



HEXAGON TRANSPORTATION CONSULTANTS, INC.

2791 Winton Avenue Warehouse Development

Local Transportation Analysis

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City of Hayward

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Executive Summary

This report presents the results of the Local Transportation Analysis (LTA) conducted for the proposed Amazon Distribution Center development at 2791 W. Winton Avenue in Hayward, California. Amazon would occupy an existing 507,000 square-foot warehouse to operate an Amazon Delivery Station. Access to the site is provided by three driveways on Winton Avenue.

The potential project related transportation deficiencies were evaluated in accordance with the standards and methodologies set forth by the City of Hayward. The study analyzes the transportation deficiencies caused by the proposed development on the key intersections in the vicinity of the site during the weekday AM and PM peak hours of traffic.

In addition, the study includes a queuing analysis, a review of site access and circulation, an evaluation of potential impacts to transit services and pedestrian and bicycle facilities, and parking.

Project Trip Estimates

The project is estimated to generate 4,151 daily vehicle trips, with 299 trips occurring during the AM peak hour and 695 trips during the PM peak hour.

Local Transportation Assessment (LTA)

The results of the Local Transportation Analysis (LTA) show that the following study intersections would operate at unacceptable conditions during the PM peak hour under all scenarios:

- Cabot Boulevard and West Winton Avenue
- Clawiter Road and SR 92 eastbound ramps/Eden Landing Road

The addition of project trips would cause the critical movement delay to increase by more than 5.0 seconds at these intersections. Thus, the project would have an adverse effect on operations at these intersections.

Recommended Improvements

The results of the peak-hour traffic signal warrants checks indicate that the Cabot Road/Winton Avenue intersection would not meet the signal warrant. The intersection does not satisfy parts A and B of the traffic signal warrants analysis under either peak hour. However, level of service at this intersection would be improved to satisfactory levels with the installation of a traffic signal under all conditions.

The results of the peak-hour traffic signal warrant checks indicate that the Clawiter Road/SR 92 Eastbound Ramps/Eden Landing Road intersection would meet the signal warrant under all conditions.

The installation of traffic signals at the Cabot Boulevard/West Winton Avenue and Clawiter Road and SR 92 eastbound ramps/Eden Landing Road intersections would improve the level of service at these intersections to satisfactory levels. According to the City of Hayward Traffic Study Interim Guidelines, when a project results in an impact or signal warrants being met at a study intersection, the project must make a fair share contribution to the cost of improvements. Based on the impacts or traffic signal warrants being met, the project contribution would be 100% at these intersections.

The extension of the northbound left-turn pocket at the intersection of Clawiter Road/Winton Avenue by 50 feet into the existing two-way left turn lane would accommodate both the existing and project left turn volumes. This can be accomplished by re-striping the existing two-way left turn lane.

Transit, Pedestrian and Bicycle Analysis

The proposed project does not conflict with existing or planned pedestrian and bicycle facilities. The transit service within the immediate vicinity of the project site operates well below capacity, and additional trips generated by the proposed project could be accommodated by existing bus services. Therefore, the impacts to pedestrian, bicycle and transit facilities would be less-than significant. The project should re-stripe West Winton Avenue between Cabot Boulevard and the Bay Trail entrance to include a Class III Bicycle Boulevard, which is an improvement consistent with the City's Bicycle and Pedestrian Master Plan.

There are no existing sidewalks leading to the Bay Trail. Currently, there is low traffic volume in this area of West Winton Avenue. However, more development could increase the amount of traffic in this area. The project should contribute to future construction of sidewalks that provide pedestrian access to the Bay Trail.

Freeway Segment Analysis

The freeway study segments operate at LOS E or better during the AM and PM commute peak hours under existing conditions. The proposed project would not result in any potentially significant impact to any of the freeway study segments under 2020 plus project conditions.

Freeway Ramp Capacity Analysis

At the I-880 and Winton Avenue interchange under Existing and Existing Plus Project, all ramps have a volume to capacity (V/C) ratio that is below 1.0, which means that the existing traffic demand is lower than the ramp capacity.

Freeway Ramp Queuing Analysis

At the Clawiter Road/SR 92 Eastbound Ramps and Industrial Boulevard/SR 92 Westbound Ramps intersections, both freeway off-ramps have sufficient capacity to serve the existing traffic queues.

1. Introduction

This report presents the results of the transportation analysis (TA) conducted for the proposed Amazon Distribution Center development at 2791 W. Winton Avenue in Hayward, California (see Figure 1). Amazon would occupy an existing 507,000 square-foot warehouse to operate an Amazon Delivery Station. Access to the site is provided by three driveways on Winton Avenue (see Figure 2).

Scope of Study

The purpose of the study is to identify potential transportation adverse effects related to the proposed development. The potential adverse effects of the project were evaluated in accordance with the standards and methodologies set forth by the City of Hayward. An analysis of vehicle queuing, site access and on-site circulation, parking, and transit, bicycle, pedestrian access, and vehicle miles travelled (VMT) is also included.

The study analyzes the traffic adverse effects of the proposed development on the key intersections in the vicinity of the site during the weekday AM and PM peak hours of traffic. Locally, the AM peak hour of traffic is usually between 7:00 AM and 9:00 AM, and the PM peak hour is typically between 4:00 PM and 6:00 PM. It is during these periods that the most congested traffic conditions occur on an average weekday.

Study Intersections

The study includes those intersections that provide primary access to the project site and intersections that would experience a traffic increase of 10 or more peak-hour trips per lane. These intersections were selected in consultation with City of Hayward staff. The study intersections are listed below and shown on Figure 1.

1. West Winton Avenue and Cabot Boulevard (All-Way Stop)
2. West Winton Avenue and Corsair Boulevard (Signalized)
3. West Winton Avenue and Clawiter Road (Signalized)
4. West Winton Avenue and Hesperian Boulevard (Signalized)
5. West Winton Avenue and Southland Drive (Signalized)
6. Clawiter Road and Depot Road (Signalized)
7. Depot Road and Cabot Boulevard (Two-Way Stop)
8. Clawiter Road and SR 92 Westbound Ramps – Breakwater Avenue (Signalized)
9. Clawiter Road and SR 92 Eastbound Ramps – Eden Landing Road (All-Way Stop)
10. Industrial Boulevard and Depot Road (Signalized)
11. Industrial Boulevard and SR 92 Westbound Ramps – Cryer Street (Signalized)
12. Industrial Boulevard and SR 92 Eastbound Ramps – Sleepy Hollow Avenue (Signalized)
13. Hesperian Boulevard and Depot Road – Cathy Way (Signalized)

Study Freeway Segments

1. I-880 south of Winton Avenue
2. I-880 north of Winton Avenue
3. SR 92 west of Clawiter Road
4. SR 92 east of Clawiter Road

Study Freeway Ramps

1. Southbound On-Ramp from eastbound Winton Avenue
2. Southbound On-Ramp from westbound Winton Avenue
3. Southbound Off-Ramp to westbound Winton Avenue
4. Southbound Off-Ramp to eastbound Winton Avenue
5. Northbound Off-Ramp to westbound Winton Avenue
6. Northbound Off-Ramp to eastbound Winton Avenue
7. Northbound On-Ramp from eastbound Winton Avenue
8. Northbound On-Ramp from westbound Winton Avenue

The following Metropolitan Transportation System (MTS) roadway segments on Winton Avenue and Hesperian Boulevard were analyzed.

1. Winton Avenue between Cabot Boulevard and Clawiter Road
2. Winton Avenue between Clawiter Road and Hesperian Boulevard
3. Winton Avenue between Hesperian Boulevard and I-880
4. Hesperian Boulevard north of Winton Avenue
5. Hesperian Boulevard south of Winton Avenue

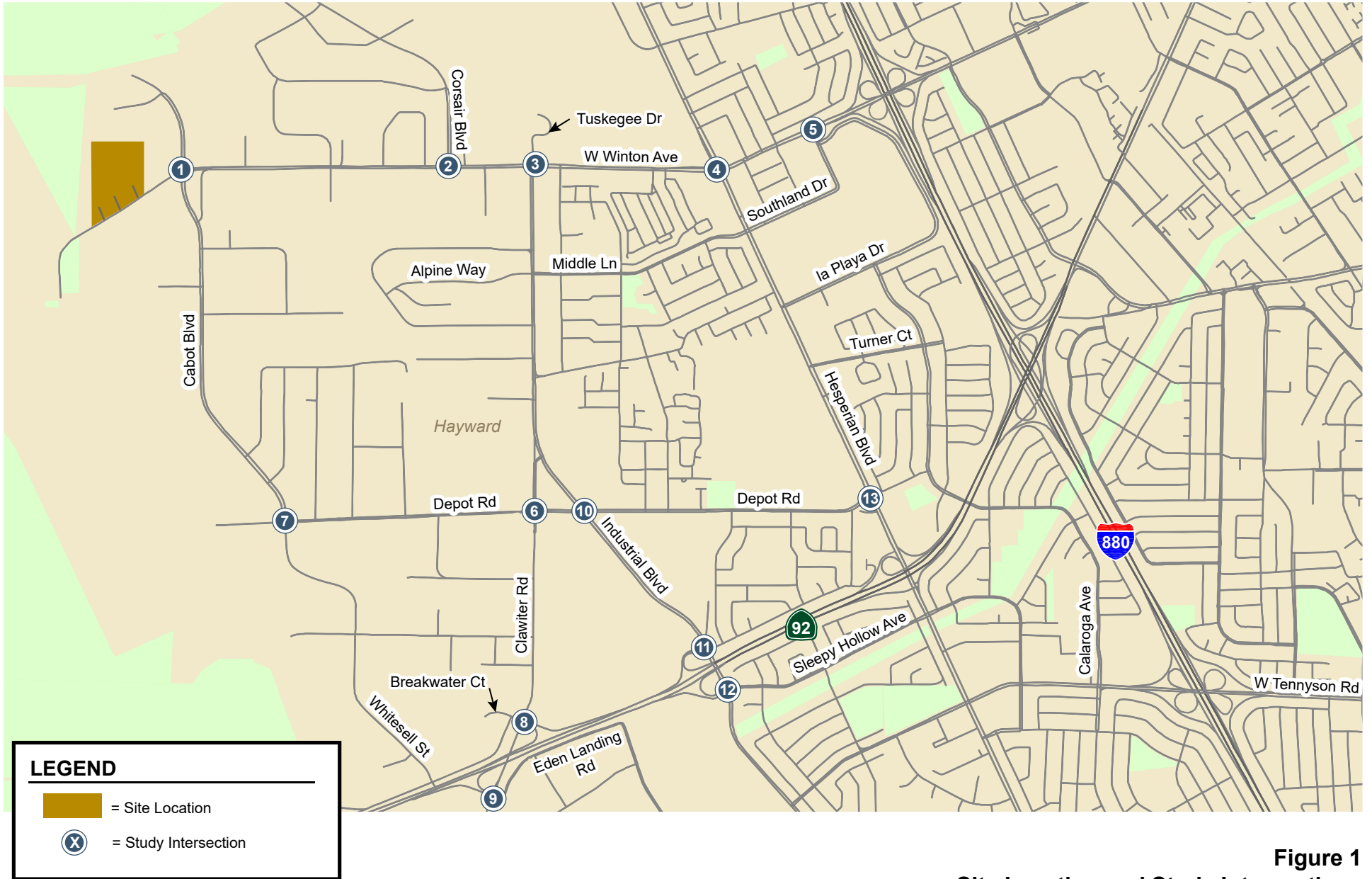


Figure 1
Site Location and Study Intersections

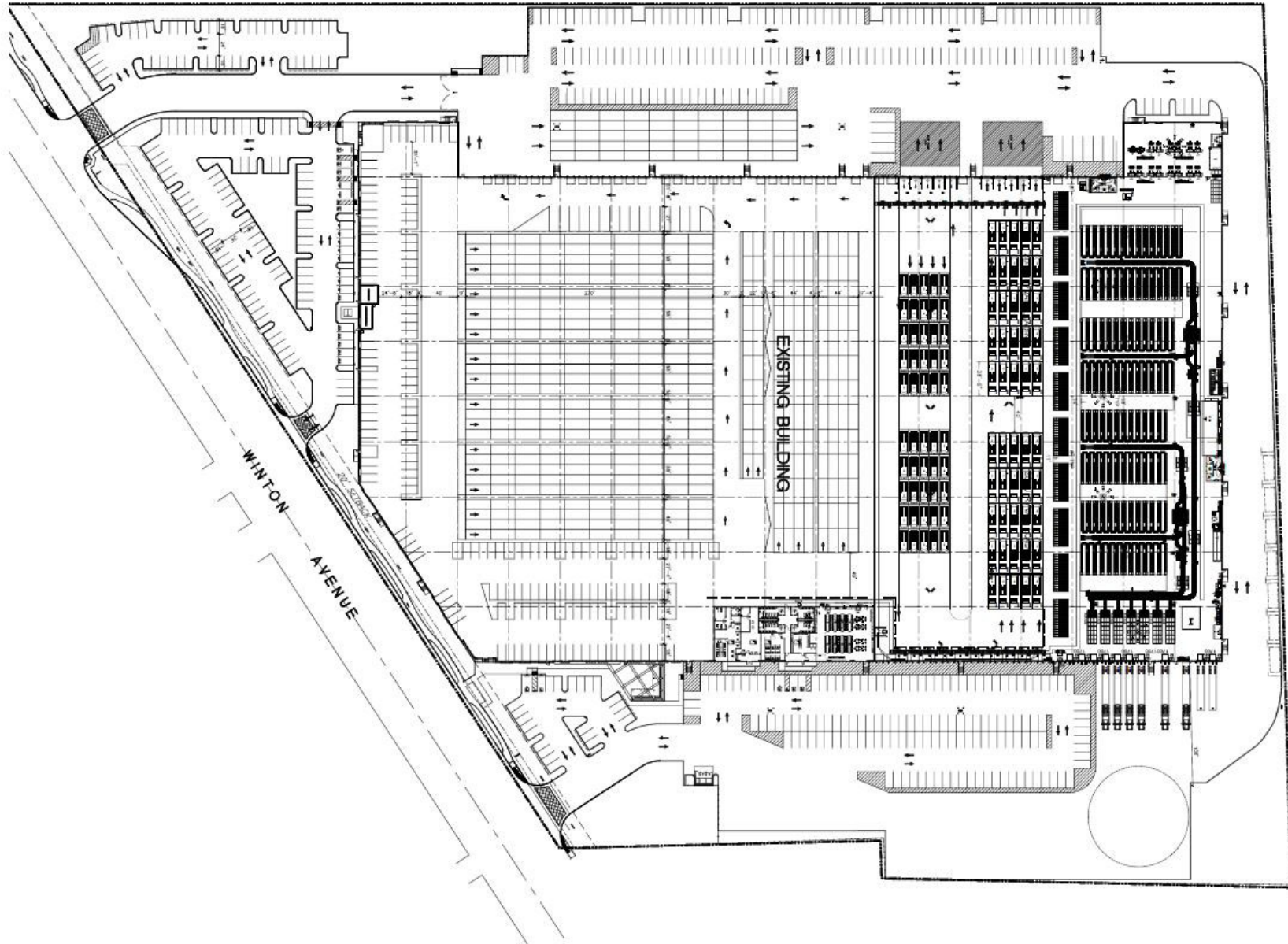


Figure 2
Site Plan

Intersection traffic conditions were evaluated for the following scenarios:

- **Existing Conditions.** Existing AM and PM peak-hour traffic volumes were obtained from turning-movement counts taken from the 2595 Depot Road traffic study and previous traffic studies conducted between February 2016 and September 2019. Since some of the counts are older than two years old, a one percent growth factor, consistent with forecasts from the Hayward General Plan Update model, was applied per year to 2020 to account for growth in traffic volumes. Due to COVID-19 Shelter-in-Place, typical traffic conditions have changed. With more people working from home, people are less inclined to drive to work. Existing 2020 volumes are much lower than normal conditions as a result and are not historically consistent. As such, previous/historical numbers with an applied growth factor was used to account for typical traffic volumes.
- **Existing Plus Project Conditions.** Existing plus project traffic volumes were estimated by adding to existing traffic volumes the additional traffic generated by the project. Existing plus project conditions were evaluated relative to existing conditions in order to determine potential project related adverse effects.
- **Background Conditions.** Background traffic volumes were estimated by applying a growth factor of 1% per year for the next 5 years to existing conditions to represent traffic growth in the area. The growth factor was derived from the 18% projected growth rate between the Year 2000 to Year 2020 in the Hayward General Plan Update travel demand model.
- **Background Plus Project Conditions.** Background plus project conditions represent background peak hour traffic volumes with the addition of project traffic. Background plus project conditions were evaluated relative to background conditions in order to determine potential project related adverse effects.
- **Cumulative Conditions.** Cumulative traffic volumes were estimated by applying a growth factor of 1% per year through year 2040 to represent traffic growth in the area. The growth factor was derived from the Hayward General Plan Update travel demand model.
- **Cumulative Plus Project Conditions.** Cumulative plus project conditions represent cumulative peak hour traffic volumes with the addition of project traffic. Cumulative plus project conditions were evaluated relative to cumulative conditions in order to determine potential project related adverse effects.

Other Transportation Issues

The study includes a queuing analysis, a review of site access and circulation, an evaluation of potential impacts to transit services and pedestrian and bicycle facilities, and parking.

Methodology

This section presents the methods used to evaluate traffic conditions at the study intersections and the traffic impacts of the project. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

Data Requirements

The data required for the analysis were obtained from previous traffic studies and the City of Hayward. The following data were collected from these sources:

- Existing traffic volumes,
- Existing bicycle facilities,

- Existing transit services, and
- Lane geometries

Intersection Level of Service Methodology and Standards

Traffic conditions at the study intersections were evaluated using level of service (LOS). Level of service is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The various analysis methods are described below.

Signalized Study Intersections

The City of Hayward level of service methodology for signalized intersections is the *2010 Highway Capacity Manual (HCM)* method. The study intersections were evaluated with a level of service analysis using SYNCHRO software in accordance with the *2010 Highway Capacity Manual* methodology. The Hesperian Boulevard/Depot Road intersection was evaluated with a level of service analysis using SYNCHRO software in accordance with *2000 Highway Capacity Manual* methodology due to the shared and exclusive lane geometrics that cannot be supported by the HCM 2010 methodology. The 2010 HCM operations method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. As stated in the City of Hayward General Plan Goal M-4.3, the City of Hayward level of service standard for signalized intersections is LOS E or better during peak commute periods except when a LOS F may be acceptable due to costs of mitigation or when there would be other unacceptable impacts, such as right-of-way acquisition or degradation of the pedestrian environment. The correlation between average control delay and level of service is shown in Table 1.

**Table 1
Signalized Intersection Level of Service Definitions Based on Average Control Delay**

Level of Service	Description	Average Control Delay Per Vehicle (Sec.)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	Up to 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operation with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	Greater than 80.0

Source: Transportation Research Board, *2000 Highway Capacity Manual*, (Washington, D.C., 2000)

Unsignalized Intersections

Level of service at unsignalized intersections was based on the *2010 Highway Capacity Manual* (HCM) method using the Synchro software. This method is applicable for both one-way and all-way stop-controlled intersections. The correlation between average control delay and LOS for unsignalized intersections is shown in Table 2.

Table 2
Unsignalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Delay Per Vehicle (Sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p17-2.

Traffic Signal Warrants

The unsignalized study intersections of West Winton Avenue and Cabot Boulevard, Depot Road and Cabot Boulevard, and Clawiter Road and SR 92 Eastbound Ramps-Eden Landing Road were analyzed for potential signalization based on the Peak-Hour Volume Signal Warrant, (Warrant #3 – Part B) described in the California Manual on Uniform Traffic Control Devices (MUTCD), 2014 Edition. This method provides an indication whether peak-hour traffic volumes are, or would be, sufficient to justify installation of a traffic signal. Intersections that meet the peak hour warrant are subject to further analysis before determining that a traffic signal is necessary. Other options such as traffic control devices, signage, or geometric changes may be preferable based on existing field conditions.

MTS Freeway and Roadway Segments

Operation of the Metropolitan Transportation System (MTS) freeway and surface street segments were assessed based on volume-to capacity (V/C) ratios. For freeway segments, a per-lane capacity of 2,200 vehicles per hour was used. For surface streets, a per-lane capacity of 1,100 vehicles per hour was used. This methodology is consistent with the approach used for other projects within Alameda County. These capacities do not reflect additional capacity provided at intersections through turn pockets. Roadway segments with a V/C ratio greater than 1.0 are assigned LOS F. Volume-to capacity ratios and the corresponding levels of service are shown in Table 3.

Table 3
Level of Service Criteria for Freeway and Roadway Segments

Level of Service	v/c ¹
A	<= 0.60
B	0.61 to 0.70
C	0.71 to 0.80
D	0.81 to 0.90
E	0.91 to 1.00
F	> 1.00

Source: Transportation Research Board, 2000 Highway Capacity Manual, ¹Volume to Capacity ratio

Adverse Effects at Signalized and Unsignalized Intersections

According to the City of Hayward standards, a development is said to create an adverse effect on traffic conditions at a study intersection if for either peak hour:

1. The level of service at a signalized intersection degrades from an acceptable LOS E or better under no project conditions to an unacceptable LOS F under project conditions, or
2. A signalized or unsignalized intersection operates at LOS F without the project, and the addition of project trips causes the average control delay to increase by 5.0 seconds or greater.

Metropolitan Transportation System (MTS) Roadway Analysis Methodology

According to the Alameda County Transportation Commission's (ACTC) 2011 Congestion Management Program (CMP), the LOS standard for MTS roadway segments is LOS E, except where LOS F was the LOS of a segment when originally measured as part of the CMP, in which case the standard shall be LOS F. However, the ACTC does not have a policy for determining a threshold of significance for segments operating unacceptably without the project. Rather, professional judgment is required to determine project level impacts.

Therefore, for the purposes of this traffic impact analysis, an adverse effect would be identified when the project traffic causes an MTS network segment to fall from an acceptable LOS E or better (roadway segment, freeway segment, or freeway ramp v/c ratio of 0.99 or less) in the No Project case to an unacceptable LOS F (v/c of 1.00 or more); or, if a segment is already operating at LOS F in the No Project case, the v/c ratio increases by more than 0.02 (for example, from 1.03 to 1.05).

Intersection Vehicle Queuing Analysis

The analysis of intersection levels of service was supplemented with a vehicle queuing analysis at intersections where the project would add a substantial number of trips to the left-turn movements. The intersection queuing analysis was conducted using SYNCHRO traffic analysis software in accordance with the *2010 Highway Capacity Manual* methodology. SYNCHRO provides total movement delay and 95th-percentile queues for each movement.

2. Existing Conditions

This chapter describes the existing conditions for transportation facilities in the vicinity of the site, including the roadway network, transit services, pedestrian and bicycle facilities, and traffic operations at the study intersections.

Existing Roadway Network

Regional access to the project site are provided by I-880 and SR 92. Local access to the project site is provided via West Winton Avenue, Cabot Boulevard, Corsair Boulevard, Clawiter Road, Hesperian Boulevard, Southland Drive, Depot Road, and Industrial Boulevard.

Interstate 880 (I-880) is a north-south freeway extending from Oakland to San Jose. In the vicinity of the project I-880 provides four mixed-flow lanes in both directions, with one HOV lane in each direction.

SR 92 is a four- to six- lane east-west freeway extending from Half Moon Bay in western San Mateo County to Hayward in Alameda County. Access to and from the project study area is provided via interchanges at Clawiter Road, Industrial Boulevard, and Hesperian Boulevard.

West Winton Avenue is a west-east arterial street that extends from Depot Road in the west to Grand Street in the east. West Winton Avenue has two to four lanes of travel and has a posted speed limit of 35 mph. West Winton Avenue has sidewalks on both sides of the street with a few exceptions where the sidewalk is discontinuous. Within the vicinity of the project, West Winton Avenue is a Class III bike route from Depot Road to Clawiter Road. On-street parking is permitted along West Winton Avenue between Bush Lane and Clawiter Road.

Cabot Boulevard is a north-south roadway that extends from its north end near Barrington Court to Depot Road in the south, where it transitions to Whitesell Street. Cabot Boulevard has four lanes and has a posted speed limit of 35 mph. Within the vicinity of the project, Cabot Boulevard has sidewalks on both sides of the street. Cabot Boulevard is a Class III bike route between West Winton Avenue and Depot Road. Cabot Boulevard provides access to industrial and commercial developments. On-street parking is prohibited on both sides of the street.

Corsair Boulevard is a north-south roadway that extends from its north end near Stearman Avenue to West Winton Avenue in the south. Corsair Boulevard has four lanes of travel and has a posted speed limit of 25 mph. Corsair Boulevard provides access to industrial and commercial developments.

Clawiter Road is a north-south collector street that extends from West Winton Avenue in the north to Arden Road in the south. Within the vicinity of the project, Clawiter Road is two- to four-lanes wide and has a prima facie speed limit of 25 mph. Clawiter Road has sidewalks on both sides of the street with a few exceptions where the sidewalk is discontinuous. Clawiter Road is a Class III bike route from West Winton Avenue to Arden Road. On-street parking is prohibited along Clawiter Road.

Hesperian Boulevard is a north-south arterial street that extends from East 14th Street in San Leandro in the north to Alameda Creek in the south, where it transitions to Union City Boulevard. Hesperian Boulevard is six lanes wide and has a posted speed limit of 35 mph. Hesperian Boulevard has sidewalks on both sides of the street. On-street parking is prohibited. Within the vicinity of the project, Hesperian Boulevard has no bike facilities.

Southland Drive is a six-lane north-south roadway that becomes a four-lane roadway at its 90-degree bend. Southland Drive extends from West Winton Avenue in the north to Hesperian Boulevard in the west. Southland Drive has sidewalks on both sides of the street when oriented in a north-south and no

sidewalks when Southland Drive is oriented in a west-east direction. Southland Drive has a prima facie speed limit of 25 mph with no bicycle facilities. On-street parking is prohibited.

Depot Road is an east-west collector street that extends from Hesperian Boulevard in the east to its terminus near the San Francisco Bay. Within the vicinity of the project, Depot Road is two lanes wide and has a posted speed limit of 25 mph. Depot Road is a Class III bike route and has sidewalks on both sides of the street. On-street parking is permitted on both sides of the street.

Industrial Road is a north-south arterial street that extends from Clawiter Road in the north to Hesperian Boulevard in the south. Within the vicinity of the project, Industrial Road is four lanes wide and has a posted speed limit of 35 mph. Industrial Road is a Class III bike route and has sidewalks on both sides of the street. On-street parking is prohibited along Industrial Road.

Existing Bicycle Facilities

The bicycle facilities in the vicinity of the project (see Figure 3) consist of shared bike routes (Class III bikeway). Bike routes are existing streets that accommodate bicycles but are not separate from the existing travel lanes. Routes are typically designated only with signs. Class III bicycle routes are present on Cabot Boulevard between West Winton Avenue and Depot Road, Depot Road between Cabot Boulevard and Hesperian Boulevard, Clawiter Road between West Winton Avenue and Arden Road, and Industrial Boulevard between Clawiter Road and Industrial Parkway.

Existing Pedestrian Facilities

Sidewalks are generally found on both sides of all previously-described roadways in the study area in the immediate vicinity of the site, except on West Winton Avenue and Clawiter Road where sidewalks are discontinuous in places. All signalized study intersections have pedestrian crosswalks and curb ramps.

Although all the signalized study intersections have crosswalks, some of them lack crosswalks on some of the legs. At the Corsair Boulevard/Winton Avenue intersection, there is no crosswalk on the east leg of the intersection. At the Hesperian Boulevard/Depot Road intersection, there is no crosswalk on the north leg of the intersection. At the Industrial Boulevard/SR 92 West On-Ramp/Cryer Street intersection and the Industrial Boulevard/ SR 92 East On-Ramp/Sleepy Hollow Avenue intersection, there are no crosswalks on the north and south legs of the intersection.

Existing Transit Services

Existing bus service in the project vicinity is provided by the Alameda-Contra Costa Transit District (AC Transit). There is one bus route in the area, described below. Existing transit service is shown in Figure 4.

