190	0.9190	0.9210	0.9210	0.9210	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	176	26	35	171	17	42	143	7	42	95	24
Total Analysis Volume [veh/h]	140	706	105	140	684	66	167	571	28	166	382	95
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	29	0	16	32	0	18	36	0	14	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	27	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	21	21	9	21	21	11	39	39	10	38	38
g / C, Green / Cycle	0.10	0.23	0.23	0.10	0.23	0.23	0.11	0.41	0.41	0.11	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.08	0.20	0.07	0.08	0.19	0.04	0.09	0.16	0.02	0.09	0.13	0.13
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	1900	1771
c, Capacity [veh/h]	173	815	364	174	818	365	203	1463	653	192	756	705
d1, Uniform Delay [s]	42.20	35.48	30.54	42.11	35.13	29.70	41.31	20.05	17.18	41.88	19.81	19.83
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	8.75	2.95	0.43	8.31	2.35	0.23	8.03	0.79	0.12	11.09	1.14	1.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.81	0.87	0.29	0.80	0.84	0.18	0.82	0.39	0.04	0.87	0.33	0.33
d, Delay for Lane Group [s/veh]	50.95	38.43	30.98	50.42	37.48	29.94	49.34	20.83	17.30	52.97	20.95	21.07
Lane Group LOS	D	D	C	D	D	C	D	C	B	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.61	8.04	2.02	3.59	7.67	1.23	4.20	4.43	0.38	4.34	3.85	3.63
50th-Percentile Queue Length [ft/ln]	90.22	201.10	50.45	89.71	191.79	30.80	104.93	110.79	9.54	108.49	96.14	90.87
95th-Percentile Queue Length [veh/ln]	6.50	12.70	3.63	6.46	12.21	2.22	7.55	7.88	0.69	7.76	6.92	6.54
95th-Percentile Queue Length [ft/ln]	162.39	317.38	90.81	161.48	305.36	55.44	188.87	197.10	17.17	193.89	173.05	163.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.95	38.43	30.98	50.42	37.48	29.94	49.34	20.83	17.30	52.97	21.00	21.07
Movement LOS	D	D	C	D	D	C	D	C	B	D	C	C
d_A, Approach Delay [s/veh]	39.45			38.96			26.92			29.26		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	34.35											
Intersection LOS	C											
Intersection V/C	0.522											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	38.97	38.97	38.97	38.97
l_p,int, Pedestrian LOS Score for Intersectio	2.904	2.796	2.732	2.693
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	526	589	673	589
d_b, Bicycle Delay [s]	25.83	23.66	20.92	23.66
l_b,int, Bicycle LOS Score for Intersection	2.371	2.310	2.199	2.115
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sanderson Ave/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	22.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.507

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	135.00	100.00	100.00	195.00	100.00	100.00	65.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	75	830	94	98	635	2	9	152	159	147	98	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	24	0	0	1	0	0	41	0	0	34
Total Hourly Volume [veh/h]	77	847	72	100	648	1	9	155	121	150	100	103
Peak Hour Factor	0.9260	0.9260	0.9260	0.9640	0.9640	0.9640	0.9200	0.9200	0.9200	0.8610	0.8610	0.8610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	229	19	26	168	0	2	42	33	44	29	30
Total Analysis Volume [veh/h]	83	915	78	104	672	1	10	168	132	174	116	120
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	24	0	10	23	0	9	28	0	13	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	35	35	6	36	36	1	10	10	9	18
g / C, Green / Cycle	0.06	0.46	0.46	0.07	0.48	0.48	0.01	0.13	0.13	0.12	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.26	0.26	0.06	0.19	0.00	0.01	0.09	0.08	0.10	0.14
s, saturation flow rate [veh/h]	1810	1900	1848	1810	3618	1615	1810	1900	1615	1810	1744
c, Capacity [veh/h]	111	873	849	137	1713	765	26	254	216	215	415
d1, Uniform Delay [s]	34.74	14.96	14.96	34.11	12.80	10.43	36.76	30.99	30.76	32.31	25.25
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.59	2.77	2.85	8.40	0.68	0.00	9.24	2.95	2.81	7.04	1.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.58	0.58	0.76	0.39	0.00	0.39	0.66	0.61	0.81	0.57
d, Delay for Lane Group [s/veh]	44.33	17.73	17.81	42.52	13.48	10.43	46.00	33.94	33.57	39.34	26.48
Lane Group LOS	D	B	B	D	B	B	D	C	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.75	6.40	6.25	2.13	3.49	0.01	0.24	2.97	2.32	3.36	3.63
50th-Percentile Queue Length [ft/ln]	43.75	159.98	156.13	53.28	87.26	0.22	6.05	74.20	58.02	84.10	90.79
95th-Percentile Queue Length [veh/ln]	3.15	10.55	10.34	3.84	6.28	0.02	0.44	5.34	4.18	6.06	6.54
95th-Percentile Queue Length [ft/ln]	78.76	263.69	258.59	95.91	157.07	0.39	10.89	133.56	104.43	151.38	163.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.33	17.76	17.81	42.52	13.48	10.43	46.00	33.94	33.57	39.34	26.48	26.48
Movement LOS	D	B	B	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	19.81			17.36			34.17			31.94		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.74											
Intersection LOS	C											
Intersection V/C	0.507											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.10	29.10	29.10	29.10
l_p,int, Pedestrian LOS Score for Intersectio	2.740	2.749	2.339	2.291
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	532	506	639	745
d_b, Bicycle Delay [s]	20.22	20.96	17.39	14.78
l_b,int, Bicycle LOS Score for Intersection	2.467	2.201	2.139	2.292
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Kirby St/SR-74

Control Type:	Signalized	Delay (sec / veh):	16.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.354

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	245.00	100.00	205.00	245.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	247	47	70	239	57	56	688	37	66	569	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	12	0	0	15	0	0	10	0	0	12
Total Hourly Volume [veh/h]	55	252	36	71	244	43	57	702	28	67	580	37
Peak Hour Factor	0.7150	0.7150	0.7150	0.8740	0.8740	0.8740	0.9400	0.9400	0.9400	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	88	13	20	70	12	15	187	7	18	152	10
Total Analysis Volume [veh/h]	77	352	50	81	279	49	61	747	30	70	607	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	9	28	0	10	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	17	17	17	17	4	37	37	4	37	37
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.53	0.53	0.05	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.07	0.11	0.11	0.08	0.09	0.09	0.03	0.21	0.02	0.04	0.17	0.02
s, saturation flow rate [veh/h]	1069	1900	1819	998	1900	1803	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	246	463	444	218	463	440	93	1918	856	99	1931	862
d1, Uniform Delay [s]	28.31	22.46	22.49	29.83	21.97	22.01	32.66	9.75	7.89	32.59	9.16	7.81
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	0.72	0.66	0.70	1.05	0.47	0.51	7.64	0.60	0.08	8.84	0.43	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.31	0.44	0.45	0.37	0.36	0.37	0.66	0.39	0.04	0.71	0.31	0.05
d, Delay for Lane Group [s/veh]	29.03	23.12	23.19	30.87	22.44	22.52	40.30	10.35	7.96	41.42	9.59	7.91
Lane Group LOS	C	C	C	C	C	C	D	B	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.19	2.73	2.65	1.30	2.18	2.11	1.18	3.11	0.21	1.37	2.38	0.27
50th-Percentile Queue Length [ft/ln]	29.66	68.35	66.36	32.59	54.45	52.76	29.54	77.83	5.25	34.35	59.46	6.79
95th-Percentile Queue Length [veh/ln]	2.14	4.92	4.78	2.35	3.92	3.80	2.13	5.60	0.38	2.47	4.28	0.49
95th-Percentile Queue Length [ft/ln]	53.39	123.04	119.45	58.66	98.02	94.97	53.17	140.09	9.45	61.83	107.03	12.23

Movement, Approach, & Intersection Results

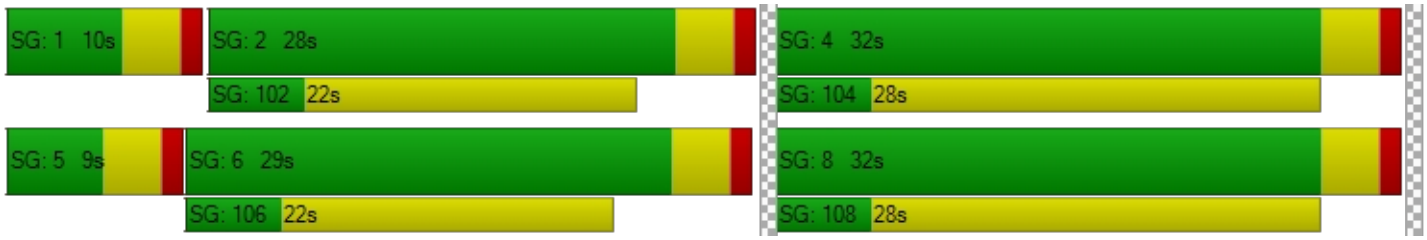
d_M, Delay for Movement [s/veh]	29.03	23.15	23.19	30.87	22.48	22.52	40.30	10.35	7.96	41.42	9.59	7.91
Movement LOS	C	C	C	C	C	C	D	B	A	D	A	A
d_A, Approach Delay [s/veh]	24.10			24.14			12.45			12.61		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	16.74											
Intersection LOS	B											
Intersection V/C	0.354											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.61	26.61	26.61	26.61
l_p,int, Pedestrian LOS Score for Intersectio	2.506	2.512	2.825	2.837
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	799	799	685	714
d_b, Bicycle Delay [s]	12.63	12.63	15.14	14.49
l_b,int, Bicycle LOS Score for Intersection	1.965	1.909	2.259	2.160
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Kirby St/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	22.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.375

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	66	286	80	27	238	69	39	280	46	51	315	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	21	0	0	18	0	0	12	0	0	12
Total Hourly Volume [veh/h]	67	292	61	28	243	52	40	286	35	52	321	35
Peak Hour Factor	0.8160	0.8160	0.8160	0.9000	0.9000	0.9000	0.9690	0.9690	0.9690	0.8760	0.8760	0.8760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	89	19	8	68	14	10	74	9	15	92	10
Total Analysis Volume [veh/h]	82	358	75	31	270	58	41	295	36	59	366	40
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	9	19	0	9	26	0	9	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	28	28	2	26	26	3	16	3	16
g / C, Green / Cycle	0.06	0.43	0.43	0.03	0.40	0.40	0.04	0.24	0.05	0.25
(v / s)_i Volume / Saturation Flow Rate	0.05	0.12	0.12	0.02	0.09	0.09	0.02	0.18	0.03	0.22
s, saturation flow rate [veh/h]	1810	1900	1788	1810	1900	1786	1810	1864	1810	1868
c, Capacity [veh/h]	112	809	762	64	759	714	77	449	95	469
d1, Uniform Delay [s]	30.10	12.17	12.19	30.91	12.90	12.93	30.62	22.86	30.28	23.39
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.96	0.84	0.90	5.65	0.67	0.73	5.64	2.37	6.43	4.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.73	0.27	0.28	0.49	0.22	0.23	0.53	0.74	0.62	0.87
d, Delay for Lane Group [s/veh]	39.06	13.01	13.10	36.56	13.57	13.67	36.26	25.23	36.72	28.32
Lane Group LOS	D	B	B	D	B	B	D	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.47	2.00	1.93	0.55	1.55	1.51	0.72	4.58	1.03	6.06
50th-Percentile Queue Length [ft/ln]	36.77	50.09	48.14	13.83	38.85	37.74	17.94	114.38	25.67	151.59
95th-Percentile Queue Length [veh/ln]	2.65	3.61	3.47	1.00	2.80	2.72	1.29	8.08	1.85	10.10
95th-Percentile Queue Length [ft/ln]	66.18	90.16	86.65	24.89	69.93	67.93	32.29	202.08	46.21	252.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.06	13.04	13.10	36.56	13.61	13.67	36.26	25.23	25.23	36.72	28.32	28.32
Movement LOS	D	B	B	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	17.19			15.60			26.44			29.38		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.18											
Intersection LOS	C											
Intersection V/C	0.375											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.19	24.19	24.19	24.19
l_p,int, Pedestrian LOS Score for Intersectio	2.523	2.499	2.287	2.283
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	522	461	675	675
d_b, Bicycle Delay [s]	17.79	19.30	14.28	14.28
l_b,int, Bicycle LOS Score for Intersection	2.002	1.871	2.193	2.347
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Kirby St/Johnston Ave

Control Type:	All-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.601

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	85.00	100.00	100.00	95.00	100.00	100.00	100.00	100.00	185.00	100.00	100.00	320.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	16	238	52	31	225	29	41	102	16	90	144	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	243	53	32	230	30	42	104	16	92	147	55
Peak Hour Factor	0.7640	0.7640	0.7640	0.8110	0.8110	0.8110	0.7900	0.7900	0.7900	0.8170	0.8170	0.8170
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	80	17	10	71	9	13	33	5	28	45	17
Total Analysis Volume [veh/h]	21	318	69	39	284	37	53	132	20	113	180	67
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	448	478	494	440	469	479	474	529	488	551
Degree of Utilization, x	0.05	0.41	0.39	0.09	0.34	0.34	0.39	0.04	0.60	0.12

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.15	1.94	1.84	0.29	1.50	1.46	1.83	0.12	3.89	0.41
95th-Percentile Queue Length [ft]	3.68	48.43	46.02	7.26	37.60	36.48	45.74	2.94	97.35	10.31
Approach Delay [s/veh]	14.74			13.88			14.57		18.64	
Approach LOS	B			B			B		C	
Intersection Delay [s/veh]	15.53									
Intersection LOS	C									

Intersection Level Of Service Report
Intersection 10: Kirby St/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	34.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.833

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	70.00	100.00	70.00	115.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	47	40	26	72	32	255	190	828	27	17	920	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	7	0	0	65	0	0	7	0	0	20
Total Hourly Volume [veh/h]	48	41	20	73	33	195	194	845	21	17	938	59
Peak Hour Factor	0.8270	0.8270	0.8270	0.7550	0.7550	0.7550	0.9060	0.9060	0.9060	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	12	6	24	11	65	54	233	6	5	263	17
Total Analysis Volume [veh/h]	58	50	24	97	44	258	214	933	23	19	1054	66
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	26	0	18	74	0	10	66	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	20	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22	22	22	22	22	14	74	74	2	62	62
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.20	0.20	0.13	0.67	0.67	0.02	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.05	0.01	0.01	0.07	0.02	0.16	0.12	0.25	0.25	0.01	0.55	0.04
s, saturation flow rate [veh/h]	1094	3618	1615	1347	1900	1615	1810	1900	1884	1810	1900	1615
c, Capacity [veh/h]	248	728	325	301	382	325	230	1273	1262	36	1069	908
d1, Uniform Delay [s]	40.28	35.59	35.63	40.36	35.93	41.78	47.51	8.02	8.03	53.38	23.64	10.97
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.46	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	2.19	0.18	0.44	2.82	0.61	17.93	15.05	0.18	0.19	11.24	23.39	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.23	0.07	0.07	0.32	0.12	0.79	0.93	0.38	0.38	0.52	0.99	0.07
d, Delay for Lane Group [s/veh]	42.48	35.78	36.07	43.17	36.55	59.71	62.56	8.21	8.21	64.62	47.03	11.01
Lane Group LOS	D	D	D	D	D	E	E	A	A	E	D	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.52	0.56	0.56	2.55	1.03	8.16	6.57	4.25	4.21	0.62	30.11	0.68
50th-Percentile Queue Length [ft/ln]	38.01	13.97	13.98	63.69	25.63	204.06	164.24	106.17	105.33	15.49	752.87	17.05
95th-Percentile Queue Length [veh/ln]	2.74	1.01	1.01	4.59	1.85	12.85	10.77	7.63	7.58	1.12	39.11	1.23
95th-Percentile Queue Length [ft/ln]	68.41	25.14	25.16	114.63	46.13	321.20	269.33	190.66	189.49	27.88	977.86	30.69

Movement, Approach, & Intersection Results

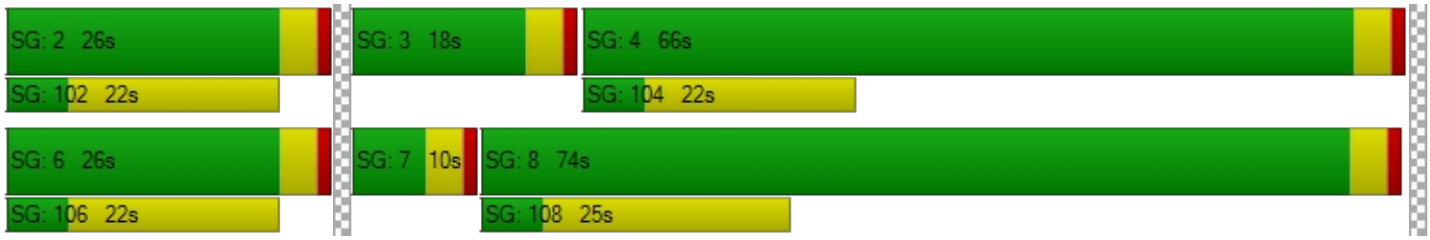
d_M, Delay for Movement [s/veh]	42.48	35.78	36.07	43.17	36.55	59.71	62.56	8.21	8.21	64.62	47.03	11.01
Movement LOS	D	D	D	D	D	E	E	A	A	E	D	B
d_A, Approach Delay [s/veh]	38.78			53.14			18.15			45.24		
Approach LOS	D			D			B			D		
d_I, Intersection Delay [s/veh]	34.89											
Intersection LOS	C											
Intersection V/C	0.833											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersectio	2.374	2.589	3.167	3.127
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	400	1273	1127
d_b, Bicycle Delay [s]	35.20	35.20	7.27	10.47
l_b,int, Bicycle LOS Score for Intersection	1.674	2.325	2.531	3.472
Bicycle LOS	A	B	B	C

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Sanderson Ave/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	44.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.796

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	200.00	100.00	180.00	210.00	100.00	100.00	205.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	669	581	97	711	81	65	347	18	503	630	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	148	0	0	21	0	0	5	0	0	31
Total Hourly Volume [veh/h]	45	682	445	99	725	62	66	354	13	513	643	93
Peak Hour Factor	0.9030	0.9030	0.9030	0.8290	0.8290	0.8290	0.9250	0.9250	0.9250	0.8870	0.8870	0.8870
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	189	123	30	219	19	18	96	4	145	181	26
Total Analysis Volume [veh/h]	50	755	493	119	875	75	71	383	14	578	725	105
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	26	0	12	29	0	26	30	0	37	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	21	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	34	34	8	39	39	5	14	14	33	41	41
g / C, Green / Cycle	0.04	0.33	0.33	0.08	0.37	0.37	0.05	0.13	0.13	0.31	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.03	0.21	0.31	0.07	0.25	0.25	0.04	0.10	0.11	0.32	0.22	0.22
s, saturation flow rate [veh/h]	1810	3618	1615	1810	1900	1848	1810	1900	1877	1810	1900	1817
c, Capacity [veh/h]	68	1185	529	139	697	678	95	246	243	568	743	711
d1, Uniform Delay [s]	50.07	30.03	34.21	47.94	28.22	28.22	49.13	44.50	44.52	36.07	25.07	25.13
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.47	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	14.17	2.62	25.43	13.63	5.55	5.70	11.22	6.30	6.47	41.11	0.69	0.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.73	0.64	0.93	0.85	0.69	0.69	0.75	0.81	0.81	1.02	0.57	0.57
d, Delay for Lane Group [s/veh]	64.23	32.66	59.64	61.56	33.76	33.92	60.36	50.80	50.99	77.18	25.76	25.86
Lane Group LOS	E	C	E	E	C	C	E	D	D	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.56	8.41	15.61	3.59	11.12	10.85	2.13	5.45	5.41	20.66	8.22	7.96
50th-Percentile Queue Length [ft/ln]	39.11	210.30	390.19	89.80	278.02	271.20	53.17	136.25	135.33	516.60	205.59	199.06
95th-Percentile Queue Length [veh/ln]	2.82	13.17	22.09	6.47	16.59	16.25	3.83	9.28	9.23	28.45	12.93	12.59
95th-Percentile Queue Length [ft/ln]	70.40	329.21	552.16	161.65	414.74	406.23	95.71	231.97	230.72	711.34	323.16	314.75

Movement, Approach, & Intersection Results

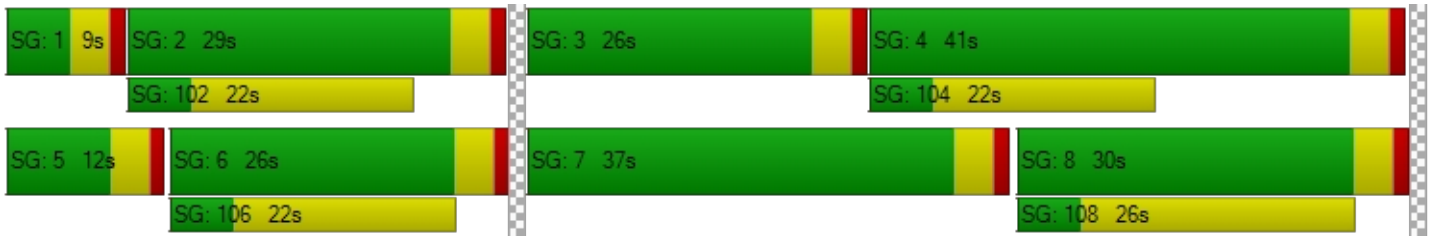
d_M, Delay for Movement [s/veh]	64.23	32.66	59.64	61.56	33.84	33.92	60.36	50.89	50.99	77.18	25.80	25.86
Movement LOS	E	C	E	E	C	C	E	D	D	F	C	C
d_A, Approach Delay [s/veh]	44.12			36.93			52.33			46.90		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	44.14											
Intersection LOS	D											
Intersection V/C	0.796											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	43.92	43.92	43.92	43.92
l_p,int, Pedestrian LOS Score for Intersectio	3.147	2.739	2.578	2.856
Crosswalk LOS	C	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	419	476	495	704
d_b, Bicycle Delay [s]	32.83	30.50	29.75	22.05
l_b,int, Bicycle LOS Score for Intersection	2.753	2.459	1.950	2.747
Bicycle LOS	C	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Kirby Street

Vistro File: C:\...\Kirby Street_Add_Intersection_Update_Existing_Abby.vistro
Report File: C:\...\Existing AM.pdf

Scenario 1 Existing AM
4/25/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Sanderson Ave/SR-74	125	629	126	129	629	81	154	526	35	154	353	118	3059

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Sanderson Ave/Acacia Ave	77	847	96	100	648	2	9	155	162	150	100	137	2483

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Kirby St/SR-74	55	252	48	71	244	58	57	702	38	67	580	49	2221

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Kirby St/Acacia Ave	67	292	82	28	243	70	40	286	47	52	321	47	1575

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
9	Kirby St/Johnston Ave	16	243	53	32	230	30	42	104	16	92	147	55	1060

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
10	Kirby St/Stetson Ave	48	41	27	73	33	260	194	845	28	17	938	79	2583

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11	Sanderson Ave/Stetson Ave	45	682	593	99	725	83	66	354	18	513	643	124	3945

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Kirby Street

Vistro File: C:\...\Kirby Street_Add_Intersection_Update_Existing_Abby.vistro
Report File: C:\...\Existing PM.pdf

Scenario 2 Existing PM
4/25/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sanderson Ave/SR-74	Signalized	HCM 7th Edition	WB Left	0.711	43.8	D
2	Sanderson Ave/Acacia Ave	Signalized	HCM 7th Edition	EB Left	0.648	29.7	C
5	Kirby St/SR-74	Signalized	HCM 7th Edition	WB Left	0.547	23.1	C
6	Kirby St/Acacia Ave	Signalized	HCM 7th Edition	SB Left	0.556	27.8	C
9	Kirby St/Johnston Ave	All-way stop	HCM 7th Edition	SB Thru	0.444	13.2	B
10	Kirby St/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.801	34.1	C
11	Sanderson Ave/Stetson Ave	Signalized	HCM 7th Edition	SB Left	0.759	42.5	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sanderson Ave/SR-74

Control Type:	Signalized	Delay (sec / veh):	43.8
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	230.00	100.00	110.00	175.00	100.00	200.00	420.00	100.00	615.00	420.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	185	689	196	180	837	97	249	625	71	254	478	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	50	0	0	25	0	0	18	0	0	33
Total Hourly Volume [veh/h]	189	703	150	184	854	74	254	638	54	259	488	100
Peak Hour Factor	0.8820	0.8820	0.8820	0.9170	0.9170	0.9170	0.9790	0.9790	0.9790	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	199	43	50	233	20	65	163	14	70	132	27
Total Analysis Volume [veh/h]	214	797	170	201	931	81	259	652	55	281	529	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	32	0	17	32	0	24	36	0	20	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	27	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	28	28	13	28	28	17	32	32	16	31	31
g / C, Green / Cycle	0.12	0.27	0.27	0.12	0.27	0.27	0.16	0.31	0.31	0.15	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.12	0.22	0.11	0.11	0.26	0.05	0.14	0.18	0.03	0.16	0.17	0.17
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	1900	1790
c, Capacity [veh/h]	224	960	429	224	960	429	292	1107	494	276	565	532
d1, Uniform Delay [s]	45.71	36.34	31.66	45.34	38.15	29.83	43.12	30.86	26.19	44.50	31.34	31.35
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.12	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	18.96	1.93	0.59	11.98	8.10	0.21	9.01	2.30	0.46	30.87	4.32	4.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.95	0.83	0.40	0.90	0.97	0.19	0.89	0.59	0.11	1.02	0.58	0.58
d, Delay for Lane Group [s/veh]	64.67	38.27	32.26	57.32	46.25	30.04	52.13	33.16	26.64	75.37	35.66	35.92
Lane Group LOS	E	D	C	E	D	C	D	C	C	F	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.68	9.73	3.59	5.87	12.69	1.60	7.19	7.17	1.04	9.40	7.58	7.18
50th-Percentile Queue Length [ft/ln]	167.07	243.14	89.77	146.81	317.30	40.12	179.65	179.36	25.98	234.95	189.41	179.41
95th-Percentile Queue Length [veh/ln]	10.92	14.84	6.46	9.85	18.53	2.89	11.58	11.57	1.87	14.55	12.09	11.57
95th-Percentile Queue Length [ft/ln]	273.06	371.00	161.58	246.17	463.37	72.22	289.56	289.18	46.76	363.78	302.26	289.25

Movement, Approach, & Intersection Results

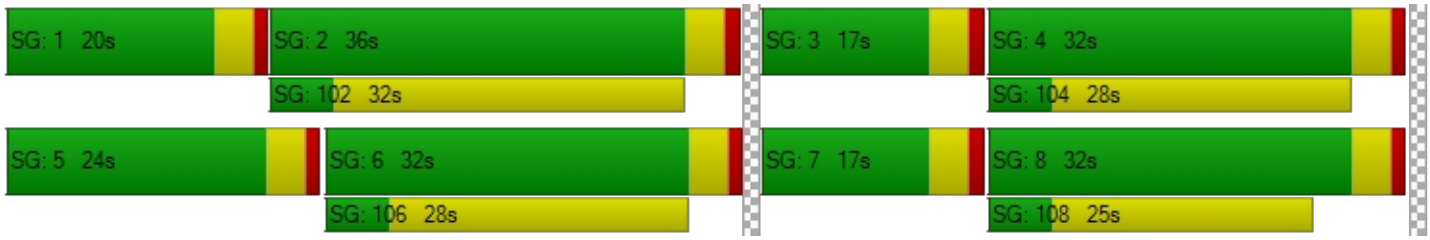
d_M, Delay for Movement [s/veh]	64.67	38.27	32.26	57.32	46.25	30.04	52.13	33.16	26.64	75.37	35.76	35.92
Movement LOS	E	D	C	E	D	C	D	C	C	F	D	D
d_A, Approach Delay [s/veh]	42.18			47.00			37.88			47.90		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	43.81											
Intersection LOS	D											
Intersection V/C	0.711											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	43.89	43.89	43.89	43.89
l_p,int, Pedestrian LOS Score for Intersectio	3.024	2.893	2.835	2.816
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	533	533	609	533
d_b, Bicycle Delay [s]	28.24	28.24	25.38	28.24
l_b,int, Bicycle LOS Score for Intersection	2.575	2.581	2.371	2.344
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sanderson Ave/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	29.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.648

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	135.00	100.00	100.00	195.00	100.00	100.00	65.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	99	877	100	201	859	13	13	259	161	178	186	207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	26	0	0	3	0	0	41	0	0	53
Total Hourly Volume [veh/h]	101	895	76	205	876	10	13	264	123	182	190	158
Peak Hour Factor	0.9900	0.9900	0.9900	0.9430	0.9430	0.9430	0.9230	0.9230	0.9230	0.8720	0.8720	0.8720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	226	19	54	232	3	4	72	33	52	54	45
Total Analysis Volume [veh/h]	102	904	77	217	929	11	14	286	133	209	218	181
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	20	0	14	24	0	9	27	0	14	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	25	25	10	30	30	1	14	14	10	22
g / C, Green / Cycle	0.07	0.34	0.34	0.13	0.40	0.40	0.02	0.18	0.18	0.13	0.30
(v / s)_i Volume / Saturation Flow Rate	0.06	0.26	0.26	0.12	0.26	0.01	0.01	0.15	0.08	0.12	0.23
s, saturation flow rate [veh/h]	1810	1900	1848	1810	3618	1615	1810	1900	1615	1810	1759
c, Capacity [veh/h]	134	639	621	242	1432	639	34	348	296	242	525
d1, Uniform Delay [s]	34.17	22.45	22.46	32.06	18.47	13.82	36.51	29.54	27.35	31.90	23.94
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.12
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.49	9.07	9.32	11.10	2.29	0.05	7.96	4.84	1.07	8.80	2.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.78	0.78	0.90	0.65	0.02	0.42	0.82	0.45	0.86	0.76
d, Delay for Lane Group [s/veh]	42.66	31.53	31.78	43.16	20.76	13.87	44.48	34.39	28.41	40.70	26.39
Lane Group LOS	D	C	C	D	C	B	D	C	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.10	8.98	8.78	4.49	6.51	0.12	0.32	5.16	2.11	4.13	6.31
50th-Percentile Queue Length [ft/ln]	52.38	224.56	219.58	112.34	162.76	2.90	8.00	129.09	52.72	103.22	157.66
95th-Percentile Queue Length [veh/ln]	3.77	13.90	13.64	7.97	10.69	0.21	0.58	8.89	3.80	7.43	10.42
95th-Percentile Queue Length [ft/ln]	94.28	347.45	341.09	199.26	267.37	5.22	14.39	222.26	94.90	185.80	260.62

Movement, Approach, & Intersection Results

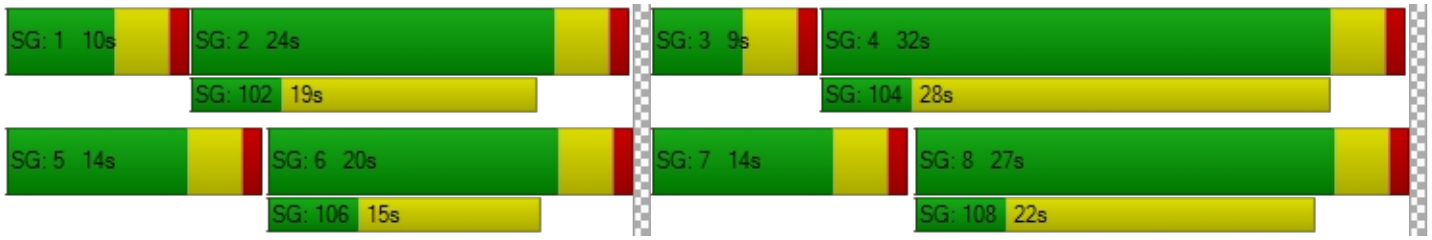
d_M, Delay for Movement [s/veh]	42.66	31.64	31.78	43.16	20.76	13.87	44.48	34.39	28.41	40.70	26.39	26.39
Movement LOS	D	C	C	D	C	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	32.69			24.89			32.88			31.31		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	29.71											
Intersection LOS	C											
Intersection V/C	0.648											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.10	29.10	29.10	29.10
l_p,int, Pedestrian LOS Score for Intersectio	2.801	2.825	2.412	2.488
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	426	532	612	745
d_b, Bicycle Delay [s]	23.26	20.22	18.08	14.78
l_b,int, Bicycle LOS Score for Intersection	2.475	2.517	2.342	2.650
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Kirby St/SR-74

Control Type:	Signalized	Delay (sec / veh):	23.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.547

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	245.00	100.00	205.00	245.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	365	93	89	347	190	201	893	117	118	798	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	24	0	0	49	0	0	30	0	0	20
Total Hourly Volume [veh/h]	88	372	71	91	354	145	205	911	89	120	814	59
Peak Hour Factor	0.8340	0.8340	0.8340	0.7920	0.7920	0.7920	0.9300	0.9300	0.9300	0.8970	0.8970	0.8970
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	112	21	29	112	46	55	245	24	33	227	16
Total Analysis Volume [veh/h]	106	446	85	115	447	183	220	980	96	134	907	66
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	15	26	0	17	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	25	25	25	25	11	31	31	7	27	27
g / C, Green / Cycle	0.33	0.33	0.33	0.33	0.33	0.33	0.14	0.41	0.41	0.09	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.13	0.14	0.14	0.13	0.17	0.17	0.12	0.27	0.06	0.07	0.25	0.04
s, saturation flow rate [veh/h]	809	1900	1796	887	1900	1715	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	230	630	596	269	630	569	261	1495	667	172	1317	588
d1, Uniform Delay [s]	30.04	19.56	19.58	27.95	20.28	20.31	31.28	17.72	13.74	33.19	20.26	15.82
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	1.43	0.47	0.50	1.08	0.68	0.76	7.22	2.26	0.45	7.40	2.96	0.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.46	0.43	0.43	0.43	0.52	0.53	0.84	0.66	0.14	0.78	0.69	0.11
d, Delay for Lane Group [s/veh]	31.48	20.03	20.08	29.03	20.96	21.06	38.50	19.98	14.19	40.59	23.22	16.21
Lane Group LOS	C	C	C	C	C	C	D	B	B	D	C	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.84	3.52	3.36	1.89	4.45	4.06	4.27	6.73	1.03	2.67	6.80	0.77
50th-Percentile Queue Length [ft/ln]	45.89	88.09	84.03	47.24	111.27	101.40	106.73	168.26	25.87	66.66	170.06	19.37
95th-Percentile Queue Length [veh/ln]	3.30	6.34	6.05	3.40	7.91	7.30	7.66	10.99	1.86	4.80	11.08	1.39
95th-Percentile Queue Length [ft/ln]	82.60	158.57	151.25	85.04	197.76	182.52	191.45	274.63	46.57	119.99	276.99	34.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.48	20.05	20.08	29.03	20.99	21.06	38.50	19.98	14.19	40.59	23.22	16.21
Movement LOS	C	C	C	C	C	C	D	B	B	D	C	B
d_A, Approach Delay [s/veh]	21.95			22.25			22.69			24.90		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	23.13											
Intersection LOS	C											
Intersection V/C	0.547											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.05	29.05	29.05	29.05
l_p,int, Pedestrian LOS Score for Intersectio	2.638	2.714	3.057	3.016
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	746	746	586	640
d_b, Bicycle Delay [s]	14.74	14.74	18.74	17.35
l_b,int, Bicycle LOS Score for Intersection	2.105	2.215	2.654	2.489
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Kirby St/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	27.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	84	346	64	75	414	143	65	392	111	95	407	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	16	0	0	37	0	0	28	0	0	31
Total Hourly Volume [veh/h]	86	353	49	77	422	109	66	400	85	97	415	92
Peak Hour Factor	0.9170	0.9170	0.9170	0.9230	0.9230	0.9230	0.9580	0.9580	0.9580	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	96	13	21	114	30	17	104	22	27	117	26
Total Analysis Volume [veh/h]	94	385	53	83	457	118	69	418	89	109	466	103
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	19	0	10	19	0	9	26	0	10	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	20	20	4	19	19	4	20	5	22
g / C, Green / Cycle	0.07	0.30	0.30	0.06	0.29	0.29	0.06	0.31	0.08	0.34
(v / s)_i Volume / Saturation Flow Rate	0.05	0.12	0.12	0.05	0.16	0.16	0.04	0.28	0.06	0.31
s, saturation flow rate [veh/h]	1810	1900	1821	1810	1900	1768	1810	1843	1810	1841
c, Capacity [veh/h]	124	575	551	110	561	522	101	575	143	616
d1, Uniform Delay [s]	29.82	17.94	17.96	30.10	19.17	19.19	30.18	21.27	29.41	20.86
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.16	0.11	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.15	1.96	2.08	9.85	3.54	3.86	7.81	6.47	8.24	11.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.39	0.39	0.75	0.53	0.53	0.68	0.88	0.76	0.92
d, Delay for Lane Group [s/veh]	38.96	19.90	20.03	39.95	22.71	23.06	37.99	27.74	37.65	31.97
Lane Group LOS	D	B	C	D	C	C	D	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.68	2.71	2.64	1.51	3.94	3.74	1.22	7.54	1.90	9.22
50th-Percentile Queue Length [ft/ln]	41.92	67.75	65.93	37.72	98.52	93.50	30.53	188.47	47.45	230.62
95th-Percentile Queue Length [veh/ln]	3.02	4.88	4.75	2.72	7.09	6.73	2.20	12.04	3.42	14.21
95th-Percentile Queue Length [ft/ln]	75.46	121.96	118.67	67.89	177.33	168.30	54.96	301.05	85.41	355.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.96	19.96	20.03	39.95	22.83	23.06	37.99	27.74	27.74	37.65	31.97	31.97
Movement LOS	D	B	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	23.32			25.03			28.97			32.89		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.77											
Intersection LOS	C											
Intersection V/C	0.556											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.16	24.16	24.16	24.16
l_p,int, Pedestrian LOS Score for Intersectio	2.588	2.629	2.465	2.454
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	461	461	676	707
d_b, Bicycle Delay [s]	19.26	19.26	14.25	13.60
l_b,int, Bicycle LOS Score for Intersection	2.012	2.133	2.556	2.729
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Kirby St/Johnston Ave