Local Route 86 provides service between the Hayward BART station and the South Hayward BART station. Route 86 operates along Cabot Boulevard and West Winton Avenue in the project study area, with 30-minute headways during the weekday peak commute hours and 45-minute headways during the weekends. The closest bus stop is located on West Winton Avenue near Cabot Boulevard approximately one quarter mile from the project site.

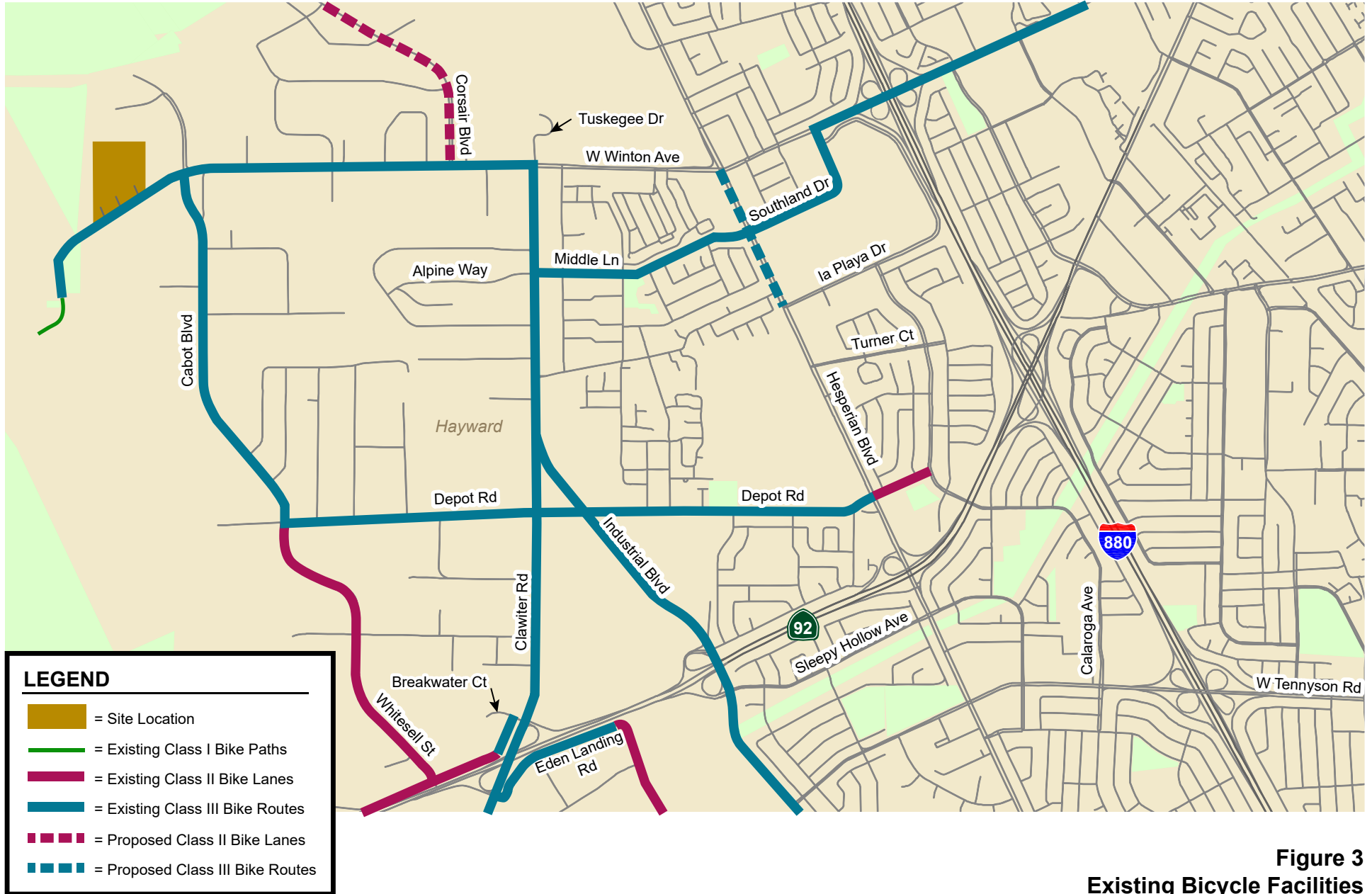


Figure 3
Existing Bicycle Facilities



Figure 4
Existing Transit Services

Existing Lane Configurations and Traffic Volumes

The existing lane configurations at the study intersections were obtained from previous traffic studies (see Figure 5).

Existing peak-hour intersection volumes (see Figure 6) were obtained from previous traffic studies. The counts were collected between February 2016 and September 2019, between 7:00 and 9:00 AM and between 4:00 and 6:00 PM. A growth factor of 1% per year was applied from the previous count date to estimate 2020 volume.

The intersection turning-movement counts conducted for this analysis are presented in Appendix A. Traffic volumes for all components of traffic are tabulated in Appendix B.

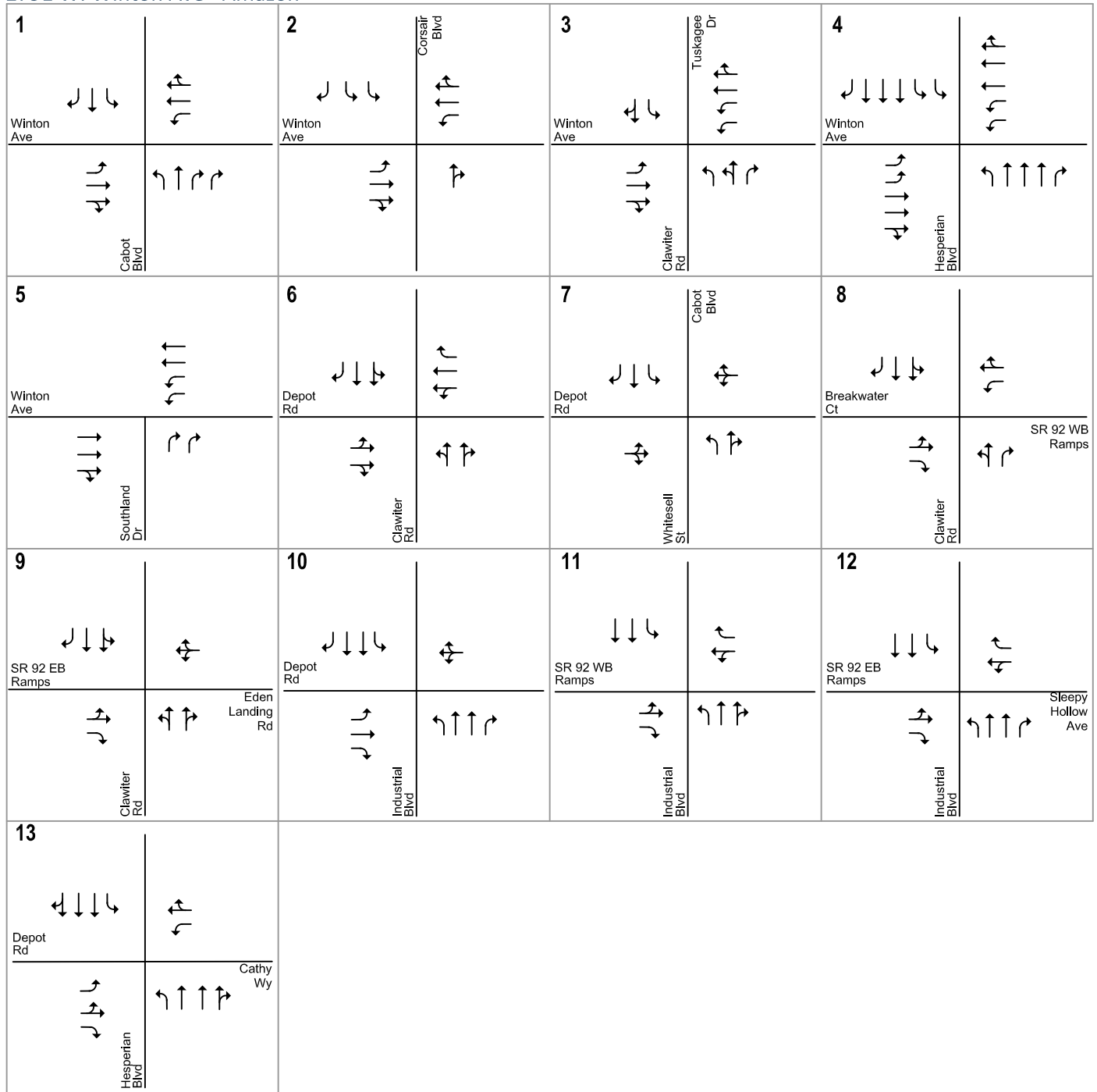
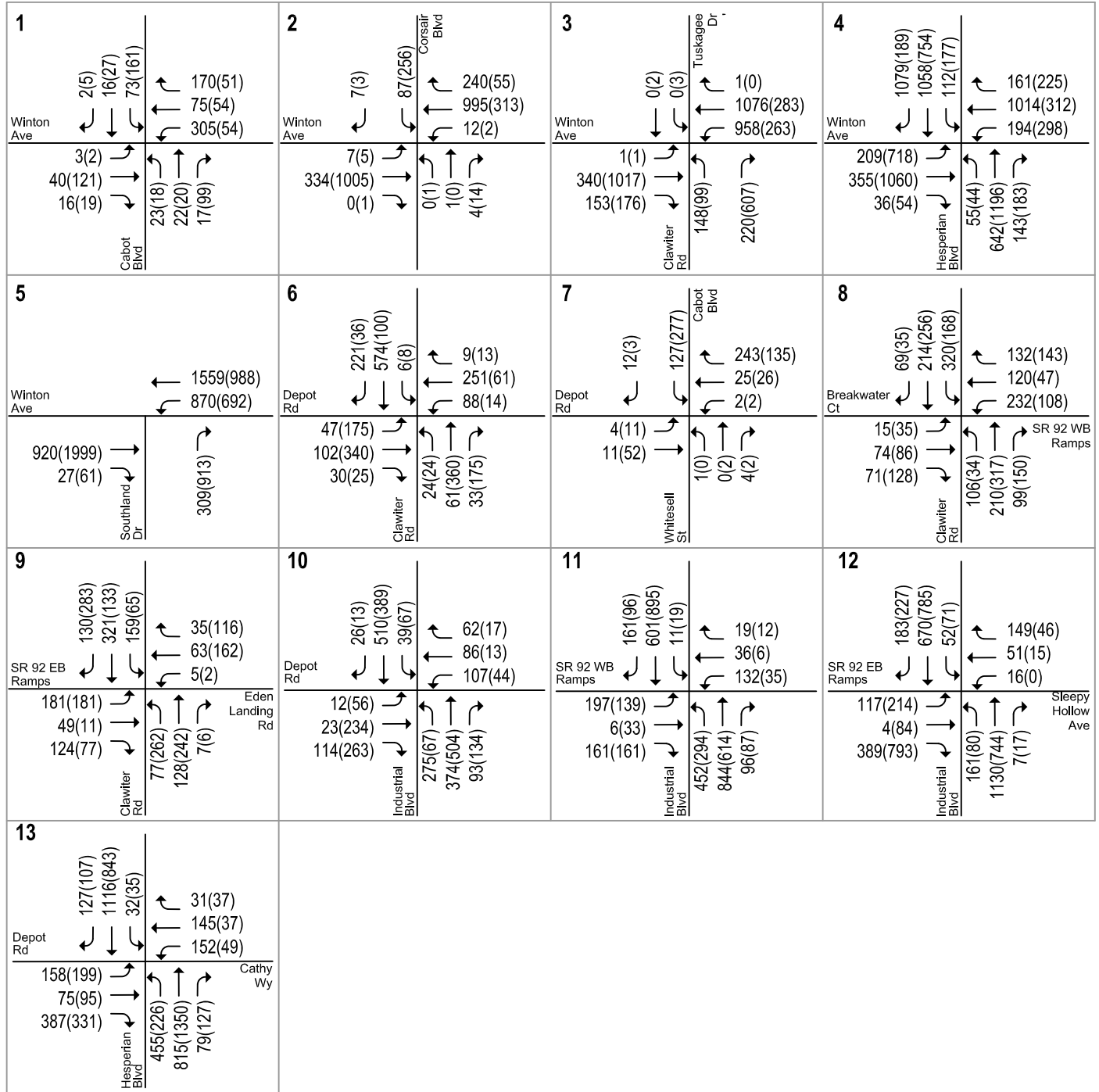


Figure 5
Existing Lane Configurations



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 6
Existing Traffic Volumes

Existing Intersection Levels of Service

Intersection levels of service were evaluated against the City of Hayward level of service standards. The results of the intersection level of service analysis show that most of the study intersections operate at acceptable level of service during both AM and PM peak hours (see Table 4). The intersection of Clawiter Road and the SR 92 eastbound ramps operates at an unacceptable level of service during the PM peak hour.

The intersection levels of service calculation sheets are included in Appendix C.

Table 4
Existing Intersection Levels of Service

#	Intersection	Control	Peak Hour	Count Date	Note	Existing	
						Avg. Delay (sec)	LOS
1	Cabot Boulevard & West Winton Avenue	All-Way Stop	AM	02/11/16		14.1	B
			PM	02/11/16		11.4	B
2	Corsair Boulevard & West Winton Avenue	Signal	AM	03/30/17	*	7.6	A
			PM	03/30/17	*	11.3	B
3	Clawiter Road & West Winton Avenue	Signal	AM	02/11/16	*	21.4	C
			PM	02/11/16	*	49.1	D
4	Hesperian Boulevard & West Winton Avenue	Signal	AM	02/03/16		36.9	D
			PM	02/03/16		51.5	D
5	Southland Drive & West Winton Avenue	Signal	AM	03/30/17	*	27.3	C
			PM	03/30/17	*	66.5	E
6	Clawiter Road & Depot Road	Signal	AM	09/12/19		13.0	B
			PM	09/12/19		14.5	B
7	Cabot Boulevard & Depot Road	All-Way Stop	AM	03/30/17		9.8	A
			PM	03/30/17		11.8	B
8	Clawiter Road & SR 92 Westbound Ramps/Breakwater Avenue	Signal	AM	07/18/17	*	42.4	D
			PM	07/18/17	*	35.1	D
9	Clawiter Road & SR 92 Eastbound Ramps/Eden Landing Road	All-Way Stop	AM	07/18/17		20.6	C
			PM	07/18/17		86.9	F
10	Industrial Boulevard & Depot Road	Signal	AM	09/12/19		12.1	B
			PM	09/12/19		14.2	B
11	Industrial Boulevard & SR 92 Westbound Ramps/Cryer Street	Signal	AM	09/12/19		40.2	D
			PM	09/12/19		29.8	C
12	Industrial Boulevard & SR 92 Eastbound Ramps/Sleepy Hollow	Signal	AM	09/12/19		47.9	D
			PM	09/12/19		56.3	E
13	Hesperian Boulevard & Depot Road/Cathy Way	Signal	AM	09/12/19	*	72.6	E
			PM	09/12/19	*	38.1	D

Notes:

* indicates the intersection level of service is calculated using the HCM 2000 module with the Synchro software. These intersections have unusual lane geometries that cannot be supported by Synchro HCM 2010 module.

BOLD indicates a substandard level of service

Existing Roadway and Freeway Segment Levels of Service

The analysis methodology used to analyze roadway facilities is described in Chapter 1. The level of service was determined by comparing existing traffic volumes for selected roadway and freeway segments with hourly traffic capacities. Table 5 and Table 6 shows the results of the LOS analysis of MTS roadway segments and freeway segments for the 2020 analysis scenario without the proposed project. 2020 volumes were obtained from the Alameda Transportation Commission's Countywide

Travel Demand Model. As shown, all the study segments are operating at LOS E or better during both the AM and PM peak hours under 2020 baseline conditions.

Table 5
Existing Freeway Levels of Service

Freeway Segment	No. of Lanes	Capacity	Direction	Peak Hour	Year 2020 No Project		
					Volume ¹	V/C ²	LOS ³
I-880 south of Winton Avenue	5	11,000	NB	AM	6273	0.57	A
				PM	6769	0.62	B
	5	11,000	SB	AM	7002	0.64	B
				PM	7124	0.65	B
I-880 north of Winton Avenue	5	11,000	NB	AM	6353	0.58	A
				PM	6958	0.63	B
	5	11,000	SB	AM	7569	0.69	B
				PM	7584	0.69	B
SR 92 west of Clawiter Road	3	6,600	EB	AM	1399	0.21	A
				PM	6046	0.92	E
	4	8,800	WB	AM	5040	0.57	A
				PM	2235	0.25	A
SR 92 east of Clawiter Road	4	8,800	EB	AM	1304	0.15	A
				PM	6489	0.74	C
	5	11,000	WB	AM	5728	0.52	A
				PM	2340	0.21	A

Notes:

¹ 2020 volume source: Alameda County Transportation Commission Countywide Travel Demand Model

² Volume to Capacity Ratio

³ Level of Service

Bold indicates a substandard level of service.

Table 6
Existing Roadway Levels of Service

Roadway Segment	No. of Lanes	Capacity	Direction	Peak Hour	Year 2020 No Project		
					Volume ¹	V/C ²	LOS ³
Winton Avenue between Cabot Boulevard and Clawiter Road	2	2,200	EB	AM	148	0.07	A
				PM	1393	0.63	B
	2	2,200	WB	AM	1282	0.58	A
				PM	361	0.16	A
Winton Avenue between Clawiter Road and Hesperian Boulevard	2	2,200	EB	AM	352	0.16	A
				PM	1919	0.87	D
	2	2,200	WB	AM	1880	0.85	D
				PM	636	0.29	A
Winton Avenue between Hesperian Boulevard and I-880	3	3,300	EB	AM	659	0.20	A
				PM	1434	0.43	A
	2	2,200	WB	AM	2091	0.95	E
				PM	1168	0.53	A
Hesperian Boulevard north of Winton Avenue	3	3,300	NB	AM	489	0.15	A
				PM	2332	0.71	C
	3	3,300	SB	AM	2040	0.62	B
				PM	554	0.17	A
Hesperian Boulevard south of Winton Avenue	3	3,300	NB	AM	628	0.19	A
				PM	1444	0.44	A
	3	3,300	SB	AM	1852	0.56	A
				PM	749	0.23	A

Notes:

¹ 2020 volume source: Alameda County Transportation Commission Countywide Travel Demand Model

² Volume to Capacity Ratio

³ Level of Service

Bold indicates a substandard level of service.

3. Existing Plus Project Conditions

This chapter describes existing plus project traffic conditions with the addition of the traffic that would be generated by the proposed project. Existing plus project traffic conditions could potentially occur if the project were to be occupied prior to the other approved projects in the area.

Roadway Network under Existing Plus Project Conditions

The roadway network under existing plus project conditions would be the same as the existing roadway network because the project would not alter the existing intersection lane configurations.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear were estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic traveling to and from the proposed project site was estimated for the AM and PM peak hours. As part of the project trip distribution, the directions to and from which the project trips would travel were estimated. In the project trip assignment, the project trips were assigned to specific streets and intersections. These procedures are described below.

Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by many types of land uses. The research is compiled in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition* (2017). The rates published for High-Cube Fulfillment Center Warehouse (Land Use 155) were used to estimate the trips generated by the proposed project. The ITE does not provide in/out percentage split for High-Cube Fulfillment Center Warehouse. Therefore, it is assumed that 50% of the trip generation rate will enter and 50% of the trip generation rate will exit. ITE results were found to be consistent with Amazon's operational model. In addition, ITE rates were found to be slightly more conservative than data provided by Amazon. As such, ITE rates were used for the purposes of this analysis.

As shown in Table 7, the project is estimated to generate 4,151 daily vehicle trips, with 299 trips occurring during the AM peak hour and 695 trips during the PM peak hour. These trips include the line haul trucks and delivery vans. The estimated number of line haul trucks and delivery vans are based on Amazon's operational model and can be found in Appendix E.

**Table 7
Project Trip Generation Estimates**

	ITE Land Use Code	Size	Daily		AM Peak Hour			PM Peak Hour				
			Rate	Trip	Rate	Trip		Rate	Trip			
						In	Out		Total	In	Out	Total
Proposed Uses												
Warehouse ^{1,2}	155	507,500 Square Feet	8.18	4,151	0.59	150	149	299	1.37	348	347	695

Notes:
¹ Land Use Code 155: High-Cube Fulfillment Center Warehouse (average rates expressed in trips per 1,000 s.f.)
² ITE does not provide the in/out percentage split for High-Cube Fulfillment Center Warehouse. It is assumed that 50% of the trip generation rate will enter and 50% of the trip generation rate will exit.

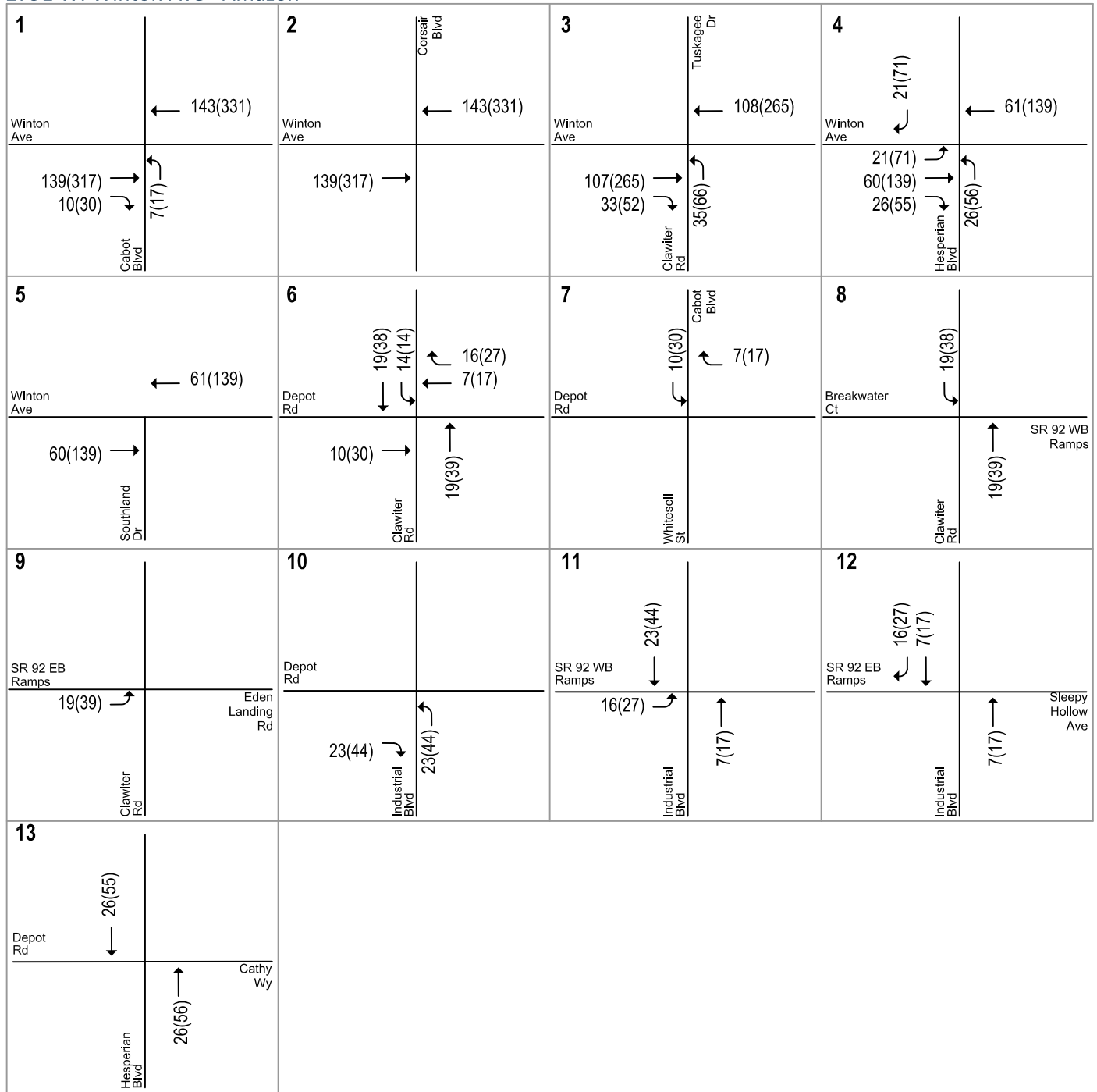
Trip Distribution and Assignment

The trip distribution pattern for the project was estimated based on existing travel patterns on the surrounding roadway network and the locations of complementary land uses and under direction of the City of Hayward based on the City's General Plan Update Travel Demand Model. The trip distribution pattern for the project is shown on Figure 7. The peak-hour trips generated by the project were assigned to the roadway network in accordance with the project trip distribution pattern. Figure 8 shows the assignment of net project trips at each study intersection.

A tabular summary of project traffic at each study intersection is contained in Appendix B.



Figure 7
Project Trip Distribution



LEGEND

XX(X) = AM(PM) Peak-Hour Trips

Figure 8
Project Trip Assignment

Existing Plus Project Traffic Volumes

Project trips, as represented in the above project trip assignment, were added to existing traffic volumes to obtain existing plus project traffic volumes (see Figure 9).

Existing Plus Project Intersection Levels of Service

The results of the intersection level of service analysis under existing plus project conditions are summarized in Table 8. The results of the intersection level of service analysis show that the following study intersections would operate at unacceptable levels during the PM peak hours of traffic, and the project would have an adverse effect on operations:

- Cabot Boulevard and Winton Avenue
- Clawiter Road and SR 92 Eastbound Ramps/Eden Landing Road

Both intersections are unsignalized, and the level of service could be improved with the installation of traffic signals. The installation of traffic signals would restore both intersections to acceptable levels of service, LOS B. The signal warrant analysis is described below.

Signal Warrant Analysis

The unsignalized study intersections of Cabot Boulevard/West Winton Avenue, Cabot Road/Depot Road, and Clawiter Road/SR 92 Eastbound Ramps/Eden Landing Road were analyzed for signalization, based on the Peak-Hour Volume Signal Warrant, (Warrant #3 – Part B) described in the *California Manual on Uniform Traffic Control Devices (MUTCD)*, 2014 Edition. This method provides an indication whether peak-hour traffic volumes are, or would be, sufficient to justify installation of a traffic signal. Intersections that meet the peak hour warrant are subject to further analysis before determining that a traffic signal is necessary. Other options such as traffic control devices, signage, or geometric changes may be preferable based on existing field conditions.

The results of the peak-hour traffic signal warrants checks indicate that the Cabot Boulevard/Winton Avenue intersection would not meet the signal warrant under existing or existing plus project conditions. The intersection does not satisfy parts A and B of the traffic signal warrants analysis under either peak hours. However, the level of service at this intersection could be improved with the installation of a traffic signal. The installation of a traffic signal would restore the intersection to an acceptable level of service, LOS B.

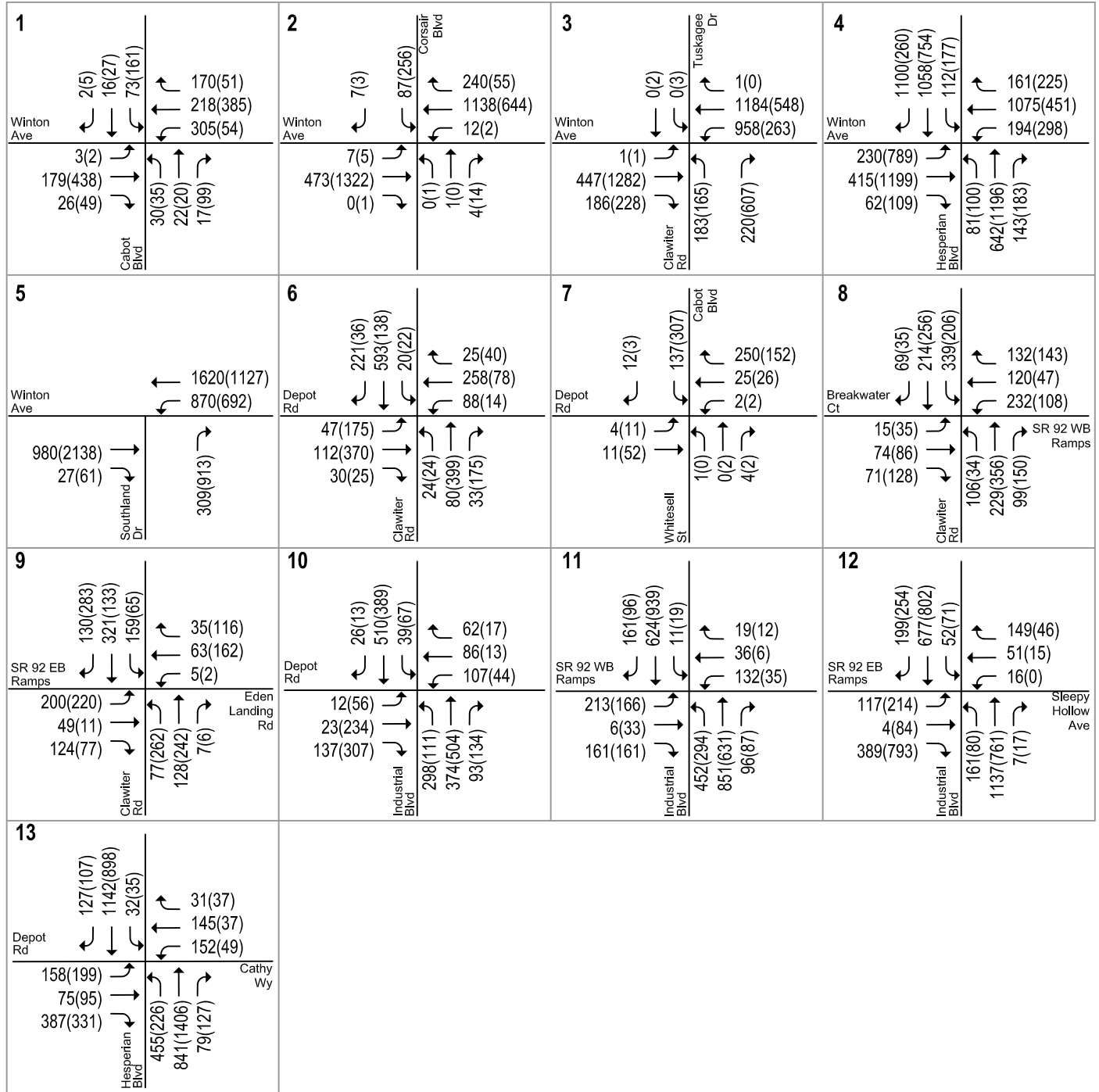
The results of the peak-hour traffic signal warrants checks indicate that the Cabot Boulevard/Depot Road intersection would not meet the signal warrant under existing or existing plus project conditions.

The results of the peak-hour traffic signal warrant checks indicate that the Clawiter Road/SR 92 Eastbound Ramps/Eden Landing Road intersection would meet the signal warrant under existing or existing plus project conditions. The peak-hour signal warrant sheets are contained in Appendix D.

Table 8
Existing Plus Project Intersection Levels of Service

#	Intersection	Control	Peak Hour	Count Date	Note	Existing		Existing plus Project		
						Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Incr. in Avg. Delay
1	Cabot Boulevard & West Winton Avenue	All-Way Stop	AM	02/11/16		14.1	B	17.8	C	3.7
			PM	02/11/16		11.4	B	73.5	F	62.1
2	Corsair Boulevard & West Winton Avenue	Signal	AM	03/30/17	*	7.6	A	7.6	A	0.0
			PM	03/30/17	*	11.3	B	12.4	B	1.1
3	Clawiter Road & West Winton Avenue	Signal	AM	02/11/16	*	21.4	C	24.6	C	3.2
			PM	02/11/16	*	49.1	D	77.6	E	28.5
4	Hesperian Boulevard & West Winton Avenue	Signal	AM	02/03/16		36.9	D	42.0	D	5.1
			PM	02/03/16		51.5	D	53.9	D	2.4
5	Southland Drive & West Winton Avenue	Signal	AM	03/30/17	*	27.3	C	29.1	C	1.8
			PM	03/30/17	*	66.5	E	70.4	E	3.9
6	Clawiter Road & Depot Road	Signal	AM	09/12/19		13.0	B	13.4	B	0.4
			PM	09/12/19		14.5	B	15.6	B	1.1
7	Cabot Boulevard & Depot Road	All-Way Stop	AM	03/30/17		9.8	A	10.1	B	0.3
			PM	03/30/17		11.8	B	12.7	B	0.9
8	Clawiter Road & SR 92 Westbound Ramps/Breakwater Avenue	Signal	AM	07/18/17	*	42.4	D	44.2	D	1.8
			PM	07/18/17	*	35.1	D	37.8	D	2.7
9	Clawiter Road & SR 92 Eastbound Ramps/Eden Landing Road	All-Way Stop	AM	07/18/17		20.6	C	22.2	C	1.6
			PM	07/18/17		86.9	F	97.7	F	10.8
10	Industrial Boulevard & Depot Road	Signal	AM	09/12/19		12.1	B	12.5	B	0.4
			PM	09/12/19		14.2	B	15.9	B	1.7
11	Industrial Boulevard & SR 92 Westbound Ramps/Cryer Street	Signal	AM	09/12/19		40.2	D	42.8	D	2.6
			PM	09/12/19		29.8	C	42.8	D	13.0
12	Industrial Boulevard & SR 92 Eastbound Ramps/Sleepy Hollow	Signal	AM	09/12/19		47.9	D	48.3	D	0.4
			PM	09/12/19		56.3	E	56.9	E	0.6
13	Hesperian Boulevard & Depot Road/Cathy Way	Signal	AM	09/12/19	*	72.6	E	74.1	E	1.5
			PM	09/12/19	*	38.1	D	38.1	D	0.0

Notes:
* indicates the intersection level of service is calculated using the HCM 2000 module with the Synchro software. These intersections have unusual lane geometries that cannot be supported by Synchro HCM 2010 module.
BOLD indicates a substandard level of service
boxed and BOLD indicates adverse effect



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 9
Existing Plus Project Traffic Volumes

Existing Plus Project Roadway and Freeway Segment Levels of Service

The analysis methodology used to analyze roadway facilities is described in Chapter 1. The level of service was determined by comparing existing traffic volumes for selected roadway and freeway segments with hourly traffic capacities. Table 9 and 10 shows the results of the LOS analysis of MTS roadway segments and freeway segments for the 2020 analysis scenarios, with and without the proposed projects. 2020 volumes were obtained from the Alameda Transportation Commission's Countywide Travel Demand Model. As shown, all the study segments would operate at LOS E or better during both the AM and PM peak hours, under both 2020 baseline and 2020 plus project conditions.

Table 9
Existing Plus Project Freeway Levels of Service

Freeway Segment	No. of Lanes	Capacity	Direction	Peak Hour	Year 2020 No Project			Project Trips	Year 2020 Plus Project		
					Volume ¹	V/C ²	LOS ³		Volume ¹	V/C ²	LOS ³
I-880 south of Winton Avenue	5	11,000	NB	AM	6273	0.57	A	6	6279	0.57	A
				PM	6769	0.62	B	31	6800	0.62	B
	5	11,000	SB	AM	7002	0.64	B	6	7008	0.64	B
				PM	7124	0.65	B	31	7155	0.65	B
I-880 north of Winton Avenue	5	11,000	NB	AM	6353	0.58	A	36	6389	0.58	A
				PM	6958	0.63	B	54	7012	0.64	B
	5	11,000	SB	AM	7569	0.69	B	36	7605	0.69	B
				PM	7584	0.69	B	54	7638	0.69	B
SR 92 west of Clawiter Road	3	6,600	EB	AM	1399	0.21	A	19	1418	0.21	A
				PM	6046	0.92	E	39	6085	0.92	E
	4	8,800	WB	AM	5040	0.57	A	19	5059	0.57	B
				PM	2235	0.25	A	38	2273	0.26	A
SR 92 east of Clawiter Road	4	8,800	EB	AM	1304	0.15	A	0	1304	0.15	A
				PM	6489	0.74	C	0	6489	0.74	C
	5	11,000	WB	AM	5728	0.52	A	0	5728	0.52	A
				PM	2340	0.21	A	0	2340	0.21	A

Notes:
¹ 2020 volume source: Alameda County Transportation Commission Countywide Travel Demand Model
² Volume to Capacity Ratio
³ Level of Service
Bold indicates a substandard level of service.

Table 10
Existing Plus Project Roadway Levels of Service

Roadway Segment	No. of Lanes	Capacity	Direction	Peak Hour	Year 2020 No Project			Project Trips	Year 2020 Plus 2017 Project		
					Volume ¹	V/C ²	LOS ³		Volume ¹	V/C ²	LOS ³
Winton Avenue between Cabot Boulevard and Clawiter Road	2	2,200	EB	AM	148	0.07	A	139	287	0.13	A
				PM	1393	0.63	B	317	1710	0.78	C
	2	2,200	WB	AM	1282	0.58	A	143	1425	0.65	B
				PM	361	0.16	A	331	692	0.31	A
Winton Avenue between Clawiter Road and Hesperian Boulevard	2	2,200	EB	AM	352	0.16	A	107	459	0.21	A
				PM	1919	0.87	D	265	2184	0.99	E
	2	2,200	WB	AM	1880	0.85	D	108	1988	0.90	E
				PM	636	0.29	A	265	901	0.41	A
Winton Avenue between Hesperian Boulevard and I-880	3	3,300	EB	AM	659	0.20	A	60	719	0.22	A
				PM	1434	0.43	A	139	1573	0.48	A
	2	2,200	WB	AM	2091	0.95	E	61	2152	0.98	E
				PM	1168	0.53	A	139	1307	0.59	A
Hesperian Boulevard north of Winton Avenue	3	3,300	NB	AM	489	0.15	A	21	510	0.15	A
				PM	2332	0.71	C	71	2403	0.73	C
	3	3,300	SB	AM	2040	0.62	B	21	2061	0.62	B
				PM	554	0.17	A	71	625	0.19	A
Hesperian Boulevard south of Winton Avenue	3	3,300	NB	AM	628	0.19	A	26	654	0.20	A
				PM	1444	0.44	A	56	1500	0.45	A
	3	3,300	SB	AM	1852	0.56	A	26	1878	0.57	A
				PM	749	0.23	A	55	804	0.24	A

Notes:
¹ 2020 volume source: Alameda County Transportation Commission Countywide Travel Demand Model
² Volume to Capacity Ratio
³ Level of Service
Bold indicates a substandard level of service.

Freeway Ramp Capacity Analysis

This analysis consisted of a volume-to-capacity ratio evaluation of the eight freeway ramps at the interchange of I-880 and Winton Avenue for the Year 2020, to reflect existing conditions. The ramp capacities were obtained from the *Highway Capacity Manual 2000*, which considers both the free-flow speed and the number of lanes on the study ramps. The peak-hour freeway ramp volumes were obtained from the ACTC Model. Table 11 shows the 2020 AM and PM peak hour volumes and analysis of the freeway ramp capacity.

The ramp analysis showed that the freeway ramps currently have sufficient capacity to serve the existing traffic volumes. The study ramps have a volume-to-capacity (V/C) ratio that is well below 1.0, which means that the existing traffic demand is far lower than the ramp capacity.

Table 11
Existing Freeway Ramp Capacity Analysis

Freeway Interchange and Ramp	Peak Hour	Existing Conditions								Project Conditions			
		Dir	Ramp Type	Meter	Lanes	Capacity ¹ (vphpl)	Volume ²	V/C Ratio	LOS	Add. Vol.	% Capacity	V/C Ratio	LOS
I-880 and Winton Avenue Interchange													
SB On-Ramp from EB Winton Avenue	AM	SB	D	-	1	2,000	183	0.09	A	6	0.3%	0.09	A
	PM	SB	D	-	1	2,000	327	0.16	A	31	1.6%	0.18	A
SB On-Ramp from WB Winton Avenue	AM	SB	L	-	1	1,800	376	0.21	A	0	0.0%	0.21	A
	PM	SB	L	-	1	1,800	89	0.05	A	0	0.0%	0.05	A
NB Off-Ramp to WB Winton Avenue	AM	NB	L	-	1	1,800	293	0.16	A	6	0.3%	0.17	A
	PM	NB	L	-	1	1,800	146	0.08	A	31	1.7%	0.10	A
NB Off-Ramp to EB Winton Avenue	AM	NB	D	-	1	2,000	89	0.04	A	0	0.0%	0.04	A
	PM	NB	D	-	1	2,000	239	0.12	A	0	0.0%	0.12	A
NB On-Ramp from EB Winton Avenue	AM	NB	L	-	1	1,800	129	0.07	A	36	2.0%	0.09	A
	PM	NB	L	-	1	1,800	198	0.11	A	54	3.0%	0.14	A
NB On-Ramp from WB Winton Avenue	AM	NB	D	-	1	2,000	253	0.13	A	0	0.0%	0.13	A
	PM	NB	D	-	1	2,000	341	0.17	A	0	0.0%	0.17	A
SB Off-Ramp to WB Winton Avenue	AM	SB	D	-	1	2,000	880	0.44	B	36	1.8%	0.46	B
	PM	SB	D	-	1	2,000	637	0.32	A	54	2.7%	0.35	B
SB Off-Ramp to EB Winton Avenue	AM	SB	L	-	1	1,800	178	0.10	A	0	0.0%	0.10	A
	PM	SB	L	-	1	1,800	99	0.06	A	0	0.0%	0.06	A

Notes:
D = Diagonal ramp; L = Loop ramp
¹ Theoretical capacities of ramps per Exhibit 25-3 of HCM 2000: 2,000 vph for single-lane diagonal ramps, 1,800 vph for loop ramps, and 3,800 vph for dual-lane ramps. Capacity for metered on-ramps are calculated by multiplying the max metering rate (900 vphpl) by the number of lanes.
² Volumes derived from the latest available peak hour turning movement counts.

Freeway Ramp Queuing Analysis

A vehicle queuing and storage analysis was conducted for high demand turn movements at the off-ramps where project traffic would be added. The intersection queuing analysis was conducted using SYNCHRO traffic analysis software. SYNCHRO provides 95th-percentile vehicle queues for each movement. The results of this analysis are summarized below in Table 12. The ramp analysis showed that the freeway ramps currently have sufficient capacity to serve the existing traffic queues.

Table 12
Existing Freeway Ramp Queuing Analysis

Intersection	Movement	Peak Period	Storage Length (ft)	Existing	Existing Plus Project	
				95th Percentile Queue (feet) ¹	95th Percentile Queue (feet) ¹	Estimated Increase in 95th Percentile Queue (feet)
SR 92 EB Off-Ramp to Clawiter Road	EBL	AM	225	150	175	25
		PM	225	150	200	50
SR 92 WB Off-Ramp to Industrial Road	EBL	AM	300	250	275	25
		PM	300	150	175	25

Notes:

EB = eastbound; WB = westbound.

LT = left turn movement.

¹Based on 95th percentile queue reported by Synchro software using the HCM methodology.

²Queue lengths rounded up to nearest 25 feet.

³25 feet per vehicle queued.

4. Background Conditions

This chapter presents background traffic conditions, which are defined as conditions just prior to completion of the proposed project. This chapter describes the procedure used to determine background traffic volumes and the resulting traffic conditions.

Roadway Network Under Background Conditions

The roadway network under background conditions would be the same as the existing roadway network because there are no planned and funded transportation improvements at the study intersections that would alter the existing intersection lane configurations.

Background Traffic Volumes

Background traffic volumes for the study intersections (see Figure 10) were estimated by applying a growth factor of 1% per year through the year 2025 (five years) to represent background traffic growth in the area. The growth factor was derived from the Hayward General Plan Update travel demand model.

Volumes under background conditions are presented in Appendix B.

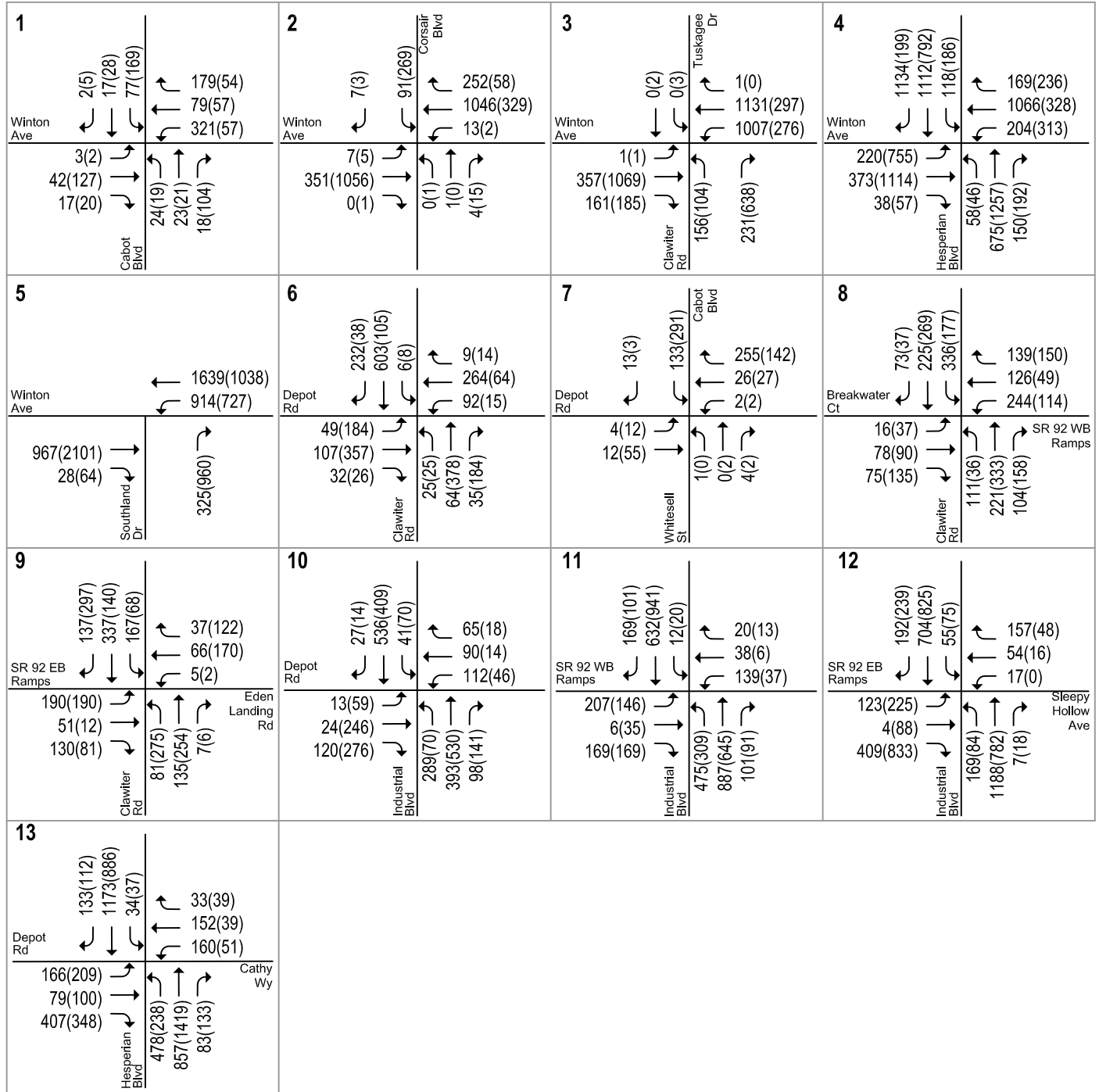
Background Intersection Levels of Service

The results the level of service analysis under background conditions (see Table 13) show that the following study intersection would operate at an unacceptable level of service during the PM peak hour:

- Clawiter Road and SR 92 eastbound ramps/Eden Landing Road

All other study intersections would operate at acceptable level of service during both peak hours.

Intersection level of service calculation sheets are included in Appendix C.



LEGEND

XX(X) = AM(PM) Peak-Hour Traffic Volumes

Figure 10
Background Traffic Volumes

Table 13
Background Intersection Levels of Service

#	Intersection	Control	Peak Hour	Count Date	Note	Existing		Background	
						Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS
1	Cabot Boulevard & West Winton Avenue	All-Way Stop	AM	02/11/16		14.1	B	15.1	C
			PM	02/11/16		11.4	B	11.7	B
2	Corsair Boulevard & West Winton Avenue	Signal	AM	03/30/17	*	7.6	A	7.8	A
			PM	03/30/17	*	11.3	B	11.7	B
3	Clawiter Road & West Winton Avenue	Signal	AM	02/11/16	*	21.4	C	22.9	C
			PM	02/11/16	*	49.1	D	29.7	C
4	Hesperian Boulevard & West Winton Avenue	Signal	AM	02/03/16		36.9	D	39.8	D
			PM	02/03/16		51.5	D	54.1	D
5	Southland Drive & West Winton Avenue	Signal	AM	03/30/17	*	27.3	C	31.9	C
			PM	03/30/17	*	66.5	E	39.8	D
6	Clawiter Road & Depot Road	Signal	AM	09/12/19		13.0	B	13.5	B
			PM	09/12/19		14.5	B	14.6	B
7	Cabot Boulevard & Depot Road	All-Way Stop	AM	03/30/17		9.8	A	10.1	B
			PM	03/30/17		11.8	B	12.2	B
8	Clawiter Road & SR 92 Westbound Ramps/Breakwater Avenue	Signal	AM	07/18/17	*	42.4	D	45.9	D
			PM	07/18/17	*	35.1	D	39.4	D
9	Clawiter Road & SR 92 Eastbound Ramps/Eden Landing Road	All-Way Stop	AM	07/18/17		20.6	C	23.3	C
			PM	07/18/17		86.9	F	107.9	F
10	Industrial Boulevard & Depot Road	Signal	AM	09/12/19		12.1	B	12.7	B
			PM	09/12/19		14.2	B	15.0	B
11	Industrial Boulevard & SR 92 Westbound Ramps/Cryer Street	Signal	AM	09/12/19		40.2	D	46.6	D
			PM	09/12/19		29.8	C	26.2	C
12	Industrial Boulevard & SR 92 Eastbound Ramps/Sleepy Hollow	Signal	AM	09/12/19		47.9	D	27.3	C
			PM	09/12/19		56.3	E	65.2	E
13	Hesperian Boulevard & Depot Road/Cathy Way	Signal	AM	09/12/19	*	72.6	E	68.8	E
			PM	09/12/19	*	38.1	D	31.0	C

Notes:
* indicates the intersection level of service is calculated using the HCM2000 module with the Synchro software. These intersections have unusual lane geometries that cannot be supported by Synchro HCM2010 module.
BOLD indicates a substandard level of service

5. Background Plus Project Conditions

This chapter describes background plus project traffic conditions. Background plus project conditions were evaluated relative to background conditions in order to determine potential project impacts.

Roadway Network Under Background Plus Project Conditions

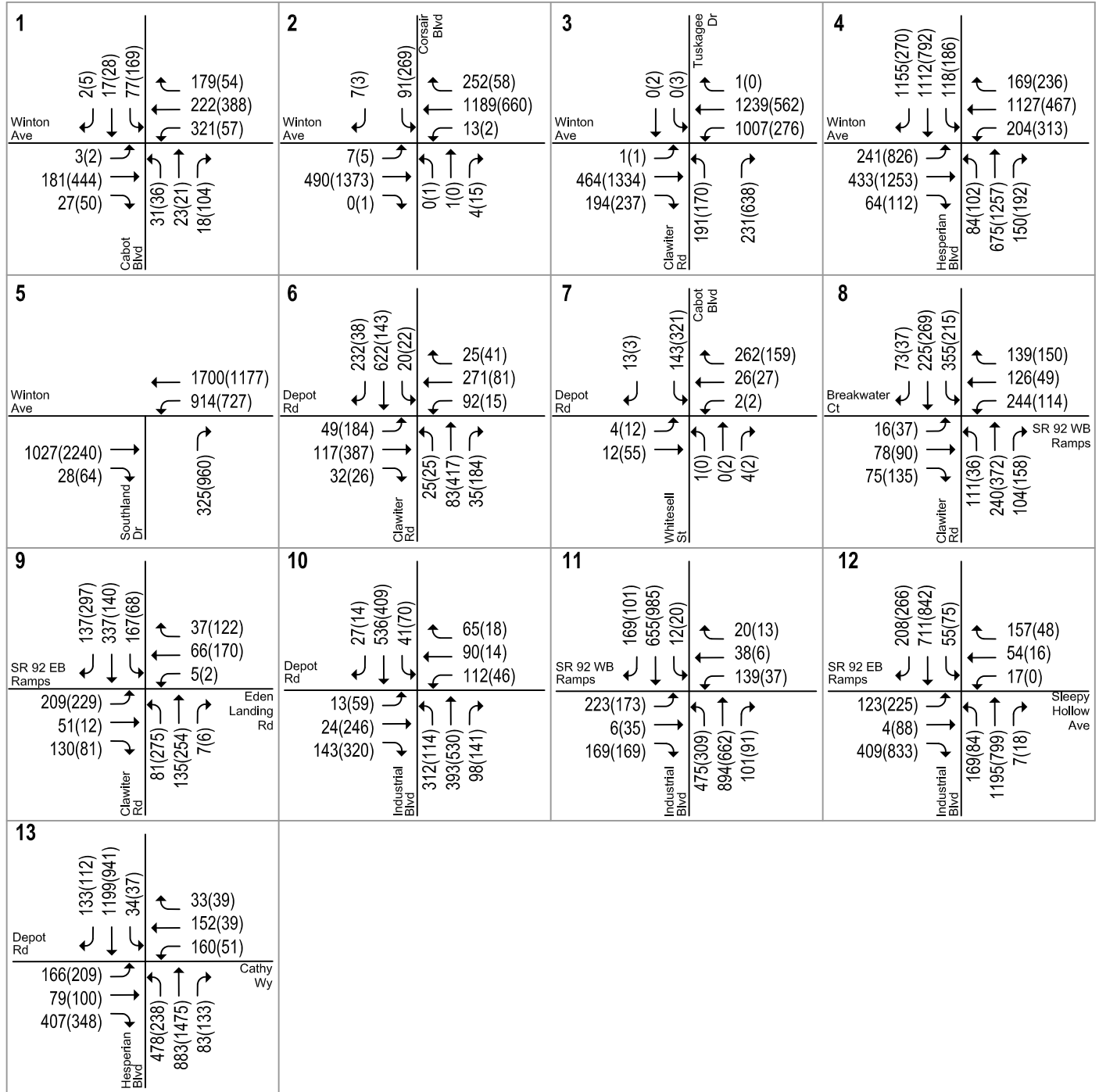
The roadway network under background plus project conditions would be the same as the existing plus project roadway network as described in Chapter 3.

Project Trip Estimates

The estimated project trip generation, distribution and assignment are the same under background plus project conditions as previously described under existing plus project conditions (see Chapter 3).

Background Plus Project Traffic Volumes

Project trips were added to background traffic volumes to obtain background plus project traffic volumes (see Figure 11).



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 11
Background Plus Project Traffic Volumes

Background Plus Project Intersection Levels of Service

The results of the level of service analysis under background plus project conditions (see Table 14) show that the following study intersections would operate at an unacceptable level of service during the PM peak hour:

- Cabot Boulevard and West Winton Avenue
- Clawiter Road and SR 92 eastbound ramps/Eden Landing Road

The addition of project trips would cause the critical movement delay to increase by more than 5.0 seconds. Thus, the project would have an adverse effect at these intersections.

All other study intersections would operate at an acceptable level of service during both peak hours.

Intersection level of service calculation sheets are included in Appendix C.

The results of the peak-hour traffic signal warrant checks indicate that the Cabot Boulevard/Winton Avenue intersection would not meet the signal warrant under background or background plus project conditions. The intersection does not satisfy parts A and B of the traffic signal warrants analysis under either peak hour. However, the intersection level of service could be improved with the installation of a traffic signal. The installation of a traffic signal would restore the intersection to an acceptable level of service, LOS B.