Control Type:	All-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.444

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	85.00	100.00	100.00	95.00	100.00	100.00	100.00	100.00	185.00	100.00	100.00	320.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	33	259	44	80	379	58	49	88	15	30	76	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	264	45	82	387	59	50	90	15	31	78	68
Peak Hour Factor	0.9130	0.9130	0.9130	0.9460	0.9460	0.9460	0.8420	0.8420	0.8420	0.8780	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	72	12	22	102	16	15	27	4	9	22	19
Total Analysis Volume [veh/h]	37	289	49	87	409	62	59	107	18	35	89	77
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	475	508	524	494	531	545	503	568	492	552
Degree of Utilization, x	0.08	0.33	0.32	0.18	0.44	0.43	0.33	0.03	0.25	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.25	1.44	1.39	0.63	2.26	2.16	1.43	0.10	0.99	0.48
95th-Percentile Queue Length [ft]	6.30	36.09	34.67	15.83	56.44	54.03	35.70	2.45	24.72	12.06
Approach Delay [s/veh]	12.83			14.05			12.93		11.62	
Approach LOS	B			B			B		B	
Intersection Delay [s/veh]	13.18									
Intersection LOS	B									

Intersection Level Of Service Report
Intersection 10: Kirby St/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	34.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.801

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	70.00	100.00	70.00	115.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	43	25	96	73	243	223	810	75	22	769	108
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	7	0	0	62	0	0	19	0	0	28
Total Hourly Volume [veh/h]	43	44	19	98	74	186	227	826	58	22	784	82
Peak Hour Factor	0.7980	0.7980	0.7980	0.8640	0.8640	0.8640	0.9290	0.9290	0.9290	0.7750	0.7750	0.7750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	14	6	28	21	54	61	222	16	7	253	26
Total Analysis Volume [veh/h]	54	55	24	113	86	215	244	889	62	28	1012	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	26	0	20	74	0	10	64	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	20	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22	22	22	22	22	16	73	73	3	60	60
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.20	0.20	0.15	0.66	0.66	0.03	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.05	0.02	0.01	0.08	0.05	0.13	0.13	0.25	0.25	0.02	0.53	0.07
s, saturation flow rate [veh/h]	1095	3618	1615	1341	1900	1615	1810	1900	1857	1810	1900	1615
c, Capacity [veh/h]	234	737	329	305	387	329	263	1256	1228	47	1029	875
d1, Uniform Delay [s]	41.42	35.42	35.41	40.49	36.54	40.24	46.42	8.45	8.46	52.98	24.70	12.36
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.46	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	2.29	0.20	0.43	3.42	1.33	9.73	13.34	0.19	0.20	11.21	23.04	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.23	0.07	0.07	0.37	0.22	0.65	0.93	0.38	0.38	0.59	0.98	0.12
d, Delay for Lane Group [s/veh]	43.71	35.62	35.84	43.91	37.86	49.97	59.76	8.65	8.65	64.19	47.74	12.42
Lane Group LOS	D	D	D	D	D	D	E	A	A	E	D	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.44	0.61	0.56	3.00	2.06	6.16	7.33	4.43	4.33	0.89	29.15	1.20
50th-Percentile Queue Length [ft/ln]	36.04	15.33	13.92	75.10	51.39	153.91	183.34	110.65	108.34	22.31	728.74	29.92
95th-Percentile Queue Length [veh/ln]	2.59	1.10	1.00	5.41	3.70	10.23	11.77	7.88	7.75	1.61	38.00	2.15
95th-Percentile Queue Length [ft/ln]	64.87	27.60	25.05	135.17	92.50	255.64	294.37	196.90	193.69	40.15	950.10	53.86

Movement, Approach, & Intersection Results

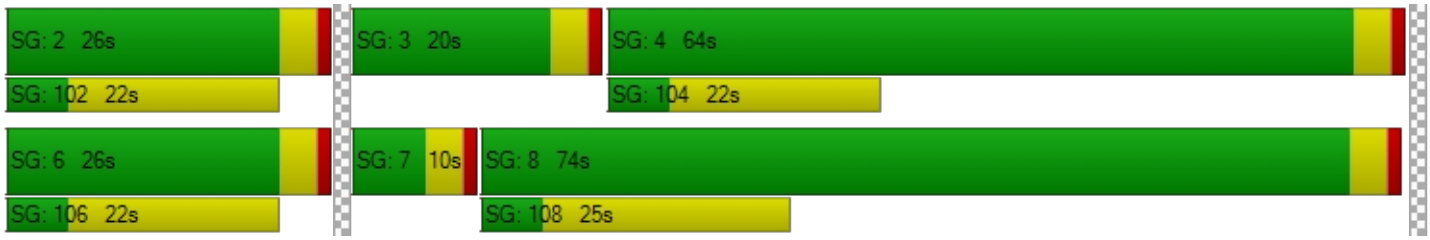
d_M, Delay for Movement [s/veh]	43.71	35.62	35.84	43.91	37.86	49.97	59.76	8.65	8.65	64.19	47.74	12.42
Movement LOS	D	D	D	D	D	D	E	A	A	E	D	B
d_A, Approach Delay [s/veh]	38.94			45.80			19.09			44.88		
Approach LOS	D			D			B			D		
d_I, Intersection Delay [s/veh]	34.06											
Intersection LOS	C											
Intersection V/C	0.801											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersectio	2.397	2.606	3.163	3.157
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	400	1273	1091
d_b, Bicycle Delay [s]	35.20	35.20	7.27	11.36
l_b,int, Bicycle LOS Score for Intersection	1.675	2.345	2.561	3.497
Bicycle LOS	A	B	B	C

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Sanderson Ave/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	42.5
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.759

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	200.00	100.00	180.00	210.00	100.00	100.00	205.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	13	595	502	147	702	89	188	443	19	453	458	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	128	0	0	23	0	0	5	0	0	36
Total Hourly Volume [veh/h]	13	607	384	150	716	68	192	452	14	462	467	107
Peak Hour Factor	0.9400	0.9400	0.9400	0.9080	0.9080	0.9080	0.9280	0.9280	0.9280	0.9050	0.9050	0.9050
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	161	102	41	197	19	52	122	4	128	129	30
Total Analysis Volume [veh/h]	14	646	409	165	789	75	207	487	15	510	516	118
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	26	0	14	31	0	39	30	0	35	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	21	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	32	32	10	40	40	14	17	17	31	33	33
g / C, Green / Cycle	0.02	0.30	0.30	0.10	0.38	0.38	0.14	0.16	0.16	0.30	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.01	0.18	0.25	0.09	0.23	0.23	0.11	0.13	0.13	0.28	0.17	0.17
s, saturation flow rate [veh/h]	1810	3618	1615	1810	1900	1843	1810	1900	1880	1810	1900	1779
c, Capacity [veh/h]	31	1083	484	173	719	697	245	299	296	534	602	564
d1, Uniform Delay [s]	51.17	31.40	34.54	47.28	26.42	26.42	44.37	43.01	43.01	36.39	29.61	29.62
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.42	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	9.98	2.42	16.48	21.87	3.84	3.96	7.78	6.37	6.46	26.36	0.76	0.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.45	0.60	0.85	0.95	0.61	0.61	0.84	0.84	0.84	0.96	0.54	0.54
d, Delay for Lane Group [s/veh]	61.15	33.82	51.03	69.15	30.26	30.38	52.15	49.37	49.47	62.75	30.38	30.44
Lane Group LOS	E	C	D	E	C	C	D	D	D	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.45	7.26	11.83	5.32	9.46	9.20	5.76	6.84	6.78	16.47	6.86	6.45
50th-Percentile Queue Length [ft/ln]	11.25	181.62	295.65	133.06	236.45	229.91	143.89	171.09	169.62	411.71	171.52	161.21
95th-Percentile Queue Length [veh/ln]	0.81	11.69	17.47	9.11	14.50	14.17	9.69	11.13	11.06	23.12	11.16	10.61
95th-Percentile Queue Length [ft/ln]	20.25	292.13	436.64	227.65	362.54	354.25	242.25	278.35	276.42	578.10	278.91	265.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.15	33.82	51.03	69.15	30.31	30.38	52.15	49.42	49.47	62.75	30.40	30.44
Movement LOS	E	C	D	E	C	C	D	D	D	E	C	C
d_A, Approach Delay [s/veh]	40.76			36.54			50.22			44.83		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.54											
Intersection LOS	D											
Intersection V/C	0.759											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	43.92	43.92	43.92	43.92
l_p,int, Pedestrian LOS Score for Intersectio	3.053	2.743	2.578	2.822
Crosswalk LOS	C	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	419	514	495	419
d_b, Bicycle Delay [s]	32.83	29.00	29.75	32.83
l_b,int, Bicycle LOS Score for Intersection	2.547	2.428	2.149	2.533
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Kirby Street

Vistro File: C:\...\Kirby Street_Add_Intersection_Update_Existing_Abby.vistro
Report File: C:\...\Existing PM.pdf

Scenario 2 Existing PM
4/25/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Sanderson Ave/SR-74	189	703	200	184	854	99	254	638	72	259	488	133	4073

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Sanderson Ave/Acacia Ave	101	895	102	205	876	13	13	264	164	182	190	211	3216

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Kirby St/SR-74	88	372	95	91	354	194	205	911	119	120	814	79	3442

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Kirby St/Acacia Ave	86	353	65	77	422	146	66	400	113	97	415	123	2363

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
9	Kirby St/Johnston Ave	34	264	45	82	387	59	50	90	15	31	78	68	1203

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
10	Kirby St/Stetson Ave	43	44	26	98	74	248	227	826	77	22	784	110	2579

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11	Sanderson Ave/Stetson Ave	13	607	512	150	716	91	192	452	19	462	467	143	3824

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Kirby Industrial

Vistro File: C:\...\Kirby Industrial.vistro
Report File: C:\...\Project Completion Without Whittier AM.pdf

Scenario 3 Project Completion without Whittier AM
6/23/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sanderson Ave/SR-74	Signalized	HCM 7th Edition	WB Left	0.547	36.0	D
2	Sanderson Ave/Acacia Ave	Signalized	HCM 7th Edition	EB Left	0.517	23.0	C
5	Kirby St/SR-74	Signalized	HCM 7th Edition	WB Left	0.371	17.2	B
6	Kirby St/Acacia Ave	Signalized	HCM 7th Edition	NB Left	0.401	22.5	C
7	Kirby St/Project Dwy-2	Two-way stop	HCM 7th Edition	EB Left	0.063	15.5	C
8	Kirby St/Project Dwy-3	Two-way stop	HCM 7th Edition	EB Right	0.011	9.4	A
9	Kirby St/Johnston Ave	All-way stop	HCM 7th Edition	WB Thru	0.628	16.5	C
10	Kirby St/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.863	41.4	D
11	Sanderson Ave/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.823	47.0	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sanderson Ave/SR-74

Control Type:	Signalized	Delay (sec / veh):	36.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.547

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	230.00	100.00	110.00	175.00	100.00	200.00	420.00	100.00	615.00	420.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	123	617	124	126	617	79	151	516	34	151	346	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	6	0	0	0	34	0	0	10	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	32	0	0	21	0	0	9	0	0	31
Total Hourly Volume [veh/h]	128	642	97	137	642	61	157	571	26	157	370	92
Peak Hour Factor	0.8910	0.8910	0.8910	0.9190	0.9190	0.9190	0.9210	0.9210	0.9210	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	180	27	37	175	17	43	155	7	42	100	25
Total Analysis Volume [veh/h]	144	721	109	149	699	66	170	620	28	170	400	99
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	9	25	0	12	28	0	14	32	0	10	28	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	29	0	16	32	0	18	36	0	14	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	27	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	22	22	10	22	22	11	38	38	10	37	37
g / C, Green / Cycle	0.09	0.23	0.23	0.10	0.23	0.23	0.11	0.40	0.40	0.11	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.08	0.20	0.07	0.08	0.19	0.04	0.09	0.17	0.02	0.09	0.14	0.14
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	1900	1772
c, Capacity [veh/h]	171	828	369	183	850	379	205	1435	641	190	738	688
d1, Uniform Delay [s]	42.29	35.29	30.30	41.84	34.46	28.98	41.20	20.87	17.60	41.97	20.55	20.58
k, delay calibration	0.25	0.11	0.11	0.15	0.11	0.11	0.15	0.50	0.50	0.30	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	21.61	3.02	0.44	11.76	2.06	0.22	11.27	0.95	0.13	29.25	1.30	1.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.84	0.87	0.30	0.82	0.82	0.17	0.83	0.43	0.04	0.89	0.35	0.35
d, Delay for Lane Group [s/veh]	63.90	38.31	30.74	53.60	36.52	29.20	52.47	21.82	17.73	71.22	21.86	21.98
Lane Group LOS	E	D	C	D	D	C	D	C	B	E	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.32	8.21	2.09	3.98	7.74	1.21	4.45	4.98	0.39	5.39	4.14	3.91
50th-Percentile Queue Length [ft/ln]	107.88	205.33	52.18	99.55	193.59	30.35	111.27	124.48	9.69	134.85	103.51	97.73
95th-Percentile Queue Length [veh/ln]	7.72	12.91	3.76	7.17	12.31	2.19	7.91	8.64	0.70	9.20	7.45	7.04
95th-Percentile Queue Length [ft/ln]	193.05	322.82	93.92	179.18	307.69	54.63	197.76	215.97	17.44	230.07	186.31	175.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.90	38.31	30.74	53.60	36.52	29.20	52.47	21.82	17.73	71.22	21.90	21.98
Movement LOS	E	D	C	D	D	C	D	C	B	E	C	C
d_A, Approach Delay [s/veh]	41.25			38.78			28.05			34.45		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	36.03											
Intersection LOS	D											
Intersection V/C	0.547											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	38.93	38.93	38.93	38.93
l_p,int, Pedestrian LOS Score for Intersectio	2.910	2.805	2.746	2.714
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	526	589	674	589
d_b, Bicycle Delay [s]	25.79	23.63	20.89	23.63
l_b,int, Bicycle LOS Score for Intersection	2.390	2.331	2.242	2.137
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sanderson Ave/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.517

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	135.00	100.00	100.00	195.00	100.00	100.00	65.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	75	830	94	98	635	2	9	152	159	147	98	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	25	0	0	1	0	0	41	0	0	35
Total Hourly Volume [veh/h]	78	863	73	102	660	1	9	158	124	153	102	104
Peak Hour Factor	0.9260	0.9260	0.9260	0.9640	0.9640	0.9640	0.9200	0.9200	0.9200	0.8610	0.8610	0.8610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	233	20	26	171	0	2	43	34	44	30	30
Total Analysis Volume [veh/h]	84	932	79	106	685	1	10	172	135	178	118	121
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	5	17	0	7	19	0	7	22	0	13	28	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	24	0	10	23	0	9	28	0	13	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	34	34	6	35	35	1	10	10	9	18
g / C, Green / Cycle	0.06	0.46	0.46	0.08	0.47	0.47	0.01	0.13	0.13	0.12	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.27	0.27	0.06	0.19	0.00	0.01	0.09	0.08	0.10	0.14
s, saturation flow rate [veh/h]	1810	1900	1848	1810	3618	1615	1810	1900	1615	1810	1744
c, Capacity [veh/h]	109	869	845	136	1709	763	24	255	217	217	421
d1, Uniform Delay [s]	34.74	15.12	15.12	34.08	12.88	10.45	36.72	30.90	30.66	32.21	25.03
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.99	2.93	3.01	9.30	0.70	0.00	11.31	3.08	2.90	7.49	1.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.59	0.59	0.78	0.40	0.00	0.42	0.67	0.62	0.82	0.57
d, Delay for Lane Group [s/veh]	45.73	18.05	18.14	43.37	13.58	10.45	48.03	33.98	33.56	39.70	26.24
Lane Group LOS	D	B	B	D	B	B	D	C	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.80	6.60	6.45	2.20	3.59	0.01	0.25	3.04	2.38	3.46	3.66
50th-Percentile Queue Length [ft/ln]	45.07	165.09	161.18	54.89	89.66	0.22	6.26	76.08	59.38	86.44	91.52
95th-Percentile Queue Length [veh/ln]	3.24	10.82	10.61	3.95	6.46	0.02	0.45	5.48	4.28	6.22	6.59
95th-Percentile Queue Length [ft/ln]	81.12	270.45	265.28	98.81	161.38	0.39	11.27	136.95	106.89	155.59	164.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.73	18.09	18.14	43.37	13.58	10.45	48.03	33.98	33.56	39.70	26.24	26.24
Movement LOS	D	B	B	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	20.21			17.57			34.25			31.99		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	22.98											
Intersection LOS	C											
Intersection V/C	0.517											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.04	29.04	29.04	29.04
l_p,int, Pedestrian LOS Score for Intersectio	2.749	2.754	2.342	2.299
Crosswalk LOS	B	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	533	507	640	747
d_b, Bicycle Delay [s]	20.17	20.91	17.34	14.73
l_b,int, Bicycle LOS Score for Intersection	2.484	2.214	2.150	2.305
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Kirby St/SR-74

Control Type:	Signalized	Delay (sec / veh):	17.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.371

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	245.00	100.00	205.00	245.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	247	47	70	239	57	56	688	37	66	569	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	1	4	0	3	0	0	0	40	13	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	13	0	0	15	0	0	20	0	0	13
Total Hourly Volume [veh/h]	68	258	40	73	252	44	58	716	58	82	592	37
Peak Hour Factor	0.7150	0.7150	0.7150	0.8740	0.8740	0.8740	0.9400	0.9400	0.9400	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	90	14	21	72	13	15	190	15	21	155	10
Total Analysis Volume [veh/h]	95	361	56	84	288	50	62	762	62	86	620	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	28	0	0	28	0	8	22	0	8	22	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	9	26	0	12	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	18	18	18	18	4	36	36	4	37	37
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.51	0.51	0.06	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.09	0.11	0.11	0.09	0.09	0.09	0.03	0.21	0.04	0.05	0.17	0.02
s, saturation flow rate [veh/h]	1059	1900	1812	985	1900	1804	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	256	486	463	226	486	461	91	1849	826	112	1891	844
d1, Uniform Delay [s]	28.15	21.83	21.86	29.31	21.32	21.36	32.70	10.59	8.70	32.35	9.62	8.17
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	0.90	0.62	0.66	1.02	0.44	0.47	8.70	0.68	0.18	10.62	0.46	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.37	0.44	0.44	0.37	0.35	0.36	0.68	0.41	0.08	0.77	0.33	0.05
d, Delay for Lane Group [s/veh]	29.04	22.45	22.52	30.33	21.76	21.83	41.40	11.27	8.87	42.97	10.08	8.27
Lane Group LOS	C	C	C	C	C	C	D	B	A	D	B	A
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.48	2.81	2.71	1.34	2.21	2.14	1.22	3.36	0.47	1.72	2.51	0.28
50th-Percentile Queue Length [ft/ln]	36.94	70.13	67.80	33.58	55.30	53.55	30.50	83.97	11.65	42.90	62.64	6.97
95th-Percentile Queue Length [veh/ln]	2.66	5.05	4.88	2.42	3.98	3.86	2.20	6.05	0.84	3.09	4.51	0.50
95th-Percentile Queue Length [ft/ln]	66.49	126.23	122.04	60.44	99.55	96.39	54.90	151.14	20.97	77.23	112.76	12.55

Movement, Approach, & Intersection Results

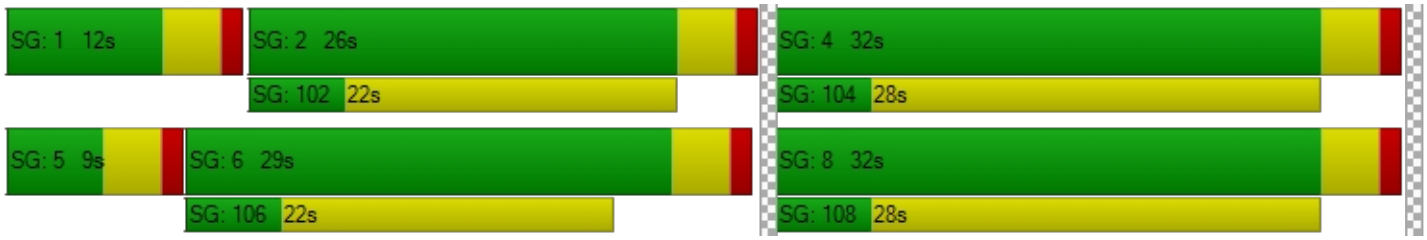
d_M, Delay for Movement [s/veh]	29.04	22.48	22.52	30.33	21.79	21.83	41.40	11.27	8.87	42.97	10.08	8.27
Movement LOS	C	C	C	C	C	C	D	B	A	D	B	A
d_A, Approach Delay [s/veh]	23.70			23.49			13.21			13.79		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	17.16											
Intersection LOS	B											
Intersection V/C	0.371											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.58	26.58	26.58	26.58
l_p,int, Pedestrian LOS Score for Intersectio	2.530	2.518	2.879	2.852
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	800	629	714
d_b, Bicycle Delay [s]	12.60	12.60	16.46	14.46
l_b,int, Bicycle LOS Score for Intersection	1.993	1.920	2.307	2.185
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Kirby St/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	22.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.401

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	66	286	80	27	238	69	39	280	46	51	315	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	17	5	0	57	0	0	0	0	16	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	22	0	0	18	0	0	12	0	0	12
Total Hourly Volume [veh/h]	69	314	66	28	305	54	41	291	36	69	328	36
Peak Hour Factor	0.8160	0.8160	0.8160	0.9000	0.9000	0.9000	0.9690	0.9690	0.9690	0.8760	0.8760	0.8760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	96	20	8	85	15	11	75	9	20	94	10
Total Analysis Volume [veh/h]	85	385	81	31	339	60	42	300	37	79	374	41
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	7	17	0	5	15	0	6	22	0	10	26	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	9	19	0	9	26	0	9	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	28	28	2	26	26	3	15	4	17
g / C, Green / Cycle	0.06	0.42	0.42	0.03	0.40	0.40	0.04	0.24	0.06	0.25
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.13	0.02	0.11	0.11	0.02	0.18	0.04	0.22
s, saturation flow rate [veh/h]	1810	1900	1788	1810	1900	1803	1810	1864	1810	1867
c, Capacity [veh/h]	111	804	757	61	751	713	76	442	109	477
d1, Uniform Delay [s]	30.07	12.38	12.40	30.91	13.32	13.34	30.59	23.12	30.06	23.20
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.12
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.22	0.94	1.02	6.37	0.89	0.95	6.22	2.76	8.91	5.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.30	0.30	0.51	0.27	0.27	0.56	0.76	0.73	0.87
d, Delay for Lane Group [s/veh]	40.28	13.32	13.42	37.28	14.20	14.30	36.81	25.88	38.97	28.80
Lane Group LOS	D	B	B	D	B	B	D	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.55	2.20	2.11	0.56	1.96	1.90	0.74	4.73	1.42	6.27
50th-Percentile Queue Length [ft/ln]	38.79	55.03	52.77	14.02	48.92	47.51	18.54	118.25	35.39	156.64
95th-Percentile Queue Length [veh/ln]	2.79	3.96	3.80	1.01	3.52	3.42	1.34	8.30	2.55	10.37
95th-Percentile Queue Length [ft/ln]	69.83	99.05	94.98	25.24	88.05	85.53	33.38	207.42	63.71	259.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.28	13.36	13.42	37.28	14.24	14.30	36.81	25.88	25.88	38.97	28.80	28.80
Movement LOS	D	B	B	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	17.52			15.91			27.09			30.43		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.54											
Intersection LOS	C											
Intersection V/C	0.401											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.14	24.14	24.14	24.14
l_p,int, Pedestrian LOS Score for Intersectio	2.553	2.522	2.294	2.299
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	523	461	677	677
d_b, Bicycle Delay [s]	17.74	19.25	14.24	14.24
l_b,int, Bicycle LOS Score for Intersection	2.032	1.929	2.205	2.395
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Kirby St/Project Dwy-2

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.063

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	432	335	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	30	0	0	73	22	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	449	348	73	22	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	118	92	19	6	0
Total Analysis Volume [veh/h]	32	473	366	77	23	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.06	0.00
d_M, Delay for Movement [s/veh]	8.29	0.00	0.00	0.00	15.54	10.23
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.00	0.20	0.20
95th-Percentile Queue Length [ft/ln]	2.19	0.00	0.00	0.00	5.03	5.03
d_A, Approach Delay [s/veh]	0.53		0.00		15.54	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.64					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Kirby St/Project Dwy-3

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	432	335	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	30	0	0	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	479	348	0	0	9
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	126	92	0	0	2
Total Analysis Volume [veh/h]	0	504	366	0	0	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	13.50	9.36
Movement LOS		A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.82	0.82
d_A, Approach Delay [s/veh]	0.00		0.00		9.36	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.10					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 9: Kirby St/Johnston Ave

Control Type:	All-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.628

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	85.00	100.00	100.00	95.00	100.00	100.00	100.00	100.00	185.00	100.00	100.00	320.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	16	238	52	31	225	29	41	102	16	90	144	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	26	0	1	8	0	0	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	274	54	33	242	30	43	106	17	94	150	59
Peak Hour Factor	0.7640	0.7640	0.7640	0.8110	0.8110	0.8110	0.7900	0.7900	0.7900	0.8170	0.8170	0.8170
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	90	18	10	75	9	14	34	5	29	46	18
Total Analysis Volume [veh/h]	22	359	71	41	298	37	54	134	22	115	184	72
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	441	469	484	429	457	465	463	515	476	536
Degree of Utilization, x	0.05	0.46	0.44	0.10	0.37	0.36	0.41	0.04	0.63	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	2.36	2.25	0.31	1.66	1.62	1.94	0.13	4.25	0.46
95th-Percentile Queue Length [ft]	3.93	59.03	56.20	7.87	41.57	40.39	48.51	3.34	106.13	11.54
Approach Delay [s/veh]	16.08			14.58			15.09		19.88	
Approach LOS	C			B			C		C	
Intersection Delay [s/veh]	16.53									
Intersection LOS	C									

Intersection Level Of Service Report
Intersection 10: Kirby St/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	41.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	70.00	100.00	70.00	115.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	47	40	26	72	32	255	190	828	27	17	920	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	3	0	5	17	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	7	0	0	68	0	0	7	0	0	23
Total Hourly Volume [veh/h]	49	42	20	78	33	202	215	861	21	18	957	67
Peak Hour Factor	0.8270	0.8270	0.8270	0.7550	0.7550	0.7550	0.9060	0.9060	0.9060	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	13	6	26	11	67	59	238	6	5	269	19
Total Analysis Volume [veh/h]	59	51	24	103	44	268	237	950	23	20	1075	75
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	24	0	0	24	0	24	25	0	59	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	26	0	20	75	0	9	64	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	20	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22	22	22	22	22	16	74	74	2	60	60
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.20	0.20	0.15	0.67	0.67	0.02	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.05	0.01	0.01	0.08	0.02	0.17	0.13	0.26	0.26	0.01	0.57	0.05
s, saturation flow rate [veh/h]	1084	3618	1615	1346	1900	1615	1810	1900	1884	1810	1900	1615
c, Capacity [veh/h]	244	726	324	297	381	324	263	1271	1260	39	1035	880
d1, Uniform Delay [s]	40.56	35.64	35.67	40.79	35.97	42.13	46.21	8.12	8.12	53.28	25.04	11.96
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.15	0.11	0.11	0.11	0.50	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	2.33	0.19	0.44	3.17	0.61	20.90	14.11	0.19	0.19	10.39	38.53	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.24	0.07	0.07	0.35	0.12	0.83	0.90	0.38	0.38	0.52	1.04	0.09
d, Delay for Lane Group [s/veh]	42.89	35.83	36.11	43.96	36.59	63.03	60.32	8.31	8.31	63.66	63.57	12.00
Lane Group LOS	D	D	D	D	D	E	E	A	A	E	F	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.56	0.57	0.56	2.74	1.03	8.73	7.18	4.36	4.33	0.64	34.57	0.82
50th-Percentile Queue Length [ft/ln]	38.92	14.26	13.99	68.42	25.64	218.34	179.52	109.08	108.26	16.10	864.31	20.58
95th-Percentile Queue Length [veh/ln]	2.80	1.03	1.01	4.93	1.85	13.58	11.58	7.79	7.74	1.16	45.64	1.48
95th-Percentile Queue Length [ft/ln]	70.05	25.67	25.17	123.15	46.15	339.50	289.39	194.72	193.58	28.98	1141.01	37.04

Movement, Approach, & Intersection Results

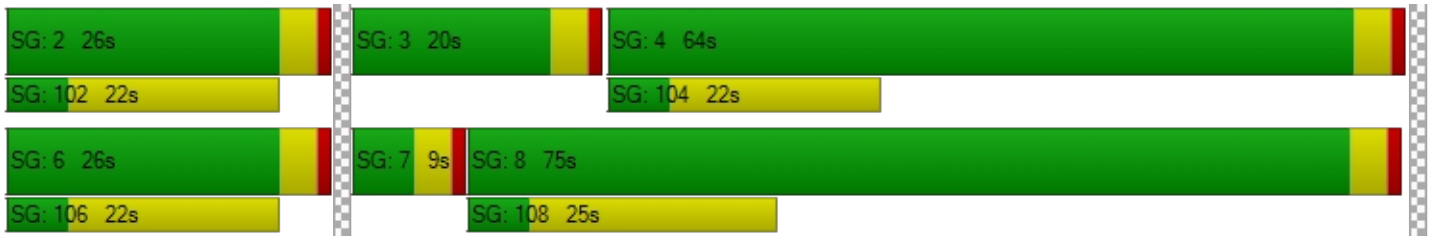
d_M, Delay for Movement [s/veh]	42.89	35.83	36.11	43.96	36.59	63.03	60.32	8.31	8.31	63.66	63.57	12.00
Movement LOS	D	D	D	D	D	E	E	A	A	E	F	B
d_A, Approach Delay [s/veh]	38.99			55.50			18.50			60.27		
Approach LOS	D			E			B			E		
d_I, Intersection Delay [s/veh]	41.36											
Intersection LOS	D											
Intersection V/C	0.863											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersectio	2.374	2.605	3.191	3.156
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	400	1291	1091
d_b, Bicycle Delay [s]	35.20	35.20	6.92	11.37
l_b,int, Bicycle LOS Score for Intersection	1.676	2.357	2.564	3.528
Bicycle LOS	A	B	B	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Sanderson Ave/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	47.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.823

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	200.00	100.00	180.00	210.00	100.00	100.00	205.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	669	581	97	711	81	65	347	18	503	630	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	17	0	0	0	0	0	0	5	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	155	0	0	21	0	0	5	0	0	32
Total Hourly Volume [veh/h]	46	696	466	101	739	63	68	361	14	528	655	95
Peak Hour Factor	0.9030	0.9030	0.9030	0.8290	0.8290	0.8290	0.9250	0.9250	0.9250	0.8870	0.8870	0.8870
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	193	129	30	223	19	18	98	4	149	185	27
Total Analysis Volume [veh/h]	51	771	516	122	891	76	74	390	15	595	738	107
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	6	23	0	9	26	0	39	26	0	36	23	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	26	0	12	28	0	13	30	0	37	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	21	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	34	34	8	38	38	6	14	14	33	41	41
g / C, Green / Cycle	0.04	0.33	0.33	0.08	0.37	0.37	0.05	0.13	0.13	0.31	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.03	0.21	0.32	0.07	0.26	0.26	0.04	0.11	0.11	0.33	0.23	0.23
s, saturation flow rate [veh/h]	1810	3618	1615	1810	1900	1848	1810	1900	1875	1810	1900	1817
c, Capacity [veh/h]	67	1179	526	138	694	675	97	249	246	569	744	712
d1, Uniform Delay [s]	50.11	30.32	35.06	48.05	28.52	28.52	49.02	44.39	44.41	36.00	25.11	25.18
k, delay calibration	0.11	0.50	0.50	0.22	0.50	0.50	0.11	0.11	0.11	0.43	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	16.23	2.83	34.66	28.51	5.97	6.14	11.46	6.44	6.62	47.56	0.71	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.76	0.65	0.98	0.88	0.71	0.71	0.76	0.82	0.82	1.05	0.58	0.58
d, Delay for Lane Group [s/veh]	66.34	33.15	69.72	76.56	34.49	34.66	60.48	50.83	51.03	83.57	25.82	25.94
Lane Group LOS	E	C	E	E	C	C	E	D	D	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.62	8.68	17.79	4.24	11.47	11.20	2.22	5.56	5.52	21.71	8.39	8.14
50th-Percentile Queue Length [ft/ln]	40.61	217.04	444.66	106.00	286.81	279.89	55.45	139.12	138.11	542.87	209.84	203.55
95th-Percentile Queue Length [veh/ln]	2.92	13.51	24.70	7.62	17.03	16.68	3.99	9.43	9.38	30.24	13.14	12.82
95th-Percentile Queue Length [ft/ln]	73.10	337.84	617.58	190.43	425.68	417.07	99.81	235.84	234.47	755.95	328.62	320.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	66.34	33.15	69.72	76.56	34.56	34.66	60.48	50.93	51.03	83.57	25.87	25.94
Movement LOS	E	C	E	E	C	C	E	D	D	F	C	C
d_A, Approach Delay [s/veh]	48.52			39.28			52.41			49.72		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	47.03											
Intersection LOS	D											
Intersection V/C	0.823											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	43.89	43.89	43.89	43.89
l_p,int, Pedestrian LOS Score for Intersectio	3.170	2.747	2.583	2.872
Crosswalk LOS	C	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	419	457	495	952
d_b, Bicycle Delay [s]	32.81	31.25	29.72	14.41
l_b,int, Bicycle LOS Score for Intersection	2.791	2.475	1.959	2.774
Bicycle LOS	C	B	A	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Kirby Industrial

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Scenario 3 Project Completion without Whittier AM
6/23/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Sanderson Ave/SR-74	128	642	129	137	642	82	157	571	35	157	370	123	3173

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Sanderson Ave/Acacia Ave	78	863	98	102	660	2	9	158	165	153	102	139	2529

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Kirby St/SR-74	68	258	53	73	252	59	58	716	78	82	592	50	2339

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Kirby St/Acacia Ave	69	314	88	28	305	72	41	291	48	69	328	48	1701

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
7	Kirby St/Project Dwy-2	30	449	348	73	22	0	922

ID	Intersection Name	Northbound	Southbound		Eastbound		Total Volume
		Thru	Thru	Right	Left	Right	
8	Kirby St/Project Dwy-3	479	348	0	0	9	836

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
9	Kirby St/Johnston Ave	17	274	54	33	242	30	43	106	17	94	150	59	1119

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
10	Kirby St/Stetson Ave	49	42	27	78	33	270	215	861	28	18	957	90	2668

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11	Sanderson Ave/Stetson Ave	46	696	621	101	739	84	68	361	19	528	655	127	4045

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Kirby Industrial

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Scenario 4 Project Completion without Whittier PM
6/23/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sanderson Ave/SR-74	Signalized	HCM 7th Edition	WB Left	0.729	49.0	D
2	Sanderson Ave/Acacia Ave	Signalized	HCM 7th Edition	EB Left	0.660	31.8	C
5	Kirby St/SR-74	Signalized	HCM 7th Edition	WB Left	0.578	25.2	C
6	Kirby St/Acacia Ave	Signalized	HCM 7th Edition	SB Left	0.575	30.5	C
7	Kirby St/Project Dwy-2	Two-way stop	HCM 7th Edition	EB Left	0.388	29.3	D
8	Kirby St/Project Dwy-3	Two-way stop	HCM 7th Edition	EB Right	0.062	10.8	B
9	Kirby St/Johnston Ave	All-way stop	HCM 7th Edition	SB Thru	0.495	14.0	B
10	Kirby St/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.833	37.3	D
11	Sanderson Ave/Stetson Ave	Signalized	HCM 7th Edition	SB Left	0.792	47.2	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sanderson Ave/SR-74

Control Type:	Signalized	Delay (sec / veh):	49.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.729