The results of the peak-hour traffic signal warrant checks indicate that the Clawiter Road/SR 92 Eastbound Ramps/Eden Landing Road intersection would meet the signal warrant under background or background plus project conditions. The installation of a traffic signal would restore the intersection to an acceptable level of service, LOS C. The peak-hour signal warrant sheets are contained in Appendix D.

Table 14
Background Plus Project Intersection Levels of Service

#	Intersection	Control	Peak Hour	Note	Background		Project		
					Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Incr. in Avg. Delay
1	Cabot Boulevard & West Winton Avenue	All-Way Stop	AM		15.1	C	19.4	C	4.3
			PM		11.7	B	79.7	F	68.0
2	Corsair Boulevard & West Winton Avenue	Signal	AM	*	7.8	A	7.4	A	-0.4
			PM	*	11.7	B	14.0	B	2.3
3	Clawiter Road & West Winton Avenue	Signal	AM	*	22.9	C	26.9	C	4.0
			PM	*	29.7	C	37.3	D	7.6
4	Hesperian Boulevard & West Winton Avenue	Signal	AM		39.8	D	42.8	D	3.0
			PM		54.1	D	61.8	E	7.7
5	Southland Drive & West Winton Avenue	Signal	AM	*	31.9	C	33.4	C	1.5
			PM	*	39.8	D	48.6	D	8.8
6	Clawiter Road & Depot Road	Signal	AM		13.5	B	13.4	B	-0.1
			PM		14.6	B	15.8	B	1.2
7	Cabot Boulevard & Depot Road	All-Way Stop	AM		10.1	B	10.3	B	0.2
			PM		12.2	B	13.3	B	1.1
8	Clawiter Road & SR 92 Westbound Ramps/Breakwater Avenue	Signal	AM	*	45.9	D	50.8	D	4.9
			PM	*	39.4	D	49.7	D	10.3
9	Clawiter Road & SR 92 Eastbound Ramps/Eden Landing Road	All-Way Stop	AM		23.3	C	25.3	D	2.0
			PM		107.9	F	>120	F	13.3
10	Industrial Boulevard & Depot Road	Signal	AM		12.7	B	11.8	B	-0.9
			PM		15.0	B	17.4	B	2.4
11	Industrial Boulevard & SR 92 Westbound Ramps/Cryer Street	Signal	AM		46.6	D	52.1	D	5.5
			PM		26.2	C	29.6	C	3.4
12	Industrial Boulevard & SR 92 Eastbound Ramps/Sleepy Hollow	Signal	AM		27.3	C	27.5	C	0.2
			PM		65.2	E	65.8	E	0.6
13	Hesperian Boulevard & Depot Road/Cathy Way	Signal	AM	*	68.8	E	70.7	E	1.9
			PM	*	31.0	C	33.0	C	2.0

Notes:

* indicates the intersection level of service is calculated using the HCM 2000 module with the Synchro software. These intersections have unusual lane geometries that cannot be supported by Synchro HCM 2010 module.

BOLD indicates a substandard level of service

boxed and BOLD indicates adverse effect

6. Cumulative Conditions

This chapter describes the roadway traffic under cumulative and cumulative plus project conditions. Cumulative conditions represent future traffic conditions with expected growth in the area. The expected future growth conditions include approved projects in Hayward. This chapter describes the procedure used to determine cumulative conditions in order to determine potential project impacts.

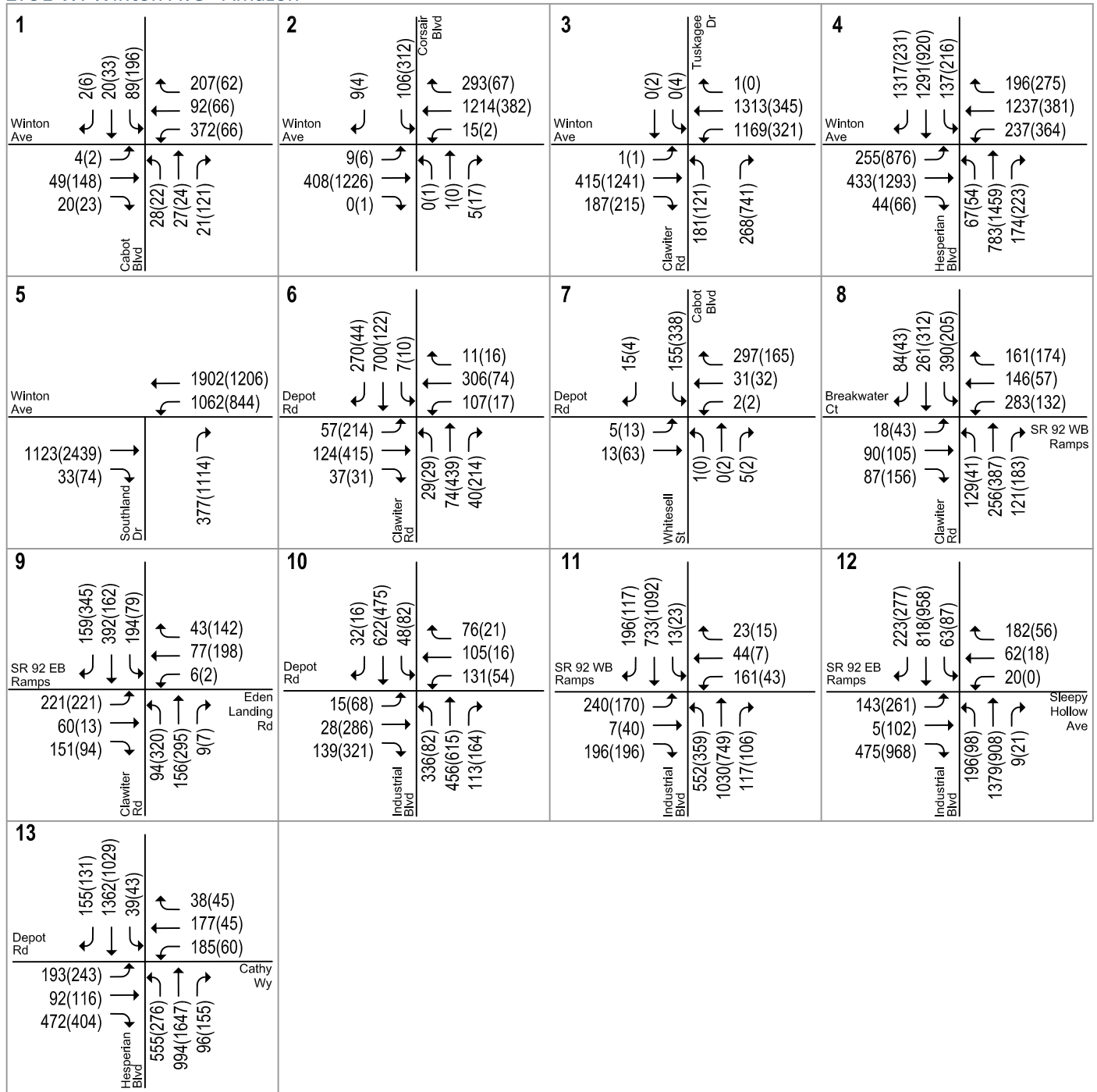
Roadway Network Under Cumulative Conditions

It is assumed in this analysis that the transportation network under cumulative conditions and cumulative plus project conditions would be the same as the background conditions and background plus project roadway network as described in Chapter 4.

Cumulative and Cumulative Plus Project Traffic Volumes

Cumulative traffic volumes for the study intersections (see Figure 12) were estimated by applying a growth factor of 1% per year through the year 2040 (20 years) to represent cumulative traffic growth in the area. The growth factor was derived from the Hayward General Plan Update travel demand model.

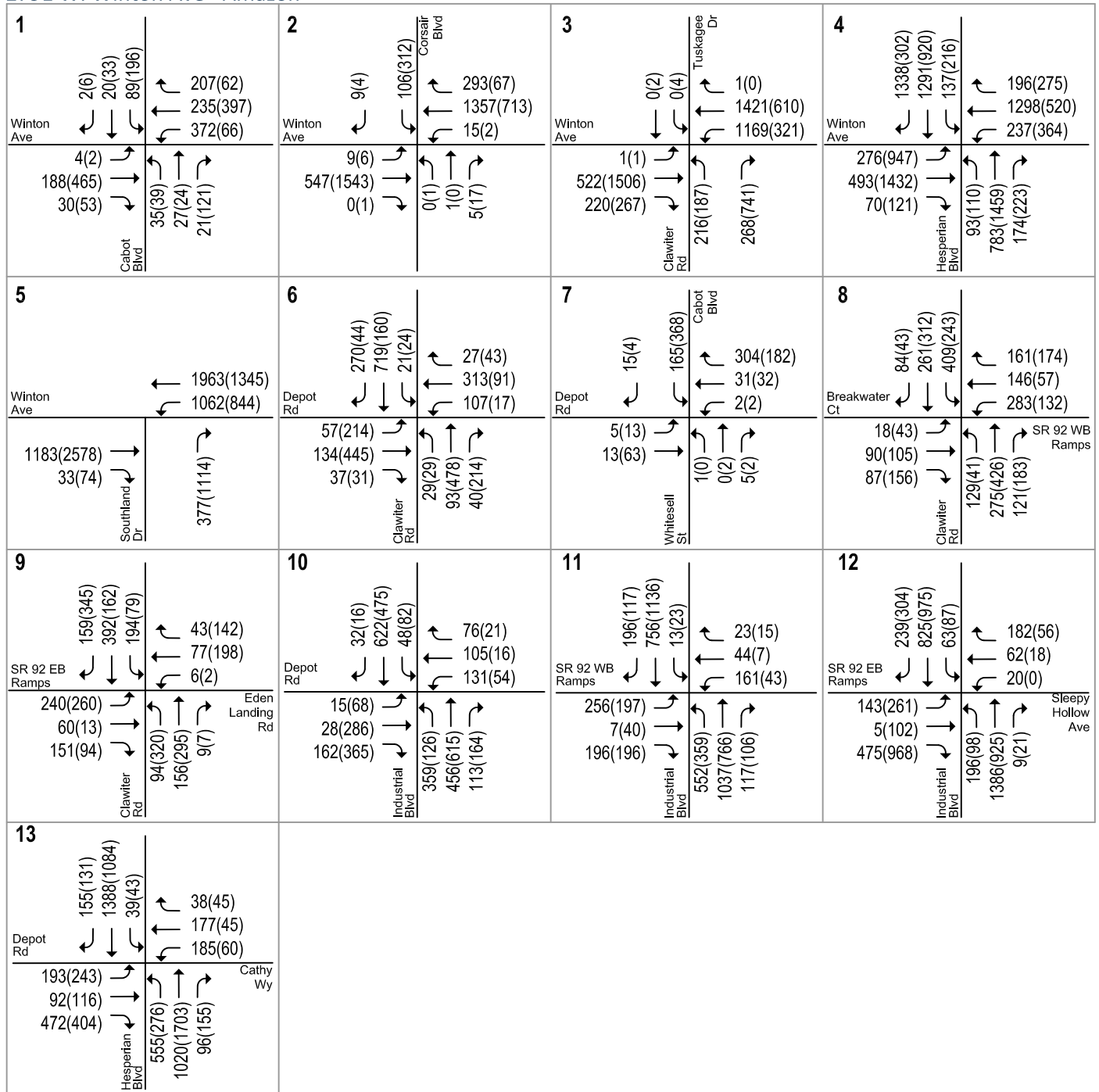
Project trips were added to cumulative traffic volumes to obtain cumulative plus project traffic volumes (see Figure 13).



LEGEND

XX(X) = AM(PM) Peak-Hour Traffic Volumes

Figure 12
Cumulative Traffic Volumes



LEGEND

XX(X) = AM(PM) Peak-Hour Traffic Volumes

Figure 13
Cumulative Plus Project Traffic Volumes

Cumulative Plus Project Intersection Levels of Service

The results of the level of service analysis under cumulative conditions (see Table 15) show that the following intersections would operate at an unacceptable level of service:

- Cabot Boulevard & West Winton Avenue - PM peak hour
- Clawiter Road & SR 92 eastbound ramps/Eden Landing Road – PM peak hour

The addition of project trips would cause the critical movement delay to increase by more than 5.0 seconds at both of these intersections.

The results of the level of service analysis under cumulative conditions also shows that the Hesperian Boulevard/Depot Road intersection would operate at an unacceptable level of service. However, the addition of project trips would not cause the critical movement delay to increase by more than 5.0 seconds. Therefore, the project would not have an adverse effect on the intersection.

All other study intersections would operate at an acceptable level of service during both peak hours. Intersection level of service calculation sheets are included in Appendix C.

The results of the peak-hour traffic signal warrant checks indicate that the Cabot Boulevard/West Winton Avenue intersection would not meet the signal warrant under cumulative or cumulative plus project conditions. However, the level of service at the intersection could be improved with the installation of traffic signal.

The results of the peak-hour traffic signal warrant checks indicate that the Clawiter Road/SR 92 Eastbound Ramps/Eden Landing Road intersection would meet the signal warrant under cumulative or cumulative plus project conditions. The peak-hour signal warrant sheets are contained in Appendix D.

Table 15
Cumulative Intersection Levels of Service

#	Intersection	Control	Peak Hour	Note	Cumulative no Project		Cumulative plus Project		Cumulative plus Project w/ Improvements	
					Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS
1	Cabot Boulevard & West Winton Avenue	All-Way Stop	AM		20.2	C	28.8	C	12.6	B
			PM		13.1	B	108.3	F		
2	Corsair Boulevard & West Winton Avenue	Signal	AM	*	8.6	A	8.9	A		
			PM	*	14.2	B	16.3	B		
3	Clawiter Road & West Winton Avenue	Signal	AM	*	30.0	C	37.2	D		
			PM	*	42.6	D	79.5	E		
4	Hesperian Boulevard & West Winton Avenue	Signal	AM		53.3	D	61.3	E		
			PM		57.5	E	64.6	E		
5	Southland Drive & West Winton Avenue	Signal	AM	*	61.1	E	66.6	E		
			PM	*	50.7	D	58.5	E		
6	Clawiter Road & Depot Road	Signal	AM		14.7	B	15.0	B		
			PM		17.2	B	18.7	B		
7	Cabot Boulevard & Depot Road	All-Way Stop	AM		11.2	B	11.4	B		
			PM		14.5	B	16.4	B		
8	Clawiter Road & SR 92 Westbound Ramps/Breakwater Avenue	Signal	AM	*	63.6	E	67.9	E		
			PM	*	44.8	D	52.5	D		
9	Clawiter Road & SR 92 Eastbound Ramps/Eden Landing Road	All-Way Stop	AM		42.2	D	45.1	D	39.7	D
			PM		>120	F	>120	F		
10	Industrial Boulevard & Depot Road	Signal	AM		12.8	B	12.8	B		
			PM		18.8	B	22.5	C		
11	Industrial Boulevard & SR 92 Westbound Ramps/Cryer Street	Signal	AM		67.8	E	74.9	E		
			PM		38.0	D	46.5	D		
12	Industrial Boulevard & SR 92 Eastbound Ramps/Sleepy Hollow	Signal	AM		63.4	E	63.1	E		
			PM		78.1	E	79.5	E		
13	Hesperian Boulevard & Depot Road/Cathy Way	Signal	AM	*	118.9	F	>120	F		
			PM	*	43.2	D	47.8	D		

Notes:

* indicates the intersection level of service is calculated using the HCM2000 module with the Synchro software. These intersections have unusual lane geometries that cannot be supported by Synchro HCM2010 module.

BOLD indicates a substandard level of service

boxed and BOLD indicates adverse effect

7. Other Transportation Issues

This chapter presents other transportation issues associated with the project, including:

- Intersection vehicle queuing analysis
- Site access and circulation
- Pedestrians, bicycles, and transit facilities
- Parking

Intersection Vehicle Queuing Analysis

A vehicle queuing and storage analysis was conducted for high demand turn movements at the selected study intersections where project traffic would be added. The intersection queuing analysis was conducted using SYNCHRO traffic analysis software. Along with providing overall control delay and level of service for the intersection, SYNCHRO provides total movement delay and 95th-percentile vehicle queues for each movement. The results of this analysis are summarized below and in Table 16 for the AM and PM peak hours.

Table 16
Queuing Analysis Summary

Intersection	Movement	Peak Period	Storage Length (ft)	Existing	Existing Plus Project	Estimated Increase in 95th Percentile Queue (feet)
				95th Percentile Queue (feet) ¹	95th Percentile Queue (feet) ¹	
Clawiter Road and Winton Avenue	NB LT	AM	100	125	150	25
		PM	100	75	100	25
Hesperian Boulevard and Winton Avenue	NB LT	AM	325	100	175	75
		PM	325	75	150	75
	EB LT	AM	350	150	175	25
		PM	350	400	425	25
Industrial Boulevard and Depot Road	NB LT	AM	300	100	100	0
		PM	300	75	100	25

Notes:

EB = eastbound; NB = northbound.

LT = left turn movement.

¹ Based on 95th percentile queue reported by Synchro software using the HCM methodology.

¹ Queue lengths rounded up to nearest 25 feet.

³ 25 feet per vehicle queued.

Intersection	Movement	Peak Period	Storage Length (ft)	Background	Background Plus Project	
				95th Percentile Queue (feet) ¹	95th Percentile Queue (feet) ¹	Estimated Increase in 95th Percentile Queue (feet)
Clawiter Road and Winton Avenue	NB LT	AM	100	125	125	0
		PM	100	75	125	50
Hesperian Boulevard and Winton Avenue	NB LT	AM	325	125	150	25
		PM	325	75	175	100
Industrial Boulevard and Depot Road	NB LT	AM	350	150	150	0
		PM	350	425	475	50
Industrial Boulevard and Depot Road	NB LT	AM	300	125	275	150
		PM	300	75	100	25

Notes:
 EB = eastbound; NB = northbound.
 LT = left turn movement.
¹ Based on 95th percentile queue reported by Synchro software using the HCM methodology.
¹ Queue lengths rounded up to nearest 25 feet.
³ 25 feet per vehicle queued.

Intersection	Movement	Peak Period	Storage Length (ft)	Cumulative	Cumulative Plus Project	
				95th Percentile Queue (feet) ¹	95th Percentile Queue (feet) ¹	Estimated Increase in 95th Percentile Queue (feet)
Clawiter Road and Winton Avenue	NB LT	AM	100	125	175	50
		PM	100	100	150	50
Hesperian Boulevard and Winton Avenue	NB LT	AM	325	150	200	50
		PM	325	100	225	125
Industrial Boulevard and Depot Road	NB LT	AM	350	200	225	25
		PM	350	575	700	125
Industrial Boulevard and Depot Road	NB LT	AM	300	125	350	225
		PM	300	100	125	25

Notes:
 EB = eastbound; NB = northbound.
 LT = left turn movement.
¹ Based on 95th percentile queue reported by Synchro software using the HCM methodology.
¹ Queue lengths rounded up to nearest 25 feet.
³ 25 feet per vehicle queued.

Clawiter Road and Winton Avenue

The project would add trips to the northbound left-turn at the intersection of Clawiter Road and Winton Avenue. The analysis indicates that the 95th percentile vehicle queues would not be accommodated by the existing storage space for the northbound left-turn movement during the AM peak hour and would continue to do so under all scenarios. With the addition of the project traffic, the estimated increase in the 95th percentile queue for the northbound left-turn movement would be 1 and 2 vehicles for the existing plus project and cumulative plus project scenarios, respectively. The left turn pocket could be

extended by 50 feet into the existing two-way left turn lane to accommodate both the existing and project left turn volumes.

Hesperian Boulevard and Winton Avenue

The project would add trips to the northbound left-turn and the eastbound left-turn at the intersection of Hesperian Boulevard and Winton Avenue. The analysis indicates that the 95th percentile vehicle queues would not be accommodated by the existing storage space for the eastbound left-turn movement during the PM peak hour and would continue to do so under all scenarios. With the addition of the project traffic, the estimated increase in the 95th percentile queue for the eastbound left-turn movement would be 1, 2 and 5 vehicles for the existing plus project, background plus project and cumulative plus project scenarios, respectively. There is no room in the median on Winton Avenue to lengthen the left turn pocket. The analysis indicates that the 95th percentile vehicle queue would be accommodated by the existing storage space for the northbound left-turn movement during both peak hours and would continue to do so under all scenarios.

Industrial Boulevard and Depot Road

The project would add trips to the northbound left-turn at the intersection of Industrial Boulevard Depot Road. The analysis indicates that the 95th percentile vehicle queues are accommodated by the existing storage space for the northbound left-turn movement during both peak hours. With the addition of project traffic, the estimated 95th percentile queue for the northbound left-turn movement would exceed the storage length by 2 vehicles in the cumulative plus project scenario. There is room in the median on Industrial Boulevard to lengthen the left turn pocket. However, the landscaped median would need to be modified or removed.

Site Access and Circulation

A review of site access and circulation was completed based on the site plan dated April 20, 2020 and shown in Figure 2.

Vehicle Site Access and Circulation

Vehicle access to the project site would continue to be provided via three site driveways on West Winton Avenue. The left and middle driveways on West Winton Avenue would serve the van driver vehicles, and the right driveway on West Winton Avenue would serve customer vehicles, employee and manager vehicles, and line haul trucks. As shown in Table 4, there would be 150 inbound and 149 outbound trips accessing the driveways during the AM peak hour and 348 inbound and 347 outbound trips during the PM peak hour.

According to the City of Hayward Municipal Code, the minimum driveway width is 12 feet, except where a driveway would be along arterial or major collector streets it is 16 feet. According to the site plan, all driveways would be approximately 26 feet, which meets the City Standard.

On-site circulation was reviewed in accordance with generally accepted traffic engineering standards. The project site would have three-full access driveways along Winton Avenue that lead to a parking lot. In the parking lot, there would be two-way drive aisles with 90-degree perpendicular parking spaces. The drive aisles would be at least 24 feet wide and would provide sufficient space for vehicles to back out of the parking stalls. Generally, the proposed plan would provide sufficient space for vehicle traffic with adequate connectivity through the parking areas. The drive aisle would be at least 30 feet and would provide sufficient spaces for vans to enter and exit the distribution facility. It is expected that operations would not create spillback onto West Winton Avenue given the adequate space provided within the project site.

Sight Distance Analysis

Sight distance was evaluated to determine if a driver will have adequate visibility to enter W. Winton Avenue from the driveways. The project access points should be free and clear of any obstructions that would materially and adversely affect sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and other vehicles traveling on adjacent roadways. Landscaping and parking should not conflict with a driver's ability to locate a gap in traffic and see oncoming pedestrians and bicyclists. Adequate corner sight distance (sight distance triangles) should be provided at all site access points in accordance with the City's standards. Sight distance requirements vary depending on the roadway speeds. The speed limit on West Winton Avenue is 35 mph. According to the Highway Design Manual (HDM), Chapter 200, 2014, the required minimum stopping sight distance for design speed of 35 mph is 250 feet. The line of sight for vehicles exiting the driveways and vehicles travelling eastbound and westbound on West Winton Avenue are clear and visible. Vehicles exiting the driveways will be visible to the vehicles travelling eastbound and westbound on West Winton Avenue. One recommendation would be that on-street truck and auto parking be prohibited for 50 feet on either side of the driveways to preserve sight distance. The project would not substantially increase hazards due to any design features.

Transit, Pedestrian and Bicycle Analysis

A significant impact occurs if the proposed project conflicts with applicable or adopted policies, plans or programs related to pedestrian facilities or otherwise decrease the performance or safety of pedestrian facilities. The proposed project would not result in any significant impacts to existing or planned pedestrian facilities in the immediate vicinity of the project because of the absence of such conflicts; therefore, the impact to pedestrian facilities is less-than-significant.

In terms of bicycle access to the project site, West Winton Avenue and Cabot Boulevard are classified as Class III Bike routes per the City of Hayward Bicycle Master Plan. Overall, the existing bicycle facilities provide adequate connectivity between the proposed project site and the adjacent neighborhoods. An impact to bicyclists occurs if the proposed project disrupts existing bicycle facilities; or conflicts with or creates inconsistencies with adopted bicycle system plans, guidelines, and policies. A significant impact occurs if the proposed project conflicts with applicable or adopted policies, plans or programs related to bicycle facilities or otherwise decrease the performance or safety of bicycle facilities. The proposed project would not conflict with existing and planned bicycle facilities; therefore, the impact to bicycle facilities is less-than-significant.

The 2020 Hayward Bicycle and Pedestrian Master Plan Update identifies the section along West Winton Avenue between Cabot Boulevard and the Bay Trail as a proposed Class III Bicycle Boulevard. The Project applicant should work with the City to implement the Class III Bicycle Boulevard as part of the project and to be consistent with City's Bicycle and Pedestrian Master Plan. Upgrading this section of roadway to include a Class III Bicycle Boulevard would enhance the bicycle-user experience and therefore encourage non-auto travel.

The entrance to the Bay Trail, a bike and pedestrian path, is located west of the project site along West Winton Avenue. The Bay Trail runs along the east boundary of the San Francisco Bay. There are sidewalks leading up to the west end of the project site. However, there are no existing sidewalks leading to the Bay Trail. Currently, there is low traffic volume in this area of West Winton Avenue. However, more development could increase the amount of traffic in this area. The project should contribute to future construction of sidewalks that provide pedestrian access to the Bay Trail.

The proposed project would generate very few trips via transit services, which can be accommodated by the existing transit capacity, and, hence, the project is anticipated to have a less-than-significant impact on transit facilities.

Emergency Vehicle Access

The site plan shows adequate driveway width for emergency vehicles to access through the site. There is sufficient space to turn around at the end of the dead-end aisles via turnaround spaces.

Parking

Parking provided on the site was evaluated based on the parking requirements set forth by the City of Hayward. According to the City of Hayward Municipal Code, warehouse uses requires one space for each 2,000 square feet of gross floor area. Based on the City of Hayward Municipal Code, the project is required to provide 253 parking spaces. The project proposes to provide 1,143 parking spaces, which meets the City requirements.

8. Conclusions

The potential impacts of the project were evaluated in accordance with the standards set forth by the City of Hayward. The study analyzes the traffic impacts of the proposed development on the key intersections during the weekday AM and PM peak hours of traffic. In addition, the study includes a vehicle queuing analysis at selected intersections, a review of site access and circulation, an evaluation of potential impacts to transit services and pedestrian and bicycle facilities, and an evaluation of parking.

Project Trip Estimates

The project is estimated to generate 4,151 daily vehicle trips, with 299 trips occurring during the AM peak hour and 695 trips during the PM peak hour.

Local Transportation Assessment (LTA)

The results of the Local Transportation Analysis (LTA) show that the following study intersections would operate at an unacceptable conditions during the PM peak hour under all scenarios:

- Cabot Boulevard and West Winton Avenue
- Clawiter Road and SR 92 eastbound ramps/Eden Landing Road

The addition of project trips would cause the critical movement delay to increase by more than 5.0 seconds at these intersections. Thus, the project would have an adverse effect on operations at these intersections.

Recommended Improvements

The results of the peak-hour traffic signal warrants checks indicate that the Cabot Road/Winton Avenue intersection would not meet the signal warrant. The intersection does not satisfy parts A and B of the traffic signal warrants analysis under either peak hour. However, level of service at this intersection would be improved to satisfactory levels with the installation of a traffic signal under all conditions.

The results of the peak-hour traffic signal warrant checks indicate that the Clawiter Road/SR 92 Eastbound Ramps/Eden Landing Road intersection would meet the signal warrant under all conditions.

The installation of traffic signals at the Cabot Boulevard/West Winton Avenue and Clawiter Road and SR 92 eastbound ramps/Eden Landing Road intersections would improve the level of service at these intersections to satisfactory levels. According to the City of Hayward Traffic Study Interim Guidelines, when a project results in an impact or signal warrants being met at a study intersection, the project must make a fair share contribution to the cost of improvements. Based on the impacts or traffic signal warrants being met, the project contribution would be 100% at these intersections.

The extension of the northbound left-turn pocket at the intersection of Clawiter Road/Winton Avenue by 50 feet into the existing two-way left-turn lane would accommodate both the existing and project left turn volumes. This can be accomplished by re-striping the existing two-way left turn lane.