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	230.00	100.00	110.00	175.00	100.00	200.00	420.00	100.00	615.00	420.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	185	689	196	180	837	97	249	625	71	254	478	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	2	0	0	0	15	0	0	37	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	51	0	0	25	0	0	19	0	0	35
Total Hourly Volume [veh/h]	192	717	153	189	870	76	259	665	55	264	534	106
Peak Hour Factor	0.8820	0.8820	0.8820	0.9170	0.9170	0.9170	0.9790	0.9790	0.9790	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	203	43	52	237	21	66	170	14	72	145	29
Total Analysis Volume [veh/h]	218	813	173	206	949	83	265	679	56	286	579	115
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	13	25	0	16	28	0	20	32	0	16	28	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	29	0	20	32	0	24	36	0	20	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	27	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	27	27	14	28	28	17	32	32	16	31	31
g / C, Green / Cycle	0.12	0.26	0.26	0.13	0.27	0.27	0.16	0.30	0.30	0.15	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.12	0.22	0.11	0.11	0.26	0.05	0.15	0.19	0.03	0.16	0.19	0.19
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	1900	1792
c, Capacity [veh/h]	224	935	417	239	965	431	299	1103	492	276	555	524
d1, Uniform Delay [s]	45.83	37.25	32.34	44.63	38.27	29.76	42.89	31.24	26.29	44.50	32.39	32.39
k, delay calibration	0.38	0.11	0.11	0.24	0.11	0.11	0.26	0.50	0.50	0.44	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	45.81	2.66	0.66	17.37	10.19	0.22	18.44	2.58	0.47	60.76	5.65	5.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.97	0.87	0.41	0.86	0.98	0.19	0.89	0.62	0.11	1.04	0.64	0.64
d, Delay for Lane Group [s/veh]	91.63	39.90	33.00	62.00	48.46	29.98	61.33	33.82	26.76	105.26	38.04	38.37
Lane Group LOS	F	D	C	E	D	C	E	C	C	F	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.47	10.17	3.71	6.37	13.27	1.64	8.13	7.57	1.06	11.68	8.58	8.14
50th-Percentile Queue Length [ft/ln]	211.75	254.20	92.65	159.27	331.71	41.12	203.23	189.25	26.50	292.11	214.43	203.44
95th-Percentile Queue Length [veh/ln]	13.24	15.40	6.67	10.51	19.24	2.96	12.81	12.08	1.91	17.59	13.38	12.82
95th-Percentile Queue Length [ft/ln]	331.08	384.93	166.77	262.75	481.06	74.02	320.13	302.05	47.70	439.86	334.50	320.40

Movement, Approach, & Intersection Results

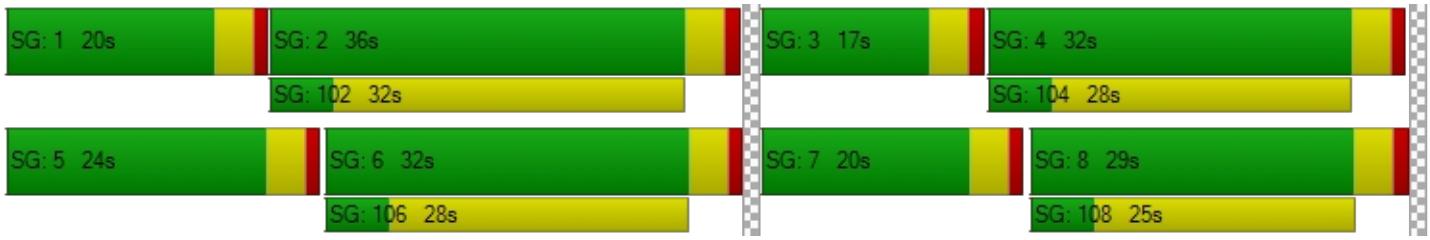
d_M, Delay for Movement [s/veh]	91.63	39.90	33.00	62.00	48.46	29.98	61.33	33.82	26.76	105.26	38.17	38.37
Movement LOS	F	D	C	E	D	C	E	C	C	F	D	D
d_A, Approach Delay [s/veh]	48.28			49.48			40.71			57.77		
Approach LOS	D			D			D			E		
d_I, Intersection Delay [s/veh]	49.01											
Intersection LOS	D											
Intersection V/C	0.729											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	43.89	43.89	43.89	43.89
l_p,int, Pedestrian LOS Score for Intersectio	3.033	2.902	2.854	2.842
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	476	533	610	533
d_b, Bicycle Delay [s]	30.48	28.23	25.38	28.23
l_b,int, Bicycle LOS Score for Intersection	2.595	2.602	2.400	2.397
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sanderson Ave/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	31.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.660

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	135.00	100.00	100.00	195.00	100.00	100.00	65.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	99	877	100	201	859	13	13	259	161	178	186	207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	26	0	0	4	0	0	42	0	0	54
Total Hourly Volume [veh/h]	103	912	78	209	893	10	14	269	125	185	193	161
Peak Hour Factor	0.9900	0.9900	0.9900	0.9430	0.9430	0.9430	0.9230	0.9230	0.9230	0.8720	0.8720	0.8720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	230	20	55	237	3	4	73	34	53	55	46
Total Analysis Volume [veh/h]	104	921	79	222	947	11	15	291	135	212	221	185
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	8	15	0	14	21	0	7	22	0	13	28	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	19	0	15	24	0	9	26	0	15	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	24	24	11	29	29	1	14	14	10	23
g / C, Green / Cycle	0.07	0.32	0.32	0.15	0.39	0.39	0.02	0.18	0.18	0.14	0.31
(v / s)_i Volume / Saturation Flow Rate	0.06	0.27	0.27	0.12	0.26	0.01	0.01	0.15	0.08	0.12	0.23
s, saturation flow rate [veh/h]	1810	1900	1848	1810	3618	1615	1810	1900	1615	1810	1759
c, Capacity [veh/h]	134	601	584	263	1401	626	35	352	299	254	538
d1, Uniform Delay [s]	34.13	23.95	23.95	31.24	19.09	14.19	36.42	29.43	27.20	31.44	23.50
k, delay calibration	0.11	0.50	0.50	0.17	0.50	0.50	0.11	0.11	0.11	0.18	0.12
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.08	13.58	13.95	10.66	2.63	0.05	8.32	4.98	1.07	11.07	2.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.84	0.84	0.84	0.68	0.02	0.43	0.83	0.45	0.84	0.75
d, Delay for Lane Group [s/veh]	43.21	37.53	37.90	41.90	21.72	14.24	44.74	34.41	28.27	42.51	25.95
Lane Group LOS	D	D	D	D	C	B	D	C	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.15	10.11	9.90	4.56	6.84	0.12	0.34	5.26	2.13	4.34	6.36
50th-Percentile Queue Length [ft/ln]	53.77	252.80	247.45	113.97	171.00	2.96	8.56	131.43	53.35	108.46	159.02
95th-Percentile Queue Length [veh/ln]	3.87	15.33	15.06	8.06	11.13	0.21	0.62	9.02	3.84	7.75	10.50
95th-Percentile Queue Length [ft/ln]	96.78	383.18	376.45	201.50	278.22	5.32	15.41	225.44	96.03	193.86	262.42

Movement, Approach, & Intersection Results

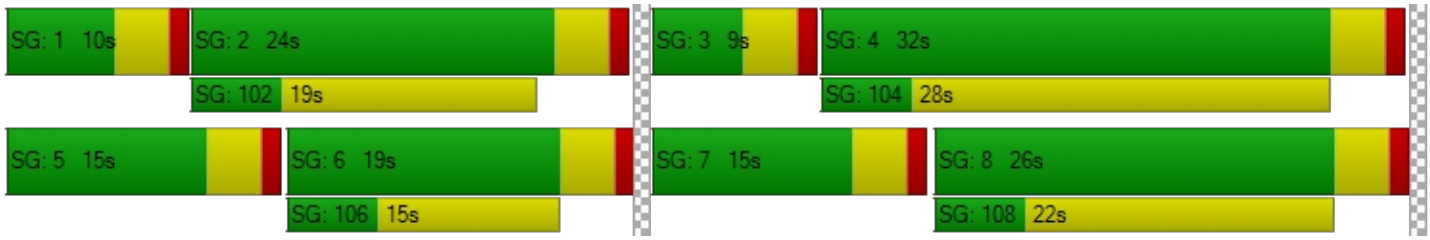
d_M, Delay for Movement [s/veh]	43.21	37.70	37.90	41.90	21.72	14.24	44.74	34.41	28.27	42.51	25.95	25.95
Movement LOS	D	D	D	D	C	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	38.23			25.44			32.88			31.63		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	31.79											
Intersection LOS	C											
Intersection V/C	0.660											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.06	29.06	29.06	29.06
l_p,int, Pedestrian LOS Score for Intersectio	2.810	2.834	2.417	2.499
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	533	586	746
d_b, Bicycle Delay [s]	24.02	20.18	18.74	14.74
l_b,int, Bicycle LOS Score for Intersection	2.492	2.536	2.357	2.668
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Kirby St/SR-74

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.578

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	245.00	100.00	205.00	245.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	365	93	89	347	190	201	893	117	118	798	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	43	4	18	0	2	0	0	0	17	7	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	29	0	0	50	0	0	35	0	0	20
Total Hourly Volume [veh/h]	132	384	86	93	363	148	209	929	104	130	830	60
Peak Hour Factor	0.8340	0.8340	0.8340	0.7920	0.7920	0.7920	0.9300	0.9300	0.9300	0.8970	0.8970	0.8970
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	115	26	29	115	47	56	250	28	36	231	17
Total Analysis Volume [veh/h]	158	460	103	117	458	187	225	999	112	145	925	67
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	28	0	0	28	0	13	26	0	9	22	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	22	26	0	22	26	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	28	28	28	28	12	32	32	8	28	28
g / C, Green / Cycle	0.35	0.35	0.35	0.35	0.35	0.35	0.15	0.40	0.40	0.10	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.20	0.15	0.15	0.14	0.18	0.18	0.12	0.28	0.07	0.08	0.26	0.04
s, saturation flow rate [veh/h]	798	1900	1781	861	1900	1715	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	239	666	625	271	666	602	267	1440	643	183	1271	567
d1, Uniform Delay [s]	32.93	19.86	19.88	28.87	20.48	20.50	33.11	19.99	15.55	35.07	22.57	17.53
k, delay calibration	0.13	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	3.73	0.45	0.48	1.09	0.60	0.67	7.04	2.78	0.59	7.55	3.68	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.66	0.44	0.44	0.43	0.51	0.51	0.84	0.69	0.17	0.79	0.73	0.12
d, Delay for Lane Group [s/veh]	36.66	20.31	20.36	29.96	21.08	21.17	40.15	22.76	16.14	42.62	26.25	17.95
Lane Group LOS	D	C	C	C	C	C	D	C	B	D	C	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.19	3.95	3.73	2.04	4.77	4.34	4.64	7.78	1.37	3.07	7.80	0.87
50th-Percentile Queue Length [ft/ln]	79.86	98.85	93.28	50.94	119.14	108.45	116.05	194.56	34.14	76.85	195.05	21.79
95th-Percentile Queue Length [veh/ln]	5.75	7.12	6.72	3.67	8.35	7.75	8.18	12.36	2.46	5.53	12.38	1.57
95th-Percentile Queue Length [ft/ln]	143.75	177.94	167.90	91.69	208.65	193.85	204.39	308.94	61.46	138.34	309.57	39.22

Movement, Approach, & Intersection Results

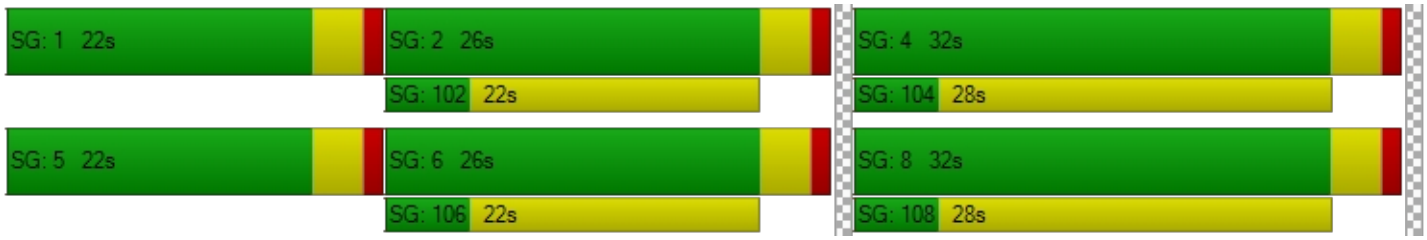
d_M, Delay for Movement [s/veh]	36.66	20.33	20.36	29.96	21.10	21.17	40.15	22.76	16.14	42.62	26.25	17.95
Movement LOS	D	C	C	C	C	C	D	C	B	D	C	B
d_A, Approach Delay [s/veh]	23.91			22.48			25.14			27.85		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.18											
Intersection LOS	C											
Intersection V/C	0.578											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.47	31.47	31.47	31.47
l_p,int, Pedestrian LOS Score for Intersectio	2.678	2.727	3.160	3.034
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	701	701	551	551
d_b, Bicycle Delay [s]	16.87	16.87	20.99	20.99
l_b,int, Bicycle LOS Score for Intersection	2.178	2.230	2.691	2.514
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Kirby St/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	30.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.575

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	84	346	64	75	414	143	65	392	111	95	407	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	65	22	0	25	0	0	0	0	9	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	22	0	0	37	0	0	29	0	0	32
Total Hourly Volume [veh/h]	87	425	67	78	456	112	68	408	86	108	423	94
Peak Hour Factor	0.9170	0.9170	0.9170	0.9230	0.9230	0.9230	0.9580	0.9580	0.9580	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	116	18	21	124	30	18	106	22	30	119	26
Total Analysis Volume [veh/h]	95	463	73	85	494	121	71	426	90	121	475	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	10	15	0	10	15	0	7	22	0	7	22	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	10	20	0	9	26	0	10	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	19	19	4	19	19	4	20	6	22
g / C, Green / Cycle	0.07	0.29	0.29	0.06	0.29	0.29	0.06	0.31	0.09	0.34
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.14	0.05	0.17	0.17	0.04	0.28	0.07	0.32
s, saturation flow rate [veh/h]	1810	1900	1811	1810	1900	1773	1810	1843	1810	1841
c, Capacity [veh/h]	125	557	531	112	544	508	102	576	156	630
d1, Uniform Delay [s]	29.77	18.99	19.01	30.04	19.89	19.91	30.15	21.35	29.13	20.57
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.30	0.11	0.33
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.15	3.08	3.26	9.88	4.52	4.90	8.17	12.70	8.05	15.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.49	0.49	0.76	0.58	0.59	0.69	0.90	0.78	0.92
d, Delay for Lane Group [s/veh]	38.92	22.06	22.27	39.91	24.41	24.81	38.32	34.05	37.18	36.02
Lane Group LOS	D	C	C	D	C	C	D	C	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.69	3.56	3.44	1.54	4.40	4.18	1.26	8.71	2.09	10.15
50th-Percentile Queue Length [ft/ln]	42.33	88.92	85.94	38.58	110.06	104.57	31.56	217.66	52.16	253.82
95th-Percentile Queue Length [veh/ln]	3.05	6.40	6.19	2.78	7.84	7.53	2.27	13.55	3.76	15.38
95th-Percentile Queue Length [ft/ln]	76.19	160.06	154.70	69.44	196.08	188.22	56.80	338.64	93.90	384.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.92	22.15	22.27	39.91	24.55	24.81	38.32	34.05	34.05	37.18	36.02	36.02
Movement LOS	D	C	C	D	C	C	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	24.69			26.46			34.57			36.22		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	30.46											
Intersection LOS	C											
Intersection V/C	0.575											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.14	24.14	24.14	24.14
l_p,int, Pedestrian LOS Score for Intersectio	2.632	2.658	2.476	2.479
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	461	492	677	707
d_b, Bicycle Delay [s]	19.25	18.49	14.24	13.59
l_b,int, Bicycle LOS Score for Intersection	2.098	2.168	2.576	2.771
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Kirby St/Project Dwy-2

Control Type:	Two-way stop	Delay (sec / veh):	29.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.388

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	494	619	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	0	0	34	88	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	514	644	34	88	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	135	169	9	23	0
Total Analysis Volume [veh/h]	16	541	678	36	93	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.39	0.00
d_M, Delay for Movement [s/veh]	9.09	0.00	0.00	0.00	29.27	19.82
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.05	0.00	0.00	0.00	1.74	1.74
95th-Percentile Queue Length [ft/ln]	1.36	0.00	0.00	0.00	43.50	43.50
d_A, Approach Delay [s/veh]	0.26		0.00		29.27	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	2.10					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Kirby St/Project Dwy-3

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	494	619	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	15	0	0	0	39
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	529	644	0	0	39
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	139	169	0	0	10
Total Analysis Volume [veh/h]	0	557	678	0	0	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	19.24	10.79
Movement LOS		A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.20	0.20
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	4.93	4.93
d_A, Approach Delay [s/veh]	0.00		0.00		10.79	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.35					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Kirby St/Johnston Ave

Control Type:	All-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.495

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	85.00	100.00	100.00	95.00	100.00	100.00	100.00	100.00	185.00	100.00	100.00	320.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	33	259	44	80	379	58	49	88	15	30	76	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	14	0	4	35	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	283	46	87	429	60	51	92	16	31	79	72
Peak Hour Factor	0.9130	0.9130	0.9130	0.9460	0.9460	0.9460	0.8420	0.8420	0.8420	0.8780	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	77	13	23	113	16	15	27	5	9	22	21
Total Analysis Volume [veh/h]	37	310	50	92	453	63	61	109	19	35	90	82
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	465	497	511	486	522	534	493	554	481	538
Degree of Utilization, x	0.08	0.36	0.35	0.19	0.50	0.48	0.34	0.03	0.26	0.15

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.26	1.64	1.57	0.69	2.72	2.61	1.52	0.11	1.03	0.54
95th-Percentile Queue Length [ft]	6.45	40.90	39.34	17.27	67.94	65.13	38.02	2.66	25.74	13.38
Approach Delay [s/veh]	13.52			15.27			13.35		11.92	
Approach LOS	B			C			B		B	
Intersection Delay [s/veh]	14.02									
Intersection LOS	B									

Intersection Level Of Service Report
Intersection 10: Kirby St/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	37.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.833

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	70.00	100.00	70.00	115.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	43	25	96	73	243	223	810	75	22	769	108
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	13	0	22	8	0	0	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	7	0	0	69	0	0	20	0	0	29
Total Hourly Volume [veh/h]	44	45	19	113	76	206	240	842	58	23	800	88
Peak Hour Factor	0.7980	0.7980	0.7980	0.8640	0.8640	0.8640	0.9290	0.9290	0.9290	0.7750	0.7750	0.7750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	14	6	33	22	60	65	227	16	7	258	28
Total Analysis Volume [veh/h]	55	56	24	131	88	238	258	906	62	30	1032	114
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	22	0	0	22	0	24	32	0	54	62	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	26	0	27	85	0	9	67	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	20	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23	23	23	23	23	19	82	82	3	66	66
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.16	0.68	0.68	0.03	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.05	0.02	0.01	0.10	0.05	0.15	0.14	0.26	0.26	0.02	0.54	0.07
s, saturation flow rate [veh/h]	1071	3618	1615	1339	1900	1615	1810	1900	1858	1810	1900	1615
c, Capacity [veh/h]	203	682	304	274	358	304	287	1299	1270	51	1051	893
d1, Uniform Delay [s]	47.52	40.13	40.10	46.94	41.43	46.34	49.54	8.10	8.10	57.64	26.25	12.90
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.23	0.11	0.11	0.11	0.46	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	3.28	0.24	0.51	5.87	1.63	17.90	18.45	0.18	0.19	10.55	22.64	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.27	0.08	0.08	0.48	0.25	0.78	0.90	0.38	0.38	0.59	0.98	0.13
d, Delay for Lane Group [s/veh]	50.80	40.37	40.61	52.81	43.06	64.24	68.00	8.28	8.29	68.19	48.90	12.97
Lane Group LOS	D	D	D	D	D	E	E	A	A	E	D	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.68	0.70	0.63	4.06	2.37	8.20	8.84	4.65	4.56	1.03	32.22	1.41
50th-Percentile Queue Length [ft/ln]	41.98	17.58	15.65	101.53	59.27	204.90	220.94	116.21	113.88	25.72	805.47	35.16
95th-Percentile Queue Length [veh/ln]	3.02	1.27	1.13	7.31	4.27	12.89	13.71	8.18	8.06	1.85	41.53	2.53
95th-Percentile Queue Length [ft/ln]	75.56	31.64	28.17	182.76	106.69	322.28	342.83	204.60	201.39	46.30	1038.19	63.29

Movement, Approach, & Intersection Results

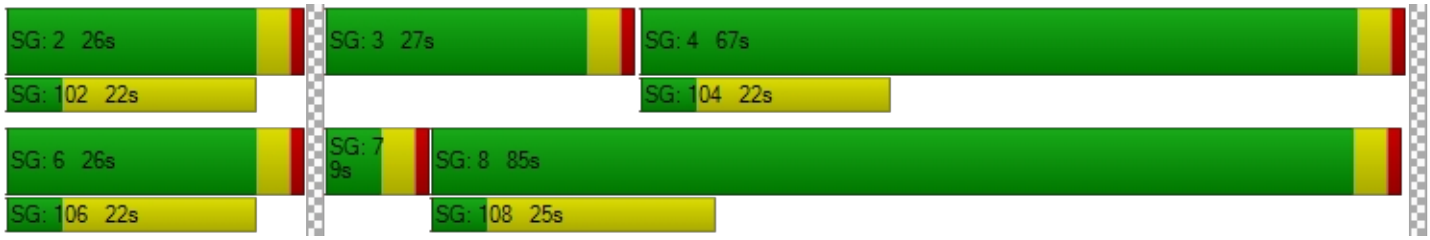
d_M, Delay for Movement [s/veh]	50.80	40.37	40.61	52.81	43.06	64.24	68.00	8.28	8.29	68.19	48.90	12.97
Movement LOS	D	D	D	D	D	E	E	A	A	E	D	B
d_A, Approach Delay [s/veh]	44.66			56.88			20.85			45.91		
Approach LOS	D			E			C			D		
d_I, Intersection Delay [s/veh]	37.26											
Intersection LOS	D											
Intersection V/C	0.833											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersectio	2.403	2.637	3.194	3.208
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	367	367	1350	1050
d_b, Bicycle Delay [s]	40.02	40.02	6.34	13.54
l_b,int, Bicycle LOS Score for Intersection	1.677	2.428	2.588	3.548
Bicycle LOS	A	B	B	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Sanderson Ave/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	47.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.792

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	200.00	100.00	180.00	210.00	100.00	100.00	205.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	13	595	502	147	702	89	188	443	19	453	458	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	8	0	0	0	0	0	0	22	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	133	0	0	23	0	0	5	0	0	37
Total Hourly Volume [veh/h]	14	619	397	153	730	70	196	461	15	493	476	109
Peak Hour Factor	0.9400	0.9400	0.9400	0.9080	0.9080	0.9080	0.9280	0.9280	0.9280	0.9050	0.9050	0.9050
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	165	106	42	201	19	53	124	4	136	131	30
Total Analysis Volume [veh/h]	15	659	422	169	804	77	211	497	16	545	526	120
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	5	22	0	11	28	0	34	26	0	30	22	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	26	0	16	33	0	42	30	0	38	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	21	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	31	31	12	41	41	15	17	17	34	36	36
g / C, Green / Cycle	0.02	0.28	0.28	0.11	0.37	0.37	0.14	0.16	0.16	0.31	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.01	0.18	0.26	0.09	0.24	0.24	0.12	0.14	0.14	0.30	0.18	0.18
s, saturation flow rate [veh/h]	1810	3618	1615	1810	1900	1842	1810	1900	1879	1810	1900	1780
c, Capacity [veh/h]	31	1006	449	197	703	681	248	302	298	559	628	588
d1, Uniform Delay [s]	53.54	35.03	38.78	48.14	28.55	28.55	46.34	45.00	45.00	37.58	29.87	29.89
k, delay calibration	0.11	0.50	0.50	0.29	0.50	0.50	0.11	0.13	0.13	0.44	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	11.23	3.33	29.82	23.42	4.37	4.51	8.02	8.21	8.35	30.08	0.70	0.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.48	0.66	0.94	0.86	0.64	0.64	0.85	0.85	0.86	0.98	0.53	0.53
d, Delay for Lane Group [s/veh]	64.77	38.36	68.60	71.56	32.92	33.06	54.36	53.21	53.35	67.66	30.57	30.64
Lane Group LOS	E	D	E	E	C	C	D	D	D	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.51	8.19	14.67	5.82	10.42	10.13	6.16	7.49	7.43	18.88	7.21	6.79
50th-Percentile Queue Length [ft/ln]	12.68	204.71	366.75	145.45	260.52	253.31	154.08	187.36	185.72	472.03	180.21	169.65
95th-Percentile Queue Length [veh/ln]	0.91	12.88	20.95	9.77	15.71	15.35	10.23	11.98	11.90	26.01	11.61	11.06
95th-Percentile Queue Length [ft/ln]	22.83	322.04	523.79	244.34	392.87	383.82	255.87	299.60	297.47	650.19	290.29	276.45

Movement, Approach, & Intersection Results

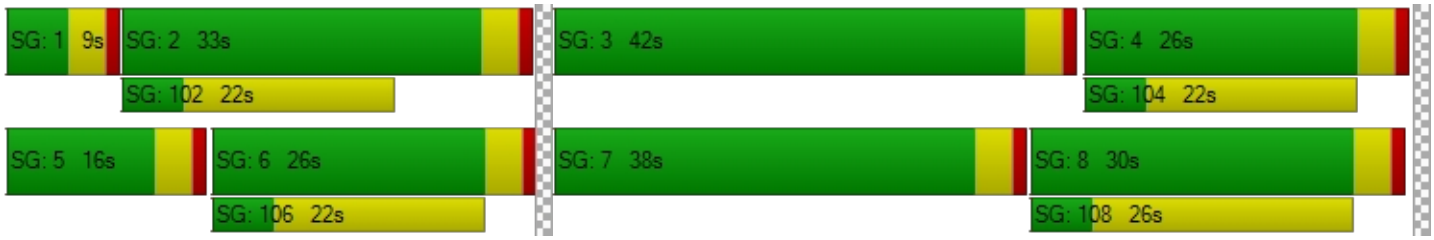
d_M, Delay for Movement [s/veh]	64.77	38.36	68.60	71.56	32.98	33.06	54.36	53.28	53.35	67.66	30.59	30.64
Movement LOS	E	D	E	E	C	C	D	D	D	E	C	C
d_A, Approach Delay [s/veh]	50.37			39.19			53.60			47.56		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	47.23											
Intersection LOS	D											
Intersection V/C	0.792											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.35	46.35	46.35	46.35
l_p,int, Pedestrian LOS Score for Intersectio	3.076	2.753	2.585	2.841
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	527	473	400
d_b, Bicycle Delay [s]	35.18	29.80	32.05	35.18
l_b,int, Bicycle LOS Score for Intersection	2.574	2.445	2.161	2.573
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Kirby Industrial

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Scenario 4 Project Completion without Whittier PM
6/23/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Sanderson Ave/SR-74	192	717	204	189	870	101	259	665	74	264	534	141	4210

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Sanderson Ave/Acacia Ave	103	912	104	209	893	14	14	269	167	185	193	215	3278

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Kirby St/SR-74	132	384	115	93	363	198	209	929	139	130	830	80	3602

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Kirby St/Acacia Ave	87	425	89	78	456	149	68	408	115	108	423	126	2532

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
7	Kirby St/Project Dwy-2	15	514	644	34	88	0	1295

ID	Intersection Name	Northbound	Southbound		Eastbound		Total Volume
		Thru	Thru	Right	Left	Right	
8	Kirby St/Project Dwy-3	529	644	0	0	39	1212

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
9	Kirby St/Johnston Ave	34	283	46	87	429	60	51	92	16	31	79	72	1280

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
10	Kirby St/Stetson Ave	44	45	26	113	76	275	240	842	78	23	800	117	2679

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11	Sanderson Ave/Stetson Ave	14	619	530	153	730	93	196	461	20	493	476	146	3931

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Kirby Industrial

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Report File: C:\...\Project Completion With Whittier AM.pdf

Scenario 5 Project Completion with Whittier AM
5/22/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sanderson Ave/SR-74	Signalized	HCM 7th Edition	NB Left	0.536	35.0	C
2	Sanderson Ave/Acacia Ave	Signalized	HCM 7th Edition	EB Left	0.520	23.0	C
3	Sanderson Ave/Whittier Ave	Two-way stop	HCM 7th Edition	WB Right	0.025	12.6	B
4	Project Dwy-1/Whittier Ave	All-way stop	HCM 7th Edition	EB Thru	0.042	7.0	A
5	Kirby St/SR-74	Signalized	HCM 7th Edition	WB Left	0.371	17.2	B
6	Kirby St/Acacia Ave	Signalized	HCM 7th Edition	WB Left	0.390	23.8	C
7	Kirby St/Project Dwy-2	Two-way stop	HCM 7th Edition	EB Left	0.032	14.9	B
8	Kirby St/Project Dwy-3	Two-way stop	HCM 7th Edition	EB Right	0.011	9.4	A
9	Kirby St/Johnston Ave	All-way stop	HCM 7th Edition	WB Thru	0.628	16.5	C
10	Kirby St/Stetson Ave	Signalized	HCM 7th Edition	EB Left	0.863	37.8	D
11	Sanderson Ave/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.823	47.1	D
12	Project Dwy-4/Whittier Ave	Two-way stop	HCM 7th Edition	WB Left	0.001	8.5	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sanderson Ave/SR-74

Control Type:	Signalized	Delay (sec / veh):	35.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.536

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	230.00	100.00	110.00	175.00	100.00	200.00	420.00	100.00	615.00	420.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	123	617	124	126	617	79	151	516	34	151	346	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	2	0	0	6	0	0	3	31	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	32	0	0	21	0	0	17	0	0	30
Total Hourly Volume [veh/h]	137	644	97	131	648	61	157	540	49	157	361	91
Peak Hour Factor	0.8910	0.8910	0.8910	0.9190	0.9190	0.9190	0.9210	0.9210	0.9210	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	181	27	36	176	17	43	147	13	42	98	25
Total Analysis Volume [veh/h]	154	723	109	143	705	66	170	586	53	170	390	98
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	32	0	13	32	0	14	36	0	14	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	27	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	22	22	9	22	22	10	38	38	10	38	38
g / C, Green / Cycle	0.10	0.23	0.23	0.10	0.23	0.23	0.11	0.40	0.40	0.11	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.09	0.20	0.07	0.08	0.19	0.04	0.09	0.16	0.03	0.09	0.13	0.13
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	1900	1770
c, Capacity [veh/h]	174	831	371	174	831	371	193	1446	646	193	760	708
d1, Uniform Delay [s]	42.56	35.34	30.33	42.28	35.13	29.49	41.99	20.49	17.75	41.99	19.79	19.82
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	13.64	2.98	0.44	9.25	2.53	0.23	12.23	0.85	0.25	12.23	1.17	1.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.89	0.87	0.29	0.82	0.85	0.18	0.88	0.41	0.08	0.88	0.33	0.33
d, Delay for Lane Group [s/veh]	56.20	38.33	30.76	51.53	37.65	29.71	54.22	21.33	18.00	54.22	20.96	21.08
Lane Group LOS	E	D	C	D	D	C	D	C	B	D	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.20	8.24	2.09	3.71	7.94	1.23	4.51	4.62	0.74	4.51	3.94	3.72
50th-Percentile Queue Length [ft/ln]	104.96	205.95	52.18	92.80	198.53	30.64	112.64	115.54	18.56	112.64	98.55	93.03
95th-Percentile Queue Length [veh/ln]	7.56	12.95	3.76	6.68	12.56	2.21	7.99	8.15	1.34	7.99	7.10	6.70
95th-Percentile Queue Length [ft/ln]	188.93	323.63	93.92	167.04	314.07	55.15	199.67	203.68	33.41	199.67	177.38	167.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.20	38.33	30.76	51.53	37.65	29.71	54.22	21.33	18.00	54.22	21.01	21.08
Movement LOS	E	D	C	D	D	C	D	C	B	D	C	C
d_A, Approach Delay [s/veh]	40.28			39.25			28.03			29.60		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	34.97											
Intersection LOS	C											
Intersection V/C	0.536											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.01	39.01	39.01	39.01
l_p,int, Pedestrian LOS Score for Intersectio	2.917	2.805	2.757	2.701
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	588	588	673	673
d_b, Bicycle Delay [s]	23.70	23.70	20.96	20.96
l_b,int, Bicycle LOS Score for Intersection	2.399	2.331	2.241	2.127
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sanderson Ave/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.520

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	135.00	100.00	100.00	195.00	100.00	100.00	65.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	75	830	94	98	635	2	9	152	159	147	98	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	0	0	37	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	25	0	0	1	0	0	41	0	0	35
Total Hourly Volume [veh/h]	78	874	73	102	697	1	9	158	124	153	102	104
Peak Hour Factor	0.9260	0.9260	0.9260	0.9640	0.9640	0.9640	0.9200	0.9200	0.9200	0.8610	0.8610	0.8610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	236	20	26	181	0	2	43	34	44	30	30
Total Analysis Volume [veh/h]	84	944	79	106	723	1	10	172	135	178	118	121
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	24	0	10	23	0	9	28	0	13	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	17	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	34	34	6	35	35	1	10	10	9	18
g / C, Green / Cycle	0.06	0.46	0.46	0.08	0.47	0.47	0.01	0.13	0.13	0.12	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.27	0.27	0.06	0.20	0.00	0.01	0.09	0.08	0.10	0.14
s, saturation flow rate [veh/h]	1810	1900	1849	1810	3618	1615	1810	1900	1615	1810	1744
c, Capacity [veh/h]	112	867	844	139	1704	761	26	254	216	218	419
d1, Uniform Delay [s]	34.71	15.29	15.30	34.05	13.15	10.53	36.76	31.05	30.82	32.26	25.18
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.50	3.04	3.12	8.33	0.78	0.00	9.24	3.16	2.97	7.21	1.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.60	0.60	0.76	0.42	0.00	0.39	0.68	0.63	0.81	0.57
d, Delay for Lane Group [s/veh]	44.21	18.33	18.42	42.38	13.93	10.53	46.00	34.21	33.79	39.47	26.41
Lane Group LOS	D	B	B	D	B	B	D	C	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.77	6.75	6.59	2.17	3.86	0.01	0.24	3.05	2.38	3.45	3.67
50th-Percentile Queue Length [ft/ln]	44.20	168.64	164.72	54.19	96.39	0.22	6.05	76.36	59.59	86.19	91.80
95th-Percentile Queue Length [veh/ln]	3.18	11.01	10.80	3.90	6.94	0.02	0.44	5.50	4.29	6.21	6.61
95th-Percentile Queue Length [ft/ln]	79.56	275.13	269.96	97.55	173.50	0.40	10.89	137.45	107.26	155.13	165.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.21	18.37	18.42	42.38	13.93	10.53	46.00	34.21	33.79	39.47	26.41	26.41
Movement LOS	D	B	B	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	20.34			17.56			34.40			31.99		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	22.96											
Intersection LOS	C											
Intersection V/C	0.520											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.10	29.10	29.10	29.10
l_p,int, Pedestrian LOS Score for Intersectio	2.759	2.762	2.342	2.299
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	532	506	639	745
d_b, Bicycle Delay [s]	20.22	20.96	17.39	14.78
l_b,int, Bicycle LOS Score for Intersection	2.494	2.245	2.150	2.305
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Sanderson Ave/Whittier Ave

Control Type:	Two-way stop	Delay (sec / veh):	12.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	999	0	0	941	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	37	0	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1039	0	37	979	0	11
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	273	0	10	258	0	3
Total Analysis Volume [veh/h]	1094	0	39	1031	0	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.06	0.01	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	10.94	0.00	49.53	12.59
Movement LOS	A	A	B	A	E	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.19	0.00	0.08	0.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	4.81	0.00	1.90	1.90
d_A, Approach Delay [s/veh]	0.00		0.40		12.59	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.27					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Project Dwy-1/Whittier Ave

Control Type:	All-way stop	Delay (sec / veh):	7.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.042

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	0	37	0	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	1	0	37	0	0	10	0
Peak Hour Factor	0.9500	1.0000	0.9500	1.0000	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	10	0	0	3	0
Total Analysis Volume [veh/h]	0	0	0	0	0	1	0	39	0	0	11	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	899	1058	920	915
Degree of Utilization, x	0.00	0.00	0.04	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.00	0.00	0.13	0.04
95th-Percentile Queue Length [ft]	0.00	0.07	3.31	0.91
Approach Delay [s/veh]	0.00	6.41	7.08	6.98
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.05			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Kirby St/SR-74

Control Type:	Signalized	Delay (sec / veh):	17.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.371

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	245.00	100.00	205.00	245.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	247	47	70	239	57	56	688	37	66	569	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	1	4	0	3	0	0	0	3	13	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	13	0	0	15	0	0	10	0	0	13
Total Hourly Volume [veh/h]	57	258	40	73	252	44	58	716	31	82	592	37
Peak Hour Factor	0.7150	0.7150	0.7150	0.8740	0.8740	0.8740	0.9400	0.9400	0.9400	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	90	14	21	72	13	15	190	8	21	155	10
Total Analysis Volume [veh/h]	80	361	56	84	288	50	62	762	33	86	620	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	9	26	0	12	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	18	18	18	18	4	36	36	4	37	37
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.51	0.51	0.06	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.08	0.11	0.11	0.09	0.09	0.09	0.03	0.21	0.02	0.05	0.17	0.02
s, saturation flow rate [veh/h]	1059	1900	1813	985	1900	1804	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	252	478	456	222	478	454	94	1860	830	114	1901	849
d1, Uniform Delay [s]	27.99	22.11	22.14	29.62	21.60	21.63	32.65	10.49	8.45	32.30	9.52	8.09
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	0.72	0.65	0.69	1.06	0.46	0.49	7.75	0.67	0.09	9.47	0.46	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.32	0.44	0.45	0.38	0.36	0.37	0.66	0.41	0.04	0.75	0.33	0.05
d, Delay for Lane Group [s/veh]	28.71	22.76	22.84	30.68	22.05	22.12	40.40	11.16	8.54	41.77	9.98	8.19
Lane Group LOS	C	C	C	C	C	C	D	B	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.23	2.82	2.73	1.35	2.22	2.15	1.20	3.35	0.24	1.69	2.50	0.28
50th-Percentile Queue Length [ft/ln]	30.65	70.46	68.17	33.73	55.58	53.82	30.06	83.74	6.06	42.20	62.47	6.95
95th-Percentile Queue Length [veh/ln]	2.21	5.07	4.91	2.43	4.00	3.87	2.16	6.03	0.44	3.04	4.50	0.50
95th-Percentile Queue Length [ft/ln]	55.17	126.82	122.71	60.71	100.04	96.87	54.10	150.74	10.91	75.96	112.45	12.52

Movement, Approach, & Intersection Results

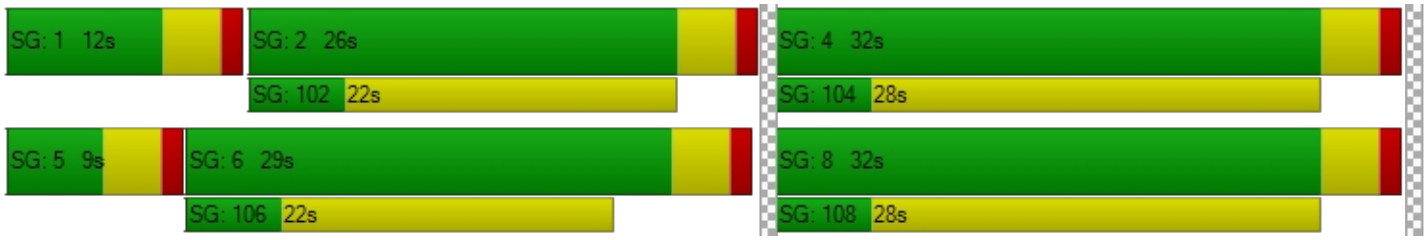
d_M, Delay for Movement [s/veh]	28.71	22.79	22.84	30.68	22.08	22.12	40.40	11.16	8.54	41.77	9.98	8.19
Movement LOS	C	C	C	C	C	C	D	B	A	D	A	A
d_A, Approach Delay [s/veh]	23.75			23.80			13.17			13.56		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	17.15											
Intersection LOS	B											
Intersection V/C	0.371											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.61	26.61	26.61	26.61
l_p,int, Pedestrian LOS Score for Intersectio	2.518	2.518	2.835	2.852
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	799	799	628	714
d_b, Bicycle Delay [s]	12.63	12.63	16.49	14.49
l_b,int, Bicycle LOS Score for Intersection	1.980	1.920	2.275	2.185
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Kirby St/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	23.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.390

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	66	286	80	27	238	69	39	280	46	51	315	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	5	0	20	0	0	0	0	16	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	22	0	0	18	0	0	12	0	0	12
Total Hourly Volume [veh/h]	69	303	66	28	268	54	41	291	36	69	328	36
Peak Hour Factor	0.8160	0.8160	0.8160	0.9000	0.9000	0.9000	0.9690	0.9690	0.9690	0.8760	0.8760	0.8760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	93	20	8	74	15	11	75	9	20	94	10
Total Analysis Volume [veh/h]	85	371	81	31	298	60	42	300	37	79	374	41
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	24	0	9	23	0	9	26	0	11	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	31	31	2	29	29	3	17	4	18
g / C, Green / Cycle	0.06	0.44	0.44	0.03	0.42	0.42	0.04	0.24	0.06	0.25
(v / s)_i Volume / Saturation Flow Rate	0.05	0.12	0.12	0.02	0.10	0.10	0.02	0.18	0.04	0.22
s, saturation flow rate [veh/h]	1810	1900	1784	1810	1900	1792	1810	1864	1810	1867
c, Capacity [veh/h]	114	840	789	62	786	741	76	442	106	474
d1, Uniform Delay [s]	32.37	12.45	12.47	33.33	13.36	13.39	33.02	24.97	32.55	25.15
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.31	0.81	0.88	6.07	0.69	0.75	6.20	2.76	9.79	5.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.28	0.28	0.50	0.23	0.24	0.55	0.76	0.74	0.88
d, Delay for Lane Group [s/veh]	41.68	13.26	13.35	39.39	14.05	14.14	39.21	27.73	42.33	30.42
Lane Group LOS	D	B	B	D	B	B	D	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.65	2.23	2.13	0.60	1.82	1.76	0.80	5.18	1.55	6.80
50th-Percentile Queue Length [ft/ln]	41.17	55.65	53.30	15.01	45.48	44.12	20.00	129.43	38.71	169.89
95th-Percentile Queue Length [veh/ln]	2.96	4.01	3.84	1.08	3.27	3.18	1.44	8.91	2.79	11.07
95th-Percentile Queue Length [ft/ln]	74.11	100.17	95.94	27.02	81.86	79.42	36.00	222.72	69.67	276.77

Movement, Approach, & Intersection Results

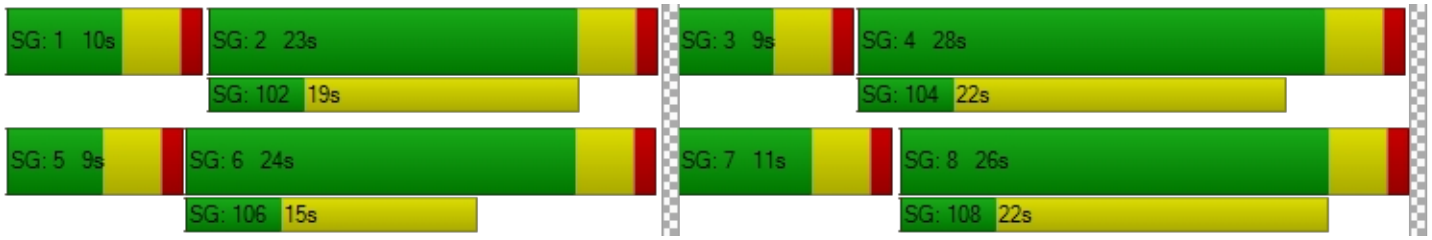
d_M, Delay for Movement [s/veh]	41.68	13.29	13.35	39.39	14.09	14.14	39.21	27.73	27.73	42.33	30.42	30.42
Movement LOS	D	B	B	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	17.80			16.11			29.00			32.32		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.78											
Intersection LOS	C											
Intersection V/C	0.390											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.64	26.64	26.64	26.64
l_p,int, Pedestrian LOS Score for Intersectio	2.544	2.513	2.298	2.303
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	570	542	627	684
d_b, Bicycle Delay [s]	17.92	18.64	16.52	15.17
l_b,int, Bicycle LOS Score for Intersection	2.021	1.895	2.205	2.395
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Kirby St/Project Dwy-2

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	432	335	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	30	0	0	36	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	449	348	36	11	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	118	92	9	3	0
Total Analysis Volume [veh/h]	32	473	366	38	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	8.18	0.00	0.00	0.00	14.91	9.75
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.08	0.00	0.00	0.00	0.10	0.10
95th-Percentile Queue Length [ft/ln]	2.12	0.00	0.00	0.00	2.47	2.47
d_A, Approach Delay [s/veh]	0.52		0.00		14.91	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.48					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Kirby St/Project Dwy-3

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	432	335	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	30	0	0	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	479	348	0	0	9
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	126	92	0	0	2
Total Analysis Volume [veh/h]	0	504	366	0	0	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	13.50	9.36
Movement LOS		A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.82	0.82
d_A, Approach Delay [s/veh]	0.00		0.00		9.36	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.10					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 9: Kirby St/Johnston Ave

Control Type:	All-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.628

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	85.00	100.00	100.00	95.00	100.00	100.00	100.00	100.00	185.00	100.00	100.00	320.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	16	238	52	31	225	29	41	102	16	90	144	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	26	0	1	8	0	0	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	274	54	33	242	30	43	106	17	94	150	59
Peak Hour Factor	0.7640	0.7640	0.7640	0.8110	0.8110	0.8110	0.7900	0.7900	0.7900	0.8170	0.8170	0.8170
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	90	18	10	75	9	14	34	5	29	46	18
Total Analysis Volume [veh/h]	22	359	71	41	298	37	54	134	22	115	184	72
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	441	469	484	429	457	465	463	515	476	536
Degree of Utilization, x	0.05	0.46	0.44	0.10	0.37	0.36	0.41	0.04	0.63	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	2.36	2.25	0.31	1.66	1.62	1.94	0.13	4.25	0.46
95th-Percentile Queue Length [ft]	3.93	59.03	56.20	7.87	41.57	40.39	48.51	3.34	106.13	11.54
Approach Delay [s/veh]	16.08			14.58			15.09		19.88	
Approach LOS	C			B			C		C	
Intersection Delay [s/veh]	16.53									
Intersection LOS	C									

Intersection Level Of Service Report
Intersection 10: Kirby St/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	37.8
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	70.00	100.00	70.00	115.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	47	40	26	72	32	255	190	828	27	17	920	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	3	0	5	17	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	7	0	0	68	0	0	7	0	0	23
Total Hourly Volume [veh/h]	49	42	20	78	33	202	215	861	21	18	957	67
Peak Hour Factor	0.8270	0.8270	0.8270	0.7550	0.7550	0.7550	0.9060	0.9060	0.9060	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	13	6	26	11	67	59	238	6	5	269	19
Total Analysis Volume [veh/h]	59	51	24	103	44	268	237	950	23	20	1075	75
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	26	0	20	85	0	9	74	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	20	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23	23	23	23	23	16	83	83	2	69	69
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.13	0.69	0.69	0.02	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.05	0.01	0.01	0.08	0.02	0.17	0.13	0.26	0.26	0.01	0.57	0.05
s, saturation flow rate [veh/h]	1084	3618	1615	1346	1900	1615	1810	1900	1884	1810	1900	1615
c, Capacity [veh/h]	239	693	310	292	364	310	241	1307	1296	37	1092	929
d1, Uniform Delay [s]	44.22	39.76	39.79	44.48	40.13	47.00	51.86	7.86	7.86	58.23	24.96	11.37
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.46	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	2.45	0.21	0.49	3.31	0.68	26.17	22.98	0.18	0.18	11.96	22.43	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.25	0.07	0.08	0.35	0.12	0.87	0.98	0.37	0.37	0.54	0.98	0.08
d, Delay for Lane Group [s/veh]	46.67	39.97	40.28	47.79	40.81	73.17	74.84	8.04	8.04	70.19	47.39	11.40
Lane Group LOS	D	D	D	D	D	E	E	A	A	E	D	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.71	0.64	0.62	3.00	1.14	9.92	8.45	4.54	4.51	0.71	32.99	0.84
50th-Percentile Queue Length [ft/ln]	42.66	15.92	15.58	75.03	28.58	247.92	211.16	113.48	112.63	17.76	824.73	21.03
95th-Percentile Queue Length [veh/ln]	3.07	1.15	1.12	5.40	2.06	15.08	13.21	8.03	7.99	1.28	42.41	1.51
95th-Percentile Queue Length [ft/ln]	76.79	28.66	28.05	135.06	51.45	377.03	330.32	200.84	199.65	31.97	1060.22	37.86

Movement, Approach, & Intersection Results

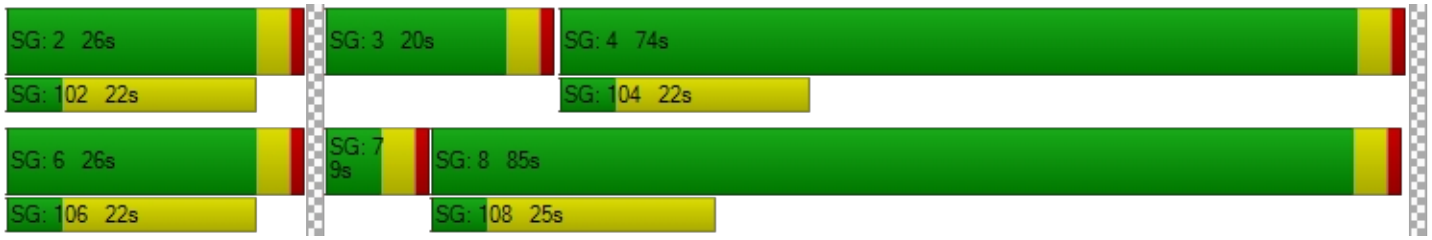
d_M, Delay for Movement [s/veh]	46.67	39.97	40.28	47.79	40.81	73.17	74.84	8.04	8.04	70.19	47.39	11.40
Movement LOS	D	D	D	D	D	E	E	A	A	E	D	B
d_A, Approach Delay [s/veh]	42.98			63.44			21.12			45.48		
Approach LOS	D			E			C			D		
d_I, Intersection Delay [s/veh]	37.85											
Intersection LOS	D											
Intersection V/C	0.863											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersectio	2.379	2.610	3.195	3.160
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	367	367	1350	1167
d_b, Bicycle Delay [s]	40.02	40.02	6.34	10.42
l_b,int, Bicycle LOS Score for Intersection	1.676	2.357	2.564	3.528
Bicycle LOS	A	B	B	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Sanderson Ave/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	47.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.823

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	200.00	100.00	180.00	210.00	100.00	100.00	205.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	669	581	97	711	81	65	347	18	503	630	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	17	0	0	0	0	0	0	5	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	155	0	0	21	0	0	5	0	0	32
Total Hourly Volume [veh/h]	46	696	466	101	739	63	68	361	14	528	655	95
Peak Hour Factor	0.9030	0.9030	0.9030	0.8290	0.8290	0.8290	0.9250	0.9250	0.9250	0.8870	0.8870	0.8870
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	193	129	30	223	19	18	98	4	149	185	27
Total Analysis Volume [veh/h]	51	771	516	122	891	76	74	390	15	595	738	107
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	28	0	12	31	0	21	30	0	40	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	21	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	36	36	8	40	40	6	14	14	36	44	44
g / C, Green / Cycle	0.04	0.32	0.32	0.07	0.36	0.36	0.05	0.13	0.13	0.33	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.03	0.21	0.32	0.07	0.26	0.26	0.04	0.11	0.11	0.33	0.23	0.23
s, saturation flow rate [veh/h]	1810	3618	1615	1810	1900	1848	1810	1900	1875	1810	1900	1817
c, Capacity [veh/h]	68	1172	523	133	684	666	98	248	245	591	766	733
d1, Uniform Delay [s]	52.49	31.96	36.96	50.68	30.37	30.38	51.37	46.62	46.64	37.07	25.34	25.42
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.46	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	15.44	2.89	36.00	20.92	6.33	6.50	11.29	6.65	6.84	37.22	0.65	0.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.75	0.66	0.99	0.92	0.72	0.72	0.76	0.82	0.82	1.01	0.56	0.57
d, Delay for Lane Group [s/veh]	67.93	34.85	72.95	71.59	36.70	36.88	62.66	53.27	53.48	74.28	25.99	26.11
Lane Group LOS	E	C	E	E	D	D	E	D	D	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.68	9.18	18.71	4.10	12.21	11.91	2.32	5.86	5.82	21.64	8.66	8.40
50th-Percentile Queue Length [ft/ln]	42.10	229.40	467.66	102.54	305.19	297.80	57.90	146.52	145.45	541.09	216.55	210.04
95th-Percentile Queue Length [veh/ln]	3.03	14.14	25.80	7.38	17.94	17.57	4.17	9.83	9.77	29.40	13.49	13.15
95th-Percentile Queue Length [ft/ln]	75.77	353.60	644.99	184.57	448.44	439.31	104.22	245.77	244.34	735.08	337.22	328.87

Movement, Approach, & Intersection Results

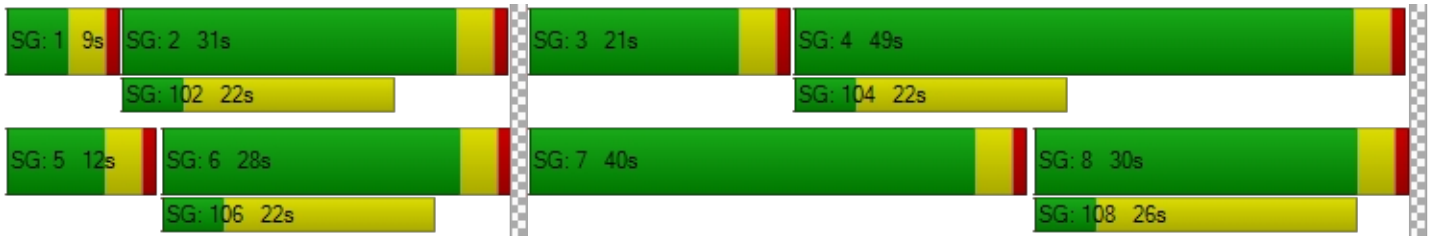
d_M, Delay for Movement [s/veh]	67.93	34.85	72.95	71.59	36.78	36.88	62.66	53.37	53.48	74.28	26.04	26.11
Movement LOS	E	C	E	E	D	D	E	D	D	F	C	C
d_A, Approach Delay [s/veh]	50.81			40.69			54.81			45.98		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	47.11											
Intersection LOS	D											
Intersection V/C	0.823											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.39	46.39	46.39	46.39
l_p,int, Pedestrian LOS Score for Intersectio	3.172	2.749	2.585	2.874
Crosswalk LOS	C	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	436	491	473	818
d_b, Bicycle Delay [s]	33.64	31.34	32.10	19.23
l_b,int, Bicycle LOS Score for Intersection	2.791	2.475	1.959	2.774
Bicycle LOS	C	B	A	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Project Dwy-4/Whittier Ave

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	1	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	1	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.20	0.00	8.50	0.00
Movement LOS	A	A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.07	0.00
d_A, Approach Delay [s/veh]	0.00		3.60		8.50	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	8.50					
Intersection LOS	A					

Kirby Industrial

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Scenario 5 Project Completion with Whittier AM
5/22/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Sanderson Ave/SR-74	137	644	129	131	648	82	157	540	66	157	361	121	3173

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Sanderson Ave/Acacia Ave	78	874	98	102	697	2	9	158	165	153	102	139	2577

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
3	Sanderson Ave/Whittier Ave	1039	0	37	979	0	11	2066

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project Dwy-1/Whittier Ave	0	0	0	0	0	1	0	37	0	0	10	0	48

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Kirby St/SR-74	57	258	53	73	252	59	58	716	41	82	592	50	2291

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Kirby St/Acacia Ave	69	303	88	28	268	72	41	291	48	69	328	48	1653

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
7	Kirby St/Project Dwy-2	30	449	348	36	11	0	874

ID	Intersection Name	Northbound	Southbound		Eastbound		Total Volume
		Thru	Thru	Right	Left	Right	
8	Kirby St/Project Dwy-3	479	348	0	0	9	836

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
9	Kirby St/Johnston Ave	17	274	54	33	242	30	43	106	17	94	150	59	1119

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
10	Kirby St/Stetson Ave	49	42	27	78	33	270	215	861	28	18	957	90	2668

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11	Sanderson Ave/Stetson Ave	46	696	621	101	739	84	68	361	19	528	655	127	4045

ID	Intersection Name	Northbound		Southbound		Westbound	Total Volume
		Thru	Right	Left	Thru	Left	
12	Project Dwy-4/Whittier Ave	0	0	0	0	1	1

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Kirby Industrial

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Scenario 6 Project Completion with Whittier PM
5/22/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sanderson Ave/SR-74	Signalized	HCM 7th Edition	WB Left	0.746	47.3	D
2	Sanderson Ave/Acacia Ave	Signalized	HCM 7th Edition	EB Left	0.670	31.7	C
3	Sanderson Ave/Whittier Ave	Two-way stop	HCM 7th Edition	WB Right	0.090	13.7	B
4	Project Dwy-1/Whittier Ave	All-way stop	HCM 7th Edition	WB Thru	0.040	7.0	A
5	Kirby St/SR-74	Signalized	HCM 7th Edition	WB Left	0.559	23.8	C
6	Kirby St/Acacia Ave	Signalized	HCM 7th Edition	SB Left	0.571	30.7	C
7	Kirby St/Project Dwy-2	Two-way stop	HCM 7th Edition	EB Left	0.215	23.9	C
8	Kirby St/Project Dwy-3	Two-way stop	HCM 7th Edition	EB Right	0.062	10.8	B
9	Kirby St/Johnston Ave	All-way stop	HCM 7th Edition	SB Thru	0.495	14.0	B
10	Kirby St/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.833	36.7	D
11	Sanderson Ave/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.792	45.9	D
12	Project Dwy-4/Whittier Ave	Two-way stop	HCM 7th Edition	WB Left	0.004	8.5	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sanderson Ave/SR-74

Control Type:	Signalized	Delay (sec / veh):	47.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	230.00	100.00	110.00	175.00	100.00	200.00	420.00	100.00	615.00	420.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	185	689	196	180	837	97	249	625	71	254	478	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	33	6	0	0	2	0	0	2	13	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	51	0	0	25	0	0	22	0	0	34
Total Hourly Volume [veh/h]	225	723	153	187	872	76	259	652	65	264	501	101
Peak Hour Factor	0.8820	0.8820	0.8820	0.9170	0.9170	0.9170	0.9790	0.9790	0.9790	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	205	43	51	238	21	66	166	17	72	136	27
Total Analysis Volume [veh/h]	255	820	173	204	951	83	265	666	66	286	543	110
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	33	0	23	35	0	27	36	0	23	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	27	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	33	33	15	31	31	19	32	32	19	32	32
g / C, Green / Cycle	0.15	0.29	0.29	0.13	0.27	0.27	0.16	0.28	0.28	0.17	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.14	0.23	0.11	0.11	0.26	0.05	0.15	0.18	0.04	0.16	0.18	0.18
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	1900	1790
c, Capacity [veh/h]	268	1037	463	234	970	433	296	1011	451	299	535	504
d1, Uniform Delay [s]	48.61	37.85	32.78	49.12	41.79	32.47	47.17	36.59	31.12	47.59	36.07	36.07
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.13	0.50	0.50	0.16	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	17.04	1.40	0.50	9.59	9.60	0.21	11.00	3.36	0.68	20.70	5.51	5.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.95	0.79	0.37	0.87	0.98	0.19	0.90	0.66	0.15	0.96	0.63	0.63
d, Delay for Lane Group [s/veh]	65.64	39.25	33.28	58.71	51.39	32.68	58.16	39.94	31.80	68.30	41.58	41.91
Lane Group LOS	E	D	C	E	D	C	E	D	C	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.49	10.74	3.92	6.36	14.50	1.82	8.24	8.60	1.46	9.72	8.93	8.46
50th-Percentile Queue Length [ft/ln]	212.28	268.61	97.94	158.90	362.54	45.43	205.91	215.09	36.41	243.05	223.29	211.57
95th-Percentile Queue Length [veh/ln]	13.27	16.12	7.05	10.49	20.75	3.27	12.94	13.41	2.62	14.84	13.83	13.23
95th-Percentile Queue Length [ft/ln]	331.75	403.01	176.28	262.26	518.67	81.77	323.58	335.36	65.54	370.89	345.83	330.84

Movement, Approach, & Intersection Results

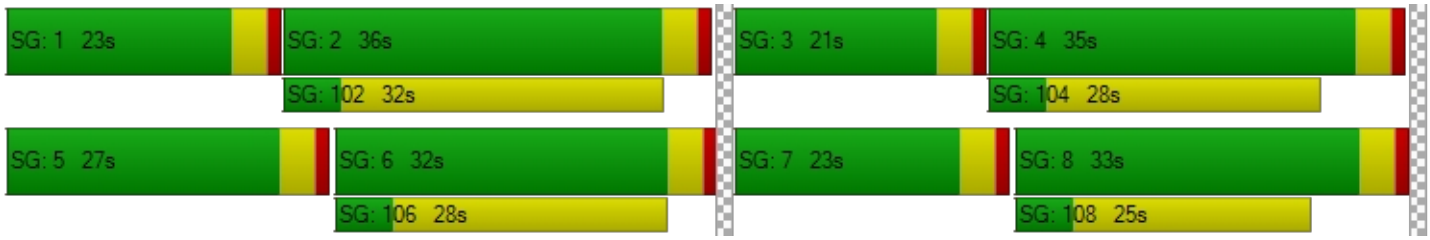
d_M, Delay for Movement [s/veh]	65.64	39.25	33.28	58.71	51.39	32.68	58.16	39.94	31.80	68.30	41.71	41.91
Movement LOS	E	D	C	E	D	C	E	D	C	E	D	D
d_A, Approach Delay [s/veh]	43.82			51.34			44.25			49.83		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	47.30											
Intersection LOS	D											
Intersection V/C	0.746											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	48.86	48.86	48.86	48.86
l_p,int, Pedestrian LOS Score for Intersectio	3.045	2.907	2.862	2.832
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	504	539	556	487
d_b, Bicycle Delay [s]	32.16	30.68	29.96	32.91
l_b,int, Bicycle LOS Score for Intersection	2.631	2.602	2.400	2.362
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sanderson Ave/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	31.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	135.00	100.00	100.00	195.00	100.00	100.00	65.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	99	877	100	201	859	13	13	259	161	178	186	207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	39	0	0	15	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	26	0	0	4	0	0	42	0	0	54
Total Hourly Volume [veh/h]	103	951	78	209	908	10	14	269	125	185	193	161
Peak Hour Factor	0.9900	0.9900	0.9900	0.9430	0.9430	0.9430	0.9230	0.9230	0.9230	0.8720	0.8720	0.8720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	240	20	55	241	3	4	73	34	53	55	46
Total Analysis Volume [veh/h]	104	961	79	222	963	11	15	291	135	212	221	185
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	24	0	15	29	0	9	26	0	15	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	17	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	27	27	11	33	33	1	15	15	11	24
g / C, Green / Cycle	0.07	0.34	0.34	0.14	0.41	0.41	0.02	0.18	0.18	0.14	0.30
(v / s)_i Volume / Saturation Flow Rate	0.06	0.28	0.28	0.12	0.27	0.01	0.01	0.15	0.08	0.12	0.23
s, saturation flow rate [veh/h]	1810	1900	1850	1810	3618	1615	1810	1900	1615	1810	1759
c, Capacity [veh/h]	136	649	632	250	1464	654	35	348	295	250	530
d1, Uniform Delay [s]	36.42	24.06	24.07	33.97	19.37	14.31	38.90	31.62	29.22	33.75	25.44
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.15
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.72	10.63	10.92	10.31	2.33	0.05	8.08	5.37	1.10	7.83	3.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.81	0.81	0.89	0.66	0.02	0.43	0.84	0.46	0.85	0.77
d, Delay for Lane Group [s/veh]	45.13	34.69	34.99	44.28	21.70	14.36	46.98	36.99	30.33	41.58	28.70
Lane Group LOS	D	C	C	D	C	B	D	D	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.28	10.48	10.26	4.84	7.26	0.12	0.36	5.70	2.31	4.40	7.04
50th-Percentile Queue Length [ft/ln]	57.08	261.98	256.60	121.01	181.40	3.08	9.05	142.53	57.81	110.09	176.05
95th-Percentile Queue Length [veh/ln]	4.11	15.79	15.52	8.45	11.67	0.22	0.65	9.62	4.16	7.85	11.39
95th-Percentile Queue Length [ft/ln]	102.74	394.71	387.95	211.22	291.84	5.54	16.28	240.43	104.06	196.13	284.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.13	34.82	34.99	44.28	21.70	14.36	46.98	36.99	30.33	41.58	28.70	28.70
Movement LOS	D	C	C	D	C	B	D	D	C	D	C	C
d_A, Approach Delay [s/veh]	35.77			25.82			35.29			33.12		
Approach LOS	D			C			D			C		
d_I, Intersection Delay [s/veh]	31.73											
Intersection LOS	C											
Intersection V/C	0.670											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.56	31.56	31.56	31.56
l_p,int, Pedestrian LOS Score for Intersectio	2.824	2.847	2.421	2.502
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	499	624	549	699
d_b, Bicycle Delay [s]	22.55	18.96	21.08	16.95
l_b,int, Bicycle LOS Score for Intersection	2.525	2.550	2.357	2.668
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Sanderson Ave/Whittier Ave

Control Type:	Two-way stop	Delay (sec / veh):	13.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.090

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	1075	0	0	1197	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	15	0	0	39
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1118	0	15	1245	0	39
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	294	0	4	328	0	10
Total Analysis Volume [veh/h]	1177	0	16	1311	0	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.03	0.01	0.00	0.09
d_M, Delay for Movement [s/veh]	0.00	0.00	11.16	0.00	61.96	13.65
Movement LOS	A	A	B	A	F	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.08	0.00	0.29	0.29
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.05	0.00	7.35	7.35
d_A, Approach Delay [s/veh]	0.00		0.13		13.65	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.29					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Project Dwy-1/Whittier Ave

Control Type:	All-way stop	Delay (sec / veh):	7.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.040

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	4	0	15	0	0	35	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	4	0	15	0	0	35	0
Peak Hour Factor	0.9500	1.0000	0.9500	1.0000	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	1	0	4	0	0	9	0
Total Analysis Volume [veh/h]	0	0	0	0	0	4	0	16	0	0	37	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	897	1055	913	918
Degree of Utilization, x	0.00	0.00	0.02	0.04

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.00	0.01	0.05	0.13
95th-Percentile Queue Length [ft]	0.00	0.29	1.34	3.15
Approach Delay [s/veh]	0.00	6.42	7.01	7.09
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.02			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Kirby St/SR-74

Control Type:	Signalized	Delay (sec / veh):	23.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.559

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	245.00	100.00	205.00	245.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	365	93	89	347	190	201	893	117	118	798	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	4	18	0	2	0	0	0	2	7	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	29	0	0	50	0	0	31	0	0	20
Total Hourly Volume [veh/h]	93	384	86	93	363	148	209	929	93	130	830	60
Peak Hour Factor	0.8340	0.8340	0.8340	0.7920	0.7920	0.7920	0.9300	0.9300	0.9300	0.8970	0.8970	0.8970
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	115	26	29	115	47	56	250	25	36	231	17
Total Analysis Volume [veh/h]	112	460	103	117	458	187	225	999	100	145	925	67
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	15	26	0	17	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	26	26	26	26	26	11	30	30	8	26	26
g / C, Green / Cycle	0.34	0.34	0.34	0.34	0.34	0.34	0.15	0.40	0.40	0.10	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.14	0.15	0.15	0.14	0.18	0.18	0.12	0.28	0.06	0.08	0.26	0.04
s, saturation flow rate [veh/h]	798	1900	1782	861	1900	1715	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	234	648	608	266	648	585	266	1436	641	185	1273	568
d1, Uniform Delay [s]	29.81	19.22	19.24	27.95	19.82	19.84	31.18	18.85	14.55	32.90	21.17	16.44
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	1.51	0.48	0.52	1.14	0.65	0.73	7.27	2.81	0.52	7.18	3.65	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.48	0.45	0.45	0.44	0.52	0.52	0.85	0.70	0.16	0.79	0.73	0.12
d, Delay for Lane Group [s/veh]	31.31	19.71	19.76	29.09	20.47	20.57	38.45	21.66	15.06	40.08	24.82	16.86
Lane Group LOS	C	B	B	C	C	C	D	C	B	D	C	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.94	3.72	3.52	1.93	4.49	4.09	4.36	7.23	1.12	2.86	7.23	0.81
50th-Percentile Queue Length [ft/ln]	48.47	93.09	88.04	48.24	112.36	102.32	109.12	180.66	28.05	71.62	180.78	20.19
95th-Percentile Queue Length [veh/ln]	3.49	6.70	6.34	3.47	7.97	7.37	7.79	11.64	2.02	5.16	11.64	1.45
95th-Percentile Queue Length [ft/ln]	87.25	167.57	158.47	86.82	199.29	184.17	194.78	290.88	50.50	128.91	291.04	36.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.31	19.73	19.76	29.09	20.50	20.57	38.45	21.66	15.06	40.08	24.82	16.86
Movement LOS	C	B	B	C	C	C	D	C	B	D	C	B
d_A, Approach Delay [s/veh]	21.66			21.83			24.01			26.29		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	23.84											
Intersection LOS	C											
Intersection V/C	0.559											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.05	29.05	29.05	29.05
l_p,int, Pedestrian LOS Score for Intersectio	2.661	2.724	3.076	3.031
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	746	746	586	640
d_b, Bicycle Delay [s]	14.74	14.74	18.74	17.35
l_b,int, Bicycle LOS Score for Intersection	2.140	2.230	2.677	2.514
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Kirby St/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	30.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.571

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	84	346	64	75	414	143	65	392	111	95	407	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	26	22	0	10	0	0	0	0	9	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	22	0	0	37	0	0	29	0	0	32
Total Hourly Volume [veh/h]	87	386	67	78	441	112	68	408	86	108	423	94
Peak Hour Factor	0.9170	0.9170	0.9170	0.9230	0.9230	0.9230	0.9580	0.9580	0.9580	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	105	18	21	119	30	18	106	22	30	119	26
Total Analysis Volume [veh/h]	95	421	73	85	478	121	71	426	90	121	475	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	19	0	14	23	0	9	26	0	11	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	22	22	4	22	22	4	21	6	24
g / C, Green / Cycle	0.07	0.32	0.32	0.06	0.31	0.31	0.05	0.31	0.09	0.34
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.13	0.05	0.16	0.16	0.04	0.28	0.07	0.32
s, saturation flow rate [veh/h]	1810	1900	1804	1810	1900	1770	1810	1843	1810	1841
c, Capacity [veh/h]	124	605	574	112	592	552	98	564	155	622
d1, Uniform Delay [s]	32.10	18.78	18.80	32.36	19.82	19.85	32.63	23.45	31.37	22.46
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.20	0.11	0.26
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.59	2.12	2.26	10.13	3.27	3.55	9.80	10.64	8.12	14.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.42	0.42	0.76	0.52	0.53	0.73	0.92	0.78	0.93
d, Delay for Lane Group [s/veh]	41.68	20.89	21.06	42.49	23.09	23.40	42.43	34.09	39.49	36.82
Lane Group LOS	D	C	C	D	C	C	D	C	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.84	3.31	3.19	1.67	4.34	4.11	1.40	9.10	2.25	10.76
50th-Percentile Queue Length [ft/ln]	45.88	82.84	79.86	41.63	108.46	102.74	34.91	227.53	56.35	269.07
95th-Percentile Queue Length [veh/ln]	3.30	5.96	5.75	3.00	7.75	7.40	2.51	14.05	4.06	16.14
95th-Percentile Queue Length [ft/ln]	82.58	149.11	143.74	74.94	193.86	184.93	62.84	351.21	101.43	403.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.68	20.96	21.06	42.49	23.20	23.40	42.43	34.09	34.09	39.49	36.82	36.82
Movement LOS	D	C	C	D	C	C	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	24.31			25.63			35.10			37.28		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	30.69											
Intersection LOS	C											
Intersection V/C	0.571											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.59	26.59	26.59	26.59
l_p,int, Pedestrian LOS Score for Intersectio	2.622	2.649	2.480	2.483
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	428	543	628	685
d_b, Bicycle Delay [s]	21.62	18.59	16.47	15.13
l_b,int, Bicycle LOS Score for Intersection	2.064	2.154	2.576	2.771
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Kirby St/Project Dwy-2

Control Type:	Two-way stop	Delay (sec / veh):	23.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.215

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	494	619	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	0	0	19	49	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	514	644	19	49	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	135	169	5	13	0
Total Analysis Volume [veh/h]	16	541	678	20	52	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.21	0.00
d_M, Delay for Movement [s/veh]	9.04	0.00	0.00	0.00	23.87	14.53
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.05	0.00	0.00	0.00	0.79	0.79
95th-Percentile Queue Length [ft/ln]	1.34	0.00	0.00	0.00	19.83	19.83
d_A, Approach Delay [s/veh]	0.26		0.00		23.87	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.06					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Kirby St/Project Dwy-3

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	494	619	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	15	0	0	0	39
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	529	644	0	0	39
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	139	169	0	0	10
Total Analysis Volume [veh/h]	0	557	678	0	0	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	19.24	10.79
Movement LOS		A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.20	0.20
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	4.93	4.93
d_A, Approach Delay [s/veh]	0.00		0.00		10.79	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.35					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Kirby St/Johnston Ave