Transit, Pedestrian and Bicycle Analysis

The proposed project does not conflict with existing or planned pedestrian and bicycle facilities. The transit service within the immediate vicinity of the project site operates well below capacity, and additional trips generated by the proposed project could be accommodated by existing bus services. Therefore, the impacts to pedestrian, bicycle and transit facilities would be less-than significant. The project should re-stripe West Winton Avenue between Cabot Boulevard and the Bay Trail entrance to include a Class III Bicycle Boulevard, which is an improvement consistent with the City's Bicycle and Pedestrian Master Plan.

There are no existing sidewalks leading to the Bay Trail. Currently, there is low traffic volume in this area of West Winton Avenue. However, more development could increase the amount of traffic in this area. The project should contribute to future construction of sidewalks that provide pedestrian access to the Bay Trail.

Freeway Segment Analysis

The freeway study segments operate at LOS E or better during the AM and PM commute peak hours under existing conditions. The proposed project would not result in any potentially significant impact to any of the freeway study segments under 2020 plus project conditions.

Freeway Ramp Capacity Analysis

At the I-880 and Winton Avenue interchange under Existing and Existing Plus Project, all ramps have a volume to capacity (V/C) ratio that is below 1.0, which means that the existing traffic demand is lower than the ramp capacity.

Freeway Ramp Queuing Analysis

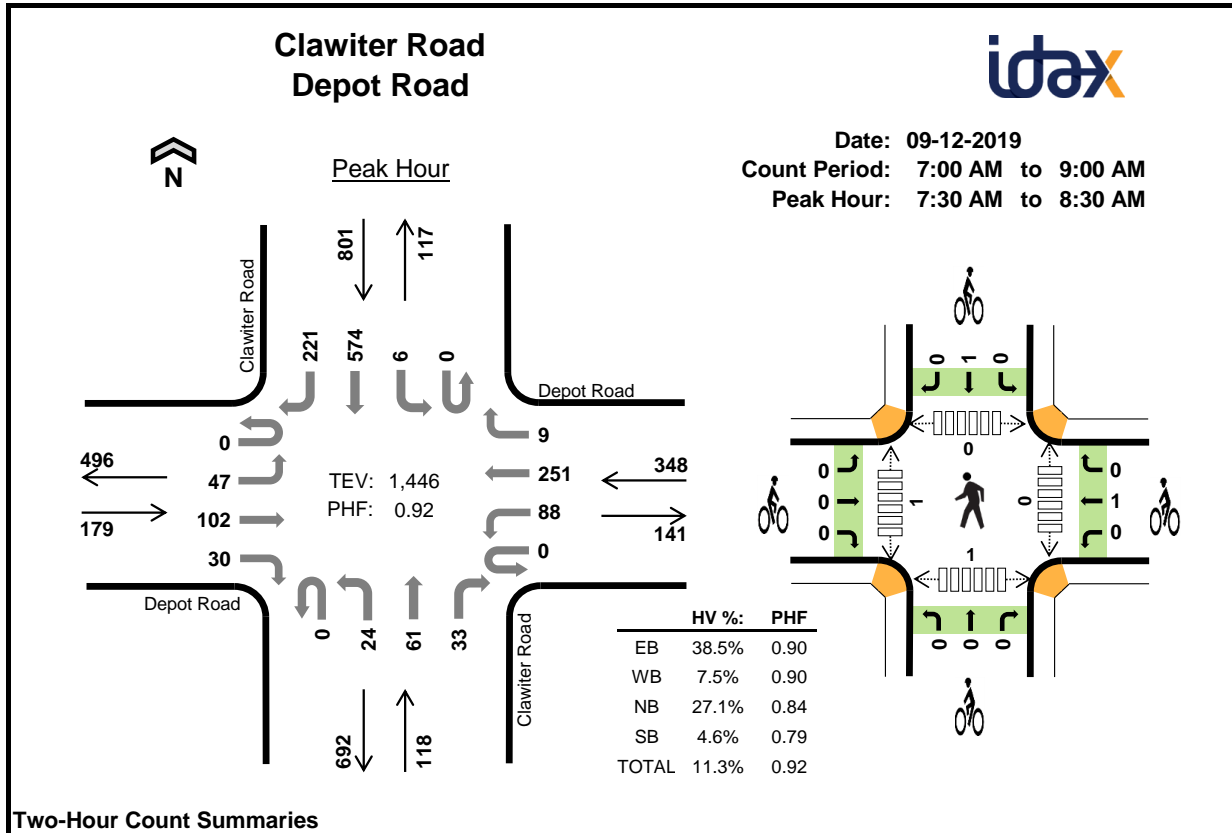
At the Clawiter Road/SR 92 Eastbound Ramps and Industrial Boulevard/SR 92 Westbound Ramps intersections, both freeway off-ramps have sufficient capacity to serve the existing traffic queues.

2791 Winton Avenue Development

Technical Appendices

Appendix A

Traffic Counts



Two-Hour Count Summaries

Interval Start	Depot Road Eastbound				Depot Road Westbound				Clawiter Road Northbound				Clawiter Road Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	6	27	7	0	18	49	2	0	5	2	3	0	1	156	44	320	0	
7:15 AM	0	11	35	7	0	18	55	2	0	4	5	6	0	2	156	34	335	0	
7:30 AM	0	10	27	9	0	17	47	4	0	7	13	7	0	1	201	50	393	0	
7:45 AM	0	11	22	8	0	32	63	2	0	5	15	6	0	1	131	58	354	1,402	
8:00 AM	0	12	24	6	0	14	75	0	0	6	16	13	0	1	132	55	354	1,436	
8:15 AM	0	14	29	7	0	25	66	3	0	6	17	7	0	3	110	58	345	1,446	
8:30 AM	0	8	20	12	0	33	48	2	0	8	22	11	0	2	147	41	354	1,407	
8:45 AM	0	17	39	13	0	30	60	3	0	10	12	7	0	0	152	31	374	1,427	
Count Total	0	89	223	69	0	187	463	18	0	51	102	60	0	11	1,185	371	2,829	0	
Peak Hour	All	0	47	102	30	0	88	251	9	0	24	61	33	0	6	574	221	1,446	0
	HV	0	14	39	16	0	6	20	0	0	10	14	8	0	1	17	19	164	0
	HV%	-	30%	38%	53%	-	7%	8%	0%	-	42%	23%	24%	-	17%	3%	9%	11%	0

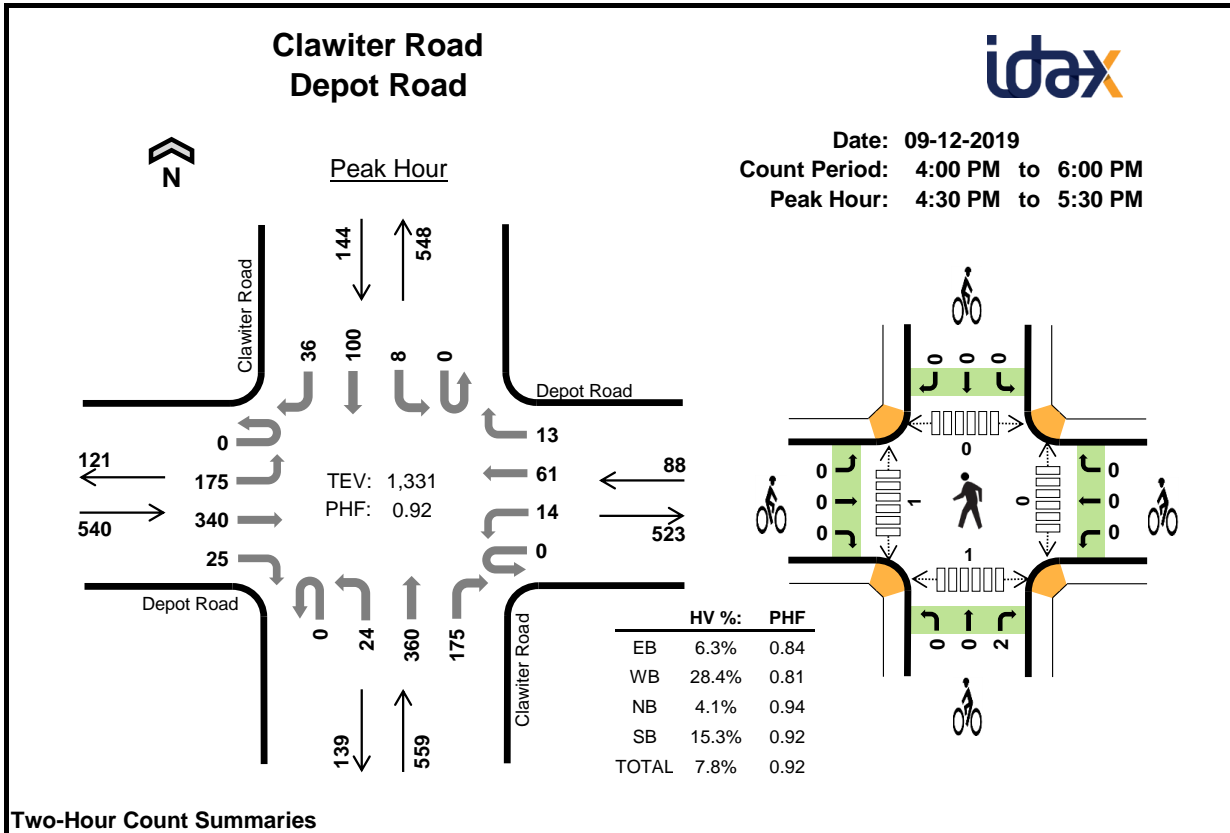
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	15	6	3	10	34	0	0	0	1	1	0	1	0	0	1
7:15 AM	17	3	5	10	35	0	0	0	0	0	0	0	0	0	0
7:30 AM	20	3	9	9	41	0	0	0	0	0	0	1	0	0	1
7:45 AM	15	5	8	11	39	0	0	0	1	1	0	0	0	0	0
8:00 AM	16	7	10	9	42	0	0	0	0	0	0	0	0	0	0
8:15 AM	18	11	5	8	42	0	1	0	0	1	0	0	0	1	1
8:30 AM	18	11	5	14	48	1	0	0	1	2	0	0	0	0	0
8:45 AM	16	8	7	12	43	0	0	0	1	1	0	0	0	0	0
Count Total	135	54	52	83	324	1	1	0	4	6	0	2	0	1	3
Peak Hour	69	26	32	37	164	0	1	0	1	2	0	1	0	1	2

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Depot Road				Depot Road				Clawiter Road				Clawiter Road				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	3	8	4	0	1	5	0	0	1	1	1	0	0	7	3	34	0
7:15 AM	0	3	10	4	0	1	2	0	0	1	2	2	0	1	6	3	35	0
7:30 AM	0	4	9	7	0	1	2	0	0	4	3	2	0	0	5	4	41	0
7:45 AM	0	2	9	4	0	2	3	0	0	2	5	1	0	0	2	9	39	149
8:00 AM	0	3	9	4	0	0	7	0	0	3	3	4	0	0	6	3	42	157
8:15 AM	0	5	12	1	0	3	8	0	0	1	3	1	0	1	4	3	42	164
8:30 AM	0	4	8	6	0	4	7	0	0	1	2	2	0	0	13	1	48	171
8:45 AM	0	3	9	4	0	2	5	1	0	2	3	2	0	0	7	5	43	175
Count Total	0	27	74	34	0	14	39	1	0	15	22	15	0	2	50	31	324	0
Peak Hour	0	14	39	16	0	6	20	0	0	10	14	8	0	1	17	19	164	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Depot Road			Depot Road			Clawiter Road			Clawiter Road			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2	
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	4	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4	
Count Total	0	0	1	0	1	0	0	0	0	0	0	0	4	0	6	0	
Peak Hour	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	0	

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start	Depot Road Eastbound				Depot Road Westbound				Clawiter Road Northbound				Clawiter Road Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	42	74	5	0	10	35	2	0	11	66	33	0	2	19	13	312	0	
4:15 PM	0	21	57	6	0	8	23	0	0	12	94	26	0	0	33	18	298	0	
4:30 PM	0	54	78	6	0	4	15	1	0	9	90	47	0	0	24	13	341	0	
4:45 PM	0	35	79	6	0	2	24	1	0	2	107	36	0	2	20	12	326	1,277	
5:00 PM	0	54	100	6	0	0	14	5	0	8	85	55	0	6	21	7	361	1,326	
5:15 PM	0	32	83	7	0	8	8	6	0	5	78	37	0	0	35	4	303	1,331	
5:30 PM	0	40	65	1	0	3	14	2	0	6	71	42	0	4	22	3	273	1,263	
5:45 PM	0	24	32	7	0	3	13	1	0	7	70	22	0	0	16	10	205	1,142	
Count Total	0	302	568	44	0	38	146	18	0	60	661	298	0	14	190	80	2,419	0	
Peak Hour	All	0	175	340	25	0	14	61	13	0	24	360	175	0	8	100	36	1,331	0
	HV	0	12	21	1	0	2	21	2	0	6	12	5	0	0	12	10	104	0
	HV%	-	7%	6%	4%	-	14%	34%	15%	-	25%	3%	3%	-	0%	12%	28%	8%	0

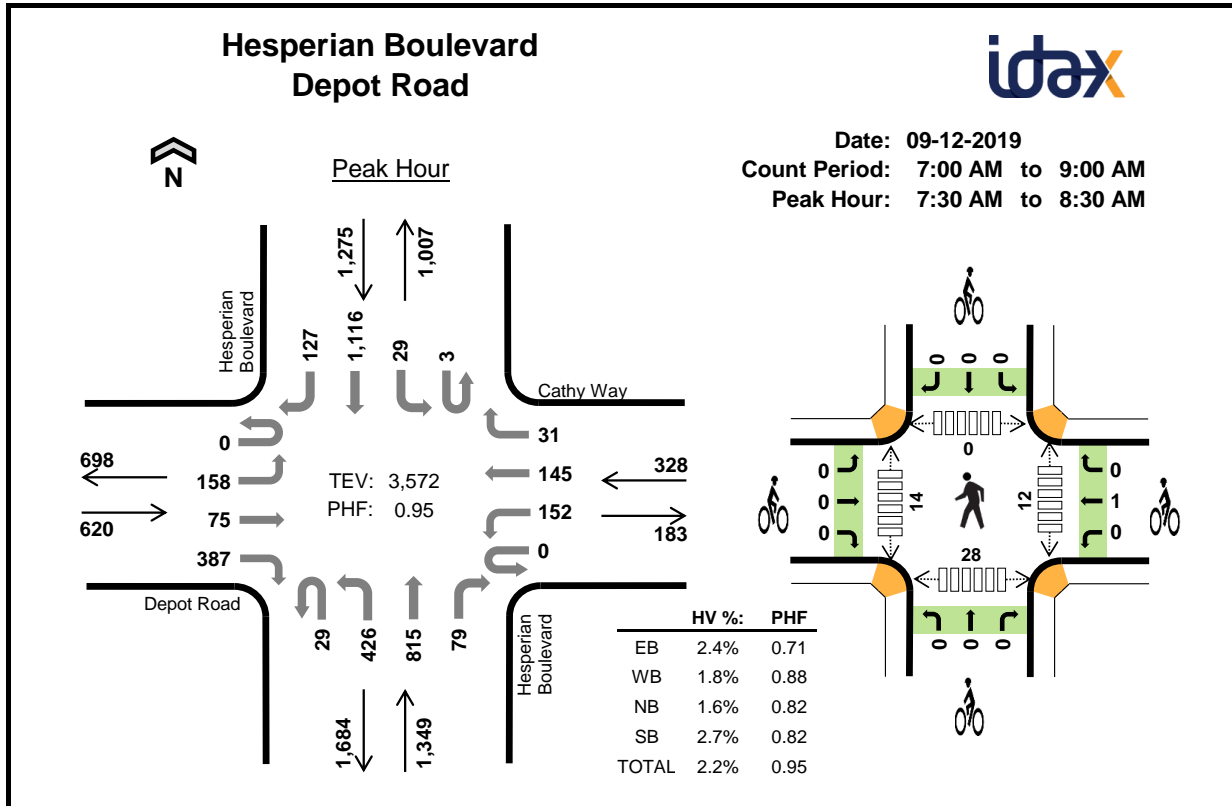
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	8	13	3	9	33	0	0	0	0	0	0	1	1	1	3
4:15 PM	7	4	12	6	29	0	0	0	0	0	1	0	1	0	2
4:30 PM	12	3	5	6	26	0	0	2	0	2	0	0	0	0	0
4:45 PM	5	10	6	6	27	0	0	0	0	0	0	1	0	1	2
5:00 PM	10	7	7	6	30	0	0	0	0	0	0	0	0	0	0
5:15 PM	7	5	5	4	21	0	0	0	0	0	0	0	0	0	0
5:30 PM	8	5	2	1	16	0	0	2	1	3	0	1	0	0	1
5:45 PM	6	5	7	2	20	0	0	0	0	0	0	0	0	0	0
Count Total	63	52	47	40	202	0	0	4	1	5	1	3	2	2	8
Peak Hour	34	25	23	22	104	0	0	2	0	2	0	1	0	1	2

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Depot Road				Depot Road				Clawiter Road				Clawiter Road				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	7	0	0	1	12	0	0	2	1	0	0	1	4	4	33	0
4:15 PM	0	0	4	3	0	1	3	0	0	6	5	1	0	0	1	5	29	0
4:30 PM	0	5	7	0	0	0	3	0	0	1	3	1	0	0	4	2	26	0
4:45 PM	0	1	4	0	0	1	9	0	0	0	5	1	0	0	3	3	27	115
5:00 PM	0	3	7	0	0	0	5	2	0	2	4	1	0	0	3	3	30	112
5:15 PM	0	3	3	1	0	1	4	0	0	3	0	2	0	0	2	2	21	104
5:30 PM	0	2	5	1	0	1	4	0	0	1	0	1	0	0	1	0	16	94
5:45 PM	0	1	2	3	0	1	4	0	0	4	2	1	0	0	0	2	20	87
Count Total	0	16	39	8	0	6	44	2	0	19	20	8	0	1	18	21	202	0
Peak Hour	0	12	21	1	0	2	21	2	0	6	12	5	0	0	12	10	104	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Depot Road			Depot Road			Clawiter Road			Clawiter Road			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	3	3	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	0	0	0	0	0	0	0	0	2	2	0	1	0	0	5	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start	Depot Road				Cathy Way				Hesperian Boulevard				Hesperian Boulevard				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Westbound		Northbound		Northbound		Southbound		Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	11	4	54	0	23	17	4	6	53	88	10	0	1	293	35	599	0	
7:15 AM	0	14	13	67	0	38	30	8	2	94	128	6	0	3	280	47	730	0	
7:30 AM	0	30	7	68	0	32	37	7	4	88	169	14	1	8	327	52	844	0	
7:45 AM	0	44	21	106	0	35	48	10	5	104	190	26	0	7	245	28	869	3,042	
8:00 AM	0	52	34	131	0	48	37	5	7	111	205	16	0	5	265	21	937	3,380	
8:15 AM	0	32	13	82	0	37	23	9	13	123	251	23	2	9	279	26	922	3,572	
8:30 AM	0	23	10	45	0	20	26	12	8	92	205	12	0	6	258	50	767	3,495	
8:45 AM	0	30	3	47	0	20	30	19	0	126	184	8	0	6	264	71	808	3,434	
Count Total	0	236	105	600	0	253	248	74	45	791	1,420	115	3	45	2,211	330	6,476	0	
Peak Hour	All	0	158	75	387	0	152	145	31	29	426	815	79	3	29	1,116	127	3,572	0
	HV	0	0	1	14	0	3	2	1	0	4	15	2	0	0	35	0	77	0
	HV%	-	0%	1%	4%	-	2%	1%	3%	0%	1%	2%	3%	0%	0%	3%	0%	2%	0

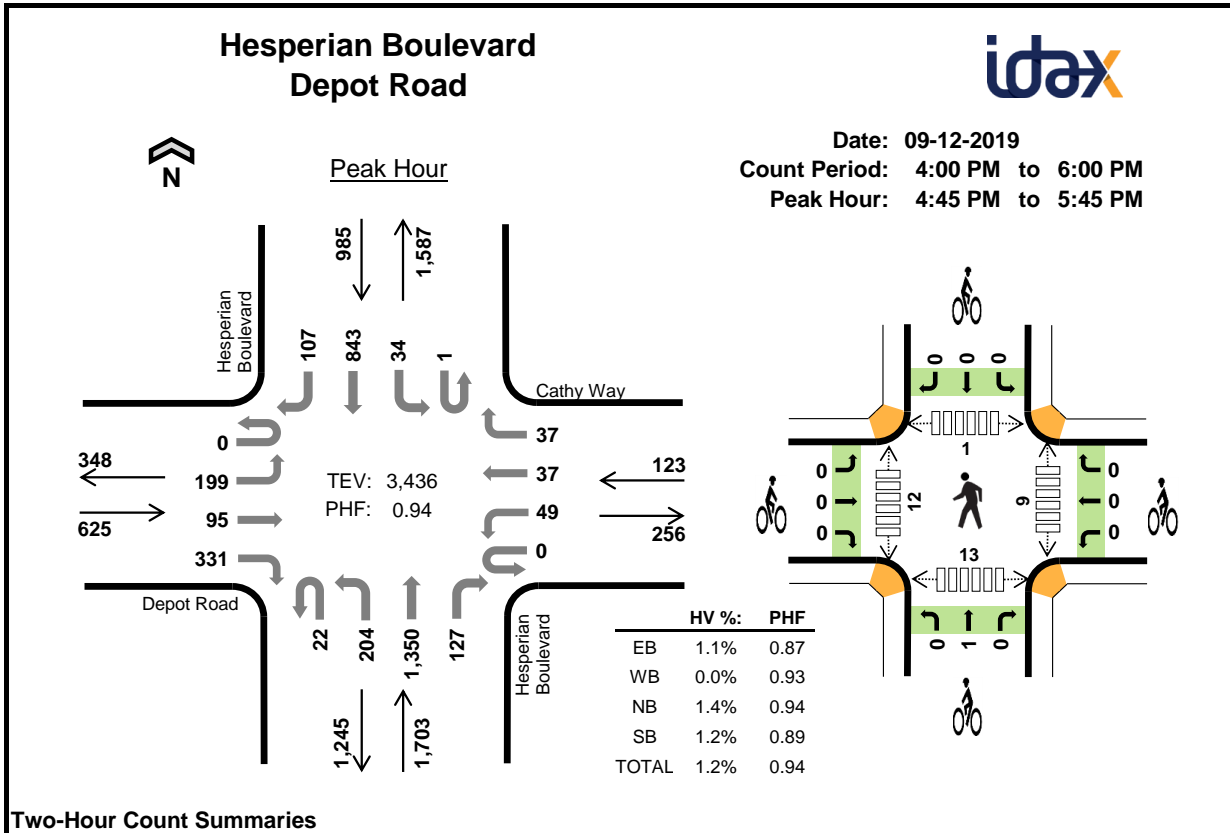
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	6	0	3	5	14	0	0	0	1	1	2	1	0	1	4
7:15 AM	3	2	6	9	20	0	0	0	0	0	2	5	0	5	12
7:30 AM	4	2	5	9	20	0	0	0	0	0	0	1	0	5	6
7:45 AM	4	1	6	4	15	0	0	0	0	0	6	6	0	15	27
8:00 AM	2	1	4	11	18	0	0	0	0	0	5	2	0	2	9
8:15 AM	5	2	6	11	24	0	1	0	0	1	1	5	0	6	12
8:30 AM	3	1	3	7	14	0	0	0	0	0	1	0	0	3	4
8:45 AM	0	0	9	8	17	0	2	0	0	2	6	5	1	4	16
Count Total	27	9	42	64	142	0	3	0	1	4	23	25	1	41	90
Peak Hour	15	6	21	35	77	0	1	0	0	1	12	14	0	28	54

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Depot Road				Cathy Way				Hesperian Boulevard				Hesperian Boulevard				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	1	4	0	0	0	0	0	1	1	1	0	0	5	0	14	0
7:15 AM	0	0	1	2	0	1	1	0	0	1	5	0	0	0	8	1	20	0
7:30 AM	0	0	0	4	0	1	1	0	0	1	3	1	0	0	9	0	20	0
7:45 AM	0	0	0	4	0	0	1	0	0	1	5	0	0	0	4	0	15	69
8:00 AM	0	0	0	2	0	1	0	0	0	1	2	1	0	0	11	0	18	73
8:15 AM	0	0	1	4	0	1	0	1	0	1	5	0	0	0	11	0	24	77
8:30 AM	0	0	0	3	0	0	1	0	1	1	1	0	0	1	4	2	14	71
8:45 AM	0	0	0	0	0	0	0	0	0	1	8	0	0	0	7	1	17	73
Count Total	0	1	3	23	0	4	4	1	1	8	30	3	0	1	59	4	142	0
Peak Hour	0	0	1	14	0	3	2	1	0	4	15	2	0	0	35	0	77	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Depot Road			Cathy Way			Hesperian Boulevard			Hesperian Boulevard			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	1			
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
8:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2	3			
Count Total	0	0	0	0	3	0	0	0	0	0	1	0	4	0			
Peak Hour	0	0	0	0	1	0	0	0	0	0	0	0	1	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start	Depot Road				Cathy Way				Hesperian Boulevard				Hesperian Boulevard				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Westbound		Eastbound		Northbound		Southbound		Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	42	31	89	0	12	9	6	3	57	416	30	1	8	207	26	937	0	
4:15 PM	0	41	29	79	0	12	12	8	6	48	325	31	0	14	226	26	857	0	
4:30 PM	0	48	25	74	0	19	5	9	2	37	272	40	0	7	204	22	764	0	
4:45 PM	0	57	26	70	0	14	10	9	6	51	369	25	0	4	196	16	853	3,411	
5:00 PM	0	57	27	96	0	13	9	10	5	37	346	34	0	12	240	25	911	3,385	
5:15 PM	0	39	16	94	0	14	10	9	4	54	310	36	0	8	210	41	845	3,373	
5:30 PM	0	46	26	71	0	8	8	9	7	62	325	32	1	10	197	25	827	3,436	
5:45 PM	0	44	23	67	0	15	8	6	5	55	357	34	0	6	202	26	848	3,431	
Count Total	0	374	203	640	0	107	71	66	38	401	2,720	262	2	69	1,682	207	6,842	0	
Peak Hour	All	0	199	95	331	0	49	37	37	22	204	1,350	127	1	34	843	107	3,436	0
	HV	0	2	2	3	0	0	0	0	0	4	19	0	0	0	11	1	42	0
	HV%	-	1%	2%	1%	-	0%	0%	0%	0%	2%	1%	0%	0%	0%	1%	1%	1%	0