Control Type:	All-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.495

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	85.00	100.00	100.00	95.00	100.00	100.00	100.00	100.00	185.00	100.00	100.00	320.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	33	259	44	80	379	58	49	88	15	30	76	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	14	0	4	35	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	283	46	87	429	60	51	92	16	31	79	72
Peak Hour Factor	0.9130	0.9130	0.9130	0.9460	0.9460	0.9460	0.8420	0.8420	0.8420	0.8780	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	77	13	23	113	16	15	27	5	9	22	21
Total Analysis Volume [veh/h]	37	310	50	92	453	63	61	109	19	35	90	82
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	465	497	511	486	522	534	493	554	481	538
Degree of Utilization, x	0.08	0.36	0.35	0.19	0.50	0.48	0.34	0.03	0.26	0.15

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.26	1.64	1.57	0.69	2.72	2.61	1.52	0.11	1.03	0.54
95th-Percentile Queue Length [ft]	6.45	40.90	39.34	17.27	67.94	65.13	38.02	2.66	25.74	13.38
Approach Delay [s/veh]	13.52			15.27			13.35		11.92	
Approach LOS	B			C			B		B	
Intersection Delay [s/veh]	14.02									
Intersection LOS	B									

Intersection Level Of Service Report
Intersection 10: Kirby St/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	36.7
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.833

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	70.00	100.00	70.00	115.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	43	25	96	73	243	223	810	75	22	769	108
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	13	0	22	8	0	0	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	7	0	0	69	0	0	20	0	0	29
Total Hourly Volume [veh/h]	44	45	19	113	76	206	240	842	58	23	800	88
Peak Hour Factor	0.7980	0.7980	0.7980	0.8640	0.8640	0.8640	0.9290	0.9290	0.9290	0.7750	0.7750	0.7750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	14	6	33	22	60	65	227	16	7	258	28
Total Analysis Volume [veh/h]	55	56	24	131	88	238	258	906	62	30	1032	114
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	26	0	22	83	0	11	72	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	20	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23	23	23	23	23	18	81	81	3	67	67
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.20	0.20	0.15	0.68	0.68	0.03	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.05	0.02	0.01	0.10	0.05	0.15	0.14	0.26	0.26	0.02	0.54	0.07
s, saturation flow rate [veh/h]	1071	3618	1615	1339	1900	1615	1810	1900	1858	1810	1900	1615
c, Capacity [veh/h]	221	709	316	296	372	316	271	1288	1259	48	1053	895
d1, Uniform Delay [s]	45.64	39.40	39.37	45.12	40.67	45.49	50.55	8.40	8.40	57.83	26.12	12.84
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.14	0.11	0.11	0.11	0.45	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	2.67	0.22	0.47	4.73	1.49	15.18	18.69	0.18	0.19	12.79	21.91	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.25	0.08	0.08	0.44	0.24	0.75	0.95	0.38	0.38	0.63	0.98	0.13
d, Delay for Lane Group [s/veh]	48.32	39.61	39.84	49.86	42.16	60.67	69.25	8.58	8.59	70.62	48.03	12.90
Lane Group LOS	D	D	D	D	D	E	E	A	A	E	D	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.63	0.70	0.62	3.93	2.34	7.95	8.86	4.78	4.68	1.05	31.87	1.40
50th-Percentile Queue Length [ft/ln]	40.68	17.40	15.47	98.21	58.56	198.87	221.55	119.43	117.04	26.27	796.83	34.97
95th-Percentile Queue Length [veh/ln]	2.93	1.25	1.11	7.07	4.22	12.58	13.74	8.36	8.23	1.89	41.13	2.52
95th-Percentile Queue Length [ft/ln]	73.22	31.32	27.84	176.77	105.41	314.51	343.61	209.04	205.75	47.29	1028.30	62.94

Movement, Approach, & Intersection Results

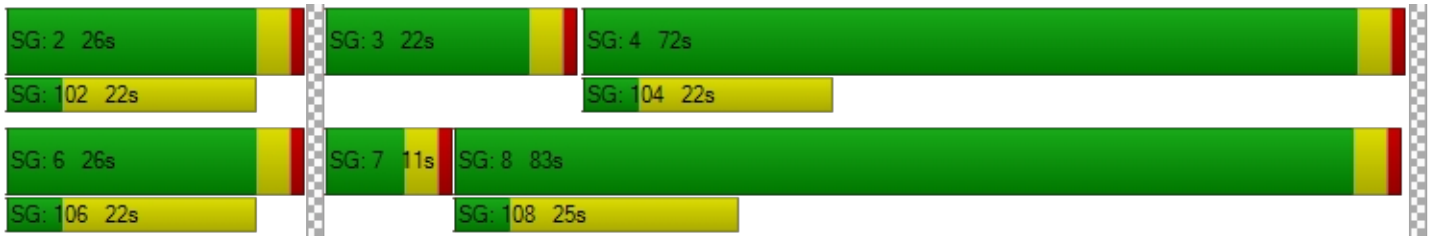
d_M, Delay for Movement [s/veh]	48.32	39.61	39.84	49.86	42.16	60.67	69.25	8.58	8.59	70.62	48.03	12.90
Movement LOS	D	D	D	D	D	E	E	A	A	E	D	B
d_A, Approach Delay [s/veh]	43.20			54.01			21.35			45.20		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	36.69											
Intersection LOS	D											
Intersection V/C	0.833											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersectio	2.403	2.637	3.194	3.208
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	367	367	1317	1133
d_b, Bicycle Delay [s]	40.02	40.02	7.00	11.27
l_b,int, Bicycle LOS Score for Intersection	1.677	2.428	2.588	3.548
Bicycle LOS	A	B	B	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Sanderson Ave/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	45.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.792

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	200.00	100.00	180.00	210.00	100.00	100.00	205.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	13	595	502	147	702	89	188	443	19	453	458	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	8	0	0	0	0	0	0	22	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	133	0	0	23	0	0	5	0	0	37
Total Hourly Volume [veh/h]	14	619	397	153	730	70	196	461	15	493	476	109
Peak Hour Factor	0.9400	0.9400	0.9400	0.9080	0.9080	0.9080	0.9280	0.9280	0.9280	0.9050	0.9050	0.9050
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	165	106	42	201	19	53	124	4	136	131	30
Total Analysis Volume [veh/h]	15	659	422	169	804	77	211	497	16	545	526	120
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	26	0	14	31	0	39	30	0	35	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	21	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	31	31	10	39	39	14	17	17	31	33	33
g / C, Green / Cycle	0.02	0.30	0.30	0.10	0.37	0.37	0.14	0.16	0.16	0.30	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.01	0.18	0.26	0.09	0.24	0.24	0.12	0.14	0.14	0.30	0.18	0.18
s, saturation flow rate [veh/h]	1810	3618	1615	1810	1900	1842	1810	1900	1879	1810	1900	1780
c, Capacity [veh/h]	33	1073	479	173	711	690	249	305	302	534	604	566
d1, Uniform Delay [s]	51.11	31.81	35.22	47.39	26.91	26.91	44.25	42.85	42.86	37.06	29.66	29.68
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.47	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	9.78	2.63	20.24	26.07	4.18	4.31	7.77	6.37	6.46	43.23	0.79	0.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.46	0.61	0.88	0.97	0.63	0.63	0.85	0.85	0.85	1.02	0.55	0.55
d, Delay for Lane Group [s/veh]	60.89	34.44	55.46	73.46	31.09	31.22	52.02	49.22	49.32	80.30	30.45	30.53
Lane Group LOS	E	C	E	E	C	C	D	D	D	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.48	7.50	12.77	5.64	9.81	9.54	5.86	6.99	6.93	19.79	7.01	6.60
50th-Percentile Queue Length [ft/ln]	11.97	187.44	319.17	140.97	245.21	238.44	146.56	174.76	173.17	494.81	175.14	164.90
95th-Percentile Queue Length [veh/ln]	0.86	11.99	18.63	9.53	14.94	14.60	9.83	11.33	11.24	27.46	11.35	10.81
95th-Percentile Queue Length [ft/ln]	21.54	299.70	465.66	238.33	373.62	365.06	245.83	283.16	281.07	686.59	283.67	270.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.89	34.44	55.46	73.46	31.15	31.22	52.02	49.27	49.32	80.30	30.48	30.53
Movement LOS	E	C	E	E	C	C	D	D	D	F	C	C
d_A, Approach Delay [s/veh]	42.90			37.96			50.07			53.28		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	45.95											
Intersection LOS	D											
Intersection V/C	0.792											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	43.92	43.92	43.92	43.92
l_p,int, Pedestrian LOS Score for Intersectio	3.073	2.751	2.583	2.839
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	419	514	495	419
d_b, Bicycle Delay [s]	32.83	29.00	29.75	32.83
l_b,int, Bicycle LOS Score for Intersection	2.574	2.445	2.161	2.573
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 12: Project Dwy-4/Whittier Ave

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	4	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	1	0
Total Analysis Volume [veh/h]	0	0	0	0	4	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.20	0.00	8.51	0.00
Movement LOS	A	A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.29	0.00
d_A, Approach Delay [s/veh]	0.00		3.60		8.51	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	8.51					
Intersection LOS	A					

Kirby Industrial

Vistro File: C:\...\Kirby Industrial.vistro
Report File: C:\...\Project Completion With Whittier PM.pdf
Scenario 6 Project Completion with Whittier PM
5/22/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Sanderson Ave/SR-74	225	723	204	187	872	101	259	652	87	264	501	135	4210

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Sanderson Ave/Acacia Ave	103	951	104	209	908	14	14	269	167	185	193	215	3332

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
3	Sanderson Ave/Whittier Ave	1118	0	15	1245	0	39	2417

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project Dwy-1/Whittier Ave	0	0	0	0	0	4	0	15	0	0	35	0	54

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Kirby St/SR-74	93	384	115	93	363	198	209	929	124	130	830	80	3548

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Kirby St/Acacia Ave	87	386	89	78	441	149	68	408	115	108	423	126	2478

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
7	Kirby St/Project Dwy-2	15	514	644	19	49	0	1241

ID	Intersection Name	Northbound	Southbound		Eastbound		Total Volume
		Thru	Thru	Right	Left	Right	
8	Kirby St/Project Dwy-3	529	644	0	0	39	1212

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
9	Kirby St/Johnston Ave	34	283	46	87	429	60	51	92	16	31	79	72	1280

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
10	Kirby St/Stetson Ave	44	45	26	113	76	275	240	842	78	23	800	117	2679

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11	Sanderson Ave/Stetson Ave	14	619	530	153	730	93	196	461	20	493	476	146	3931

ID	Intersection Name	Northbound		Southbound		Westbound	Total Volume
		Thru	Right	Left	Thru	Left	
12	Project Dwy-4/Whittier Ave	0	0	0	0	4	4

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Kirby Industrial

Vistro File: C:\...\Kirby Industrial.vistro
Report File: C:\...\Cumulative Without Whittier AM.pdf

Scenario 7 Cumulative without Whittier AM
6/23/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sanderson Ave/SR-74	Signalized	HCM 7th Edition	WB Left	0.622	40.8	D
2	Sanderson Ave/Acacia Ave	Signalized	HCM 7th Edition	EB Left	0.541	23.2	C
5	Kirby St/SR-74	Signalized	HCM 7th Edition	EB Left	0.410	17.5	B
6	Kirby St/Acacia Ave	Signalized	HCM 7th Edition	NB Left	0.407	22.6	C
7	Kirby St/Project Dwy-2	Two-way stop	HCM 7th Edition	EB Left	0.067	16.2	C
8	Kirby St/Project Dwy-3	Two-way stop	HCM 7th Edition	EB Right	0.011	9.4	A
9	Kirby St/Johnston Ave	All-way stop	HCM 7th Edition	WB Thru	0.652	18.0	C
10	Kirby St/Stetson Ave	Signalized	HCM 7th Edition	SB Right	0.927	52.6	D
11	Sanderson Ave/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.846	50.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sanderson Ave/SR-74

Control Type:	Signalized	Delay (sec / veh):	40.8
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.622

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	230.00	100.00	110.00	175.00	100.00	200.00	420.00	100.00	615.00	420.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	123	617	124	126	617	79	151	516	34	151	346	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	58	47	6	30	46	130	76	113	64	10	77	20
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	34	0	0	53	0	0	25	0	0	35
Total Hourly Volume [veh/h]	186	689	101	161	688	159	233	650	74	167	437	106
Peak Hour Factor	0.8910	0.8910	0.8910	0.9190	0.9190	0.9190	0.9210	0.9210	0.9210	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	193	28	44	187	43	63	176	20	45	118	29
Total Analysis Volume [veh/h]	209	773	113	175	749	173	253	706	80	181	472	115
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	13	25	0	16	28	0	15	32	0	11	28	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	34	0	15	32	0	19	36	0	15	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	27	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	25	25	11	24	24	15	36	36	11	32	32
g / C, Green / Cycle	0.13	0.25	0.25	0.11	0.24	0.24	0.15	0.36	0.36	0.11	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.12	0.21	0.07	0.10	0.21	0.11	0.14	0.20	0.05	0.10	0.16	0.16
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	1900	1773
c, Capacity [veh/h]	235	918	410	202	852	380	271	1319	589	199	617	576
d1, Uniform Delay [s]	42.79	35.40	29.93	43.69	36.86	32.74	42.00	25.08	21.24	44.01	27.14	27.15
k, delay calibration	0.32	0.11	0.11	0.14	0.11	0.11	0.36	0.50	0.50	0.32	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	25.76	2.19	0.36	13.08	3.15	0.85	32.06	1.56	0.48	32.31	2.79	3.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.89	0.84	0.28	0.87	0.88	0.46	0.93	0.54	0.14	0.91	0.49	0.49
d, Delay for Lane Group [s/veh]	68.54	37.59	30.29	56.77	40.02	33.59	74.06	26.64	21.72	76.32	29.93	30.16
Lane Group LOS	E	D	C	E	D	C	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.71	9.04	2.21	4.96	9.04	3.65	8.45	6.66	1.30	6.13	6.12	5.77
50th-Percentile Queue Length [ft/ln]	167.80	226.05	55.18	124.00	226.12	91.19	211.17	166.49	32.54	153.33	153.03	144.14
95th-Percentile Queue Length [veh/ln]	10.96	13.97	3.97	8.61	13.98	6.57	13.21	10.89	2.34	10.19	10.18	9.70
95th-Percentile Queue Length [ft/ln]	274.02	349.33	99.32	215.32	349.43	164.14	330.33	272.29	58.58	254.87	254.47	242.59

Movement, Approach, & Intersection Results

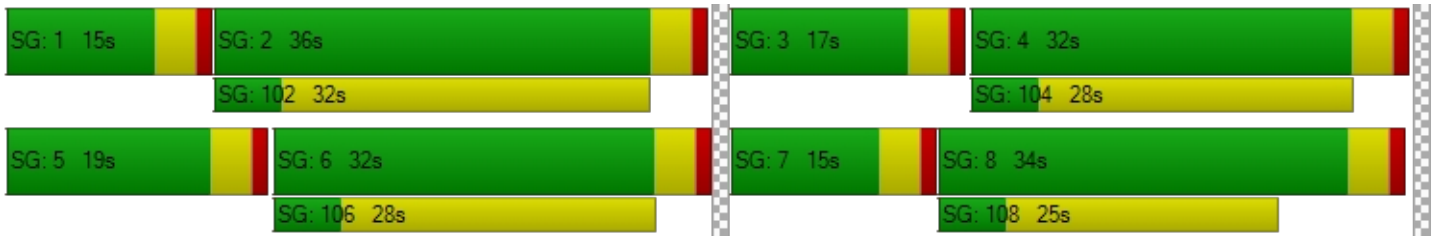
d_M, Delay for Movement [s/veh]	68.54	37.59	30.29	56.77	40.02	33.59	74.06	26.64	21.72	76.32	30.01	30.16
Movement LOS	E	D	C	E	D	C	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	42.75			41.68			37.81			40.95		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	40.82											
Intersection LOS	D											
Intersection V/C	0.622											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersectio	2.950	2.913	2.869	2.773
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	560	640	560
d_b, Bicycle Delay [s]	24.50	25.92	23.12	25.92
l_b,int, Bicycle LOS Score for Intersection	2.491	2.508	2.437	2.222
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sanderson Ave/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	23.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.541

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	135.00	100.00	100.00	195.00	100.00	100.00	65.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	75	830	94	98	635	2	9	152	159	147	98	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	82	0	0	89	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	25	0	0	1	0	0	41	0	0	35
Total Hourly Volume [veh/h]	78	945	73	102	749	1	9	158	124	153	102	104
Peak Hour Factor	0.9260	0.9260	0.9260	0.9640	0.9640	0.9640	0.9200	0.9200	0.9200	0.8610	0.8610	0.8610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	255	20	26	194	0	2	43	34	44	30	30
Total Analysis Volume [veh/h]	84	1021	79	106	777	1	10	172	135	178	118	121
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	5	17	0	7	19	0	7	22	0	13	28	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	24	0	10	23	0	9	28	0	13	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	34	34	6	35	35	1	10	10	9	18
g / C, Green / Cycle	0.06	0.46	0.46	0.08	0.47	0.47	0.01	0.13	0.13	0.12	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.29	0.29	0.06	0.21	0.00	0.01	0.09	0.08	0.10	0.14
s, saturation flow rate [veh/h]	1810	1900	1852	1810	3618	1615	1810	1900	1615	1810	1744
c, Capacity [veh/h]	109	869	847	136	1709	763	24	255	217	217	421
d1, Uniform Delay [s]	34.74	15.62	15.63	34.08	13.30	10.45	36.72	30.90	30.66	32.21	25.03
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.99	3.61	3.71	9.30	0.88	0.00	11.31	3.08	2.90	7.49	1.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.64	0.64	0.78	0.45	0.00	0.42	0.67	0.62	0.82	0.57
d, Delay for Lane Group [s/veh]	45.73	19.23	19.34	43.37	14.17	10.45	48.03	33.98	33.56	39.70	26.24
Lane Group LOS	D	B	B	D	B	B	D	C	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.80	7.49	7.34	2.20	4.21	0.01	0.25	3.04	2.38	3.46	3.66
50th-Percentile Queue Length [ft/ln]	45.07	187.23	183.41	54.89	105.30	0.22	6.26	76.08	59.38	86.44	91.52
95th-Percentile Queue Length [veh/ln]	3.24	11.98	11.78	3.95	7.58	0.02	0.45	5.48	4.28	6.22	6.59
95th-Percentile Queue Length [ft/ln]	81.12	299.43	294.47	98.81	189.45	0.39	11.27	136.95	106.89	155.59	164.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.73	19.28	19.34	43.37	14.17	10.45	48.03	33.98	33.56	39.70	26.24	26.24
Movement LOS	D	B	B	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	21.16			17.67			34.25			31.99		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	23.15											
Intersection LOS	C											
Intersection V/C	0.541											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.04	29.04	29.04	29.04
l_p,int, Pedestrian LOS Score for Intersectio	2.784	2.783	2.342	2.299
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	533	507	640	747
d_b, Bicycle Delay [s]	20.17	20.91	17.34	14.73
l_b,int, Bicycle LOS Score for Intersection	2.557	2.290	2.150	2.305
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Kirby St/SR-74

Control Type:	Signalized	Delay (sec / veh):	17.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.410

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	245.00	100.00	205.00	245.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	247	47	70	239	57	56	688	37	66	569	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	39	4	1	20	11	11	84	43	13	71	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	13	0	0	18	0	0	20	0	0	13
Total Hourly Volume [veh/h]	70	296	40	74	269	52	69	800	61	82	663	37
Peak Hour Factor	0.7150	0.7150	0.7150	0.8740	0.8740	0.8740	0.9400	0.9400	0.9400	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	103	14	21	77	15	18	213	16	21	174	10
Total Analysis Volume [veh/h]	98	414	56	85	308	59	73	851	65	86	694	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	28	0	0	28	0	8	22	0	8	22	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	10	26	0	12	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	18	18	18	18	4	35	35	4	36	36
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.26	0.26	0.05	0.50	0.50	0.06	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.10	0.13	0.13	0.09	0.10	0.10	0.04	0.24	0.04	0.05	0.19	0.02
s, saturation flow rate [veh/h]	1031	1900	1822	938	1900	1796	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	263	500	480	225	500	473	98	1822	813	111	1849	825
d1, Uniform Delay [s]	27.63	21.73	21.75	29.13	21.07	21.11	32.63	11.27	8.98	32.36	10.35	8.57
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	0.88	0.71	0.75	1.05	0.46	0.50	10.61	0.86	0.19	10.67	0.58	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.37	0.48	0.48	0.38	0.37	0.38	0.74	0.47	0.08	0.77	0.38	0.05
d, Delay for Lane Group [s/veh]	28.50	22.44	22.50	30.18	21.54	21.61	43.23	12.14	9.18	43.03	10.93	8.68
Lane Group LOS	C	C	C	C	C	C	D	B	A	D	B	A
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.51	3.17	3.07	1.36	2.40	2.31	1.47	3.98	0.50	1.72	2.99	0.29
50th-Percentile Queue Length [ft/ln]	37.71	79.24	76.72	33.93	59.91	57.73	36.71	99.38	12.52	42.94	74.68	7.22
95th-Percentile Queue Length [veh/ln]	2.72	5.71	5.52	2.44	4.31	4.16	2.64	7.16	0.90	3.09	5.38	0.52
95th-Percentile Queue Length [ft/ln]	67.88	142.63	138.10	61.08	107.84	103.92	66.07	178.89	22.53	77.29	134.42	13.00

Movement, Approach, & Intersection Results

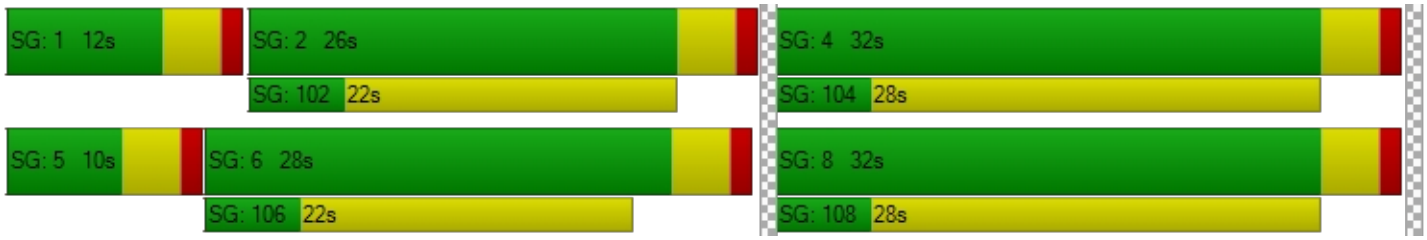
d_M, Delay for Movement [s/veh]	28.50	22.47	22.50	30.18	21.57	21.61	43.23	12.14	9.18	43.03	10.93	8.68
Movement LOS	C	C	C	C	C	C	D	B	A	D	B	A
d_A, Approach Delay [s/veh]	23.51			23.19			14.24			14.20		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	17.52											
Intersection LOS	B											
Intersection V/C	0.410											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.58	26.58	26.58	26.58
l_p,int, Pedestrian LOS Score for Intersectio	2.548	2.544	2.915	2.880
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	800	629	686
d_b, Bicycle Delay [s]	12.60	12.60	16.46	15.11
l_b,int, Bicycle LOS Score for Intersection	2.039	1.947	2.392	2.246
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Kirby St/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.407

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	66	286	80	27	238	69	39	280	46	51	315	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	57	5	0	76	0	0	0	0	16	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	22	0	0	18	0	0	12	0	0	12
Total Hourly Volume [veh/h]	69	354	66	28	324	54	41	291	36	69	328	36
Peak Hour Factor	0.8160	0.8160	0.8160	0.9000	0.9000	0.9000	0.9690	0.9690	0.9690	0.8760	0.8760	0.8760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	108	20	8	90	15	11	75	9	20	94	10
Total Analysis Volume [veh/h]	85	434	81	31	360	60	42	300	37	79	374	41
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	7	17	0	5	15	0	5	22	0	5	22	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	9	19	0	9	26	0	9	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	28	28	2	26	26	3	15	4	17
g / C, Green / Cycle	0.06	0.42	0.42	0.03	0.40	0.40	0.04	0.24	0.06	0.25
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.14	0.02	0.11	0.11	0.02	0.18	0.04	0.22
s, saturation flow rate [veh/h]	1810	1900	1798	1810	1900	1807	1810	1864	1810	1867
c, Capacity [veh/h]	112	803	760	62	751	714	76	443	107	476
d1, Uniform Delay [s]	30.00	12.58	12.59	30.83	13.40	13.43	30.54	23.05	30.09	23.21
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.15
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.92	1.09	1.17	6.06	0.95	1.02	6.13	2.72	9.56	6.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.33	0.33	0.50	0.28	0.29	0.55	0.76	0.74	0.87
d, Delay for Lane Group [s/veh]	39.93	13.67	13.76	36.90	14.35	14.45	36.66	25.77	39.65	30.06
Lane Group LOS	D	B	B	D	B	B	D	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.54	2.47	2.38	0.56	2.07	2.01	0.74	4.72	1.43	6.43
50th-Percentile Queue Length [ft/ln]	38.59	61.82	59.38	13.92	51.84	50.37	18.50	118.02	35.77	160.70
95th-Percentile Queue Length [veh/ln]	2.78	4.45	4.28	1.00	3.73	3.63	1.33	8.28	2.58	10.59
95th-Percentile Queue Length [ft/ln]	69.46	111.28	106.89	25.06	93.31	90.66	33.29	207.10	64.38	264.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.93	13.70	13.76	36.90	14.39	14.45	36.66	25.77	25.77	39.65	30.06	30.06
Movement LOS	D	B	B	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	17.42			15.95			26.98			31.59		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.60											
Intersection LOS	C											
Intersection V/C	0.407											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.12	24.12	24.12	24.12
l_p,int, Pedestrian LOS Score for Intersectio	2.569	2.537	2.294	2.299
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	523	462	677	677
d_b, Bicycle Delay [s]	17.72	19.23	14.22	14.22
l_b,int, Bicycle LOS Score for Intersection	2.073	1.947	2.205	2.395
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Kirby St/Project Dwy-2

Control Type:	Two-way stop	Delay (sec / veh):	16.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.067

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	432	335	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	30	40	19	73	22	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	489	367	73	22	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	129	97	19	6	0
Total Analysis Volume [veh/h]	32	515	386	77	23	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.00	0.07	0.00
d_M, Delay for Movement [s/veh]	8.34	0.00	0.00	0.00	16.24	10.39
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.00	0.21	0.21
95th-Percentile Queue Length [ft/ln]	2.23	0.00	0.00	0.00	5.36	5.36
d_A, Approach Delay [s/veh]	0.49		0.00		16.24	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.62					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Kirby St/Project Dwy-3

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	432	335	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	70	19	0	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	519	367	0	0	9
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	137	97	0	0	2
Total Analysis Volume [veh/h]	0	546	386	0	0	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	14.02	9.43
Movement LOS		A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.83	0.83
d_A, Approach Delay [s/veh]	0.00		0.00		9.43	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.09					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 9: Kirby St/Johnston Ave

Control Type:	All-way stop	Delay (sec / veh):	18.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	85.00	100.00	100.00	95.00	100.00	100.00	100.00	100.00	185.00	100.00	100.00	320.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	16	238	52	31	225	29	41	102	16	90	144	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	67	0	1	27	0	0	2	0	0	2	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	315	54	33	261	30	43	108	17	94	152	59
Peak Hour Factor	0.7640	0.7640	0.7640	0.8110	0.8110	0.8110	0.7900	0.7900	0.7900	0.8170	0.8170	0.8170
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	103	18	10	80	9	14	34	5	29	47	18
Total Analysis Volume [veh/h]	22	412	71	41	322	37	54	137	22	115	186	72
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	432	460	472	417	443	451	449	498	462	517
Degree of Utilization, x	0.05	0.53	0.51	0.10	0.41	0.40	0.43	0.04	0.65	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	2.99	2.86	0.32	1.93	1.88	2.08	0.14	4.58	0.48
95th-Percentile Queue Length [ft]	4.01	74.86	71.50	8.12	48.23	46.94	52.09	3.46	114.40	12.02
Approach Delay [s/veh]	18.16			15.66			15.86		21.40	
Approach LOS	C			C			C		C	
Intersection Delay [s/veh]	17.97									
Intersection LOS	C									

Intersection Level Of Service Report
Intersection 10: Kirby St/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	52.6
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.927

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	70.00	100.00	70.00	115.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	47	40	26	72	32	255	190	828	27	17	920	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	14	2	11	23	53	0	0	95	42
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	7	0	0	69	0	0	7	0	0	31
Total Hourly Volume [veh/h]	49	44	20	89	35	207	221	914	21	18	1052	91
Peak Hour Factor	0.8270	0.8270	0.8270	0.7550	0.7550	0.7550	0.9060	0.9060	0.9060	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	13	6	29	12	69	61	252	6	5	296	26
Total Analysis Volume [veh/h]	59	53	24	118	46	274	244	1009	23	20	1182	102
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	22	0	0	22	0	18	81	0	5	68	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	26	0	22	85	0	9	72	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	20	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22	22	22	22	22	18	83	83	3	68	68
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.18	0.18	0.15	0.70	0.70	0.02	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.05	0.01	0.01	0.09	0.02	0.17	0.13	0.27	0.27	0.01	0.62	0.06
s, saturation flow rate [veh/h]	1076	3618	1615	1343	1900	1615	1810	1900	1885	1810	1900	1615
c, Capacity [veh/h]	218	664	296	268	349	296	270	1320	1310	39	1078	916
d1, Uniform Delay [s]	46.23	40.59	40.60	46.99	40.99	48.17	50.19	7.68	7.68	58.08	25.97	12.00
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.35	0.11	0.11	0.11	0.50	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	3.04	0.24	0.53	5.18	0.78	36.08	26.92	0.19	0.19	9.96	57.81	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.27	0.08	0.08	0.44	0.13	0.92	0.90	0.39	0.39	0.51	1.10	0.11
d, Delay for Lane Group [s/veh]	49.27	40.83	41.14	52.18	41.78	84.26	77.11	7.87	7.87	68.04	83.78	12.05
Lane Group LOS	D	D	D	D	D	F	E	A	A	E	F	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.77	0.67	0.63	3.63	1.21	10.93	9.01	4.75	4.72	0.70	44.35	1.20
50th-Percentile Queue Length [ft/ln]	44.14	16.75	15.78	90.71	30.31	273.15	225.31	118.85	118.06	17.40	1108.63	29.89
95th-Percentile Queue Length [veh/ln]	3.18	1.21	1.14	6.53	2.18	16.35	13.94	8.33	8.29	1.25	59.64	2.15
95th-Percentile Queue Length [ft/ln]	79.45	30.15	28.41	163.28	54.56	408.67	348.40	208.25	207.16	31.32	1490.99	53.81

Movement, Approach, & Intersection Results

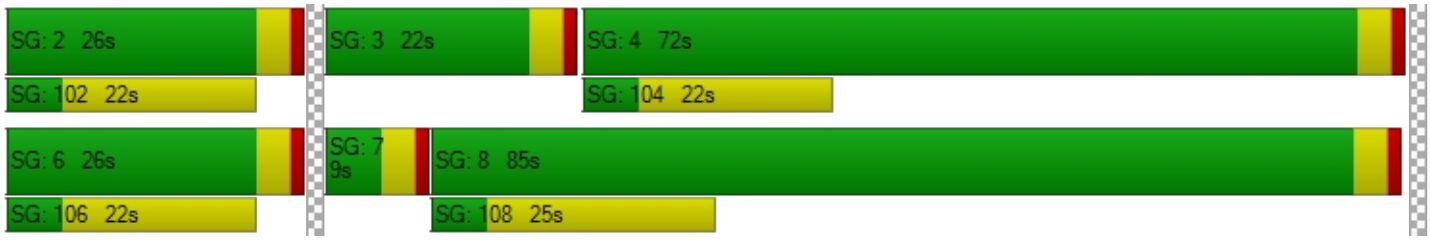
d_M, Delay for Movement [s/veh]	49.27	40.83	41.14	52.18	41.78	84.26	77.11	7.87	7.87	68.04	83.78	12.05
Movement LOS	D	D	D	D	D	F	E	A	A	E	F	B
d_A, Approach Delay [s/veh]	44.54			71.15			21.11			77.93		
Approach LOS	D			E			C			E		
d_I, Intersection Delay [s/veh]	52.56											
Intersection LOS	D											
Intersection V/C	0.927											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersectio	2.379	2.626	3.248	3.256
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	367	367	1350	1133
d_b, Bicycle Delay [s]	40.02	40.02	6.34	11.27
l_b,int, Bicycle LOS Score for Intersection	1.678	2.396	2.618	3.762
Bicycle LOS	A	B	B	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Sanderson Ave/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	50.7
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.846

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	200.00	100.00	180.00	210.00	100.00	100.00	205.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	669	581	97	711	81	65	347	18	503	630	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	79	24	5	73	3	3	47	0	8	93	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	157	0	0	22	0	0	5	0	0	33
Total Hourly Volume [veh/h]	46	775	471	106	812	65	71	408	14	531	748	100
Peak Hour Factor	0.9030	0.9030	0.9030	0.8290	0.8290	0.8290	0.9250	0.9250	0.9250	0.8870	0.8870	0.8870
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	215	130	32	245	20	19	110	4	150	211	28
Total Analysis Volume [veh/h]	51	858	522	128	979	78	77	441	15	599	843	113
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	5	24	0	9	28	0	22	26	0	35	39	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	26	0	11	27	0	12	30	0	33	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	21	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	33	33	7	37	37	6	15	15	29	38	38
g / C, Green / Cycle	0.04	0.33	0.33	0.07	0.37	0.37	0.06	0.15	0.15	0.29	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.03	0.24	0.32	0.07	0.28	0.28	0.04	0.12	0.12	0.33	0.25	0.26
s, saturation flow rate [veh/h]	1810	3618	1615	1810	1900	1851	1810	1900	1878	1810	1900	1823
c, Capacity [veh/h]	69	1205	538	127	694	676	101	278	275	525	723	694
d1, Uniform Delay [s]	47.65	29.17	32.87	46.53	28.06	28.07	46.57	41.44	41.45	35.52	25.75	25.88
k, delay calibration	0.11	0.50	0.50	0.22	0.50	0.50	0.11	0.11	0.11	0.42	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	14.42	3.59	32.06	55.39	8.09	8.33	10.97	6.02	6.15	81.32	1.08	1.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.74	0.71	0.97	1.01	0.77	0.77	0.76	0.82	0.82	1.14	0.67	0.68
d, Delay for Lane Group [s/veh]	62.07	32.75	64.93	101.92	36.15	36.40	57.54	47.46	47.61	116.83	26.84	27.11
Lane Group LOS	E	C	E	F	D	D	E	D	D	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.53	9.39	16.85	5.08	12.54	12.28	2.19	5.89	5.85	24.33	9.53	9.34
50th-Percentile Queue Length [ft/ln]	38.18	234.82	421.25	127.09	313.49	307.00	54.70	147.33	146.26	608.15	238.17	233.62
95th-Percentile Queue Length [veh/ln]	2.75	14.42	23.58	8.81	18.35	18.03	3.94	9.87	9.82	35.09	14.59	14.36
95th-Percentile Queue Length [ft/ln]	68.72	360.48	589.55	220.17	458.68	450.68	98.46	246.86	245.42	877.28	364.72	358.95

Movement, Approach, & Intersection Results

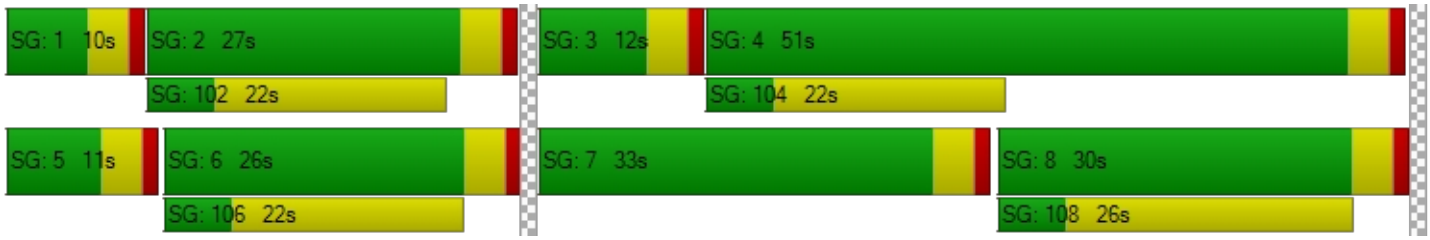
d_M, Delay for Movement [s/veh]	62.07	32.75	64.93	101.92	36.27	36.40	57.54	47.53	47.61	116.83	26.95	27.11
Movement LOS	E	C	E	F	D	D	E	D	D	F	C	C
d_A, Approach Delay [s/veh]	45.54			43.37			48.98			61.58		
Approach LOS	D			D			D			E		
d_I, Intersection Delay [s/veh]	50.68											
Intersection LOS	D											
Intersection V/C	0.846											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.42	41.42	41.42	41.42
l_p,int, Pedestrian LOS Score for Intersectio	3.201	2.784	2.612	2.906
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	440	460	520	940
d_b, Bicycle Delay [s]	30.44	29.66	27.40	14.06
l_b,int, Bicycle LOS Score for Intersection	2.870	2.555	2.003	2.870
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Kirby Industrial