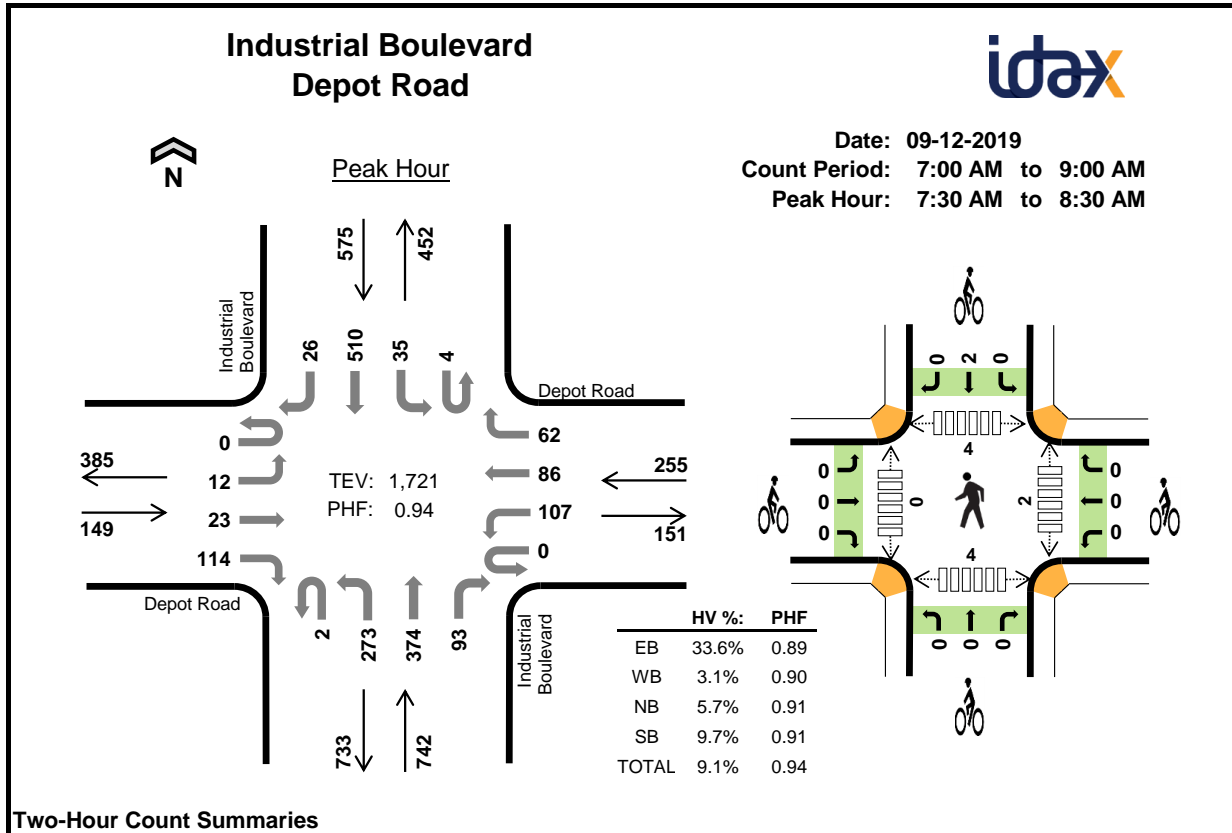
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	1	3	6	13	0	0	0	0	0	1	10	0	7	18
4:15 PM	0	0	4	4	8	0	0	0	0	0	5	2	0	3	10
4:30 PM	0	1	3	4	8	0	0	0	0	0	0	2	0	0	2
4:45 PM	1	0	8	6	15	0	0	1	0	1	1	6	0	8	15
5:00 PM	1	0	6	2	9	0	0	0	0	0	0	3	0	1	4
5:15 PM	0	0	5	1	6	0	0	0	0	0	2	2	0	2	6
5:30 PM	5	0	4	3	12	0	0	0	0	0	6	1	1	2	10
5:45 PM	1	0	7	4	12	0	0	0	0	0	0	1	0	10	11
Count Total	11	2	40	30	83	0	0	1	0	1	15	27	1	33	76
Peak Hour	7	0	23	12	42	0	0	1	0	1	9	12	1	13	35

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Depot Road				Cathy Way				Hesperian Boulevard				Hesperian Boulevard				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	2	0	0	1	0	0	0	1	2	0	0	0	5	1	13	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	3	0	0	1	3	8	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	3	0	0	0	3	1	8	0
4:45 PM	0	0	0	1	0	0	0	0	0	2	6	0	0	0	5	1	15	44
5:00 PM	0	0	0	1	0	0	0	0	0	1	5	0	0	0	2	0	9	40
5:15 PM	0	0	0	0	0	0	0	0	0	1	4	0	0	0	1	0	6	38
5:30 PM	0	2	2	1	0	0	0	0	0	0	4	0	0	0	3	0	12	42
5:45 PM	0	1	0	0	0	0	0	0	0	0	7	0	0	0	4	0	12	39
Count Total	0	4	4	3	0	1	0	1	0	6	34	0	0	1	26	3	83	0
Peak Hour	0	2	2	3	0	0	0	0	0	4	19	0	0	0	11	1	42	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Depot Road			Cathy Way			Hesperian Boulevard			Hesperian Boulevard			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Peak Hour	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



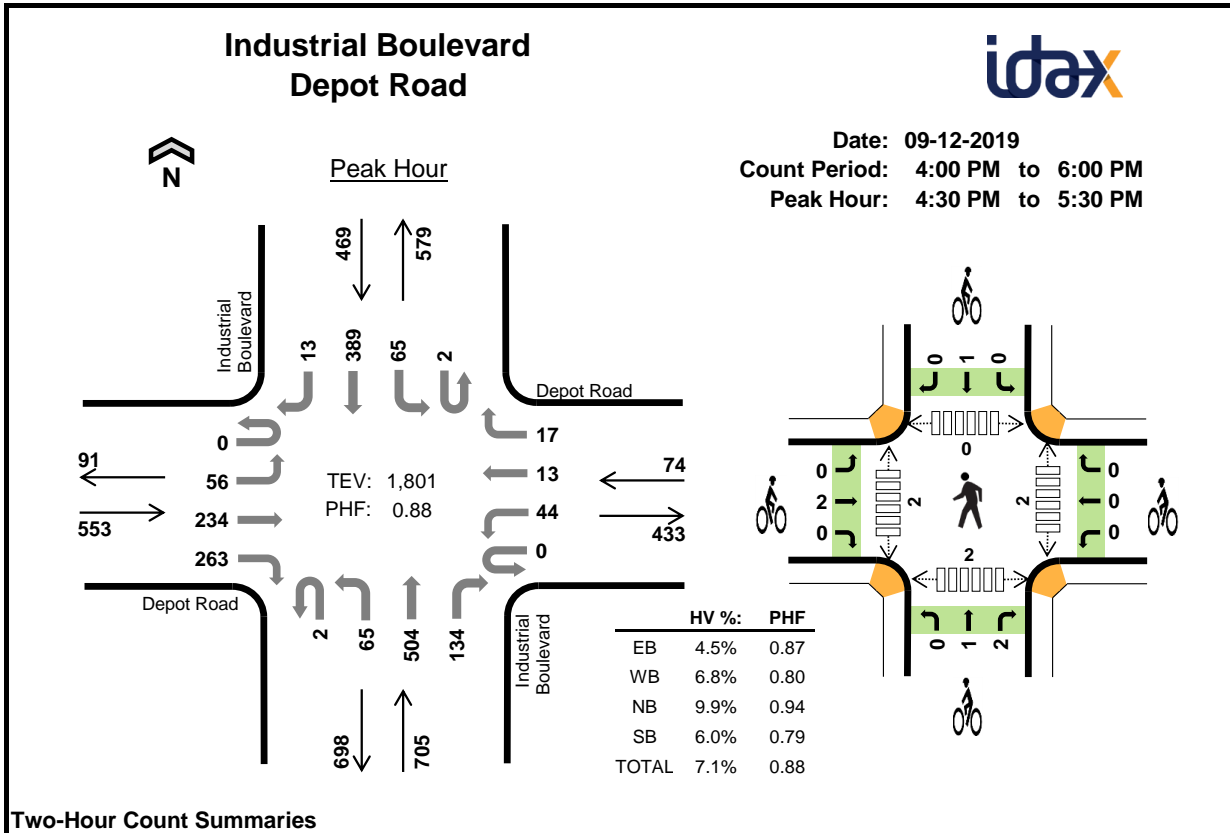
Two-Hour Count Summaries

Interval Start	Depot Road Eastbound				Depot Road Westbound				Industrial Boulevard Northbound				Industrial Boulevard Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	2	6	27	0	26	25	11	0	51	53	4	0	7	108	3	323	0	
7:15 AM	0	1	8	28	0	24	42	5	2	42	59	9	1	1	161	12	395	0	
7:30 AM	0	3	6	29	0	28	17	14	1	66	73	11	1	3	129	12	393	0	
7:45 AM	0	1	3	24	0	29	29	13	0	71	109	23	3	21	129	5	460	1,571	
8:00 AM	0	3	8	30	0	19	20	20	1	67	91	34	0	9	122	2	426	1,674	
8:15 AM	0	5	6	31	0	31	20	15	0	69	101	25	0	2	130	7	442	1,721	
8:30 AM	0	6	7	23	0	12	24	10	1	57	82	17	1	3	100	3	346	1,674	
8:45 AM	0	8	7	31	0	9	20	9	0	77	62	11	5	3	98	3	343	1,557	
Count Total	0	29	51	223	0	178	197	97	5	500	630	134	11	49	977	47	3,128	0	
Peak Hour	All	0	12	23	114	0	107	86	62	2	273	374	93	4	35	510	26	1,721	0
	HV	0	3	4	43	0	6	2	0	0	22	19	1	0	4	50	2	156	0
	HV%	-	25%	17%	38%	-	6%	2%	0%	0%	8%	5%	1%	0%	11%	10%	8%	9%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	12	1	7	11	31	0	0	0	0	0	0	0	0	0	0
7:15 AM	12	4	5	16	37	0	0	0	0	0	1	0	1	1	3
7:30 AM	12	2	9	16	39	0	0	0	1	1	0	0	0	1	1
7:45 AM	10	2	9	18	39	0	0	0	0	0	0	0	0	0	0
8:00 AM	14	1	15	7	37	0	0	0	0	0	1	0	0	2	3
8:15 AM	14	3	9	15	41	0	0	0	1	1	1	0	4	1	6
8:30 AM	11	3	14	13	41	0	0	0	1	1	0	0	0	0	0
8:45 AM	11	4	9	12	36	0	0	0	0	0	0	0	0	1	1
Count Total	96	20	77	108	301	0	0	0	3	3	3	0	5	6	14
Peak Hour	50	8	42	56	156	0	0	0	2	2	2	0	4	4	10

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Depot Road				Depot Road				Industrial Boulevard				Industrial Boulevard				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	2	8	0	0	0	1	0	5	2	0	0	0	11	0	31	0
7:15 AM	0	1	2	9	0	1	2	1	0	0	5	0	0	0	14	2	37	0
7:30 AM	0	1	1	10	0	2	0	0	0	4	5	0	0	1	15	0	39	0
7:45 AM	0	0	1	9	0	1	1	0	0	4	5	0	0	1	16	1	39	146
8:00 AM	0	1	1	12	0	1	0	0	0	7	7	1	0	1	6	0	37	152
8:15 AM	0	1	1	12	0	2	1	0	0	7	2	0	0	1	13	1	41	156
8:30 AM	0	2	2	7	0	0	3	0	0	7	7	0	0	1	12	0	41	158
8:45 AM	0	5	0	6	0	0	4	0	0	4	5	0	0	0	12	0	36	155
Count Total	0	13	10	73	0	7	11	2	0	38	38	1	0	5	99	4	301	0
Peak Hour	0	3	4	43	0	6	2	0	0	22	19	1	0	4	50	2	156	0
Two-Hour Count Summaries - Bikes																		
Interval Start	Depot Road			Depot Road			Industrial Boulevard			Industrial Boulevard			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0
<i>Note: U-Turn volumes for bikes are included in Left-Turn, if any.</i>																		



Two-Hour Count Summaries

Interval Start	Depot Road Eastbound				Depot Road Westbound				Industrial Boulevard Northbound				Industrial Boulevard Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	12	38	65	0	17	6	8	1	38	134	40	1	13	94	1	468	0	
4:15 PM	0	10	33	54	0	5	9	5	2	21	122	29	0	7	77	1	375	0	
4:30 PM	0	11	55	58	0	13	4	6	0	19	128	36	0	16	94	0	440	0	
4:45 PM	0	19	59	56	0	6	2	5	1	21	107	33	1	6	81	3	400	1,683	
5:00 PM	0	15	65	79	0	14	1	3	0	12	141	35	0	24	118	6	513	1,728	
5:15 PM	0	11	55	70	0	11	6	3	1	13	128	30	1	19	96	4	448	1,801	
5:30 PM	0	14	36	62	0	12	3	2	0	14	112	35	0	7	72	0	369	1,730	
5:45 PM	0	6	28	34	0	11	4	4	1	13	98	31	5	8	70	1	314	1,644	
Count Total	0	98	369	478	0	89	35	36	6	151	970	269	8	100	702	16	3,327	0	
Peak Hour	All	0	56	234	263	0	44	13	17	2	65	504	134	2	65	389	13	1,801	0
	HV	0	6	2	17	0	3	2	0	0	20	47	3	0	5	18	5	128	0
	HV%	-	11%	1%	6%	-	7%	15%	0%	0%	31%	9%	2%	0%	8%	5%	38%	7%	0

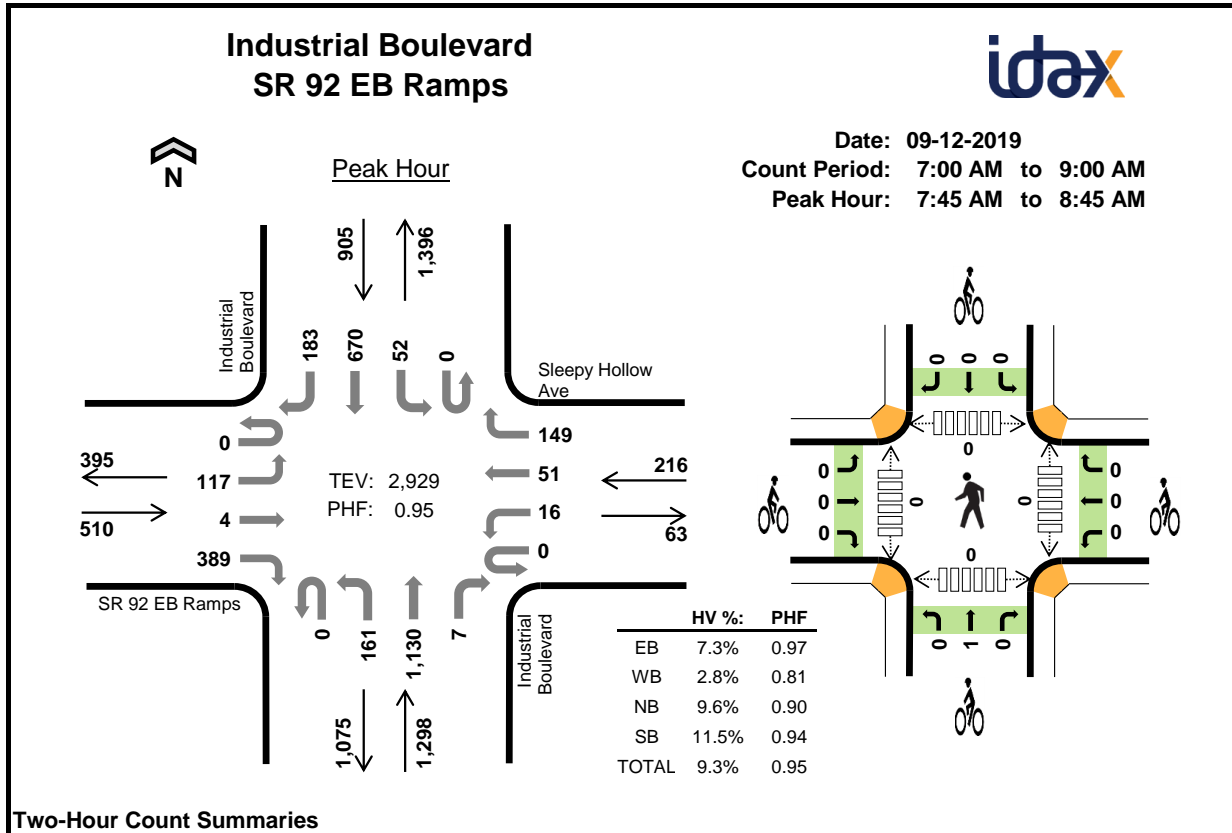
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	7	2	21	3	33	0	0	0	1	1	0	0	1	0	1
4:15 PM	6	2	13	6	27	0	0	0	0	0	2	0	0	2	4
4:30 PM	7	2	17	5	31	2	0	1	0	3	1	0	0	1	2
4:45 PM	5	1	17	7	30	0	0	0	0	0	0	0	0	1	1
5:00 PM	8	1	20	5	34	0	0	1	0	1	0	1	0	0	1
5:15 PM	5	1	16	11	33	0	0	1	1	2	1	1	0	0	2
5:30 PM	8	0	13	1	22	0	0	0	0	0	0	0	0	2	2
5:45 PM	3	0	12	4	19	0	0	0	0	0	0	0	1	0	1
Count Total	49	9	129	42	229	2	0	3	2	7	4	2	2	6	14
Peak Hour	25	5	70	28	128	2	0	3	1	6	2	2	0	2	6

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Depot Road				Depot Road				Industrial Boulevard				Industrial Boulevard				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	7	0	1	1	0	0	12	8	1	0	0	3	0	33	0
4:15 PM	0	2	1	3	0	0	1	1	0	3	10	0	0	0	6	0	27	0
4:30 PM	0	1	0	6	0	2	0	0	0	4	11	2	0	1	4	0	31	0
4:45 PM	0	2	0	3	0	0	1	0	0	7	9	1	0	0	6	1	30	121
5:00 PM	0	2	2	4	0	1	0	0	0	5	15	0	0	1	2	2	34	122
5:15 PM	0	1	0	4	0	0	1	0	0	4	12	0	0	3	6	2	33	128
5:30 PM	0	3	0	5	0	0	0	0	0	5	6	2	0	0	1	0	22	119
5:45 PM	0	1	0	2	0	0	0	0	0	4	7	1	0	0	3	1	19	108
Count Total	0	12	3	34	0	4	4	1	0	44	78	7	0	5	31	6	229	0
Peak Hour	0	6	2	17	0	3	2	0	0	20	47	3	0	5	18	5	128	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Depot Road			Depot Road			Industrial Boulevard			Industrial Boulevard			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:30 PM	0	2	0	0	0	0	0	0	1	0	0	0	3	0			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4			
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	4			
5:15 PM	0	0	0	0	0	0	0	0	1	0	1	0	2	6			
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3			
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3			
Count Total	0	2	0	0	0	0	0	1	2	0	2	0	7	0			
Peak Hour	0	2	0	0	0	0	0	1	2	0	1	0	6	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start	SR 92 EB Ramps				Sleepy Hollow Ave				Industrial Boulevard				Industrial Boulevard				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	30	0	78	0	5	6	20	0	18	263	0	0	5	104	44	573	0	
7:15 AM	0	34	4	83	0	6	8	19	0	21	284	2	0	3	97	48	609	0	
7:30 AM	0	29	4	94	0	2	14	28	0	30	275	0	0	7	115	53	651	0	
7:45 AM	0	38	2	91	0	4	16	47	0	23	300	2	0	10	135	50	718	2,551	
8:00 AM	0	24	1	105	0	5	15	43	0	46	276	0	0	19	179	43	756	2,734	
8:15 AM	0	27	1	94	0	4	11	38	0	52	304	3	0	15	176	47	772	2,897	
8:30 AM	0	28	0	99	0	3	9	21	0	40	250	2	0	8	180	43	683	2,929	
8:45 AM	0	21	2	99	0	1	3	22	0	37	231	1	0	5	117	43	582	2,793	
Count Total	0	231	14	743	0	30	82	238	0	267	2,183	10	0	72	1,103	371	5,344	0	
Peak Hour	All	0	117	4	389	0	16	51	149	0	161	1,130	7	0	52	670	183	2,929	0
	HV	0	10	1	26	0	0	0	6	0	48	76	1	0	3	70	31	272	0
	HV%	-	9%	25%	7%	-	0%	0%	4%	-	30%	7%	14%	-	6%	10%	17%	9%	0

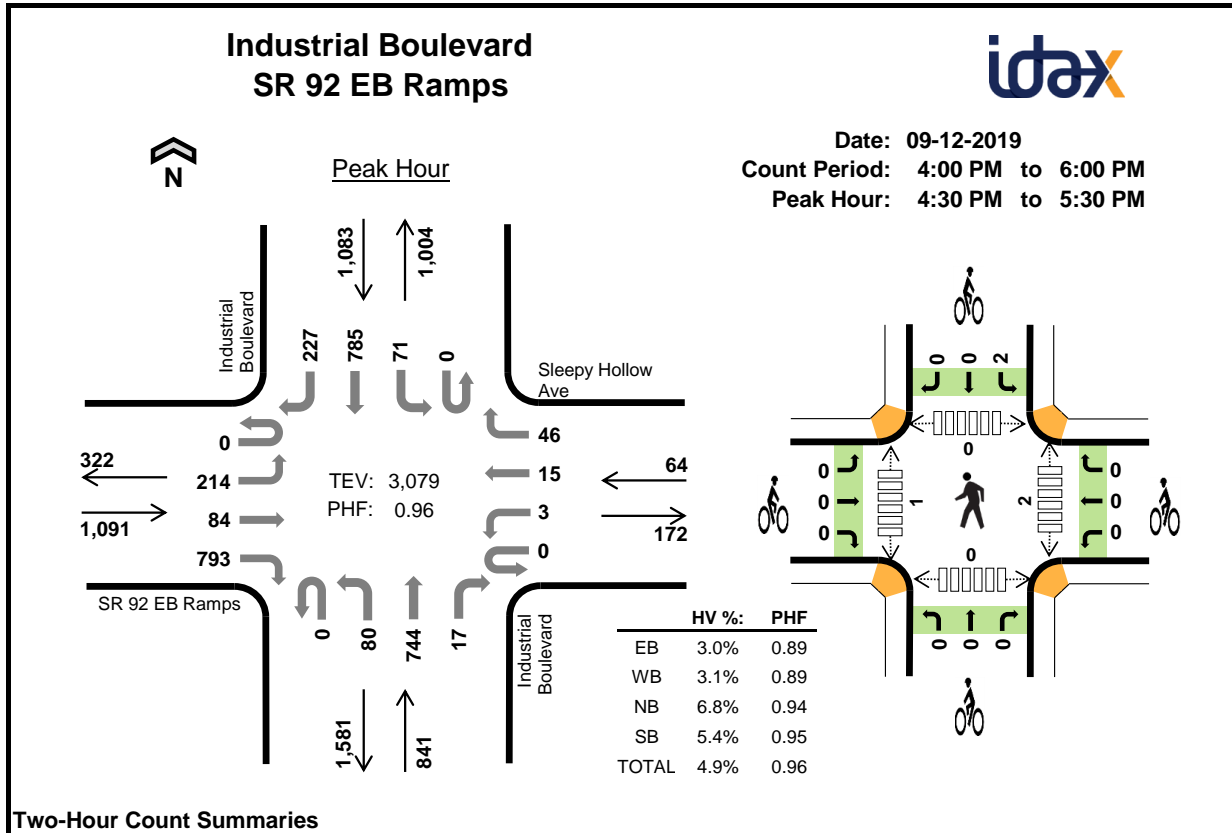
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	7	1	11	17	36	0	0	0	0	0	0	0	0	0	0
7:15 AM	9	0	12	21	42	0	1	0	0	1	1	0	0	0	1
7:30 AM	8	0	11	17	36	0	0	0	0	0	0	0	0	1	1
7:45 AM	8	0	19	31	58	0	0	0	0	0	0	0	0	0	0
8:00 AM	7	2	34	26	69	0	0	1	0	1	0	0	0	0	0
8:15 AM	10	3	38	16	67	0	0	0	0	0	0	0	0	0	0
8:30 AM	12	1	34	31	78	0	0	0	0	0	0	0	0	0	0
8:45 AM	4	0	29	27	60	0	0	0	0	0	1	0	0	0	1
Count Total	65	7	188	186	446	0	1	1	0	2	2	0	0	1	3
Peak Hour	37	6	125	104	272	0	0	1	0	1	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	SR 92 EB Ramps				Sleepy Hollow Ave				Industrial Boulevard				Industrial Boulevard				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	0	5	0	0	1	0	0	3	8	0	0	1	11	5	36	0
7:15 AM	0	3	0	6	0	0	0	0	0	3	9	0	0	1	13	7	42	0
7:30 AM	0	1	0	7	0	0	0	0	0	5	6	0	0	0	8	9	36	0
7:45 AM	0	3	1	4	0	0	0	0	0	2	16	1	0	0	23	8	58	172
8:00 AM	0	1	0	6	0	0	0	2	0	11	23	0	0	1	16	9	69	205
8:15 AM	0	4	0	6	0	0	0	3	0	20	18	0	0	0	12	4	67	230
8:30 AM	0	2	0	10	0	0	0	1	0	15	19	0	0	2	19	10	78	272
8:45 AM	0	3	0	1	0	0	0	0	0	13	16	0	0	0	18	9	60	274
Count Total	0	19	1	45	0	0	1	6	0	72	115	1	0	5	120	61	446	0
Peak Hour	0	10	1	26	0	0	0	6	0	48	76	1	0	3	70	31	272	0

Two-Hour Count Summaries - Bikes																	
Interval Start	SR 92 EB Ramps			Sleepy Hollow Ave			Industrial Boulevard			Industrial Boulevard			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0			
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	2			
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
Count Total	0	0	0	0	0	1	0	1	0	0	0	0	2	0			
Peak Hour	0	0	0	0	0	0	0	1	0	0	0	0	1	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start	SR 92 EB Ramps				Sleepy Hollow Ave				Industrial Boulevard				Industrial Boulevard				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Westbound		Northbound		Northbound		Southbound		Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	50	21	159	0	1	4	15	0	18	210	5	0	13	193	44	733	0	
4:15 PM	0	56	13	164	0	3	2	14	0	13	161	9	0	16	182	36	669	0	
4:30 PM	0	55	26	205	0	2	6	10	0	19	190	3	0	22	177	51	766	0	
4:45 PM	0	54	16	168	0	0	2	11	0	23	188	5	0	13	188	61	729	2,897	
5:00 PM	0	47	15	200	0	0	4	11	0	21	198	4	0	18	206	61	785	2,949	
5:15 PM	0	58	27	220	0	1	3	14	0	17	168	5	0	18	214	54	799	3,079	
5:30 PM	0	56	11	211	0	2	3	5	0	14	165	1	0	11	180	53	712	3,025	
5:45 PM	0	47	13	202	0	1	1	10	0	17	170	4	0	17	163	39	684	2,980	
Count Total	0	423	142	1,529	0	10	25	90	0	142	1,450	36	0	128	1,503	399	5,877	0	
Peak Hour	All	0	214	84	793	0	3	15	46	0	80	744	17	0	71	785	227	3,079	0
	HV	0	8	2	23	0	0	0	2	0	2	55	0	0	3	48	7	150	0
	HV%	-	4%	2%	3%	-	0%	0%	4%	-	3%	7%	0%	-	4%	6%	3%	5%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

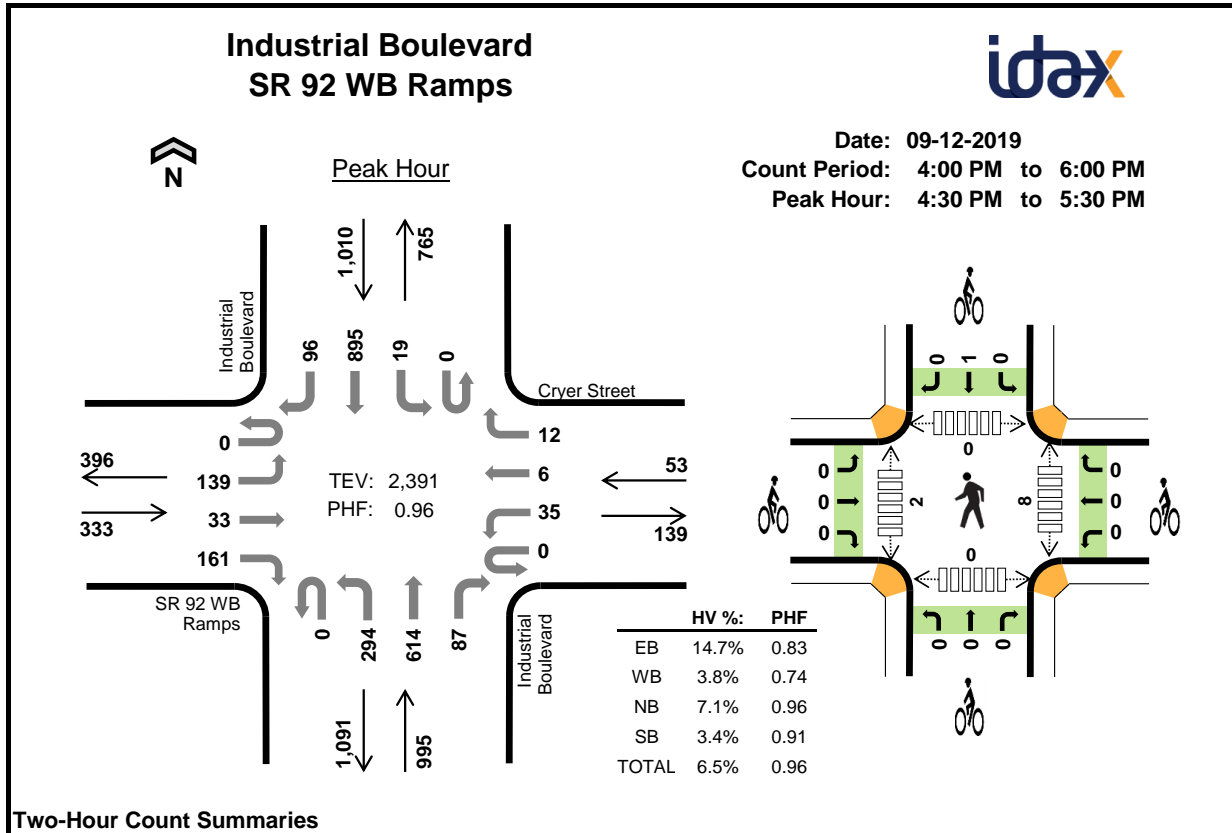
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	14	0	12	18	44	0	0	0	1	1	0	0	0	0	0
4:15 PM	10	0	9	10	29	0	0	0	0	0	0	0	0	0	0
4:30 PM	7	1	15	16	39	0	0	0	0	0	0	0	0	0	0
4:45 PM	7	0	17	16	40	0	0	0	0	0	0	0	0	0	0
5:00 PM	6	0	16	11	33	0	0	0	2	2	1	1	0	0	2
5:15 PM	13	1	9	15	38	0	0	0	0	0	1	0	0	0	1
5:30 PM	12	1	8	11	32	0	0	0	1	1	2	0	0	0	2
5:45 PM	11	0	11	5	27	0	0	0	0	0	0	0	0	0	0
Count Total	80	3	97	102	282	0	0	0	4	4	4	1	0	0	5
Peak Hour	33	2	57	58	150	0	0	0	2	2	2	1	0	0	3

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	SR 92 EB Ramps				Sleepy Hollow Ave				Industrial Boulevard				Industrial Boulevard				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	4	0	10	0	0	0	0	0	1	11	0	0	0	15	3	44	0
4:15 PM	0	3	0	7	0	0	0	0	0	0	9	0	0	0	9	1	29	0
4:30 PM	0	0	0	7	0	0	0	1	0	1	14	0	0	1	14	1	39	0
4:45 PM	0	1	2	4	0	0	0	0	0	0	17	0	0	1	13	2	40	152
5:00 PM	0	4	0	2	0	0	0	0	0	0	16	0	0	1	8	2	33	141
5:15 PM	0	3	0	10	0	0	0	1	0	1	8	0	0	0	13	2	38	150
5:30 PM	0	3	0	9	0	0	0	1	0	0	8	0	0	0	11	0	32	143
5:45 PM	0	2	0	9	0	0	0	0	0	1	10	0	0	0	4	1	27	130
Count Total	0	20	2	58	0	0	0	3	0	4	93	0	0	3	87	12	282	0
Peak Hour	0	8	2	23	0	0	0	2	0	2	55	0	0	3	48	7	150	0

Two-Hour Count Summaries - Bikes																	
Interval Start	SR 92 EB Ramps			Sleepy Hollow Ave			Industrial Boulevard			Industrial Boulevard			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4	
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	SR 92 WB Ramps				Cryer Street				Industrial Boulevard				Industrial Boulevard				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	0	1	0	1	0	1	0	5	5	0	0	1	22	5	43	0
7:15 AM	0	1	0	1	0	0	0	0	0	6	4	0	0	1	20	4	37	0
7:30 AM	0	2	0	2	0	0	1	1	0	2	6	0	0	0	18	8	40	0
7:45 AM	0	1	0	0	0	0	0	0	0	8	10	1	0	0	28	3	51	171
8:00 AM	0	2	0	4	0	2	0	0	0	11	14	1	0	0	23	4	61	189
8:15 AM	0	2	0	3	0	0	0	0	0	15	8	1	0	0	17	1	47	199
8:30 AM	0	4	0	2	0	1	0	0	0	12	13	0	0	0	33	4	69	228
8:45 AM	0	2	0	3	0	0	0	0	0	8	12	1	0	1	25	1	53	230
Count Total	0	16	0	16	0	4	1	2	0	67	72	4	0	3	186	30	401	0
Peak Hour	0	9	0	9	0	3	0	0	0	46	45	3	0	0	101	12	228	0
Two-Hour Count Summaries - Bikes																		
Interval Start	SR 92 WB Ramps			Cryer Street			Industrial Boulevard			Industrial Boulevard			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Note: U-Turn volumes for bikes are included in Left-Turn, if any.</i>																		



Two-Hour Count Summaries

Interval Start	SR 92 WB Ramps				Cryer Street				Industrial Boulevard				Industrial Boulevard				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	37	9	35	0	6	2	4	0	73	180	17	0	5	220	23	611	0	
4:15 PM	0	40	10	46	0	9	0	3	0	68	149	16	0	4	176	22	543	0	
4:30 PM	0	27	9	31	0	8	1	3	0	81	155	20	0	4	217	17	573	0	
4:45 PM	0	30	6	51	0	7	4	2	0	77	158	23	0	2	196	25	581	2,308	
5:00 PM	0	38	7	34	0	14	0	4	0	70	155	22	0	5	237	28	614	2,311	
5:15 PM	0	44	11	45	0	6	1	3	0	66	146	22	0	8	245	26	623	2,391	
5:30 PM	0	47	11	39	0	12	1	1	0	86	130	21	0	0	182	20	550	2,368	
5:45 PM	0	40	9	43	0	16	0	4	0	90	118	18	0	3	157	13	511	2,298	
Count Total	0	303	72	324	0	78	9	24	0	611	1,191	159	0	31	1,630	174	4,606	0	
Peak Hour	All	0	139	33	161	0	35	6	12	0	294	614	87	0	19	895	96	2,391	0
	HV	0	20	0	29	0	1	0	1	0	10	61	0	0	0	29	5	156	0
	HV%	-	14%	0%	18%	-	3%	0%	8%	-	3%	10%	0%	-	0%	3%	5%	7%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	14	0	18	12	44	0	0	0	1	1	0	0	1	0	1
4:15 PM	13	0	10	8	31	0	0	0	0	0	0	0	0	0	0
4:30 PM	13	0	19	11	43	0	0	0	0	0	0	0	0	0	0
4:45 PM	13	0	20	9	42	0	0	0	0	0	5	0	0	0	5
5:00 PM	10	1	19	5	35	0	0	0	1	1	1	2	0	0	3
5:15 PM	13	1	13	9	36	0	0	0	0	0	2	0	0	0	2
5:30 PM	7	0	13	9	29	0	0	0	1	1	2	1	1	0	4
5:45 PM	6	0	12	4	22	0	0	0	1	1	0	0	0	0	0
Count Total	89	2	124	67	282	0	0	0	4	4	10	3	2	0	15
Peak Hour	49	2	71	34	156	0	0	0	1	1	8	2	0	0	10

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	SR 92 WB Ramps				Cryer Street				Industrial Boulevard				Industrial Boulevard				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	7	0	7	0	0	0	0	0	0	18	0	0	0	11	1	44	0
4:15 PM	0	7	0	6	0	0	0	0	0	4	6	0	0	0	7	1	31	0
4:30 PM	0	4	0	9	0	0	0	0	0	1	18	0	0	0	8	3	43	0
4:45 PM	0	5	0	8	0	0	0	0	0	6	14	0	0	0	9	0	42	160
5:00 PM	0	6	0	4	0	1	0	0	0	1	18	0	0	0	4	1	35	151
5:15 PM	0	5	0	8	0	0	0	1	0	2	11	0	0	0	8	1	36	156
5:30 PM	0	6	0	1	0	0	0	0	0	3	9	1	0	0	8	1	29	142
5:45 PM	0	5	0	1	0	0	0	0	0	3	9	0	0	0	4	0	22	122
Count Total	0	45	0	44	0	1	0	1	0	20	103	1	0	0	59	8	282	0
Peak Hour	0	20	0	29	0	1	0	1	0	10	61	0	0	0	29	5	156	0

Two-Hour Count Summaries - Bikes																	
Interval Start	SR 92 WB Ramps			Cryer Street			Industrial Boulevard			Industrial Boulevard			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	3
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

B. A. Y. M. E. T. R. I. C. S.

INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD		SURVEY DATE: 2/11/2016		DAY: THURSDAY	
N-S APPROACH: CABOT BOULEVARD		SURVEY TIME: 7:00 AM		TO 9:00 AM	
E-W APPROACH: WINTON AVENUE		JURISDICTION: HAYWARD		FILE: 3601011-58AM	

<p>PEAK HOUR 7:45 AM to 8:45 AM</p> <p style="text-align: center;">733</p> <p style="text-align: center;">WINTON AVENUE CABOT BOULEVARD</p>	<p style="text-align: center;">ARRIVAL / DEPARTURE VOLUMES</p> <p style="text-align: center;">PHF = 0.87</p> <p style="text-align: center;">90 187</p> <p style="text-align: center;">PHF = 0.80</p> <p style="text-align: center;">96 528 56 127</p> <p style="text-align: center;">PHF = 0.52</p> <p style="text-align: center;">323 59</p> <p style="text-align: center;">PHF = 0.78</p>
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TIME PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL		
	From	To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT		THRU	RIGHT
SURVEY DATA																			
7:00 AM to 7:15 AM			3	4	6	8	3	0	0	14	2	76	27	29					172
7:15 AM to 7:30 AM			5	8	9	23	7	0	0	27	6	146	43	62					336
7:30 AM to 7:45 AM			7	11	16	29	11	0	1	39	9	220	62	95					500
7:45 AM to 8:00 AM			14	14	19	46	17	1	1	48	13	307	79	130					689
8:00 AM to 8:15 AM			20	19	27	63	21	1	1	52	16	395	102	183					900
8:15 AM to 8:30 AM			27	25	29	80	23	1	1	58	19	454	113	227					1057
8:30 AM to 8:45 AM			29	32	32	102	26	2	4	77	24	513	134	258					1233
8:45 AM to 9:00 AM			33	36	39	112	30	2	6	94	29	572	157	290					1400
TOTAL BY PERIOD																			
7:00 AM to 7:15 AM			0	3	4	6	0	8	3	0	0	0	14	2	0	76	27	29	172
7:15 AM to 7:30 AM			0	2	4	3	0	15	4	0	0	0	13	4	0	70	16	33	164
7:30 AM to 7:45 AM			0	2	3	7	0	6	4	0	0	1	12	3	0	74	19	33	164
7:45 AM to 8:00 AM			0	7	3	3	0	17	6	1	0	0	9	4	0	87	17	35	189
8:00 AM to 8:15 AM			0	6	5	8	0	17	4	0	0	0	4	3	0	88	23	53	211
8:15 AM to 8:30 AM			0	7	6	2	0	17	2	0	0	0	6	3	0	59	11	44	157
8:30 AM to 8:45 AM			0	2	7	3	0	22	3	1	0	3	19	5	0	59	21	31	176
8:45 AM to 9:00 AM			0	4	4	7	0	10	4	0	0	2	17	5	0	59	23	32	167
HOURLY TOTALS																			
7:00 AM to 8:00 AM			0	14	14	19	0	46	17	1	0	1	48	13	0	307	79	130	689
7:15 AM to 8:15 AM			0	17	15	21	0	55	18	1	0	1	38	14	0	319	75	154	728
7:30 AM to 8:30 AM			0	22	17	20	0	57	16	1	0	1	31	13	0	308	70	165	721
7:45 AM to 8:45 AM			0	22	21	16	0	73	15	2	0	3	38	15	0	293	72	163	733
8:00 AM to 9:00 AM			0	19	22	20	0	66	13	1	0	5	46	16	0	265	78	160	711
PEAK HOUR SUMMARY																			
7:45 AM to 8:45 AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL		
		NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT		WBR	
	VOLUME	0	22	21	16	0	73	15	2	0	3	38	15	0	293	72	163	733	
	PHF BY MOVEMENT	0.00	0.79	0.75	0.50	0.00	0.83	0.63	0.50	0.00	0.25	0.50	0.75	0.00	0.83	0.78	0.77	OVERALL	
	PHF BY APPROACH	0.78				0.87				0.52				0.80				0.87	
	BICYCLE	0				0				0				0				0	
	PEDESTRIAN	0				0				1				3				4	
	PEDESTRIAN BY LEG:	N-LEG				S-LEG				E-LEG				W-LEG					
		2				2				0				0				4	

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B.A.Y.M.E.T.R.I.C.S. BICYCLE TURNING MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD		SURVEY DATE: 2/11/2016		DAY: THURSDAY	
N-S APPROACH: CABOT BOULEVARD		SURVEY TIME: 7:00 AM		TO 9:00 AM	
E-W APPROACH: WINTON AVENUE		JURISDICTION: HAYWARD		FILE: 3601011-58AM	

<p>PEAK HOUR 7:45 AM to 8:45 AM</p> <p style="text-align: center;">NORTH</p> <p style="text-align: center;">WINTON AVENUE</p> <p style="text-align: center;">CABOT BOULEVARD</p>	<p>PEAK HOUR TOTAL BICYCLE VOLUMES</p> <p style="text-align: center;">0</p> <p>TOTAL N-END</p> <p style="text-align: center;">0 0</p> <p>TOTAL W-END</p> <p style="text-align: center;">0 0</p> <p>TOTAL E-END</p> <p style="text-align: center;">0 0</p> <p>TOTAL S-END</p> <p style="text-align: center;">0 0</p>
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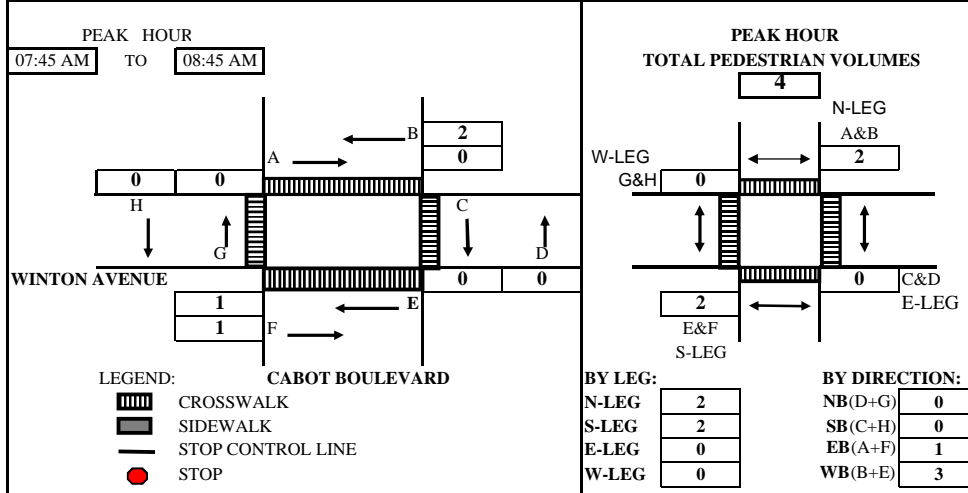
TIME PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																	
7:00 AM to 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM to 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM to 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM to 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM to 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM to 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM to 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM to 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL BY PERIOD																	
7:00 AM to 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM to 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM to 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM to 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM to 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM to 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM to 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM to 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOURLY TOTALS																	
7:00 AM to 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM to 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM to 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM to 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM to 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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7:45 AM to 8:45 AM					
APPROACH VOLUME	NB	SB	EB	WB	TOTAL
BICYCLE	0	0	0	0	0

B.A.Y.M.E.T.R.I.C.S. PEDESTRIAN MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD		SURVEY DATE: 2/11/2016	
N-S APPROACH: CABOT BOULEVARD		DAY: THURSDAY	
E-W APPROACH: WINTON AVENUE		JURISDICTION: HAYWARD	
SURVEY PERIOD 7:00 AM TO 9:00 AM		FILE: 3601011-58AM	



TIME PERIOD		NORTH X-WALK		EAST X-WALK		SOUTH X-WALK		WEST X-WALK		TOTAL
From	To	A	B	C	D	E	F	G	H	

SURVEY DATA											
07:00 AM	---	07:15 AM	0	0	0	0	0	0	3	0	3
07:15 AM	---	07:30 AM	0	0	1	0	0	0	3	0	4
07:30 AM	---	07:45 AM	0	0	1	0	0	0	3	0	4
07:45 AM	---	08:00 AM	0	0	1	0	0	0	3	0	4
08:00 AM	---	08:15 AM	0	0	1	0	1	1	3	0	6
08:15 AM	---	08:30 AM	0	0	1	0	1	1	3	0	6
08:30 AM	---	08:45 AM	0	2	1	0	1	1	3	0	8
08:45 AM	---	09:00 AM	0	2	1	0	1	1	3	0	8

TOTAL BY PERIOD											
07:00 AM	---	07:15 AM	0	0	0	0	0	0	3	0	3
07:15 AM	---	07:30 AM	0	0	1	0	0	0	0	0	1
07:30 AM	---	07:45 AM	0	0	0	0	0	0	0	0	0
07:45 AM	---	08:00 AM	0	0	0	0	0	0	0	0	0
08:00 AM	---	08:15 AM	0	0	0	0	1	1	0	0	2
08:15 AM	---	08:30 AM	0	0	0	0	0	0	0	0	0
08:30 AM	---	08:45 AM	0	2	0	0	0	0	0	0	2
08:45 AM	---	09:00 AM	0	0	0	0	0	0	0	0	0

HOURLY TOTALS											
07:00 AM	---	08:00 AM	0	0	1	0	0	0	3	0	4
07:15 AM	---	08:15 AM	0	0	1	0	1	1	0	0	3
07:30 AM	---	08:30 AM	0	0	0	0	1	1	0	0	2
07:45 AM	---	08:45 AM	0	2	0	0	1	1	0	0	4
08:00 AM	---	09:00 AM	0	2	0	0	1	1	0	0	4

Tel : (510) 232-1271

E MAIL: Baymetrics@gmail.com

12:00 AM to 12:00 AM					
VOLUME BY DIRECTION	NB	SB	EB	WB	TOTAL
PEDESTRIAN	0	0	1	3	4
VOLUME BY LEG	N-LEG	S-LEG	E-LEG	W-LEG	TOTAL
PEDESTRIAN	2	2	0	0	4

B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:		TRAFFIC COUNTS IN HAYWARD				SURVEY DATE:		2/11/2016		DAY:		THURSDAY	
N-S APPROACH:		CABOT BOULEVARD				SURVEY TIME:		4:00 PM		TO		6:00 PM	
E-W APPROACH:		WINTON AVENUE				JURISDICTION:		HAYWARD		FILE:		3601011-58PM	

<p>PEAK HOUR 4:15 PM to 5:15 PM</p> <p style="text-align: center;">606</p>	<p style="text-align: center;">ARRIVAL / DEPARTURE VOLUMES</p> <p>PHF = 0.69</p> <p>186 69</p> <p>PHF = 0.91</p> <p>74 153</p> <p>136 366</p> <p>PHF = 0.85</p> <p>97 131</p> <p>PHF = 0.67</p>
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TIME PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT		
SURVEY DATA																		
4:00 PM to 4:15 PM	0	4	6	20	40	4	1		0	1	21	3	14	14	11		139	
4:15 PM to 4:30 PM	0	8	10	36	62	9	1		0	1	42	8	31	28	22		258	
4:30 PM to 4:45 PM	0	13	20	70	111	10	2		0	1	73	11	43	40	35		429	
4:45 PM to 5:00 PM	0	16	21	86	144	15	5		1	1	108	15	53	55	45		565	
5:00 PM to 5:15 PM	1	20	25	115	195	30	6		1	2	137	21	66	66	60		745	
5:15 PM to 5:30 PM	2	22	28	124	227	38	7		1	3	158	29	74	81	65		859	
5:30 PM to 5:45 PM	2	23	28	143	262	46	7		1	3	177	34	86	87	72		971	
5:45 PM to 6:00 PM	2	29	29	150	291	49	7		1	3	191	39	101	100	76		1068	
TOTAL BY PERIOD																		
4:00 PM to 4:15 PM	0	4	6	20	0	40	4	1	0	1	21	3	0	14	14	11	139	
4:15 PM to 4:30 PM	0	4	4	16	0	22	5	0	0	0	21	5	0	17	14	11	119	
4:30 PM to 4:45 PM	0	5	10	34	0	49	1	1	0	0	31	3	0	12	12	13	171	
4:45 PM to 5:00 PM	0	3	1	16	0	33	5	3	1	0	35	4	0	10	15	10	136	
5:00 PM to 5:15 PM	1	4	4	29	0	51	15	1	0	1	29	6	0	13	11	15	180	
5:15 PM to 5:30 PM	1	2	3	9	0	32	8	1	0	1	21	8	0	8	15	5	114	
5:30 PM to 5:45 PM	0	1	0	19	0	35	8	0	0	0	19	5	0	12	6	7	112	
5:45 PM to 6:00 PM	0	6	1	7	0	29	3	0	0	0	14	5	0	15	13	4	97	
HOURLY TOTALS																		
4:00 PM to 5:00 PM	0	16	21	86	0	144	15	5	1	1	108	15	0	53	55	45	565	
4:15 PM to 5:15 PM	1	16	19	95	0	155	26	5	1	1	116	18	0	52	52	49	606	
4:30 PM to 5:30 PM	2	14	18	88	0	165	29	6	1	2	116	21	0	43	53	43	601	
4:45 PM to 5:45 PM	2	10	8	73	0	151	36	5	1	2	104	23	0	43	47	37	542	
5:00 PM to 6:00 PM	2	13	8	64	0	147	34	2	0	2	83	24	0	48	45	31	503	
PEAK HOUR SUMMARY																		
4:15 PM to 5:15 PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR		
VOLUME		1	16	19	95	0	155	26	5	1	1	116	18	0	52	52	49	606
PHF BY MOVEMENT		0.25	0.80	0.48	0.70	0.00	0.76	0.43	0.42	0.25	0.25	0.83	0.75	0.00	0.76	0.87	0.82	OVERALL
PHF BY APPROACH		0.67				0.69				0.85				0.91				0.84
BICYCLE		2				2				1				1				6
PEDESTRIAN		0				0				2				0				2
PEDESTRIAN BY LEG:		N-LEG				S-LEG				E-LEG				W-LEG				
		0				2				0				0				2

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BICYCLE TURNING MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD		SURVEY DATE: 2/11/2016		DAY: THURSDAY	
N-S APPROACH: CABOT BOULEVARD		SURVEY TIME: 4:00 PM		TO 6:00 PM	
E-W APPROACH: WINTON AVENUE		JURISDICTION: HAYWARD		FILE: 3601011-58PM	

<p>PEAK HOUR 4:15 PM to 5:15 PM</p> <p style="text-align: center;">6</p> <p style="text-align: center;">CABOT BOULEVARD</p>	<p>PEAK HOUR TOTAL BICYCLE VOLUMES 12</p> <p>TOTAL N-END 3</p> <p>TOTAL W-END 3</p> <p>TOTAL E-END 3</p> <p>TOTAL S-END 3</p>
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TIME PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																	
4:00 PM to 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM to 4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
4:30 PM to 4:45 PM	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3
4:45 PM to 5:00 PM	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3
5:00 PM to 5:15 PM	0	1	0	1	0	0	1	1	0	0	1	0	0	0	0	1	6
5:15 PM to 5:30 PM	0	2	0	1	0	0	2	1	0	0	1	0	0	0	0	1	8
5:30 PM to 5:45 PM	0	2	0	1	0	0	2	2	0	0	1	0	0	0	0	1	9
5:45 PM to 6:00 PM	0	2	0	1	0	0	2	2	0	0	2	0	0	0	0	1	10
TOTAL BY PERIOD																	
4:00 PM to 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM to 4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
4:30 PM to 4:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM to 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM to 5:15 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	3
5:15 PM to 5:30 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
5:30 PM to 5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
5:45 PM to 6:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
HOURLY TOTALS																	
4:00 PM to 5:00 PM	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3
4:15 PM to 5:15 PM	0	1	0	1	0	0	1	1	0	0	1	0	0	0	0	1	6
4:30 PM to 5:30 PM	0	2	0	1	0	0	2	0	0	0	1	0	0	0	0	1	7
4:45 PM to 5:45 PM	0	1	0	0	0	0	2	1	0	0	1	0	0	0	0	1	6
5:00 PM to 6:00 PM	0	1	0	0	0	0	2	1	0	0	2	0	0	0	0	1	7

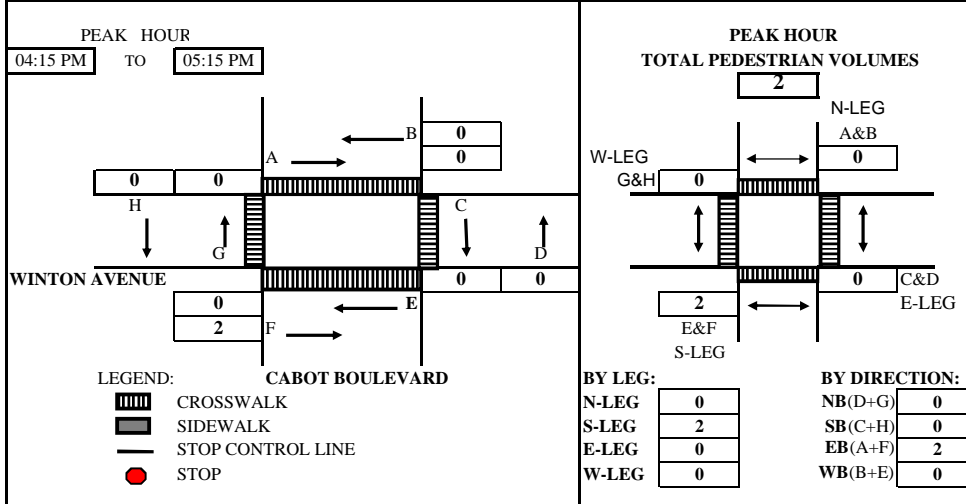
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4:15 PM to 5:15 PM					
APPROACH VOLUME	NB	SB	EB	WB	TOTAL
BICYCLE	2	2	1	1	6

B.A.Y.M.E.T.R.I.C.S.