Vistro File: C:\...\Kirby Industrial.vistro
Report File: C:\...\Cumulative Without Whittier AM.pdf

Scenario 7 Cumulative without Whittier AM
6/23/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Sanderson Ave/SR-74	186	689	135	161	688	212	233	650	99	167	437	141	3798

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Sanderson Ave/Acacia Ave	78	945	98	102	749	2	9	158	165	153	102	139	2700

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Kirby St/SR-74	70	296	53	74	269	70	69	800	81	82	663	50	2577

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Kirby St/Acacia Ave	69	354	88	28	324	72	41	291	48	69	328	48	1760

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
7	Kirby St/Project Dwy-2	30	489	367	73	22	0	981

ID	Intersection Name	Northbound	Southbound		Eastbound		Total Volume
		Thru	Thru	Right	Left	Right	
8	Kirby St/Project Dwy-3	519	367	0	0	9	895

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
9	Kirby St/Johnston Ave	17	315	54	33	261	30	43	108	17	94	152	59	1183

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
10	Kirby St/Stetson Ave	49	44	27	89	35	276	221	914	28	18	1052	122	2875

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11	Sanderson Ave/Stetson Ave	46	775	628	106	812	87	71	408	19	531	748	133	4364

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Kirby Industrial

Vistro File: C:\...\Kirby Industrial.vistro
Report File: C:\...\Cumulative Without Whittier PM.pdf

Scenario 8 Cumulative without Whittier PM
6/23/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sanderson Ave/SR-74	Signalized	HCM 7th Edition	EB Left	0.900	69.5	E
2	Sanderson Ave/Acacia Ave	Signalized	HCM 7th Edition	EB Left	0.684	33.7	C
5	Kirby St/SR-74	Signalized	HCM 7th Edition	WB Left	0.662	29.6	C
6	Kirby St/Acacia Ave	Signalized	HCM 7th Edition	SB Left	0.588	30.8	C
7	Kirby St/Project Dwy-2	Two-way stop	HCM 7th Edition	EB Left	0.428	33.4	D
8	Kirby St/Project Dwy-3	Two-way stop	HCM 7th Edition	EB Right	0.064	11.0	B
9	Kirby St/Johnston Ave	All-way stop	HCM 7th Edition	SB Thru	0.553	15.2	C
10	Kirby St/Stetson Ave	Signalized	HCM 7th Edition	EB Left	0.901	49.1	D
11	Sanderson Ave/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.830	52.3	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sanderson Ave/SR-74

Control Type:	Signalized	Delay (sec / veh):	69.5
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.900

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	230.00	100.00	110.00	175.00	100.00	200.00	420.00	100.00	615.00	420.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	185	689	196	180	837	97	249	625	71	254	478	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	54	41	8	21	42	102	134	205	57	6	231	29
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	53	0	0	51	0	0	33	0	0	41
Total Hourly Volume [veh/h]	246	758	159	208	912	152	393	855	98	270	728	123
Peak Hour Factor	0.8820	0.8820	0.8820	0.9170	0.9170	0.9170	0.9790	0.9790	0.9790	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	215	45	57	249	41	100	218	25	73	197	33
Total Analysis Volume [veh/h]	279	859	180	227	995	166	401	873	100	293	790	133
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	16	26	0	18	28	0	22	32	0	18	28	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	33	0	19	32	0	26	36	0	22	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	27	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	29	29	15	28	28	22	32	32	18	28	28
g / C, Green / Cycle	0.15	0.26	0.26	0.14	0.25	0.25	0.20	0.29	0.29	0.16	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.15	0.24	0.11	0.13	0.28	0.10	0.22	0.24	0.06	0.16	0.25	0.25
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	1900	1806
c, Capacity [veh/h]	263	948	423	250	921	411	362	1052	470	296	484	460
d1, Uniform Delay [s]	47.00	39.29	33.72	46.72	41.00	34.07	44.00	36.45	29.48	45.91	40.68	40.72
k, delay calibration	0.45	0.11	0.11	0.26	0.11	0.11	0.50	0.50	0.50	0.41	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	69.62	3.66	0.68	23.44	41.36	0.64	79.72	7.58	1.03	45.05	35.60	37.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	1.06	0.91	0.43	0.91	1.08	0.40	1.11	0.83	0.21	0.99	0.98	0.98
d, Delay for Lane Group [s/veh]	116.62	42.95	34.40	70.16	82.36	34.70	123.72	44.03	30.51	90.96	76.28	78.02
Lane Group LOS	F	D	C	E	F	C	F	D	C	F	E	E
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	12.24	11.55	4.06	7.72	17.58	3.75	17.67	11.78	2.11	11.55	17.15	16.57
50th-Percentile Queue Length [ft/ln]	306.10	288.63	101.47	193.03	439.41	93.84	441.63	294.58	52.82	288.82	428.79	414.19
95th-Percentile Queue Length [veh/ln]	18.48	17.12	7.31	12.28	25.58	6.76	25.92	17.41	3.80	17.13	23.94	23.24
95th-Percentile Queue Length [ft/ln]	461.95	427.94	182.65	306.95	639.42	168.91	648.04	435.32	95.08	428.17	598.59	581.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	116.62	42.95	34.40	70.16	82.36	34.70	123.72	44.03	30.51	90.96	76.98	78.02
Movement LOS	F	D	C	E	F	C	F	D	C	F	E	E
d_A, Approach Delay [s/veh]	57.38			74.66			66.30			80.46		
Approach LOS	E			E			E			F		
d_I, Intersection Delay [s/veh]	69.52											
Intersection LOS	E											
Intersection V/C	0.900											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersectio	3.069	3.003	3.022	2.959
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	527	509	582	509
d_b, Bicycle Delay [s]	29.82	30.56	27.65	30.56
l_b,int, Bicycle LOS Score for Intersection	2.691	2.747	2.720	2.597
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sanderson Ave/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	33.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.684

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	135.00	100.00	100.00	195.00	100.00	100.00	65.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	99	877	100	201	859	13	13	259	161	178	186	207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	90	0	0	91	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	26	0	0	4	0	0	42	0	0	54
Total Hourly Volume [veh/h]	103	1002	78	209	984	10	14	269	125	185	193	161
Peak Hour Factor	0.9900	0.9900	0.9900	0.9430	0.9430	0.9430	0.9230	0.9230	0.9230	0.8720	0.8720	0.8720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	253	20	55	261	3	4	73	34	53	55	46
Total Analysis Volume [veh/h]	104	1012	79	222	1043	11	15	291	135	212	221	185
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	8	17	0	15	24	0	7	22	0	15	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	22	0	16	27	0	13	31	0	16	34	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	30	30	12	36	36	2	15	15	12	26
g / C, Green / Cycle	0.07	0.35	0.35	0.14	0.42	0.42	0.02	0.18	0.18	0.14	0.30
(v / s)_i Volume / Saturation Flow Rate	0.06	0.29	0.29	0.12	0.29	0.01	0.01	0.15	0.08	0.12	0.23
s, saturation flow rate [veh/h]	1810	1900	1852	1810	3618	1615	1810	1900	1615	1810	1759
c, Capacity [veh/h]	133	666	649	256	1515	677	34	345	294	249	529
d1, Uniform Delay [s]	38.71	25.26	25.27	35.69	20.16	14.45	41.28	33.60	31.05	35.81	27.01
k, delay calibration	0.11	0.50	0.50	0.20	0.50	0.50	0.11	0.11	0.11	0.18	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.59	11.38	11.72	14.40	2.57	0.04	9.02	5.58	1.12	12.29	2.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.83	0.83	0.87	0.69	0.02	0.45	0.84	0.46	0.85	0.77
d, Delay for Lane Group [s/veh]	48.30	36.64	36.99	50.09	22.74	14.49	50.30	39.17	32.17	48.09	29.38
Lane Group LOS	D	D	D	D	C	B	D	D	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.45	11.78	11.56	5.43	8.47	0.13	0.39	6.11	2.48	4.99	7.42
50th-Percentile Queue Length [ft/ln]	61.25	294.58	289.08	135.64	211.85	3.20	9.70	152.65	61.99	124.84	185.46
95th-Percentile Queue Length [veh/ln]	4.41	17.41	17.14	9.25	13.25	0.23	0.70	10.16	4.46	8.66	11.89
95th-Percentile Queue Length [ft/ln]	110.25	435.31	428.50	231.14	331.20	5.77	17.45	253.96	111.58	216.46	297.13

Movement, Approach, & Intersection Results

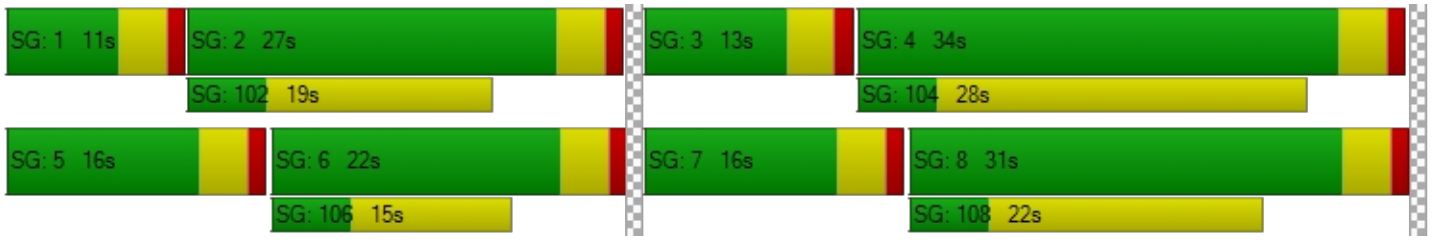
d_M, Delay for Movement [s/veh]	48.30	36.80	36.99	50.09	22.74	14.49	50.30	39.17	32.17	48.09	29.38	29.38
Movement LOS	D	D	D	D	C	B	D	D	C	D	C	C
d_A, Approach Delay [s/veh]	37.81			27.43			37.41			35.80		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	33.66											
Intersection LOS	C											
Intersection V/C	0.684											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	33.98	33.98	33.98	33.98
l_p,int, Pedestrian LOS Score for Intersectio	2.853	2.871	2.424	2.505
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	424	541	635	706
d_b, Bicycle Delay [s]	26.41	22.61	19.79	17.79
l_b,int, Bicycle LOS Score for Intersection	2.567	2.616	2.357	2.668
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Kirby St/SR-74

Control Type:	Signalized	Delay (sec / veh):	29.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	245.00	100.00	205.00	245.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	365	93	89	347	190	201	893	117	118	798	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	32	21	3	42	9	8	198	19	10	207	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	30	0	0	52	0	0	35	0	0	21
Total Hourly Volume [veh/h]	134	412	88	96	403	155	217	1127	106	133	1037	62
Peak Hour Factor	0.8340	0.8340	0.8340	0.7920	0.7920	0.7920	0.9300	0.9300	0.9300	0.8970	0.8970	0.8970
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	124	26	30	127	49	58	303	28	37	289	17
Total Analysis Volume [veh/h]	161	494	106	121	509	196	233	1212	114	148	1156	69
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	20	26	0	17	23	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	26	0	22	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	28	28	28	28	12	32	32	8	28	28
g / C, Green / Cycle	0.35	0.35	0.35	0.35	0.35	0.35	0.15	0.40	0.40	0.10	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.21	0.16	0.16	0.15	0.19	0.19	0.13	0.34	0.07	0.08	0.32	0.04
s, saturation flow rate [veh/h]	754	1900	1785	832	1900	1722	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	217	665	625	255	665	603	273	1431	639	189	1263	564
d1, Uniform Delay [s]	34.72	20.20	20.21	30.06	21.00	21.01	33.13	22.00	15.74	34.96	24.92	17.72
k, delay calibration	0.13	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	6.11	0.51	0.54	1.36	0.73	0.81	7.44	6.38	0.61	6.88	11.75	0.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.74	0.46	0.47	0.47	0.56	0.56	0.85	0.85	0.18	0.78	0.92	0.12
d, Delay for Lane Group [s/veh]	40.83	20.70	20.75	31.43	21.72	21.81	40.57	28.39	16.35	41.84	36.67	18.16
Lane Group LOS	D	C	C	C	C	C	D	C	B	D	D	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.45	4.28	4.04	2.18	5.33	4.86	4.84	10.88	1.40	3.11	11.89	0.90
50th-Percentile Queue Length [ft/ln]	86.17	106.92	100.95	54.46	133.36	121.54	121.12	271.89	35.04	77.70	297.32	22.60
95th-Percentile Queue Length [veh/ln]	6.20	7.67	7.27	3.92	9.12	8.48	8.45	16.28	2.52	5.59	17.55	1.63
95th-Percentile Queue Length [ft/ln]	155.11	191.71	181.72	98.02	228.06	211.95	211.37	407.10	63.07	139.85	438.71	40.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.83	20.72	20.75	31.43	21.75	21.81	40.57	28.39	16.35	41.84	36.67	18.16
Movement LOS	D	C	C	C	C	C	D	C	B	D	D	B
d_A, Approach Delay [s/veh]	24.98			23.18			29.33			36.30		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	29.59											
Intersection LOS	C											
Intersection V/C	0.662											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.53	31.53	31.53	31.53
l_p,int, Pedestrian LOS Score for Intersectio	2.702	2.755	3.241	3.116
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	700	550	700
d_b, Bicycle Delay [s]	16.92	16.92	21.04	16.92
l_b,int, Bicycle LOS Score for Intersection	2.212	2.284	2.875	2.710
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Kirby St/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	30.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	84	346	64	75	414	143	65	392	111	95	407	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	97	22	0	71	0	0	0	0	9	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	22	0	0	37	0	0	29	0	0	32
Total Hourly Volume [veh/h]	87	457	67	78	502	112	68	408	86	108	423	94
Peak Hour Factor	0.9170	0.9170	0.9170	0.9230	0.9230	0.9230	0.9580	0.9580	0.9580	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	125	18	21	136	30	18	106	22	30	119	26
Total Analysis Volume [veh/h]	95	498	73	85	544	121	71	426	90	121	475	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	5	15	0	6	16	0	5	22	0	6	23	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	10	20	0	10	26	0	10	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	19	19	4	19	19	4	20	6	22
g / C, Green / Cycle	0.07	0.29	0.29	0.06	0.29	0.29	0.06	0.31	0.09	0.34
(v / s)_i Volume / Saturation Flow Rate	0.05	0.15	0.15	0.05	0.18	0.18	0.04	0.28	0.07	0.32
s, saturation flow rate [veh/h]	1810	1900	1816	1810	1900	1782	1810	1843	1810	1841
c, Capacity [veh/h]	123	556	532	113	546	512	103	577	155	629
d1, Uniform Delay [s]	29.79	19.20	19.21	29.98	20.15	20.17	30.09	21.31	29.11	20.58
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.30	0.14	0.33
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.72	3.50	3.69	9.65	5.40	5.79	7.93	12.61	10.52	15.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.52	0.53	0.75	0.63	0.63	0.69	0.89	0.78	0.92
d, Delay for Lane Group [s/veh]	39.51	22.70	22.90	39.63	25.55	25.96	38.02	33.92	39.62	36.24
Lane Group LOS	D	C	C	D	C	C	D	C	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.71	3.85	3.73	1.54	4.89	4.66	1.26	8.69	2.19	10.19
50th-Percentile Queue Length [ft/ln]	42.70	96.36	93.23	38.42	122.29	116.48	31.41	217.16	54.77	254.63
95th-Percentile Queue Length [veh/ln]	3.07	6.94	6.71	2.77	8.52	8.20	2.26	13.52	3.94	15.42
95th-Percentile Queue Length [ft/ln]	76.87	173.44	167.82	69.15	212.97	204.97	56.53	338.00	98.59	385.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.51	22.78	22.90	39.63	25.70	25.96	38.02	33.92	33.92	39.62	36.24	36.24
Movement LOS	D	C	C	D	C	C	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	25.18			27.32			34.42			36.83		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	30.80											
Intersection LOS	C											
Intersection V/C	0.588											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.12	24.12	24.12	24.12
l_p,int, Pedestrian LOS Score for Intersectio	2.651	2.677	2.476	2.479
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	462	492	677	677
d_b, Bicycle Delay [s]	19.23	18.47	14.22	14.22
l_b,int, Bicycle LOS Score for Intersection	2.127	2.209	2.576	2.771
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Kirby St/Project Dwy-2

Control Type:	Two-way stop	Delay (sec / veh):	33.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.428

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	494	619	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	32	46	34	88	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	546	690	34	88	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	144	182	9	23	0
Total Analysis Volume [veh/h]	16	575	726	36	93	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.43	0.00
d_M, Delay for Movement [s/veh]	9.27	0.00	0.00	0.00	33.42	22.64
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.06	0.00	0.00	0.00	1.99	1.99
95th-Percentile Queue Length [ft/ln]	1.42	0.00	0.00	0.00	49.75	49.75
d_A, Approach Delay [s/veh]	0.25		0.00		33.42	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	2.25					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Kirby St/Project Dwy-3

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.064

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	494	619	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	47	46	0	0	39
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	561	690	0	0	39
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	148	182	0	0	10
Total Analysis Volume [veh/h]	0	591	726	0	0	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	20.66	11.01
Movement LOS		A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.20	0.20
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	5.12	5.12
d_A, Approach Delay [s/veh]	0.00		0.00		11.01	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.33					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Kirby St/Johnston Ave

Control Type:	All-way stop	Delay (sec / veh):	15.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.553

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	85.00	100.00	100.00	95.00	100.00	100.00	100.00	100.00	185.00	100.00	100.00	320.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	33	259	44	80	379	58	49	88	15	30	76	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	46	0	4	81	0	0	1	0	0	1	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	315	46	87	475	60	51	93	16	31	80	72
Peak Hour Factor	0.9130	0.9130	0.9130	0.9460	0.9460	0.9460	0.8420	0.8420	0.8420	0.8780	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	86	13	23	126	16	15	28	5	9	23	21
Total Analysis Volume [veh/h]	37	345	50	92	502	63	61	110	19	35	91	82
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	456	487	499	477	511	523	481	538	468	520
Degree of Utilization, x	0.08	0.41	0.40	0.19	0.55	0.54	0.36	0.04	0.27	0.16

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.26	1.94	1.88	0.71	3.32	3.19	1.59	0.11	1.08	0.56
95th-Percentile Queue Length [ft]	6.59	48.62	46.89	17.64	83.00	79.72	39.74	2.74	27.00	13.89
Approach Delay [s/veh]	14.52			16.94			13.79		12.31	
Approach LOS	B			C			B		B	
Intersection Delay [s/veh]	15.19									
Intersection LOS	C									

Intersection Level Of Service Report
Intersection 10: Kirby St/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	49.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.901

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	70.00	100.00	70.00	115.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	43	25	96	73	243	223	810	75	22	769	108
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	47	5	28	15	100	0	0	88	26
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	7	0	0	70	0	0	20	0	0	35
Total Hourly Volume [veh/h]	44	50	19	147	81	211	247	942	58	23	888	103
Peak Hour Factor	0.7980	0.7980	0.7980	0.8640	0.8640	0.8640	0.9290	0.9290	0.9290	0.7750	0.7750	0.7750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	16	6	43	23	61	66	253	16	7	286	33
Total Analysis Volume [veh/h]	55	63	24	170	94	244	266	1014	62	30	1146	133
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	22	0	0	22	0	19	81	0	5	67	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	26	0	23	85	0	9	71	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	20	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22	22	22	22	22	19	83	83	3	67	67
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.18	0.18	0.16	0.69	0.69	0.03	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.05	0.02	0.01	0.13	0.05	0.15	0.15	0.29	0.29	0.02	0.60	0.08
s, saturation flow rate [veh/h]	1059	3618	1615	1331	1900	1615	1810	1900	1862	1810	1900	1615
c, Capacity [veh/h]	191	663	296	263	348	296	287	1310	1283	49	1061	902
d1, Uniform Delay [s]	48.55	40.73	40.62	49.44	42.10	47.14	49.83	8.10	8.11	57.73	26.50	12.75
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.37	0.11	0.11	0.11	0.50	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	3.75	0.28	0.54	11.72	1.90	22.23	31.07	0.21	0.22	11.44	51.99	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.29	0.09	0.08	0.65	0.27	0.82	0.93	0.41	0.42	0.61	1.08	0.15
d, Delay for Lane Group [s/veh]	52.29	41.01	41.16	61.16	44.00	69.37	80.90	8.31	8.33	69.17	78.49	12.83
Lane Group LOS	D	D	D	E	D	E	F	A	A	E	F	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.71	0.80	0.63	5.76	2.57	8.76	10.11	5.22	5.14	1.04	42.12	1.64
50th-Percentile Queue Length [ft/ln]	42.81	19.98	15.79	143.90	64.20	218.97	252.75	130.54	128.48	25.94	1052.98	40.89
95th-Percentile Queue Length [veh/ln]	3.08	1.44	1.14	9.69	4.62	13.61	15.32	8.97	8.86	1.87	56.25	2.94
95th-Percentile Queue Length [ft/ln]	77.06	35.96	28.42	242.27	115.57	340.32	383.11	224.23	221.43	46.70	1406.13	73.61

Movement, Approach, & Intersection Results

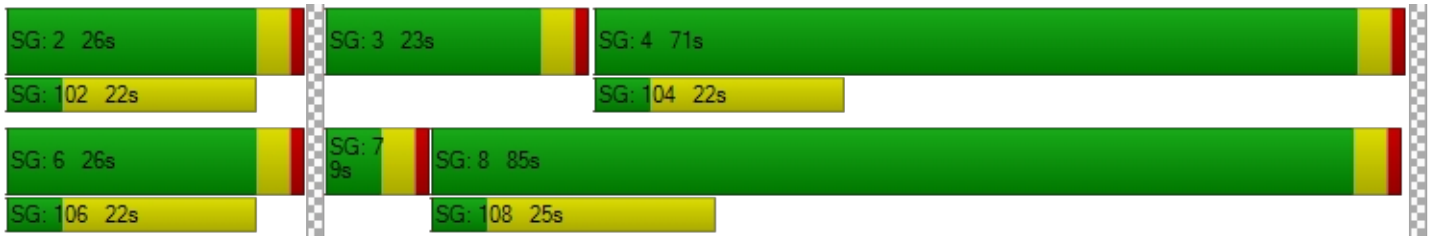
d_M, Delay for Movement [s/veh]	52.29	41.01	41.16	61.16	44.00	69.37	80.90	8.32	8.33	69.17	78.49	12.83
Movement LOS	D	D	D	E	D	E	F	A	A	E	F	B
d_A, Approach Delay [s/veh]	45.40			61.93			22.71			71.61		
Approach LOS	D			E			C			E		
d_I, Intersection Delay [s/veh]	49.11											
Intersection LOS	D											
Intersection V/C	0.901											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersectio	2.406	2.659	3.263	3.355
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	367	367	1350	1117
d_b, Bicycle Delay [s]	40.02	40.02	6.34	11.70
l_b,int, Bicycle LOS Score for Intersection	1.683	2.513	2.683	3.777
Bicycle LOS	A	B	B	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Sanderson Ave/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	52.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.830

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	200.00	100.00	180.00	210.00	100.00	100.00	205.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	13	595	502	147	702	89	188	443	19	453	458	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	76	13	4	87	2	3	98	0	31	83	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	134	0	0	24	0	0	5	0	0	37
Total Hourly Volume [veh/h]	14	695	401	157	817	71	199	559	15	502	559	112
Peak Hour Factor	0.9400	0.9400	0.9400	0.9080	0.9080	0.9080	0.9280	0.9280	0.9280	0.9050	0.9050	0.9050
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	185	107	43	225	20	54	151	4	139	154	31
Total Analysis Volume [veh/h]	15	739	427	173	900	78	214	602	16	555	618	124
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	5	22	0	10	27	0	35	26	0	31	22	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	26	0	15	27	0	38	30	0	34	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	21	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	28	28	11	38	38	15	20	20	30	35	35
g / C, Green / Cycle	0.02	0.27	0.27	0.10	0.36	0.36	0.14	0.19	0.19	0.29	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.01	0.20	0.26	0.10	0.26	0.26	0.12	0.16	0.16	0.31	0.20	0.20
s, saturation flow rate [veh/h]	1810	3618	1615	1810	1900	1847	1810	1900	1883	1810	1900	1791
c, Capacity [veh/h]	31	976	436	189	678	659	253	356	353	517	634	597
d1, Uniform Delay [s]	51.12	35.19	38.07	46.54	29.37	29.38	44.05	41.43	41.43	37.49	29.17	29.21
k, delay calibration	0.11	0.50	0.50	0.32	0.50	0.50	0.11	0.20	0.20	0.48	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	10.83	5.49	38.52	34.38	6.82	7.03	7.59	11.26	11.36	59.84	0.92	0.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.48	0.76	0.98	0.91	0.73	0.73	0.85	0.87	0.87	1.07	0.60	0.60
d, Delay for Lane Group [s/veh]	61.94	40.68	76.58	80.92	36.19	36.41	51.64	52.69	52.80	97.33	30.09	30.21
Lane Group LOS	E	D	E	F	D	D	D	D	D	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.48	9.29	15.35	6.25	11.92	11.64	5.93	8.84	8.77	21.60	8.04	7.65
50th-Percentile Queue Length [ft/ln]	12.11	232.33	383.69	156.28	297.99	290.99	148.19	220.94	219.23	539.93	200.94	191.24
95th-Percentile Queue Length [veh/ln]	0.87	14.29	21.77	10.35	17.58	17.23	9.92	13.71	13.63	30.53	12.69	12.19
95th-Percentile Queue Length [ft/ln]	21.80	357.32	544.31	258.79	439.54	430.87	248.02	342.82	340.64	763.22	317.18	304.64

Movement, Approach, & Intersection Results

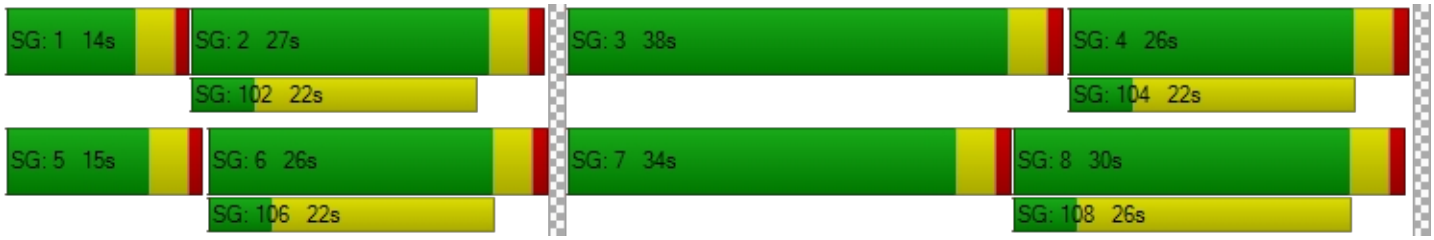
d_M, Delay for Movement [s/veh]	61.94	40.68	76.58	80.92	36.29	36.41	51.64	52.74	52.80	97.33	30.13	30.21
Movement LOS	E	D	E	F	D	D	D	D	D	F	C	C
d_A, Approach Delay [s/veh]	53.93			43.01			52.46			58.89		
Approach LOS	D			D			D			E		
d_I, Intersection Delay [s/veh]	52.28											
Intersection LOS	D											
Intersection V/C	0.830											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	43.89	43.89	43.89	43.89
l_p,int, Pedestrian LOS Score for Intersectio	3.106	2.789	2.622	2.882
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	419	438	495	419
d_b, Bicycle Delay [s]	32.80	32.02	29.72	32.80
l_b,int, Bicycle LOS Score for Intersection	2.644	2.529	2.250	2.660
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Kirby Industrial

Vistro File: C:\...\Kirby Industrial.vistro
Report File: C:\...\Cumulative Without Whittier PM.pdf

Scenario 8 Cumulative without Whittier PM
6/23/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Sanderson Ave/SR-74	246	758	212	208	912	203	393	855	131	270	728	164	5080

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Sanderson Ave/Acacia Ave	103	1002	104	209	984	14	14	269	167	185	193	215	3459

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Kirby St/SR-74	134	412	118	96	403	207	217	1127	141	133	1037	83	4108

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Kirby St/Acacia Ave	87	457	89	78	502	149	68	408	115	108	423	126	2610

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
7	Kirby St/Project Dwy-2	15	546	690	34	88	0	1373

ID	Intersection Name	Northbound	Southbound		Eastbound		Total Volume
		Thru	Thru	Right	Left	Right	
8	Kirby St/Project Dwy-3	561	690	0	0	39	1290

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
9	Kirby St/Johnston Ave	34	315	46	87	475	60	51	93	16	31	80	72	1360

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
10	Kirby St/Stetson Ave	44	50	26	147	81	281	247	942	78	23	888	138	2945

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11	Sanderson Ave/Stetson Ave	14	695	535	157	817	95	199	559	20	502	559	149	4301

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Kirby Industrial

Vistro File: C:\...\Kirby Industrial.vistro
Report File: C:\...\Cumulative With Whittier AM.pdf

Scenario 9 Cumulative with Whittier AM
5/22/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sanderson Ave/SR-74	Signalized	HCM 7th Edition	WB Left	0.626	38.1	D
2	Sanderson Ave/Acacia Ave	Signalized	HCM 7th Edition	EB Left	0.544	23.2	C
3	Sanderson Ave/Whittier Ave	Two-way stop	HCM 7th Edition	WB Right	0.026	13.1	B
4	Project Dwy-1/Whittier Ave	All-way stop	HCM 7th Edition	EB Thru	0.042	7.0	A
5	Kirby St/SR-74	Signalized	HCM 7th Edition	EB Left	0.410	17.6	B
6	Kirby St/Acacia Ave	Signalized	HCM 7th Edition	NB Left	0.399	22.3	C
7	Kirby St/Project Dwy-2	Two-way stop	HCM 7th Edition	EB Left	0.034	15.5	C
8	Kirby St/Project Dwy-3	Two-way stop	HCM 7th Edition	EB Right	0.011	9.4	A
9	Kirby St/Johnston Ave	All-way stop	HCM 7th Edition	WB Thru	0.652	18.0	C
10	Kirby St/Stetson Ave	Signalized	HCM 7th Edition	EB Left	0.927	50.3	D
11	Sanderson Ave/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.846	50.5	D
12	Project Dwy-4/Whittier Ave	Two-way stop	HCM 7th Edition	WB Left	0.001	8.5	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sanderson Ave/SR-74

Control Type:	Signalized	Delay (sec / veh):	38.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.626

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	230.00	100.00	110.00	175.00	100.00	200.00	420.00	100.00	615.00	420.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	123	617	124	126	617	79	151	516	34	151	346	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	67	49	6	24	52	130	76	82	95	10	68	18
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	34	0	0	53	0	0	33	0	0	35
Total Hourly Volume [veh/h]	195	691	101	155	694	159	233	619	97	167	428	104
Peak Hour Factor	0.8910	0.8910	0.8910	0.9190	0.9190	0.9190	0.9210	0.9210	0.9210	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	194	28	42	189	43	63	168	26	45	116	28
Total Analysis Volume [veh/h]	219	776	113	169	755	173	253	672	105	181	463	112
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	34	0	15	32	0	19	36	0	15	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	27	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	26	26	11	24	24	15	36	36	11	32	32
g / C, Green / Cycle	0.13	0.26	0.26	0.11	0.24	0.24	0.15	0.36	0.36	0.11	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.12	0.21	0.07	0.09	0.21	0.11	0.14	0.19	0.07	0.10	0.16	0.16
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	1900	1774
c, Capacity [veh/h]	237	926	413	201	855	381	273	1310	585	201	613	572
d1, Uniform Delay [s]	43.08	35.33	29.84	43.69	36.97	32.76	42.04	25.06	21.82	44.01	27.27	27.29
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	14.14	2.11	0.35	9.02	3.25	0.84	13.03	1.44	0.67	13.38	2.73	2.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.92	0.84	0.27	0.84	0.88	0.45	0.93	0.51	0.18	0.90	0.48	0.49
d, Delay for Lane Group [s/veh]	57.22	37.44	30.20	52.72	40.22	33.60	55.07	26.50	22.49	57.40	30.00	30.23
Lane Group LOS	E	D	C	D	D	C	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.24	9.06	2.20	4.58	9.14	3.65	7.02	6.29	1.75	5.10	6.00	5.65
50th-Percentile Queue Length [ft/ln]	155.96	226.60	55.08	114.46	228.54	91.14	175.59	157.35	43.77	127.45	149.94	141.34
95th-Percentile Queue Length [veh/ln]	10.33	14.00	3.97	8.09	14.10	6.56	11.37	10.41	3.15	8.80	10.01	9.55
95th-Percentile Queue Length [ft/ln]	258.37	350.03	99.15	202.19	352.50	164.04	284.25	260.21	78.79	220.02	250.36	238.82

Movement, Approach, & Intersection Results

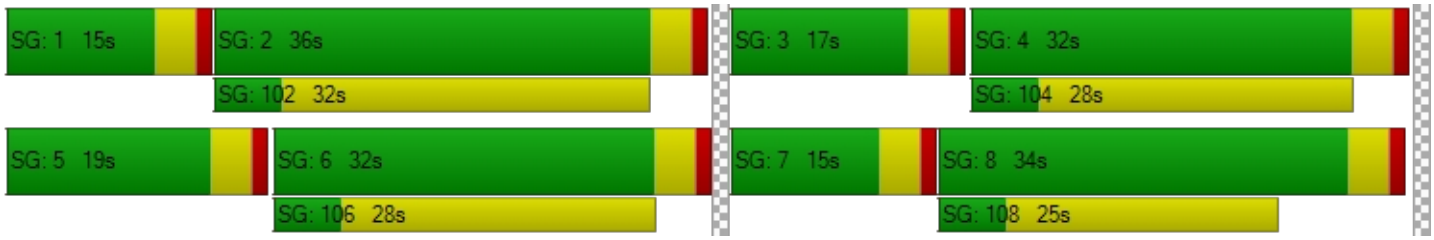
d_M, Delay for Movement [s/veh]	57.22	37.44	30.20	52.72	40.22	33.60	55.07	26.50	22.49	57.40	30.08	30.23
Movement LOS	E	D	C	D	D	C	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	40.61			41.10			33.11			36.64		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	38.06											
Intersection LOS	D											
Intersection V/C	0.626											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.47	41.47	41.47	41.47
l_p,int, Pedestrian LOS Score for Intersectio	2.958	2.913	2.880	2.761
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	599	559	639	559
d_b, Bicycle Delay [s]	24.56	25.98	23.18	25.98
l_b,int, Bicycle LOS Score for Intersection	2.502	2.508	2.437	2.212
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sanderson Ave/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	23.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.544

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	135.00	100.00	100.00	195.00	100.00	100.00	65.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	75	830	94	98	635	2	9	152	159	147	98	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	93	0	0	126	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	25	0	0	1	0	0	41	0	0	35
Total Hourly Volume [veh/h]	78	956	73	102	786	1	9	158	124	153	102	104
Peak Hour Factor	0.9260	0.9260	0.9260	0.9640	0.9640	0.9640	0.9200	0.9200	0.9200	0.8610	0.8610	0.8610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	258	20	26	204	0	2	43	34	44	30	30
Total Analysis Volume [veh/h]	84	1032	79	106	815	1	10	172	135	178	118	121
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	24	0	10	23	0	9	28	0	13	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	34	34	6	35	35	1	10	10	9	18
g / C, Green / Cycle	0.06	0.46	0.46	0.08	0.47	0.47	0.01	0.13	0.13	0.12	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.30	0.30	0.06	0.23	0.00	0.01	0.09	0.08	0.10	0.14
s, saturation flow rate [veh/h]	1810	1900	1853	1810	3618	1615	1810	1900	1615	1810	1744
c, Capacity [veh/h]	112	867	845	139	1704	761	26	254	216	218	419
d1, Uniform Delay [s]	34.71	15.79	15.80	34.05	13.59	10.53	36.76	31.05	30.82	32.26	25.18
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.50	3.74	3.85	8.33	0.96	0.00	9.24	3.16	2.97	7.21	1.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.65	0.65	0.76	0.48	0.00	0.39	0.68	0.63	0.81	0.57
d, Delay for Lane Group [s/veh]	44.21	19.54	19.65	42.38	14.55	10.53	46.00	34.21	33.79	39.47	26.41
Lane Group LOS	D	B	B	D	B	B	D	C	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.77	7.64	7.48	2.17	4.50	0.01	0.24	3.05	2.38	3.45	3.67
50th-Percentile Queue Length [ft/ln]	44.20	190.91	187.11	54.19	112.58	0.22	6.05	76.36	59.59	86.19	91.80
95th-Percentile Queue Length [veh/ln]	3.18	12.17	11.97	3.90	7.98	0.02	0.44	5.50	4.29	6.21	6.61
95th-Percentile Queue Length [ft/ln]	79.56	304.21	299.28	97.55	199.59	0.40	10.89	137.45	107.26	155.13	165.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.21	19.59	19.65	42.38	14.55	10.53	46.00	34.21	33.79	39.47	26.41	26.41
Movement LOS	D	B	B	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	21.32			17.74			34.40			31.99		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	23.18											
Intersection LOS	C											
Intersection V/C	0.544											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.10	29.10	29.10	29.10
l_p,int, Pedestrian LOS Score for Intersectio	2.794	2.791	2.342	2.299
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	532	506	639	745
d_b, Bicycle Delay [s]	20.22	20.96	17.39	14.78
l_b,int, Bicycle LOS Score for Intersection	2.566	2.321	2.150	2.305
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Sanderson Ave/Whittier Ave

Control Type:	Two-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	999	0	0	941	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	82	0	37	89	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1121	0	37	1068	0	11
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	295	0	10	281	0	3
Total Analysis Volume [veh/h]	1180	0	39	1124	0	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.07	0.01	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	11.43	0.00	59.83	13.11
Movement LOS	A	A	B	A	F	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.21	0.00	0.08	0.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	5.21	0.00	2.02	2.02
d_A, Approach Delay [s/veh]	0.00		0.38		13.11	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.26					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Project Dwy-1/Whittier Ave

Control Type:	All-way stop	Delay (sec / veh):	7.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.042

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	1	0	37	0	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	1	0	37	0	0	10	0
Peak Hour Factor	0.9500	1.0000	0.9500	1.0000	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	10	0	0	3	0
Total Analysis Volume [veh/h]	0	0	0	0	0	1	0	39	0	0	11	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	899	1058	920	915
Degree of Utilization, x	0.00	0.00	0.04	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.00	0.00	0.13	0.04
95th-Percentile Queue Length [ft]	0.00	0.07	3.31	0.91
Approach Delay [s/veh]	0.00	6.41	7.08	6.98
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.05			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Kirby St/SR-74

Control Type:	Signalized	Delay (sec / veh):	17.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.410

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	245.00	100.00	205.00	245.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	54	247	47	70	239	57	56	688	37	66	569	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	39	4	1	20	11	11	84	6	13	71	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	13	0	0	18	0	0	11	0	0	13
Total Hourly Volume [veh/h]	59	296	40	74	269	52	69	800	33	82	663	37
Peak Hour Factor	0.7150	0.7150	0.7150	0.8740	0.8740	0.8740	0.9400	0.9400	0.9400	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	103	14	21	77	15	18	213	9	21	174	10
Total Analysis Volume [veh/h]	83	414	56	85	308	59	73	851	35	86	694	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	9	26	0	12	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	19	19	19	19	4	35	35	4	35	35
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.27	0.27	0.06	0.50	0.50	0.06	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.08	0.13	0.13	0.09	0.10	0.10	0.04	0.24	0.02	0.05	0.19	0.02
s, saturation flow rate [veh/h]	1031	1900	1822	938	1900	1796	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	261	510	489	223	510	482	101	1798	803	114	1825	815
d1, Uniform Delay [s]	27.30	21.46	21.48	29.29	20.81	20.84	32.57	11.60	9.07	32.30	10.65	8.82
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	0.69	0.67	0.71	1.07	0.44	0.48	9.34	0.90	0.10	9.47	0.60	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.32	0.47	0.47	0.38	0.37	0.37	0.72	0.47	0.04	0.75	0.38	0.05
d, Delay for Lane Group [s/veh]	27.99	22.13	22.19	30.36	21.25	21.32	41.92	12.49	9.17	41.77	11.26	8.93
Lane Group LOS	C	C	C	C	C	C	D	B	A	D	B	A
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.26	3.14	3.04	1.36	2.37	2.29	1.44	4.06	0.27	1.69	3.05	0.29
50th-Percentile Queue Length [ft/ln]	31.39	78.38	75.94	34.02	59.30	57.14	36.04	101.51	6.74	42.20	76.29	7.37
95th-Percentile Queue Length [veh/ln]	2.26	5.64	5.47	2.45	4.27	4.11	2.60	7.31	0.49	3.04	5.49	0.53
95th-Percentile Queue Length [ft/ln]	56.51	141.09	136.69	61.24	106.73	102.86	64.88	182.72	12.13	75.96	137.32	13.27

Movement, Approach, & Intersection Results

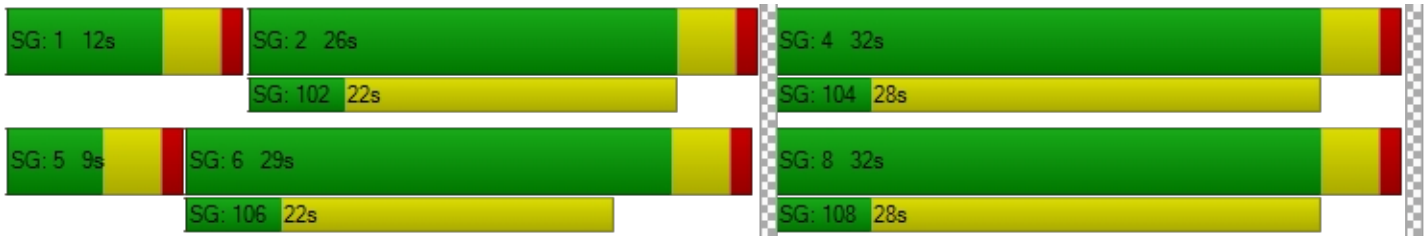
d_M, Delay for Movement [s/veh]	27.99	22.15	22.19	30.36	21.28	21.32	41.92	12.49	9.17	41.77	11.26	8.93
Movement LOS	C	C	C	C	C	C	D	B	A	D	B	A
d_A, Approach Delay [s/veh]	23.03			22.99			14.61			14.35		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	17.57											
Intersection LOS	B											
Intersection V/C	0.410											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.61	26.61	26.61	26.61
l_p,int, Pedestrian LOS Score for Intersectio	2.536	2.544	2.872	2.880
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	799	799	628	714
d_b, Bicycle Delay [s]	12.63	12.63	16.49	14.49
l_b,int, Bicycle LOS Score for Intersection	2.027	1.947	2.360	2.246
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Kirby St/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.399

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	66	286	80	27	238	69	39	280	46	51	315	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	46	5	0	39	0	0	0	0	16	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	22	0	0	18	0	0	12	0	0	12
Total Hourly Volume [veh/h]	69	343	66	28	287	54	41	291	36	69	328	36
Peak Hour Factor	0.8160	0.8160	0.8160	0.9000	0.9000	0.9000	0.9690	0.9690	0.9690	0.8760	0.8760	0.8760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	105	20	8	80	15	11	75	9	20	94	10
Total Analysis Volume [veh/h]	85	420	81	31	319	60	42	300	37	79	374	41
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	9	19	0	9	26	0	9	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	28	28	2	26	26	3	15	4	17
g / C, Green / Cycle	0.06	0.42	0.42	0.03	0.39	0.39	0.04	0.24	0.06	0.26
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.14	0.02	0.10	0.10	0.02	0.18	0.04	0.22
s, saturation flow rate [veh/h]	1810	1900	1795	1810	1900	1798	1810	1864	1810	1867
c, Capacity [veh/h]	115	799	755	64	746	706	78	444	110	478
d1, Uniform Delay [s]	30.05	12.67	12.68	30.91	13.41	13.44	30.59	23.11	30.12	23.23
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.05	1.06	1.14	5.65	0.84	0.91	5.66	2.68	8.55	4.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.32	0.32	0.49	0.26	0.26	0.54	0.76	0.72	0.87
d, Delay for Lane Group [s/veh]	39.10	13.73	13.82	36.56	14.25	14.35	36.25	25.78	38.67	28.18
Lane Group LOS	D	B	B	D	B	B	D	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.52	2.41	2.31	0.55	1.86	1.80	0.73	4.72	1.41	6.19
50th-Percentile Queue Length [ft/ln]	38.10	60.25	57.85	13.83	46.46	45.11	18.35	118.11	35.23	154.67
95th-Percentile Queue Length [veh/ln]	2.74	4.34	4.17	1.00	3.34	3.25	1.32	8.29	2.54	10.27
95th-Percentile Queue Length [ft/ln]	68.59	108.45	104.13	24.89	83.62	81.20	33.04	207.22	63.41	256.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.10	13.76	13.82	36.56	14.29	14.35	36.25	25.78	25.78	38.67	28.18	28.18
Movement LOS	D	B	B	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	17.45			15.98			26.94			29.86		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.33											
Intersection LOS	C											
Intersection V/C	0.399											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.19	24.19	24.19	24.19
l_p,int, Pedestrian LOS Score for Intersectio	2.556	2.525	2.294	2.299
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	522	461	675	675
d_b, Bicycle Delay [s]	17.79	19.30	14.28	14.28
l_b,int, Bicycle LOS Score for Intersection	2.061	1.913	2.205	2.395
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Kirby St/Project Dwy-2

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.034

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	432	335	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	30	40	19	36	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	489	367	36	11	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	129	97	9	3	0
Total Analysis Volume [veh/h]	32	515	386	38	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	8.23	0.00	0.00	0.00	15.54	9.86
Movement LOS	A	A	A	A	C	A
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.00	0.11	0.11
95th-Percentile Queue Length [ft/ln]	2.15	0.00	0.00	0.00	2.63	2.63
d_A, Approach Delay [s/veh]	0.48		0.00		15.54	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Kirby St/Project Dwy-3

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	432	335	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	70	19	0	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	519	367	0	0	9
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	137	97	0	0	2
Total Analysis Volume [veh/h]	0	546	386	0	0	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	14.02	9.43
Movement LOS		A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.83	0.83
d_A, Approach Delay [s/veh]	0.00		0.00		9.43	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.09					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 9: Kirby St/Johnston Ave

Control Type:	All-way stop	Delay (sec / veh):	18.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	85.00	100.00	100.00	95.00	100.00	100.00	100.00	100.00	185.00	100.00	100.00	320.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	16	238	52	31	225	29	41	102	16	90	144	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	67	0	1	27	0	0	2	0	0	2	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	315	54	33	261	30	43	108	17	94	152	59
Peak Hour Factor	0.7640	0.7640	0.7640	0.8110	0.8110	0.8110	0.7900	0.7900	0.7900	0.8170	0.8170	0.8170
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	103	18	10	80	9	14	34	5	29	47	18
Total Analysis Volume [veh/h]	22	412	71	41	322	37	54	137	22	115	186	72
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	432	460	472	417	443	451	449	498	462	517
Degree of Utilization, x	0.05	0.53	0.51	0.10	0.41	0.40	0.43	0.04	0.65	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	2.99	2.86	0.32	1.93	1.88	2.08	0.14	4.58	0.48
95th-Percentile Queue Length [ft]	4.01	74.86	71.50	8.12	48.23	46.94	52.09	3.46	114.40	12.02
Approach Delay [s/veh]	18.16			15.66			15.86		21.40	
Approach LOS	C			C			C		C	
Intersection Delay [s/veh]	17.97									
Intersection LOS	C									

Intersection Level Of Service Report
Intersection 10: Kirby St/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	50.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.927

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	70.00	100.00	70.00	115.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	47	40	26	72	32	255	190	828	27	17	920	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	14	2	11	23	53	0	0	95	42
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	7	0	0	69	0	0	7	0	0	31
Total Hourly Volume [veh/h]	49	44	20	89	35	207	221	914	21	18	1052	91
Peak Hour Factor	0.8270	0.8270	0.8270	0.7550	0.7550	0.7550	0.9060	0.9060	0.9060	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	13	6	29	12	69	61	252	6	5	296	26
Total Analysis Volume [veh/h]	59	53	24	118	46	274	244	1009	23	20	1182	102
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	27	0	0	27	0	20	84	0	9	73	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	20	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23	23	23	23	23	16	82	82	2	69	69
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.13	0.69	0.69	0.02	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.05	0.01	0.01	0.09	0.02	0.17	0.13	0.27	0.27	0.01	0.62	0.06
s, saturation flow rate [veh/h]	1076	3618	1615	1343	1900	1615	1810	1900	1885	1810	1900	1615
c, Capacity [veh/h]	233	699	312	286	367	312	241	1304	1294	37	1089	926
d1, Uniform Delay [s]	44.72	39.63	39.64	45.47	40.02	47.03	52.00	8.11	8.11	58.23	25.59	11.65
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	2.60	0.21	0.48	4.33	0.70	27.61	30.28	0.20	0.20	11.98	53.33	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.25	0.08	0.08	0.41	0.13	0.88	1.01	0.40	0.40	0.54	1.08	0.11
d, Delay for Lane Group [s/veh]	47.33	39.84	40.12	49.80	40.72	74.64	82.28	8.30	8.31	70.21	78.93	11.71
Lane Group LOS	D	D	D	D	D	E	F	A	A	E	F	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.72	0.66	0.62	3.53	1.19	10.25	9.08	4.95	4.92	0.71	43.28	1.17
50th-Percentile Queue Length [ft/ln]	43.06	16.52	15.54	88.27	29.84	256.24	226.99	123.85	123.02	17.76	1082.12	29.26
95th-Percentile Queue Length [veh/ln]	3.10	1.19	1.12	6.36	2.15	15.50	14.09	8.60	8.56	1.28	57.88	2.11
95th-Percentile Queue Length [ft/ln]	77.50	29.73	27.97	158.89	53.72	387.50	352.29	215.10	213.97	31.97	1446.95	52.67

Movement, Approach, & Intersection Results

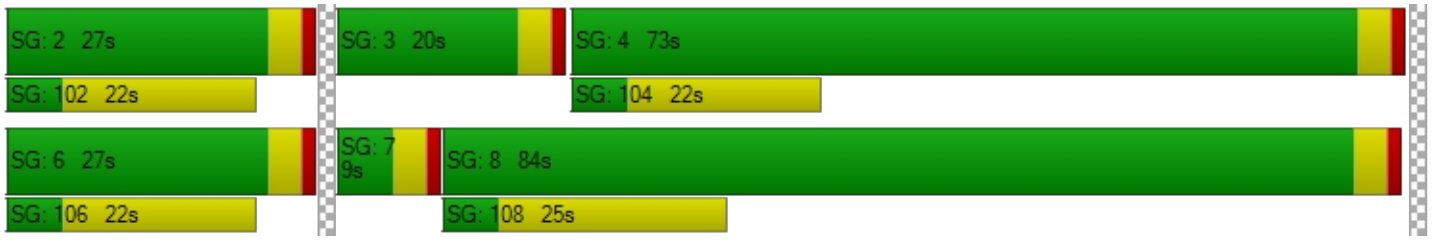
d_M, Delay for Movement [s/veh]	47.33	39.84	40.12	49.80	40.72	74.64	82.28	8.31	8.31	70.21	78.93	11.71
Movement LOS	D	D	D	D	D	E	F	A	A	E	F	B
d_A, Approach Delay [s/veh]	43.14			64.39			22.45			73.54		
Approach LOS	D			E			C			E		
d_I, Intersection Delay [s/veh]	50.29											
Intersection LOS	D											
Intersection V/C	0.927											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersectio	2.379	2.626	3.248	3.256
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	383	383	1333	1150
d_b, Bicycle Delay [s]	39.20	39.20	6.67	10.84
l_b,int, Bicycle LOS Score for Intersection	1.678	2.396	2.618	3.762
Bicycle LOS	A	B	B	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Sanderson Ave/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	50.5
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.846

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	200.00	100.00	180.00	210.00	100.00	100.00	205.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	44	669	581	97	711	81	65	347	18	503	630	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	79	24	5	73	3	3	47	0	8	93	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	157	0	0	22	0	0	5	0	0	33
Total Hourly Volume [veh/h]	46	775	471	106	812	65	71	408	14	531	748	100
Peak Hour Factor	0.9030	0.9030	0.9030	0.8290	0.8290	0.8290	0.9250	0.9250	0.9250	0.8870	0.8870	0.8870
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	215	130	32	245	20	19	110	4	150	211	28
Total Analysis Volume [veh/h]	51	858	522	128	979	78	77	441	15	599	843	113
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	29	0	12	27	0	12	30	0	39	57	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	21	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	35	35	8	39	39	6	16	16	35	45	45
g / C, Green / Cycle	0.04	0.32	0.32	0.07	0.36	0.36	0.06	0.14	0.14	0.32	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.03	0.24	0.32	0.07	0.28	0.28	0.04	0.12	0.12	0.33	0.25	0.26
s, saturation flow rate [veh/h]	1810	3618	1615	1810	1900	1851	1810	1900	1878	1810	1900	1823
c, Capacity [veh/h]	68	1156	516	133	675	658	100	274	271	575	772	741
d1, Uniform Delay [s]	52.47	33.42	37.46	50.86	31.84	31.86	51.29	45.86	45.87	37.56	26.05	26.18
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.49	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	15.16	4.33	42.57	28.28	9.26	9.53	11.49	6.67	6.83	48.48	0.84	0.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.75	0.74	1.01	0.96	0.79	0.79	0.77	0.84	0.84	1.04	0.63	0.64
d, Delay for Lane Group [s/veh]	67.64	37.75	80.04	79.14	41.10	41.39	62.79	52.53	52.71	86.04	26.89	27.10
Lane Group LOS	E	D	F	E	D	D	E	D	D	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.68	10.77	19.68	4.55	14.26	13.96	2.41	6.57	6.53	22.88	10.10	9.89
50th-Percentile Queue Length [ft/ln]	41.99	269.15	491.99	113.74	356.38	348.98	60.29	164.34	163.14	571.94	252.47	247.37
95th-Percentile Queue Length [veh/ln]	3.02	16.15	27.17	8.05	20.45	20.09	4.34	10.78	10.72	31.58	15.31	15.05
95th-Percentile Queue Length [ft/ln]	75.59	403.67	679.16	201.20	511.17	502.16	108.53	269.46	267.88	789.38	382.76	376.34

Movement, Approach, & Intersection Results

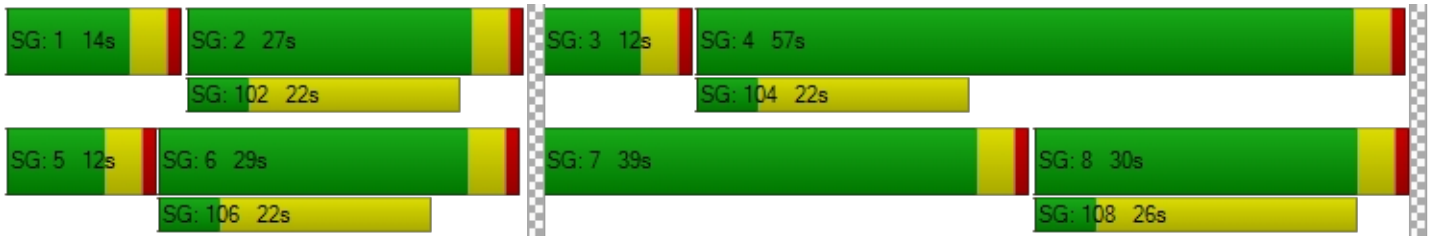
d_M, Delay for Movement [s/veh]	67.64	37.75	80.04	79.14	41.23	41.39	62.79	52.62	52.71	86.04	26.98	27.10
Movement LOS	E	D	F	E	D	D	E	D	D	F	C	C
d_A, Approach Delay [s/veh]	54.24			45.34			54.09			49.74		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	50.49											
Intersection LOS	D											
Intersection V/C	0.846											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.39	46.39	46.39	46.39
l_p,int, Pedestrian LOS Score for Intersectio	3.205	2.788	2.617	2.911
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	454	418	473	963
d_b, Bicycle Delay [s]	32.86	34.43	32.10	14.79
l_b,int, Bicycle LOS Score for Intersection	2.870	2.555	2.003	2.870
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Project Dwy-4/Whittier Ave

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	1	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	1	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.20	0.00	8.50	0.00
Movement LOS	A	A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.07	0.00
d_A, Approach Delay [s/veh]	0.00		3.60		8.50	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	8.50					
Intersection LOS	A					

Kirby Industrial

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Report File: C:\...\Cumulative With Whittier AM.pdf

Scenario 9 Cumulative with Whittier AM
5/22/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Sanderson Ave/SR-74	195	691	135	155	694	212	233	619	130	167	428	139	3798

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Sanderson Ave/Acacia Ave	78	956	98	102	786	2	9	158	165	153	102	139	2748

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
3	Sanderson Ave/Whittier Ave	1121	0	37	1068	0	11	2237

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project Dwy-1/Whittier Ave	0	0	0	0	0	1	0	37	0	0	10	0	48

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Kirby St/SR-74	59	296	53	74	269	70	69	800	44	82	663	50	2529

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Kirby St/Acacia Ave	69	343	88	28	287	72	41	291	48	69	328	48	1712

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
7	Kirby St/Project Dwy-2	30	489	367	36	11	0	933

ID	Intersection Name	Northbound	Southbound		Eastbound		Total Volume
		Thru	Thru	Right	Left	Right	
8	Kirby St/Project Dwy-3	519	367	0	0	9	895

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
9	Kirby St/Johnston Ave	17	315	54	33	261	30	43	108	17	94	152	59	1183

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
10	Kirby St/Stetson Ave	49	44	27	89	35	276	221	914	28	18	1052	122	2875

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11	Sanderson Ave/Stetson Ave	46	775	628	106	812	87	71	408	19	531	748	133	4364

ID	Intersection Name	Northbound		Southbound		Westbound	Total Volume
		Thru	Right	Left	Thru	Left	
12	Project Dwy-4/Whittier Ave	0	0	0	0	1	1

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Kirby Industrial

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Report File: C:\...\Cumulative With Whittier PM.pdf

Scenario 10 Cumulative with Whittier PM
5/22/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sanderson Ave/SR-74	Signalized	HCM 7th Edition	EB Left	0.910	68.8	E
2	Sanderson Ave/Acacia Ave	Signalized	HCM 7th Edition	EB Left	0.695	33.5	C
3	Sanderson Ave/Whittier Ave	Two-way stop	HCM 7th Edition	WB Right	0.096	14.4	B
4	Project Dwy-1/Whittier Ave	All-way stop	HCM 7th Edition	WB Thru	0.040	7.0	A
5	Kirby St/SR-74	Signalized	HCM 7th Edition	WB Left	0.643	28.2	C
6	Kirby St/Acacia Ave	Signalized	HCM 7th Edition	SB Left	0.584	28.9	C
7	Kirby St/Project Dwy-2	Two-way stop	HCM 7th Edition	EB Left	0.236	26.4	D
8	Kirby St/Project Dwy-3	Two-way stop	HCM 7th Edition	EB Right	0.064	11.0	B
9	Kirby St/Johnston Ave	All-way stop	HCM 7th Edition	SB Thru	0.553	15.2	C
10	Kirby St/Stetson Ave	Signalized	HCM 7th Edition	EB Left	0.901	46.7	D
11	Sanderson Ave/Stetson Ave	Signalized	HCM 7th Edition	WB Left	0.830	50.7	D
12	Project Dwy-4/Whittier Ave	Two-way stop	HCM 7th Edition	WB Left	0.004	8.5	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sanderson Ave/SR-74

Control Type:	Signalized	Delay (sec / veh):	68.8
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.910

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	230.00	100.00	110.00	175.00	100.00	200.00	420.00	100.00	615.00	420.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	185	689	196	180	837	97	249	625	71	254	478	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	87	47	8	19	44	102	134	192	70	6	198	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	53	0	0	51	0	0	36	0	0	40
Total Hourly Volume [veh/h]	279	764	159	206	914	152	393	842	108	270	695	118
Peak Hour Factor	0.8820	0.8820	0.8820	0.9170	0.9170	0.9170	0.9790	0.9790	0.9790	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	217	45	56	249	41	100	215	28	73	188	32
Total Analysis Volume [veh/h]	316	866	180	225	997	166	401	860	110	293	754	128
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	34	0	19	32	0	25	36	0	21	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	27	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	30	30	15	28	28	21	32	32	17	28	28
g / C, Green / Cycle	0.15	0.27	0.27	0.14	0.25	0.25	0.19	0.29	0.29	0.15	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.17	0.24	0.11	0.12	0.28	0.10	0.22	0.24	0.07	0.16	0.24	0.24
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	1900	1805
c, Capacity [veh/h]	280	982	438	247	916	409	346	1057	472	280	486	462
d1, Uniform Delay [s]	46.51	38.39	32.87	46.85	41.08	34.19	44.51	36.17	29.58	46.51	39.98	40.00
k, delay calibration	0.19	0.11	0.11	0.11	0.11	0.11	0.31	0.50	0.50	0.15	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	74.60	2.81	0.62	12.34	44.41	0.65	91.00	6.88	1.16	42.82	26.61	27.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	1.13	0.88	0.41	0.91	1.09	0.41	1.16	0.81	0.23	1.05	0.93	0.93
d, Delay for Lane Group [s/veh]	121.10	41.21	33.48	59.19	85.49	34.84	135.51	43.05	30.74	89.33	66.59	67.89
Lane Group LOS	F	D	C	E	F	C	F	D	C	F	E	E
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	13.39	11.41	4.00	6.89	17.87	3.76	17.96	11.47	2.34	10.85	15.24	14.67
50th-Percentile Queue Length [ft/ln]	334.85	285.16	99.94	172.16	446.70	93.97	449.10	286.70	58.50	271.24	380.99	366.86
95th-Percentile Queue Length [veh/ln]	20.51	16.95	7.20	11.19	26.04	6.77	26.85	17.02	4.21	16.61	21.64	20.96
95th-Percentile Queue Length [ft/ln]	512.75	423.63	179.89	279.76	651.07	169.14	671.14	425.54	105.29	415.20	541.04	523.92

Movement, Approach, & Intersection Results

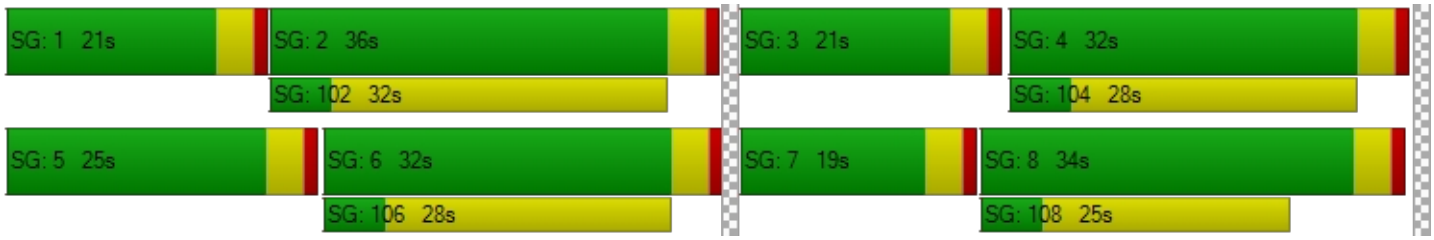
d_M, Delay for Movement [s/veh]	121.10	41.21	33.48	59.19	85.49	34.84	135.51	43.05	30.74	89.33	67.11	67.89
Movement LOS	F	D	C	E	F	C	F	D	C	F	E	E
d_A, Approach Delay [s/veh]	58.72			75.17			69.10			72.74		
Approach LOS	E			E			E			E		
d_I, Intersection Delay [s/veh]	68.83											
Intersection LOS	E											
Intersection V/C	0.910											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersectio	3.078	3.004	3.026	2.944
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	545	509	582	509
d_b, Bicycle Delay [s]	29.10	30.57	27.66	30.57
l_b,int, Bicycle LOS Score for Intersection	2.727	2.747	2.720	2.562
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sanderson Ave/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	33.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.695

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	135.00	100.00	100.00	195.00	100.00	100.00	65.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	99	877	100	201	859	13	13	259	161	178	186	207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	129	0	0	106	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	26	0	0	4	0	0	42	0	0	54
Total Hourly Volume [veh/h]	103	1041	78	209	999	10	14	269	125	185	193	161
Peak Hour Factor	0.9900	0.9900	0.9900	0.9430	0.9430	0.9430	0.9230	0.9230	0.9230	0.8720	0.8720	0.8720
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	263	20	55	265	3	4	73	34	53	55	46
Total Analysis Volume [veh/h]	104	1052	79	222	1059	11	15	291	135	212	221	185
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	28	0	16	33	0	9	26	0	15	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	23	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	31	31	12	36	36	2	15	15	11	25
g / C, Green / Cycle	0.07	0.36	0.36	0.14	0.43	0.43	0.02	0.18	0.18	0.13	0.29
(v / s)_i Volume / Saturation Flow Rate	0.06	0.30	0.30	0.12	0.29	0.01	0.01	0.15	0.08	0.12	0.23
s, saturation flow rate [veh/h]	1810	1900	1854	1810	3618	1615	1810	1900	1615	1810	1759
c, Capacity [veh/h]	135	684	667	256	1544	689	34	343	292	235	513
d1, Uniform Delay [s]	38.69	24.97	24.98	35.77	19.78	14.09	41.34	33.78	31.21	36.52	27.80
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.18
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.83	11.61	11.97	8.58	2.50	0.04	8.42	5.83	1.14	11.91	4.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.84	0.84	0.87	0.69	0.02	0.44	0.85	0.46	0.90	0.79
d, Delay for Lane Group [s/veh]	47.52	36.58	36.95	44.35	22.28	14.13	49.75	39.61	32.36	48.44	32.38
Lane Group LOS	D	D	D	D	C	B	D	D	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.43	12.21	12.01	5.02	8.50	0.13	0.38	6.15	2.49	4.97	7.85
50th-Percentile Queue Length [ft/ln]	60.71	305.33	300.16	125.42	212.46	3.15	9.61	153.66	62.23	124.29	196.25
95th-Percentile Queue Length [veh/ln]	4.37	17.94	17.69	8.69	13.28	0.23	0.69	10.21	4.48	8.63	12.45
95th-Percentile Queue Length [ft/ln]	109.29	448.61	442.22	217.26	331.98	5.67	17.30	255.30	112.01	215.70	311.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.52	36.75	36.95	44.35	22.28	14.13	49.75	39.61	32.36	48.44	32.38	32.38
Movement LOS	D	D	D	D	C	B	D	D	C	D	C	C
d_A, Approach Delay [s/veh]	37.67			26.00			37.74			37.89		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	33.51											
Intersection LOS	C											
Intersection V/C	0.695											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.03	34.03	34.03	34.03
l_p,int, Pedestrian LOS Score for Intersectio	2.864	2.880	2.424	2.505
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	564	682	517	658
d_b, Bicycle Delay [s]	21.93	18.49	23.39	19.16
l_b,int, Bicycle LOS Score for Intersection	2.600	2.629	2.357	2.668
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Sanderson Ave/Whittier Ave

Control Type:	Two-way stop	Delay (sec / veh):	14.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.096

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	1075	0	0	1197	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	90	0	15	91	0	39
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1208	0	15	1336	0	39
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	318	0	4	352	0	10
Total Analysis Volume [veh/h]	1272	0	16	1406	0	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.03	0.01	0.00	0.10
d_M, Delay for Movement [s/veh]	0.00	0.00	11.71	0.00	76.10	14.36
Movement LOS	A	A	B	A	F	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.09	0.00	0.32	0.32
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.23	0.00	7.95	7.95
d_A, Approach Delay [s/veh]	0.00		0.13		14.36	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.28					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Project Dwy-1/Whittier Ave

Control Type:	All-way stop	Delay (sec / veh):	7.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.040

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	4	0	15	0	0	35	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	4	0	15	0	0	35	0
Peak Hour Factor	0.9500	1.0000	0.9500	1.0000	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	1	0	4	0	0	9	0
Total Analysis Volume [veh/h]	0	0	0	0	0	4	0	16	0	0	37	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	897	1055	913	918
Degree of Utilization, x	0.00	0.00	0.02	0.04

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.00	0.01	0.05	0.13
95th-Percentile Queue Length [ft]	0.00	0.29	1.34	3.15
Approach Delay [s/veh]	0.00	6.42	7.01	7.09
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.02			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Kirby St/SR-74

Control Type:	Signalized	Delay (sec / veh):	28.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.643

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	245.00	100.00	205.00	245.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	365	93	89	347	190	201	893	117	118	798	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	32	21	3	42	9	8	198	4	10	207	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	30	0	0	52	0	0	32	0	0	21
Total Hourly Volume [veh/h]	95	412	88	96	403	155	217	1127	94	133	1037	62
Peak Hour Factor	0.8340	0.8340	0.8340	0.7920	0.7920	0.7920	0.9300	0.9300	0.9300	0.8970	0.8970	0.8970
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	124	26	30	127	49	58	303	25	37	289	17
Total Analysis Volume [veh/h]	114	494	106	121	509	196	233	1212	101	148	1156	69
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	17	26	0	27	36	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	28	28	28	28	13	36	36	9	32	32
g / C, Green / Cycle	0.33	0.33	0.33	0.33	0.33	0.33	0.15	0.43	0.43	0.10	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.15	0.16	0.16	0.15	0.19	0.19	0.13	0.34	0.06	0.08	0.32	0.04
s, saturation flow rate [veh/h]	754	1900	1785	832	1900	1722	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	192	625	588	229	625	567	272	1538	687	189	1374	613
d1, Uniform Delay [s]	36.87	22.88	22.90	33.99	23.78	23.80	35.28	21.15	15.00	37.16	24.07	17.11
k, delay calibration	0.11	0.11	0.11	0.11	0.12	0.12	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	2.92	0.60	0.65	1.88	1.00	1.12	7.65	4.16	0.45	6.85	6.39	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.59	0.49	0.50	0.53	0.59	0.59	0.86	0.79	0.15	0.78	0.84	0.11
d, Delay for Lane Group [s/veh]	39.79	23.48	23.55	35.87	24.79	24.92	42.92	25.31	15.45	44.00	30.46	17.48
Lane Group LOS	D	C	C	D	C	C	D	C	B	D	C	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.46	4.80	4.54	2.44	6.02	5.49	5.18	10.63	1.24	3.31	11.21	0.91
50th-Percentile Queue Length [ft/ln]	61.50	120.01	113.51	61.07	150.40	137.16	129.51	265.66	30.93	82.71	280.31	22.78
95th-Percentile Queue Length [veh/ln]	4.43	8.39	8.04	4.40	10.04	9.33	8.91	15.97	2.23	5.96	16.70	1.64
95th-Percentile Queue Length [ft/ln]	110.69	209.84	200.88	109.93	250.96	233.19	222.83	399.31	55.67	148.88	417.59	41.01

Movement, Approach, & Intersection Results

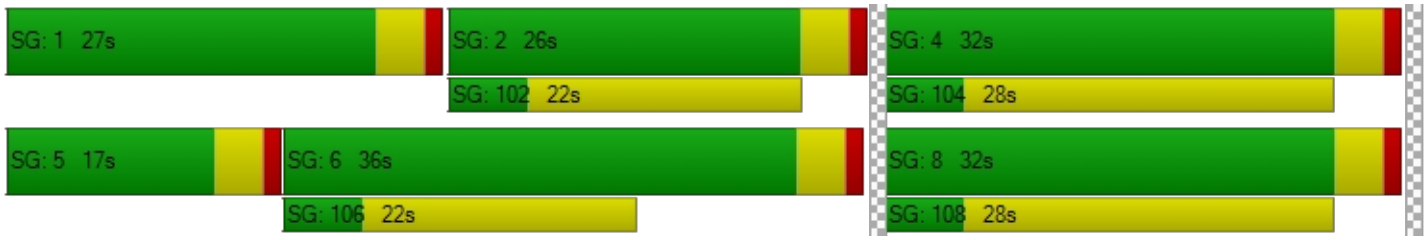
d_M, Delay for Movement [s/veh]	39.79	23.51	23.55	35.87	24.82	24.92	42.92	25.31	15.45	44.00	30.46	17.48
Movement LOS	D	C	C	D	C	C	D	C	B	D	C	B
d_A, Approach Delay [s/veh]	26.11			26.46			27.32			31.27		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.18											
Intersection LOS	C											
Intersection V/C	0.643											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.01	34.01	34.01	34.01
l_p,int, Pedestrian LOS Score for Intersectio	2.690	2.758	3.162	3.119
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	658	658	517	752
d_b, Bicycle Delay [s]	19.14	19.14	23.38	16.55
l_b,int, Bicycle LOS Score for Intersection	2.173	2.284	2.861	2.710
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Kirby St/Acacia Ave

Control Type:	Signalized	Delay (sec / veh):	28.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.584

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	84	346	64	75	414	143	65	392	111	95	407	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	58	22	0	56	0	0	0	0	9	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	22	0	0	37	0	0	29	0	0	32
Total Hourly Volume [veh/h]	87	418	67	78	487	112	68	408	86	108	423	94
Peak Hour Factor	0.9170	0.9170	0.9170	0.9230	0.9230	0.9230	0.9580	0.9580	0.9580	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	114	18	21	132	30	18	106	22	30	119	26
Total Analysis Volume [veh/h]	95	456	73	85	528	121	71	426	90	121	475	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	10	20	0	9	26	0	10	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	17	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	19	19	4	19	19	4	20	6	22
g / C, Green / Cycle	0.07	0.29	0.29	0.06	0.29	0.29	0.06	0.31	0.09	0.34
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.14	0.05	0.18	0.18	0.04	0.28	0.07	0.32
s, saturation flow rate [veh/h]	1810	1900	1810	1810	1900	1779	1810	1843	1810	1841
c, Capacity [veh/h]	125	561	535	112	548	513	103	572	157	626
d1, Uniform Delay [s]	29.80	18.84	18.86	30.07	20.01	20.02	30.16	21.53	29.11	20.72
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.16	0.11	0.22
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.18	2.94	3.12	9.95	5.00	5.38	8.05	8.04	7.74	11.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.48	0.48	0.76	0.61	0.61	0.69	0.90	0.77	0.93
d, Delay for Lane Group [s/veh]	38.98	21.78	21.98	40.02	25.00	25.40	38.21	29.56	36.85	32.61
Lane Group LOS	D	C	C	D	C	C	D	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.69	3.49	3.37	1.55	4.72	4.49	1.26	7.96	2.08	9.53
50th-Percentile Queue Length [ft/ln]	42.37	87.27	84.32	38.64	118.08	112.36	31.50	199.07	51.91	238.26
95th-Percentile Queue Length [veh/ln]	3.05	6.28	6.07	2.78	8.29	7.97	2.27	12.59	3.74	14.59
95th-Percentile Queue Length [ft/ln]	76.26	157.09	151.78	69.55	207.18	199.27	56.71	314.77	93.43	364.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.98	21.86	21.98	40.02	25.15	25.40	38.21	29.56	29.56	36.85	32.61	32.61
Movement LOS	D	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	24.48			26.91			30.61			33.34		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.86											
Intersection LOS	C											
Intersection V/C	0.584											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.16	24.16	24.16	24.16
l_p,int, Pedestrian LOS Score for Intersectio	2.638	2.664	2.476	2.479
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	461	492	676	707
d_b, Bicycle Delay [s]	19.26	18.50	14.25	13.60
l_b,int, Bicycle LOS Score for Intersection	2.093	2.196	2.576	2.771
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Kirby St/Project Dwy-2

Control Type:	Two-way stop	Delay (sec / veh):	26.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.236

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	494	619	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	32	46	19	49	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	546	690	19	49	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	144	182	5	13	0
Total Analysis Volume [veh/h]	16	575	726	20	52	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.24	0.00
d_M, Delay for Movement [s/veh]	9.21	0.00	0.00	0.00	26.37	15.71
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.06	0.00	0.00	0.00	0.89	0.89
95th-Percentile Queue Length [ft/ln]	1.40	0.00	0.00	0.00	22.28	22.28
d_A, Approach Delay [s/veh]	0.25		0.00		26.37	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	1.09					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Kirby St/Project Dwy-3

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.064

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	494	619	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	47	46	0	0	39
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	561	690	0	0	39
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	148	182	0	0	10
Total Analysis Volume [veh/h]	0	591	726	0	0	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	20.66	11.01
Movement LOS		A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.20	0.20
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	5.12	5.12
d_A, Approach Delay [s/veh]	0.00		0.00		11.01	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.33					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Kirby St/Johnston Ave

Control Type:	All-way stop	Delay (sec / veh):	15.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.553

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	85.00	100.00	100.00	95.00	100.00	100.00	100.00	100.00	185.00	100.00	100.00	320.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	33	259	44	80	379	58	49	88	15	30	76	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	46	0	4	81	0	0	1	0	0	1	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	315	46	87	475	60	51	93	16	31	80	72
Peak Hour Factor	0.9130	0.9130	0.9130	0.9460	0.9460	0.9460	0.8420	0.8420	0.8420	0.8780	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	86	13	23	126	16	15	28	5	9	23	21
Total Analysis Volume [veh/h]	37	345	50	92	502	63	61	110	19	35	91	82
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	456	487	499	477	511	523	481	538	468	520
Degree of Utilization, x	0.08	0.41	0.40	0.19	0.55	0.54	0.36	0.04	0.27	0.16

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.26	1.94	1.88	0.71	3.32	3.19	1.59	0.11	1.08	0.56
95th-Percentile Queue Length [ft]	6.59	48.62	46.89	17.64	83.00	79.72	39.74	2.74	27.00	13.89
Approach Delay [s/veh]	14.52			16.94			13.79		12.31	
Approach LOS	B			C			B		B	
Intersection Delay [s/veh]	15.19									
Intersection LOS	C									

Intersection Level Of Service Report
Intersection 10: Kirby St/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	46.7
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.901

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	70.00	100.00	70.00	115.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	42	43	25	96	73	243	223	810	75	22	769	108
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	47	5	28	15	100	0	0	88	26
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	7	0	0	70	0	0	20	0	0	35
Total Hourly Volume [veh/h]	44	50	19	147	81	211	247	942	58	23	888	103
Peak Hour Factor	0.7980	0.7980	0.7980	0.8640	0.8640	0.8640	0.9290	0.9290	0.9290	0.7750	0.7750	0.7750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	16	6	43	23	61	66	253	16	7	286	33
Total Analysis Volume [veh/h]	55	63	24	170	94	244	266	1014	62	30	1146	133
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	26	0	22	85	0	9	72	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	20	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22	22	22	22	22	18	83	83	3	68	68
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.18	0.18	0.15	0.69	0.69	0.03	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.05	0.02	0.01	0.13	0.05	0.15	0.15	0.29	0.29	0.02	0.60	0.08
s, saturation flow rate [veh/h]	1059	3618	1615	1331	1900	1615	1810	1900	1862	1810	1900	1615
c, Capacity [veh/h]	197	668	298	269	351	298	271	1309	1283	48	1074	913
d1, Uniform Delay [s]	48.00	40.60	40.49	48.90	41.97	46.99	50.82	8.12	8.13	57.84	26.08	12.35
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.15	0.11	0.11	0.11	0.50	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	3.51	0.28	0.53	10.81	1.87	21.54	25.27	0.21	0.22	12.85	47.12	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.28	0.09	0.08	0.63	0.27	0.82	0.98	0.41	0.42	0.63	1.07	0.15
d, Delay for Lane Group [s/veh]	51.51	40.88	41.02	59.71	43.84	68.53	76.09	8.33	8.35	70.69	73.20	12.42
Lane Group LOS	D	D	D	E	D	E	E	A	A	E	F	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.70	0.80	0.63	5.68	2.56	8.71	9.63	5.23	5.14	1.05	41.01	1.60
50th-Percentile Queue Length [ft/ln]	42.42	19.96	15.77	142.06	64.11	217.70	240.73	130.65	128.58	26.29	1025.15	39.96
95th-Percentile Queue Length [veh/ln]	3.05	1.44	1.14	9.59	4.62	13.55	14.72	8.97	8.86	1.89	54.38	2.88
95th-Percentile Queue Length [ft/ln]	76.36	35.92	28.38	239.80	115.40	338.69	367.96	224.37	221.56	47.32	1359.47	71.92

Movement, Approach, & Intersection Results

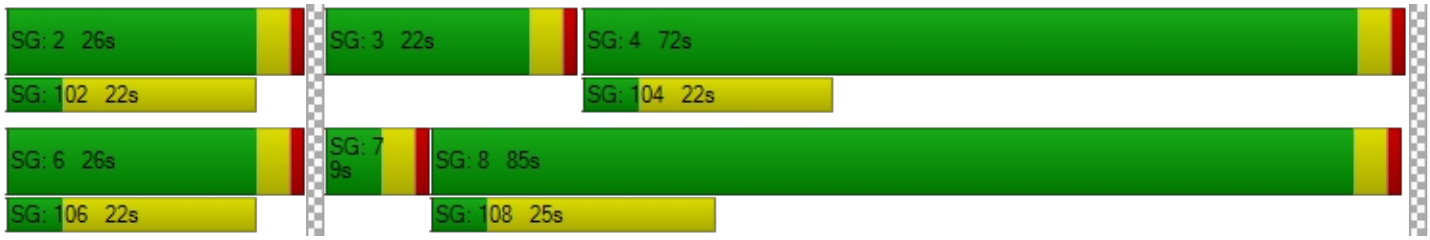
d_M, Delay for Movement [s/veh]	51.51	40.88	41.02	59.71	43.84	68.53	76.09	8.34	8.35	70.69	73.20	12.42
Movement LOS	D	D	D	E	D	E	E	A	A	E	F	B
d_A, Approach Delay [s/veh]	45.02			61.01			21.77			66.97		
Approach LOS	D			E			C			E		
d_I, Intersection Delay [s/veh]	46.73											
Intersection LOS	D											
Intersection V/C	0.901											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersectio	2.406	2.659	3.263	3.355
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	367	367	1350	1133
d_b, Bicycle Delay [s]	40.02	40.02	6.34	11.27
l_b,int, Bicycle LOS Score for Intersection	1.683	2.513	2.683	3.777
Bicycle LOS	A	B	B	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Sanderson Ave/Stetson Ave

Control Type:	Signalized	Delay (sec / veh):	50.7
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.830

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	200.00	100.00	180.00	210.00	100.00	100.00	205.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	13	595	502	147	702	89	188	443	19	453	458	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	76	13	4	87	2	3	98	0	31	83	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	134	0	0	24	0	0	5	0	0	37
Total Hourly Volume [veh/h]	14	695	401	157	817	71	199	559	15	502	559	112
Peak Hour Factor	0.9400	0.9400	0.9400	0.9080	0.9080	0.9080	0.9280	0.9280	0.9280	0.9050	0.9050	0.9050
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	185	107	43	225	20	54	151	4	139	154	31
Total Analysis Volume [veh/h]	15	739	427	173	900	78	214	602	16	555	618	124
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	26	0	14	27	0	39	30	0	35	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	21	0	0	17	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	28	28	10	37	37	15	20	20	31	36	36
g / C, Green / Cycle	0.02	0.27	0.27	0.10	0.35	0.35	0.14	0.19	0.19	0.30	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.01	0.20	0.26	0.10	0.26	0.26	0.12	0.16	0.16	0.31	0.20	0.20
s, saturation flow rate [veh/h]	1810	3618	1615	1810	1900	1847	1810	1900	1883	1810	1900	1791
c, Capacity [veh/h]	33	973	435	173	659	641	252	357	354	534	653	615
d1, Uniform Delay [s]	51.11	35.29	38.17	47.51	30.33	30.34	44.16	41.43	41.43	37.06	28.33	28.38
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.14	0.14	0.48	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	9.78	5.54	39.04	31.10	7.74	7.97	7.77	8.05	8.13	49.09	0.83	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.46	0.76	0.98	1.00	0.75	0.75	0.85	0.87	0.87	1.04	0.58	0.59
d, Delay for Lane Group [s/veh]	60.89	40.83	77.21	78.61	38.06	38.31	51.92	49.48	49.56	86.15	29.16	29.27
Lane Group LOS	E	D	E	E	D	D	D	D	D	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.48	9.31	15.41	6.00	12.25	11.97	5.94	8.52	8.46	20.66	7.90	7.52
50th-Percentile Queue Length [ft/ln]	11.97	232.74	385.35	149.90	306.26	299.13	148.56	213.11	211.41	516.51	197.43	187.89
95th-Percentile Queue Length [veh/ln]	0.86	14.31	21.85	10.01	17.99	17.64	9.94	13.31	13.23	28.84	12.51	12.01
95th-Percentile Queue Length [ft/ln]	21.54	357.84	546.31	250.29	449.76	440.96	248.51	332.81	330.64	720.89	312.65	300.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.89	40.83	77.21	78.61	38.17	38.31	51.92	49.52	49.56	86.15	29.20	29.27
Movement LOS	E	D	E	E	D	D	D	D	D	F	C	C
d_A, Approach Delay [s/veh]	54.24			44.26			50.14			53.58		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	50.71											
Intersection LOS	D											
Intersection V/C	0.830											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	43.92	43.92	43.92	43.92
l_p,int, Pedestrian LOS Score for Intersectio	3.106	2.789	2.622	2.882
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	419	438	495	419
d_b, Bicycle Delay [s]	32.83	32.05	29.75	32.83
l_b,int, Bicycle LOS Score for Intersection	2.644	2.529	2.250	2.660
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Project Dwy-4/Whittier Ave

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	4	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	1	0
Total Analysis Volume [veh/h]	0	0	0	0	4	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.20	0.00	8.51	0.00
Movement LOS	A	A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.29	0.00
d_A, Approach Delay [s/veh]	0.00		3.60		8.51	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	8.51					
Intersection LOS	A					

Kirby Industrial

Vistro File: C:\...\Kirby Industrial.vistro
Report File: C:\...\Cumulative With Whittier PM.pdf

Scenario 10 Cumulative with Whittier PM
5/22/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Sanderson Ave/SR-74	279	764	212	206	914	203	393	842	144	270	695	158	5080

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	Sanderson Ave/Acacia Ave	103	1041	104	209	999	14	14	269	167	185	193	215	3513

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
3	Sanderson Ave/Whittier Ave	1208	0	15	1336	0	39	2598

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	Project Dwy-1/Whittier Ave	0	0	0	0	0	4	0	15	0	0	35	0	54

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	Kirby St/SR-74	95	412	118	96	403	207	217	1127	126	133	1037	83	4054

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Kirby St/Acacia Ave	87	418	89	78	487	149	68	408	115	108	423	126	2556

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
7	Kirby St/Project Dwy-2	15	546	690	19	49	0	1319

ID	Intersection Name	Northbound	Southbound		Eastbound		Total Volume
		Thru	Thru	Right	Left	Right	
8	Kirby St/Project Dwy-3	561	690	0	0	39	1290

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
9	Kirby St/Johnston Ave	34	315	46	87	475	60	51	93	16	31	80	72	1360

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
10	Kirby St/Stetson Ave	44	50	26	147	81	281	247	942	78	23	888	138	2945

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11	Sanderson Ave/Stetson Ave	14	695	535	157	817	95	199	559	20	502	559	149	4301

ID	Intersection Name	Northbound		Southbound		Westbound	Total Volume
		Thru	Right	Left	Thru	Left	
12	Project Dwy-4/Whittier Ave	0	0	0	0	4	4

APPENDIX D – CUMULATIVE DEVELOPMENT PROJECT SPREADSHEET

ACTIVE RESIDENTIAL PROJECTS
CITY OF HEMET PLANNING DIVISION

DISCLAIMER: While considered to be accurate, the information contained in this list is subject to change and should not be relied upon for property purchases, leases, or other financial transactions. For more information, contact the City of Hemet Planning Division at 951-765-2375 or visit City Hall at 445 E. Florida Avenue, Hemet, CA 92543

APN #	Project Number(s)	Project Name	Project Location	Decription	Units	Square Footage	Acres	Status	Date Applied	Date Approved
464-270-002	SDR 22-011	High Pointe	Southeast corner of Stetson Avenue & Elk	228-Unit Apartments	228		10.02	Pending	1/12/2023	
446-092-027	SDR 22-018	Hemet 60 Unit	SWC E Central Ave & Santa Fe Street	60-Unit Apartments	60		2.47	Pending	12/14/2022	
448-210-005; 014;06; and 0	SDR14-001 (Project Extended)	Copenhagen	450 CopenhagenStreet	Construction of a 40-unit single-story multi-family apartment complex.	40			Approval extension to 3/16/2024		
448-270-004	SDR 22-009	Montego Bay Apartments	N/O NEC Sanderson & Devonshire Avenues	Construction of a 96-unit multi-family apartment complex.	96			Building Plan Check -In Review	5/4/2022	10/18/2022
441-690-001 thru 018	TTM 31864	Villa Madrid	Northeast corner of Madrid Street & Devonshire Avenue	Construction of remaining multifamily townhouse condominimums	104		7.4	Pre-App		
448090003	MAP21-005, TTM38309	Ramona Creek	Northwest corner of west Florida Avenue and Myers Street.	The applicant is proposing a Tentative Tract Map for development of 363 units within Planning Area 7,8,9, and 10 of the Ramona Creek Specific Plan.	363		56.43	PC 2/21	12/9/2021	
448230021	MAP21-002, TPM38141	Delfinia at Devonshire	325 Sanderson Ave	Five gross acres divided into two parcels. Parcel 1- 2.62 net acres 399.08'x285.83'; parcel 2 - 1.38 net acres 211'x285.83'	61		4.1	pending	4/20/2021	

454020013 thru -016, 46006	MAP20-005, TTM35393 and EOT 22-002 SDR 22-002 MHC 22-001 Rancho Diamante II (Lennar Homes)	Substantial Conformance #2	southside of Mustang Way, east of Warren Road and west of Fisher Street	reconfiguration of Phase 4 of TTM5393 Map to function independently, including access from phases 1,2,and 3 which is being developed by another home builder. No increase to density or number of residential lots is proposed, and a decrease from 146 to 145 lots within phase 4 on a 103.9 acre site located on the southside of Mustang Way, east of Warren Road and West of Fisher street in the Page Ranch Planned Community development (PCD 79-93)	145		103.9	approved	11/5/2020	PC approved 12/1/2020; PC2020-022

460010009	MAP20-004, TTM35392 SDR22-007 and MHC22-002 and COAA22-001 and EOT 21-005	Morgan Hill: Tract Map, Site Development Review, Model Home Complex and Conditions of Approval Amendment	northside of Thornton Avenue, southside of New Stetson, and east of Warren Road	to modify the alignment of Fisher street; reduce number of lots from 155 to 150; adjustment of lots to maintain 6,000 sf, reconfiguration of cul-de-sac radius; and modification to the Conditions of Approval on a 48.45 acre site located on the North side of Thornton Avenue, south of New Stetson Aenue and East of Warren road in the Page Ranch Planned Community Development (PCD 79-93)	150	6,000	48.45	approved	9/15/2020	PC approved 12/1/2020; PC2020-021
464300002	MAP20-003, TTM36892	River Oaks COA Amendment	SWC Thornton & Chambers	subdivision of 19.14 acres into 85 lot single family residential subdivision with a minimum lot size of 6,000 sf and 7 lettered lots located at the northeast corner of ELK & Chambers	85	6,000	19.14	approved	8/17/2020	CC approved 9/8/2020, Reso 2020-071
439230005	MAP20-002, TTM37558	Girard subdivision	800 N Girard	request to subdivide 12.0 acres into 51- 6,000 sf losts and zone change from multifamily residential (R-2) to single family residential (R-1-6)	51	6,000	12	DRC 12/3/2020	2/27/2020	

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439170005	TPM37794, MAP20-001	Diaz-Ley	885 N Girard	subdivide an existing 2 acre residential lot into 2 there is a minor drainage course traversing the southerly portion of the site and the site gently slopes northerly	2		1.33, 0.76	approved	1/21/2020	PC approved 8/18/2020, PC2020-015
	SDR 20-001	Richmond American Seasons @ McSweeny Farms	SEC McSweeny Parkway & S Village Loop Tract 33824	Construction of 77 single-family residential lots within Tract 33824-1	77			90% Built Out		
	SDR 20-004	Citrus Pointe D.R. Horton	NEC of Florida & Lake	Construction of 80 single-family homes	107			90% Built Out		
439-230-005	TTM 37794	Girard Subdivision	800 N. Girard	Tentative Tract Map for the subdivision of single-family homes	51			City Council Review 3/28	3/7/2023 PC Approval	
442-060-046	SDR 20-002 (Mod.1 - SDR21-018)	The Latham	S/O Latham Ave, E/O Lyon Ave & W/O Elk Street	Construction of 111 unit, 4 story apartment complex for seniors, age restricted 62+	111	107,267	3 acres	Approved 1/4/22	5/19/2021	1/4/2022
	EOT 20-004	Final Map 36510 Ramona Creek	NEC Florida Avenue & Warren Road	Two (2) year Extension of Time for Tenative Tract Map 36510 for Ramona Creek Specific Plan: Commercial and Residential (Planned)	1,077		96 acres	Tract Map 38309 Pending 303 Units Phase I		
	EOT 20-001	TTM 35392	Fisher Stree & W Thornton Ave	Two (2) year Extension of Time for Tentative Tract Map 35392 for the subdivision of single-family homes	155		48 acres	SDR Approved In Building and Civil Plan Check		

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	EOT 22-002	TTM 35393	S/O Mustang Way, E/O Warren Road and W/O Fisher Street	(Saddlepoint) Two (2) year Extension of Time for Tentative Tract Map 35393 for the subdivision single-family homes.	440		104 acres	SDR Approved In Building and Civil Plan Check		
	GPA 15-002 & SPA 15-001	TTM 36841	W/O Warran Road & Mustang Way	(Rancho Diamante Phase II) General Plan & Specific Plan Amendment for subdivision of single-family homes	586		245 acres	Approved. Tract Map/Financing Map in Progress Review		
	SDR 18-001	Tract No. 24147-1	W/O NEC State & Fruitvale Avenue	(The Hideway) Construction of 193 single-family homes	193		45 acres	Construction Complete		
	SDR 19-006	Tract No. 29129	E/O Warren Road S/O Esplanade Ave	(Stoney Mountain Ranch) Construction of 92 single-family homes	92			Under Construction		
	Tres Cerritos West	Tract 31513	N/O Celeste Road E/O of Old Warren Road	Subdivision for single-family homes.	177		121 acres	SDR Approved In Building and Civil Plan Check		
	SDR 20-009	Tract 33824-2	McSweeny Parkway & S Village Loop	Construction of single-family homes	102		32 acres	Under Construction		
	SDR 21-001	Tract 33824	McSweeny Parkway & S Village Loop	Construction of single-family homes	58		14.5	90% Built Out		
	EOT 20-05	Tract 13982	SEC of Acacia Ave and Kirby Street	(Citadel Village-Acacia Gardens) Construction of townhome condominium units	50		2.15 Acres	Inactive		

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	SP 01-03	Tract 29843	NWC of Menlo and Cawston	Peppertree- gated senior community of single family homes and multi-family units	456		82.5 acres	Under Construction		
	EOT 08-001&2	Tract 33825	SEC State & Gibbel	Subdivision for single-family homes. Richmond American	259		55.9 acres	Under Construction		
	EOT 21-004	TTM 37087	Fruitvale Ave W/O Palm and E/O Lyon Ave	Subdivision for single-family homes.	19		13 acres	EOT Approved AB1561		
	EOT AB 1561	TTM 24067	W/O Lyon Ave, South of Chambers Street	Subdivision for single-family homes.	82		19.5 acres	EOT Approved AB1561		
	EOT 19-001 and SDR 15-001	Santa Fe Pointe	W/S of Santa Fe Street Between Menlo & Fruitvale Avenues	Multi-Family Residential	241		17.7 acres	EOT Approved 5/21/19		
	SDR 21-017	TTM 36890	NEC Elk Street and Thornton Ave	Subdivision for single-family homes.	68		13.6 Acres	Approved 12/21/21		
	SDR 21-015	TTM 36889, 36891 & 36892	SEC of Elk Street and Thornton Avenue	Subvision for single-family homes	231		51.32 acres	Under Construction		

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DISCLAIMER: While considered to be accurate, the information contained in this list is subject to change and should not be relied upon for property purchases, leases, or other financial transactions. For more information, contact the City of Hemet Planning Division at 951-765-2375 or visit City Hall at 445 E. Florida Avenue, Hemet, CA 92543

APN(S)	Project Number(s)	Project Name	Project Location	Description	Units	Square Footage	Acres	Status	Date applied	Date approved
456-040-028; and 029	SDR 23-002	National Tube Steel	Wendtworth Drive & S. Sanderson Avenue	Development of 85,230 square-foot Industrial building with related parking and on-site improvements.		85,260 Square Feet	5.76	Pending	2/1/2023	
456-030-020	CUP22-002	Kirby Industrial	S/O Kirby Street & Acacia	Construction of a 838,880 square-foot warehouse building with 19,282 square feet of ground floor office		838,880 Square Feet	43.56	Pending	6/8/2022	
465-140-043	CUP22-006	Simpson Business park	Warren & Simpson Road	The development of two warehouse buildings on approximately 65.28 acres. Building # 1 is 992,880 square feet and building # 2 is 324,480 square feet		1,317,360 Square Feet	65.28	Pending	11/29/2022	
439-080-013 & 439-080-056	CUP 22-008 & SDR 22-019	Pacific Mobile Structures	Santa Fe & Oakwood Street	Phase 1- 3,336 square foot office and 12,386 square-foot warehouse building and on-site storage units. Phase 2- 40,000 square-foot manufacturing facility		55,722 Square Feet	13.5	Pending	9/15/2022	
456-010-025	ZC 22-002 & SDR 22-017	Hemet 63 Warehouse & Industrial	Florida & Acacia	Construction of four warehouse buildings totaling 1,100,000 square-feet on 61 acres. The project also includes a Tentative Parcel Map for the subdivision into four (4) parcels, and a Re-Zone of a portion of the property from General Commercial to Commercial Manufacturing.		1,100,000 Square Feet	61	Pending	12/9/2022	
443-281-008	SDR 22-006	Downtown Facade Improvement	130 E Kimball	Restore original openings to facade. Replace window, re-patch existing stucco.				Approved	4/13/2022	7/21/2022

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451071014	SDR22-005	Dr. Formica Dental Office	1303 S State St	Addition of 1,900 square feet to an existing 2,332 square foot dental office and related site improvements including a new facade, additional parking area, parking lot lighting, landscaping, a trash enclosure, and security perimeter wrought iron fencing		1,900 Square Feet		Approved	4/12/2022	2/28/2023
456050012	CUP22-001	Rally's Drive Thru Restaurant	NWC Sanderson & Tanya	Construction of a 1-story drive-thru restaurant 1,008 sf including site improvments on an undeveloped site. Restaurant is a prototypical "rally's" hamburger restaurant		1008		Withdrawn	12/20/2021	
456040054	MAP21-004, TPM37882	Airway Place lot split	875 Airway Place	Tentative parcel map to divide a 1.98 acre parcel into 2 parcels. Future parcel 1 has an existing 17,500 building, and future parcel 2 has been approved for an approximate 12,000 sf building.		17,500	1.98	Pending	8/31/2021	
456140008	SDR21-021	JD Fields & Company	s/o SEC W Acacia & S Gilmore	approximately 9.52 acres and existing vacant lot will be developed into the proposed manufacturing warehouse. The proposed development will include a proposed 22,000 sf warehouse building and 3,000 sf office.	2	25,000 Square Feet	9.52	Pending	12/8/2021	
460250028	CUP21-015	Plaza Liquor	1127 S Sanderson	Liquor store currently in Wentworth Plaza requesting to move to a location in Page Plaza		2,448		Approved	12/9/2021	
448320004	CUP21-013	Dutch Bros	3069 W Florida	Construction and operation of a new Dutch Bros Coffee stand with double drive-thru lanes, new trash enclosure and associated site work. No public access proposed to interior of 871 sf building. This project was reviewed during DRC on 2/11/21, DRC comments/conditions are in the attachments	1	871	0.45	Approved by PC	10/8/2021	3/1/2022

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448250006	CUP19-015	Holiday Inn & Express	3850 W Florida Avenue	Construction of a new 4 story 80-room hotel		48,698 Square Feet	1.59 acres	Building Plan Check in Process	12/9/2019	1/18/2022
448310022	CUP21-012	Pacific Inland Healthcare	2789 Rafferty Rd	Operation of a 100 bed/unit elderly care facility in an existing developed site. The site is 2.82 acres and includes three, two-story buildings. Building A is 17,044 sf for Assisted living, Building B is 17,044 sf for Memory Care and Building C is 4,644 sf for Administration offices and Kitchen			2.82	PC 4/19/22-Approved	9/14/2021	4/19/2022
451062035	CUP21-009	Rooster Tattoo Co.	1125 S State St	To utilize an approximately 1,355 sf suite within an existing shopping plaza to operate a tattoo art and body piercing studio		1355		Approved by PC	7/7/2021	10/19/2021
439100042	CUP21-008	H&H Plastics	340 Menlo	Remodel and site improvements of an existing building for a plastics recycling and processing center, where plastic bottles are cleaned and melted down into pellets for shipping.		15,852		Approved by PC	6/28/2021	1/4/2022
448140016	EOT21-003 / SDR19-001	Marriott Townplace Suites	East of Myers, North of Florida	three year extension of time for previously approved SDR19-001			2.95	Approved by PC-Building Permits	6/21/2021	9/21/2021
445290021	EOT21-002 / AUP19-001	Live Décor	2325 E Florida	request for a three year extension of time for previously approved Adminstrative Use Permit (AUP 19-001)			1.7	approved by CDD	6/15/2021	7/29/2021

445290021	AUP19-001	Live Décor	2325 E Florida	Operation is proposed in an existing 27,000 sf building in a shopping center located on the southeast corner of Florida Avenue and Yale Street The building is equipped with a loading ramp on the side of the property. A real estate office, Dollar store and furniture store take up the larger buildings while the smaller are occupied by a pizza store, mail service, a health food store, several restaurants and a gas station. The parcel is equipped with 168 parking stalls.			1.7	approved by CDD	6/26/2019	7/30/2019
443231007	SDR21-011	Aniki Restaurant	121 N Harvard	174 sf addition shall accommodate another restroom and extend a walk-in freezer. The addition is to the rear of the building that has undergone a tenant improvement to convert the existing building into a restaurant use.		174		approved by CDD	5/3/2021	6/10/2021
443232004, 443231003	SDR21-010	Pasta House addition & Patio Cover	118 & 124-126 N Harvard	Proposing an 820 sf addition to 118 N Harvard and a patio cover for outdoor seating. The enclosed addition will accommodate a dry storage area, a walk-in cooler and two restrooms. The applicant is also proposing a patio cover to the rear of an 124-125 N Harvard. The patio cover if for outdoor seating for a future restaurant use, an ADA accessible ramp and trash enclosure.		820		approved by CDD	4/29/2021	6/15/2021

443231003	SDR21-009	Island Dog Fast Food	145 N Harvard St	Façade enhancement and the addition of 53 sf to an existing 300 sf building. The façade enhancement proposes a Caribbean theme facad with the addition of reclaimed wood sidin, bamboo trim, and a small bamboo shade tower element. The proposed use is a restuarant with walk up order and pick up windows, with no indoor seating.	1	353sf		approved by CDD	4/29/2021	6/10/2021
551321008	CUP21-007 / SDR21-013 / MAP21-003, TPM	Arco AM/PM	NEC Soboba & Florida	Contruction of a gas station with a 2,800 sf convenience store, a self-serve express car wash and vacuum area, and two fast-food restaurants, one is 2,703 sf and the second one is 2,637 sf with drive thrus on 2.31 acres of vacant land.		9,137	2.31	approved by PC	4/27/2021	1/18/2022
448230021	CUP21-005 / SDR21-006 / SDR21-007	Delfina at Devonshire	325 Sanderson Ave	61 unit apartment complex, gas station w/convenience store & car wash			4.1	pending	4/20/2021	
456040033	CUP21-004 / SDR21-008	Dunkin Donuts	748 S Sanderson	construction of a 1875 sf Dunkin Donut drive-thru and restaurant on a 1.02 acre vacant pad site located within the Wentworth Plaza. Proposed hours of operation are from 4:30am to 11:00pm, seven (7) days a week.	1	1875	1.02	Construction Complete	3/29/2021	6/1/2021
448310018	CUP21-003	APC Towers-Cell Tower	2860 W Florida	Proposed wireless telecommunication facility consisting of a 69 foot tall mono-eucalyptus tree and a 622 sf enclosure				approved by PC	3/25/2021	3/1/2022
456040049	SDR21-002	Eggleton Trucking Company	814 Airway Place	Development of a trucking company, specializing in organic bulk commodity hauling, to store trucks (big rigs) and trailers and conduct minor repairs on site, and construction of a 4,374 sf vehicle maintenance building on 4.47 acres.	1	4374	4.47	approved by CDDR	3/8/2021	12/16/2021

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444100007 444100022	EOT21-001 / CUP16-008 / VAR18-001 / TPM37564 / CUP21-002	Shop n Go	855 N Sanderson	request for a two year extension of time for previously approved Tentative Parcel map (TPM) 37564, Conditional Use Permit (CUP) 16-008, and Variance (VAR) 18-001.			4.34	Pending Submittal of Construction Plans	2/1/2021	3/16/2021
445270006	CUP21-001	Piara Pizza Drive-thru	1531 E Florida Ave	3,277 sf drive-thru restaurant for Piara Pizza within the formerly Gus Jr. building, including rehabilitated parking and landscaping	1	3,277	0.64	Built	1/27/2021	4/20/2021
448440024	CUP20-006 / PCN21-001 / APL21-001	El Toro Express	1958 W Florida	Operation of a 5,040 sf market with alcohol sales (Type 21 Off-Sale) and a determination of a Public Convenience or Necessity (PCN) will be served.	1	5040	0.46	Denied by PC 5/18/2021	12/21/2020	
460250044	SDR20-015	O'Reilly's, new retail bldg & expansion	1167 S Sanderson	construction of a new 7,453 sf Oreilly's Auto Parts store on Pad 4B within the Page Plaza. The project also includes expansion of existing in-line retail shops, including a 10,000 sf addition to the existing Bed Bath & Beyond building, and 5,001 sf addition for five (5) commercial tenant spaces within Pad 4A. Site improvements include parking, loading areas, landscaping, site lighting, bike racks, pedestrian pathways and trash enclosures.	6	7453sf, 5001sf, 10000 sf	1.3	Construction Permits In Progress for O'Reilly's	12/16/2020	3/16/2021
438240039	SDR20-014	Sunny Car Wash - Florida	East of northeast corner of Columbia Street & Florida Avenue	construction of a 4,967 sf building consisting of an express car wash tunnel, office, restroom, electrical and mechanical and vending machine, located on a portion of a 96,046 sf lot. The project also includes vacuum stalls accessible outside the tunnel for customer use.	1	4,967	2.2049	CDDR 6/29/2021 Pending submittal of construction plans	12/10/2020	

456040051	SDR20-013	Brightside Warehouse		construction of a two-story 10,000 sf warehouse withloaking dock, parking lot, landscaping, trash enclosure with catch basin and precise grading detail.	1	10000		pending	11/18/2020	
443172036	SDR20-010	Express Car Wash - Palm	828 W Florida	Construction of a 5,500 sf building consisting of an express car wash tunnel and office building located on 38,768 sf lot. The project also includes 26 vacuums stalls accessible outside the tunnel for customer use	1	5500	0.1263	pending	11/9/2020	
446290014	CUP20-005 / SDR20-008	Sunny Car Wash - Stetson	448-250-006	construction of a 5,580 sf building consisting of an express car wash turnnel, office building, mechanical area, and customer booth located on a 41,723 sf lot. The project also includes self-service vacuum stalls accessible outside the tunnel for customer use.	1	5580	1	Approved by PC	11/3/2020	4/20/2021
438150041	CUP20-004 (CUP13-005 Mod. 1)	7 Days Market	3660 E Florida	Request of an Alcohol Beverage Control (ABC) Type 21 license for the sale of wine, beer and liquor at an existing convenience store with gas station	1		0.62	approved by PC	10/19/2020	2/2/2021
448310021	CUP20-003	Shamloo Drive Thru	2880 W Florida	the conversion of an existing office building in to a drive-thru restaurant (formaly a Long Johns Silver restaurant).	1	2829 sf	0.63	Approved by PC	9/24/2020	4/6/2021
448310009	CUP20-002 / SDR20-006	Raising Cane's	3156 & 3200 W Florida	Demolition of an existing building in order to construct a new 2,802 sf Raising Cane's Chicken Finder Restaurant, drive-thru and 176 sf outdoor covered pation on approximately 33,872 sf site area (.77 acres). A total of 27 parking spaces, including 2 ADA spaces. ADA pedestrian pathways are also provided. A queing analysis has been provided.	1	2,802	0.77	Construction Complete	9/24/2020	1/5/2021

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456010031	AUP20-003	Diamond Valley Honda Lot		Construction of a vehicle sales and display parking lot, including landscaping, site lighting and parking spaces on 3.95 acres (vacant)				Construction Complete	9/9/2020	9/7/2021
460-250-016	CUPA21-002	Dave's Hot Chicken	1251 S Sanderson	2,711 square-foot drive-thru restaurant		2,711 Square Feet	1.09	Under Construction		
456030004	SDR20-005	Last Chance Performance Marine	601 S Sanderson	Construction of two metal buildings, 7,500 sf and 2,500 sf fr boat sales and service, a 1,936 sf awning, a trash enclosure and remodel of existing 1,837sf veterinarian's office into support facilities for the boat sale area.	2	7500sf, 1936sf, 1837 sf (existing)	2	CDDR	8/26/2020	9/3/2020
446290006	AUP20-002	Warehouse & Drop Ship	220 W Stetson Ave	Shoes Drop Ship & Warehouse. The applicant is proposing to operate a drop ship and warehouse operation at an existing 83,020 sf commercial building on 7.64 acres of land. No additins or construction is being proposed				approved by CDD	8/13/2020	10/1/2020
443272001	AUP20-001	Shoe City Farmer's Market	101 W Florida	To operate a Certified Farmer's Market on the property located on the southeast corner of Florida Ave and Inez Street. The market is proposed to operate on Sundays from 7am to 3pm				approved by CDDR	8/10/2020	1/20/2022
448440029	CUP20-001 / VAR20-002	Puff Time Tobacco Store - Boardwalk	1784 W Florida	For the operation of a tobacco store in an existing approximate 1,300 square foot suite in the Boardwalk Plaza.	1	1,320		Approved by PC	8/10/2020	1/5/2021
443232008	SDR20-003 (Downtown)	Hemet Historic Theater	214 E Florida	front façade remodel and new marquee and major interior remodel for Hemet Theatre	1		0.18	Approved by CDDR	3/3/2020	9/29/2020
443222008	CUP21-006 / PCN21-002	American Legion Post 53	124 N Ramona St	Requesting approval of a Type 52 alcohol license from California Department of Alcohol Beverage Control (ABC)				Approved by PC	4/26/2021	8/17/2021