PEDESTRIAN MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD		SURVEY DATE: 2/11/2016	
N-S APPROACH: CABOT BOULEVARD		DAY: THURSDAY	
E-W APPROACH: WINTON AVENUE		JURISDICTION: HAYWARD	
SURVEY PERIOD: 4:00 PM TO 6:00 PM		FILE: 3601011-58PM	

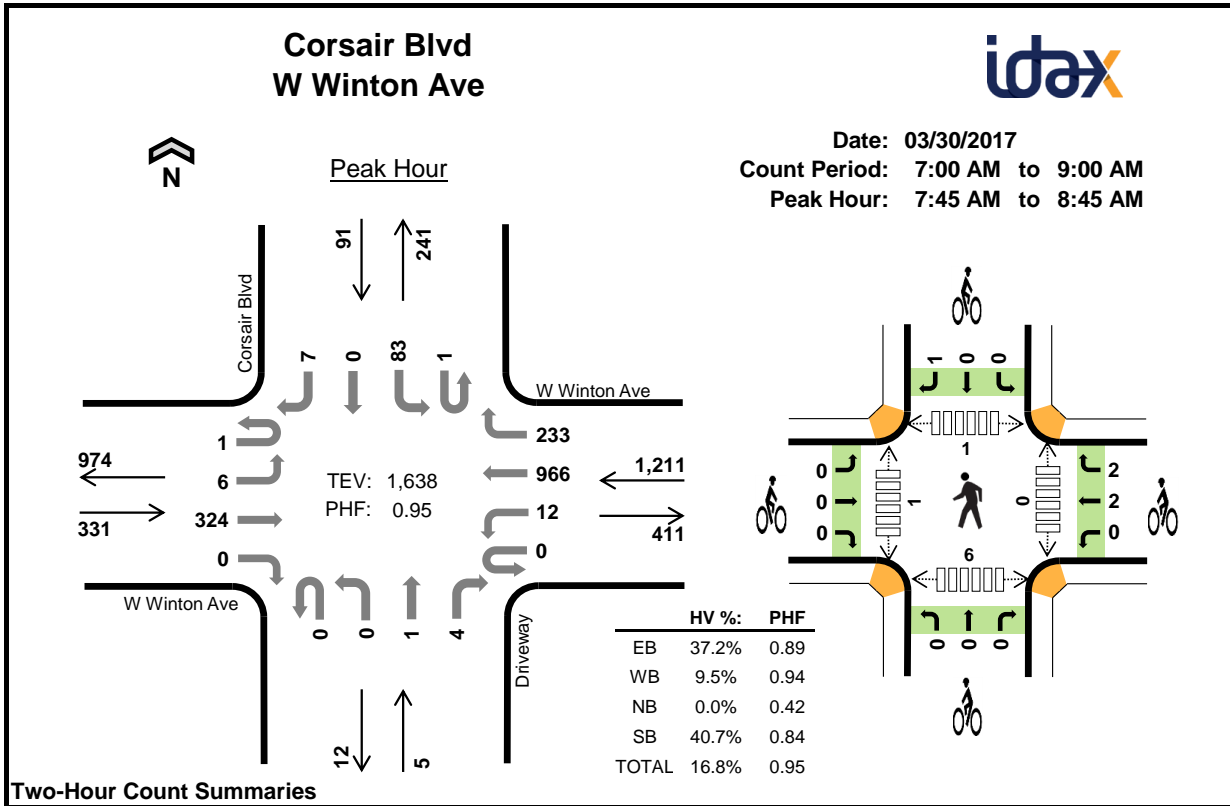


TIME PERIOD		NORTH X-WALK		EAST X-WALK		SOUTH X-WALK		WEST X-WALK		TOTAL	
From	To	A	B	C	D	E	F	G	H		
SURVEY DATA											
04:00 PM	---	04:15 PM	0	0	0	0	2	0	0	0	2
04:15 PM	---	04:30 PM	0	0	0	0	2	0	0	0	2
04:30 PM	---	04:45 PM	0	0	0	0	2	0	0	0	2
04:45 PM	---	05:00 PM	0	0	0	0	2	1	0	0	3
05:00 PM	---	05:15 PM	0	0	0	0	2	2	0	0	4
05:15 PM	---	05:30 PM	0	0	0	0	2	2	0	0	4
05:30 PM	---	05:45 PM	0	0	1	0	2	2	1	0	6
05:45 PM	---	06:00 PM	0	0	1	0	2	3	1	0	7
TOTAL BY PERIOD											
04:00 PM	---	04:15 PM	0	0	0	0	2	0	0	0	2
04:15 PM	---	04:30 PM	0	0	0	0	0	0	0	0	0
04:30 PM	---	04:45 PM	0	0	0	0	0	0	0	0	0
04:45 PM	---	05:00 PM	0	0	0	0	0	1	0	0	1
05:00 PM	---	05:15 PM	0	0	0	0	0	1	0	0	1
05:15 PM	---	05:30 PM	0	0	0	0	0	0	0	0	0
05:30 PM	---	05:45 PM	0	0	1	0	0	0	1	0	2
05:45 PM	---	06:00 PM	0	0	0	0	0	1	0	0	1
HOURLY TOTALS											
04:00 PM	---	05:00 PM	0	0	0	0	2	1	0	0	3
04:15 PM	---	05:15 PM	0	0	0	0	0	2	0	0	2
04:30 PM	---	05:30 PM	0	0	0	0	0	2	0	0	2
04:45 PM	---	05:45 PM	0	0	1	0	0	2	1	0	4
05:00 PM	---	06:00 PM	0	0	1	0	0	2	1	0	4

Tel : (510) 232-1271

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12:00 AM to 12:00 AM						
VOLUME BY DIRECTION		NB	SB	EB	WB	TOTAL
PEDESTRIAN		0	0	2	0	2
VOLUME BY LEG		N-LEG	S-LEG	E-LEG	W-LEG	TOTAL
PEDESTRIAN		0	2	0	0	2



Two-Hour Count Summaries

Interval Start	W Winton Ave Eastbound				W Winton Ave Westbound				Driveway Northbound				Corsair Blvd Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	2	92	0	0	0	215	62	0	2	0	0	0	21	0	1	395	0	
7:15 AM	0	0	73	0	0	0	234	59	0	1	0	0	0	24	0	4	395	0	
7:30 AM	0	0	64	0	0	0	213	64	0	0	0	0	0	23	0	2	366	0	
7:45 AM	0	2	72	0	0	2	260	61	0	0	0	0	0	14	0	3	414	1,570	
8:00 AM	0	1	82	0	0	1	234	67	0	0	0	1	0	22	0	1	409	1,584	
8:15 AM	0	1	92	0	0	5	256	48	0	0	1	2	1	24	0	2	432	1,621	
8:30 AM	1	2	78	0	0	4	216	57	0	0	0	1	0	23	0	1	383	1,638	
8:45 AM	0	1	70	0	0	5	174	38	0	0	0	1	0	26	0	2	317	1,541	
Count Total	1	9	623	0	0	17	1,802	456	0	3	1	5	1	177	0	16	3,111	0	
Peak Hour	All	1	6	324	0	0	12	966	233	0	0	1	4	1	83	0	7	1,638	0
	HV	0	2	121	0	0	1	76	38	0	0	0	0	0	34	0	3	275	0
	HV%	0%	33%	37%	-	-	8%	8%	16%	-	-	0%	0%	0%	41%	-	43%	17%	0

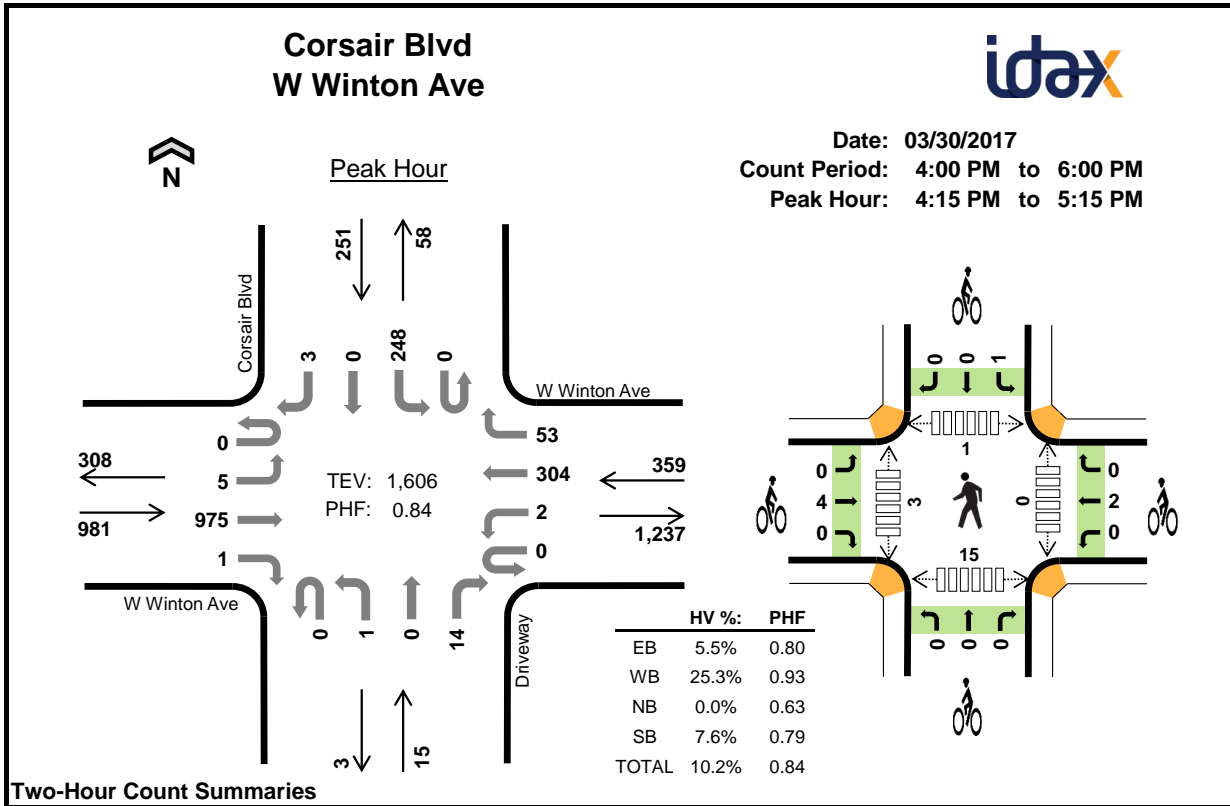
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	32	30	0	5	67	0	0	0	0	0	0	0	0	4	4
7:15 AM	31	23	0	11	65	0	1	0	0	1	0	0	2	3	5
7:30 AM	19	26	0	13	58	0	0	0	1	1	0	0	0	0	0
7:45 AM	28	31	0	8	67	0	2	0	1	3	0	1	0	3	4
8:00 AM	33	20	0	10	63	0	1	0	0	1	0	0	0	1	1
8:15 AM	34	33	0	10	77	0	0	0	0	0	0	0	1	1	2
8:30 AM	28	31	0	9	68	0	1	0	0	1	0	0	0	1	1
8:45 AM	27	15	1	12	55	0	0	0	0	0	0	1	1	1	3
Count Total	232	209	1	78	520	0	5	0	2	7	0	2	4	14	20
Peak Hour	123	115	0	37	275	0	4	0	1	5	0	1	1	6	8

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	W Winton Ave				W Winton Ave				Driveway				Corsair Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	32	0	0	0	22	8	0	0	0	0	0	5	0	0	67	0
7:15 AM	0	0	31	0	0	0	15	8	0	0	0	0	0	10	0	1	65	0
7:30 AM	0	0	19	0	0	0	18	8	0	0	0	0	0	12	0	1	58	0
7:45 AM	0	0	28	0	0	0	27	4	0	0	0	0	0	6	0	2	67	257
8:00 AM	0	1	32	0	0	0	11	9	0	0	0	0	0	10	0	0	63	253
8:15 AM	0	1	33	0	0	0	22	11	0	0	0	0	0	9	0	1	77	265
8:30 AM	0	0	28	0	0	1	16	14	0	0	0	0	0	9	0	0	68	275
8:45 AM	0	0	27	0	0	0	11	4	0	0	0	1	0	11	0	1	55	263
Count Total	0	2	230	0	0	1	142	66	0	0	0	1	0	72	0	6	520	0
Peak Hour	0	2	121	0	0	1	76	38	0	0	0	0	0	34	0	3	275	0

Two-Hour Count Summaries - Bikes																		
Interval Start	W Winton Ave			W Winton Ave			Driveway			Corsair Blvd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
7:45 AM	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	3	5	5
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	6	6
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
8:30 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	5	5
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Count Total	0	0	0	0	3	2	2	0	0	0	0	0	0	2	7	7	0	0
Peak Hour	0	0	0	0	2	2	2	0	0	0	0	0	0	1	5	5	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start	W Winton Ave Eastbound				W Winton Ave Westbound				Driveway Northbound				Corsair Blvd Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	1	241	0	0	0	85	20	0	0	0	3	0	73	0	2	425	0	
4:15 PM	0	1	177	0	0	0	76	14	0	0	0	3	0	40	0	1	312	0	
4:30 PM	0	1	295	1	0	0	84	13	0	1	0	5	0	75	0	0	475	0	
4:45 PM	0	0	198	0	0	0	71	14	0	0	0	3	0	55	0	1	342	1,554	
5:00 PM	0	3	305	0	0	2	73	12	0	0	0	3	0	78	0	1	477	1,606	
5:15 PM	0	1	158	0	1	0	70	16	0	0	0	1	0	48	0	0	295	1,589	
5:30 PM	0	1	197	0	0	0	33	11	0	1	0	3	0	33	0	0	279	1,393	
5:45 PM	0	1	134	0	0	1	53	4	0	0	0	1	0	36	0	1	231	1,282	
Count Total	0	9	1,705	1	1	3	545	104	0	2	0	22	0	438	0	6	2,836	0	
Peak Hour	All	0	5	975	1	0	2	304	53	0	1	0	14	0	248	0	3	1,606	0
	HV	0	3	51	0	0	0	80	11	0	0	0	0	0	19	0	0	164	0
	HV%	-	60%	5%	0%	-	0%	26%	21%	-	0%	-	0%	-	8%	-	0%	10%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total	
4:00 PM	13	25	0	10	48	0	0	0	0	0	0	0	0	0	6	6
4:15 PM	12	20	0	6	38	1	0	0	0	1	0	1	1	1	6	8
4:30 PM	13	27	0	4	44	0	2	0	1	3	0	0	0	0	5	5
4:45 PM	16	22	0	4	42	3	0	0	0	3	0	1	0	0	1	1
5:00 PM	13	22	0	5	40	0	0	0	0	0	0	1	0	0	4	5
5:15 PM	12	24	0	7	43	0	0	0	1	1	0	1	0	0	8	9
5:30 PM	9	10	0	2	21	0	0	0	0	0	0	1	1	1	4	6
5:45 PM	9	13	0	3	25	0	0	0	1	1	0	0	0	0	2	2
Count Total	97	163	0	41	301	4	2	0	3	9	0	5	2	3	35	42
Peak Hour	54	91	0	19	164	4	2	0	1	7	0	3	1	1	15	19

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	W Winton Ave				W Winton Ave				Driveway				Corsair Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	13	0	0	0	16	9	0	0	0	0	0	10	0	0	48	0
4:15 PM	0	1	11	0	0	0	18	2	0	0	0	0	0	6	0	0	38	0
4:30 PM	0	0	13	0	0	0	22	5	0	0	0	0	0	4	0	0	44	0
4:45 PM	0	0	16	0	0	0	20	2	0	0	0	0	0	4	0	0	42	172
5:00 PM	0	2	11	0	0	0	20	2	0	0	0	0	0	5	0	0	40	164
5:15 PM	0	1	11	0	0	0	19	5	0	0	0	0	0	7	0	0	43	169
5:30 PM	0	0	9	0	0	0	9	1	0	0	0	0	0	2	0	0	21	146
5:45 PM	0	1	8	0	0	0	12	1	0	0	0	0	0	3	0	0	25	129
Count Total	0	5	92	0	0	0	136	27	0	0	0	0	0	41	0	0	301	0
Peak Hour	0	3	51	0	0	0	80	11	0	0	0	0	0	19	0	0	164	0

Two-Hour Count Summaries - Bikes																		
Interval Start	W Winton Ave			W Winton Ave			Driveway			Corsair Blvd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3	0
4:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	7
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	7
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
Count Total	0	4	0	0	0	2	0	0	0	0	0	0	3	0	0	0	9	0
Peak Hour	0	4	0	0	0	2	0	0	0	0	0	0	1	0	0	0	7	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:		TRAFFIC COUNTS IN HAYWARD				SURVEY DATE:		2/11/2016		DAY: THURSDAY			
N-S APPROACH:		CLAWITER ROAD				SURVEY TIME:		7:00 AM		TO		9:00 AM	
E-W APPROACH:		WINTON AVENUE				JURISDICTION:		HAYWARD		FILE: 3601011-59AM			

<p>PEAK HOUR 7:00 AM to 8:00 AM</p> <p style="text-align: center;">2784</p> <p style="text-align: center;">WINTON AVENUE CLAWITER ROAD</p>	<p style="text-align: center;">ARRIVAL / DEPARTURE VOLUMES</p> <p>PHF = 0.00</p> <p>0 1</p> <p>PHF = 0.82</p> <p>1177 1956</p> <p>475 539</p> <p>PHF = 0.87</p> <p>1067 353</p> <p>PHF = 0.91</p>
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TIME PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																	
7:00 AM to 7:15 AM	40	0	57		0	0	0		1	0	89	46	0	279	292	0	804
7:15 AM to 7:30 AM	65	0	106		0	0	0		1	0	173	65	1	465	490	0	1366
7:30 AM to 7:45 AM	101	0	158		0	0	0		1	0	249	101	1	632	729	1	1973
7:45 AM to 8:00 AM	142	0	211		0	0	0		1	0	327	147	1	920	1034	1	2784
8:00 AM to 8:15 AM	180	1	262		0	2	1		1	0	391	168	1	1131	1287	5	3430
8:15 AM to 8:30 AM	206	1	311		0	3	2		1	0	468	186	1	1333	1521	8	4041
8:30 AM to 8:45 AM	248	2	357		2	3	2		1	0	543	211	1	1550	1762	10	4692
8:45 AM to 9:00 AM	292	2	400		10	5	3		1	6	612	230	1	1748	1991	16	5317
TOTAL BY PERIOD																	
7:00 AM to 7:15 AM	0	40	0	57	0	0	0	0	1	0	89	46	0	279	292	0	804
7:15 AM to 7:30 AM	0	25	0	49	0	0	0	0	0	0	84	19	1	186	198	0	562
7:30 AM to 7:45 AM	0	36	0	52	0	0	0	0	0	0	76	36	0	167	239	1	607
7:45 AM to 8:00 AM	0	41	0	53	0	0	0	0	0	0	78	46	0	288	305	0	811
8:00 AM to 8:15 AM	0	38	1	51	0	0	2	1	0	0	64	21	0	211	253	4	646
8:15 AM to 8:30 AM	0	26	0	49	0	0	1	1	0	0	77	18	0	202	234	3	611
8:30 AM to 8:45 AM	0	42	1	46	0	2	0	0	0	0	75	25	0	217	241	2	651
8:45 AM to 9:00 AM	0	44	0	43	0	8	2	1	0	6	69	19	0	198	229	6	625
HOURLY TOTALS																	
7:00 AM to 8:00 AM	0	142	0	211	0	0	0	0	1	0	327	147	1	920	1034	1	2784
7:15 AM to 8:15 AM	0	140	1	205	0	0	2	1	0	0	302	122	1	852	995	5	2626
7:30 AM to 8:30 AM	0	141	1	205	0	0	3	2	0	0	295	121	0	868	1031	8	2675
7:45 AM to 8:45 AM	0	147	2	199	0	2	3	2	0	0	294	110	0	918	1033	9	2719
8:00 AM to 9:00 AM	0	150	2	189	0	10	5	3	0	6	285	83	0	828	957	15	2533
PEAK HOUR SUMMARY																	
7:00 AM to 8:00 AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	
VOLUME	0	142	0	211	0	0	0	0	1	0	327	147	1	920	1034	1	2784
PHF BY MOVEMENT	0.00	0.87	0.00	0.93	0.00	0.00	0.00	0.00	0.25	0.00	0.92	0.80	0.25	0.80	0.85	0.25	OVERALL
PHF BY APPROACH	0.91				0.00				0.87				0.82				0.86
BICYCLE	1				0				3				1				5
PEDESTRIAN	0				0				2				6				8
PEDESTRIAN BY LEG:	N-LEG				S-LEG				E-LEG				W-LEG				
	2				6				0				0				8

B.A.Y.M.E.T.R.I.C.S.
BICYCLE TURNING MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD		SURVEY DATE: 2/11/2016		DAY: THURSDAY	
N-S APPROACH: CLAWITER ROAD		SURVEY TIME: 7:00 AM		TO: 9:00 AM	
E-W APPROACH: WINTON AVENUE		JURISDICTION: HAYWARD		FILE: 3601011-59AM	

PEAK HOUR 7:00 AM to 8:00 AM		NORTH ↑
0 0 0 0		
0 0 1 0		
0 0 1 0		
3 0 0 0		
0 0 0 0		
5		
0 0 1 0		
WINTON AVENUE		
CLAWITER ROAD		

PEAK HOUR TOTAL BICYCLE VOLUMES 10	
TOTAL N-END 1	
0 1	
TOTAL W-END 4	
4 1 1 1	
3 0 3	
TOTAL E-END 4	
0 1	
TOTAL S-END 1	

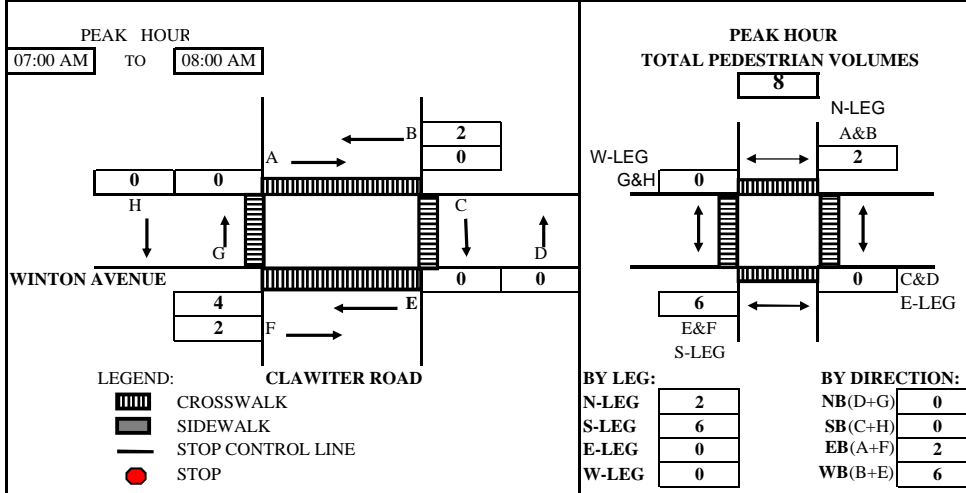
TIME PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																	
7:00 AM to 7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
7:15 AM to 7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3
7:30 AM to 7:45 AM	0	0	1	0	0	0	0	0	0	0	2	0	0	0	1	0	4
7:45 AM to 8:00 AM	0	0	1	0	0	0	0	0	0	0	3	0	0	0	1	0	5
8:00 AM to 8:15 AM	0	0	1	0	0	0	0	0	0	0	3	0	0	0	2	0	6
8:15 AM to 8:30 AM	0	0	1	0	0	0	0	0	0	0	3	0	0	0	2	0	6
8:30 AM to 8:45 AM	0	0	1	0	0	0	0	0	0	0	4	0	0	0	2	0	7
8:45 AM to 9:00 AM	0	0	1	0	0	0	0	0	0	0	4	0	0	0	2	0	7
TOTAL BY PERIOD																	
7:00 AM to 7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
7:15 AM to 7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
7:30 AM to 7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM to 8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
8:00 AM to 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
8:15 AM to 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM to 8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
8:45 AM to 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOURLY TOTALS																	
7:00 AM to 8:00 AM	0	0	1	0	0	0	0	0	0	0	3	0	0	0	1	0	5
7:15 AM to 8:15 AM	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	5
7:30 AM to 8:30 AM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	3
7:45 AM to 8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3
8:00 AM to 9:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2

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7:00 AM to 8:00 AM					
APPROACH VOLUME	NB	SB	EB	WB	TOTAL
BICYCLE	1	0	3	1	5

B.A.Y.M.E.T.R.I.C.S. PEDESTRIAN MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD	SURVEY DATE: 2/11/2016
N-S APPROACH: CLAWITER ROAD	DAY: THURSDAY
E-W APPROACH: WINTON AVENUE	JURISDICTION: HAYWARD
SURVEY PERIOD: 7:00 AM TO 9:00 AM	FILE: 3601011-59AM



TIME PERIOD		NORTH X-WALK		EAST X-WALK		SOUTH X-WALK		WEST X-WALK		TOTAL	
From	To	A	B	C	D	E	F	G	H		
SURVEY DATA											
07:00 AM	---	07:15 AM	0	0	0	0	2	1	0	0	3
07:15 AM	---	07:30 AM	0	1	0	0	3	1	0	0	5
07:30 AM	---	07:45 AM	0	1	0	0	4	1	0	0	6
07:45 AM	---	08:00 AM	0	2	0	0	4	2	0	0	8
08:00 AM	---	08:15 AM	0	3	0	0	4	2	0	0	9
08:15 AM	---	08:30 AM	0	4	0	0	4	2	0	0	10
08:30 AM	---	08:45 AM	0	4	0	0	4	2	0	0	10
08:45 AM	---	09:00 AM	0	4	0	0	5	2	0	0	11

TOTAL BY PERIOD											
07:00 AM	---	07:15 AM	0	0	0	0	2	1	0	0	3
07:15 AM	---	07:30 AM	0	1	0	0	1	0	0	0	2
07:30 AM	---	07:45 AM	0	0	0	0	1	0	0	0	1
07:45 AM	---	08:00 AM	0	1	0	0	0	1	0	0	2
08:00 AM	---	08:15 AM	0	1	0	0	0	0	0	0	1
08:15 AM	---	08:30 AM	0	1	0	0	0	0	0	0	1
08:30 AM	---	08:45 AM	0	0	0	0	0	0	0	0	0
08:45 AM	---	09:00 AM	0	0	0	0	1	0	0	0	1

HOURLY TOTALS											
07:00 AM	---	08:00 AM	0	2	0	0	4	2	0	0	8
07:15 AM	---	08:15 AM	0	3	0	0	2	1	0	0	6
07:30 AM	---	08:30 AM	0	3	0	0	1	1	0	0	5
07:45 AM	---	08:45 AM	0	3	0	0	0	1	0	0	4
08:00 AM	---	09:00 AM	0	2	0	0	1	0	0	0	3

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12:00 AM to 12:00 AM						
VOLUME BY DIRECTION		NB	SB	EB	WB	TOTAL
PEDESTRIAN		0	0	2	6	8
VOLUME BY LEG		N-LEG	S-LEG	E-LEG	W-LEG	TOTAL
PEDESTRIAN		2	6	0	0	8

B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:		TRAFFIC COUNTS IN HAYWARD				SURVEY DATE:		2/11/2016		DAY:		THURSDAY	
N-S APPROACH:		CLAWITER ROAD				SURVEY TIME:		4:00 PM		TO		6:00 PM	
E-W APPROACH:		WINTON AVENUE				JURISDICTION:		HAYWARD		FILE:		3601011-59PM	

<p>PEAK HOUR 4:00 PM to 5:00 PM</p> <p style="text-align: center;">NORTH</p> <p style="text-align: center;">WINTON AVENUE</p> <p style="text-align: center;">CLAWITER ROAD</p>	<p style="text-align: center;">ARRIVAL / DEPARTURE VOLUMES</p> <p style="text-align: center;">PHF = 0.42</p> <p style="text-align: center;">5 0</p> <p style="text-align: center;">PHF = 0.77</p> <p style="text-align: center;">368 525</p> <p style="text-align: center;">1147 1566</p> <p style="text-align: center;">PHF = 0.87</p> <p style="text-align: center;">421 678</p> <p style="text-align: center;">PHF = 0.83</p>
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TIME PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL		
	From	To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT		THRU	RIGHT
SURVEY DATA																			
4:00 PM to 4:15 PM			26	0	177	1	1	0	1	0	274	56	1	71	99	0		707	
4:15 PM to 4:30 PM			49	0	316	1	1	0	1	0	476	86	3	134	150	0		1217	
4:30 PM to 4:45 PM			73	0	458	1	1	0	1	0	736	137	3	188	207	0		1805	
4:45 PM to 5:00 PM			95	0	583	3	2	0	1	0	977	169	3	250	272	0		2355	
5:00 PM to 5:15 PM			119	0	701	3	2	0	3	0	1274	247	3	330	343	0		3025	
5:15 PM to 5:30 PM			136	0	822	3	2	0	3	0	1523	273	3	392	402	0		3559	
5:30 PM to 5:45 PM			157	0	941	4	3	0	3	0	1739	312	3	462	449	0		4073	
5:45 PM to 6:00 PM			176	0	1058	4	3	0	5	0	1932	335	3	520	508	0		4544	
TOTAL BY PERIOD																			
4:00 PM to 4:15 PM			0	26	0	177	0	1	1	0	1	0	274	56	1	71	99	0	707
4:15 PM to 4:30 PM			0	23	0	139	0	0	0	0	0	0	202	30	2	63	51	0	510
4:30 PM to 4:45 PM			0	24	0	142	0	0	0	0	0	0	260	51	0	54	57	0	588
4:45 PM to 5:00 PM			0	22	0	125	0	2	1	0	0	0	241	32	0	62	65	0	550
5:00 PM to 5:15 PM			0	24	0	118	0	0	0	0	2	0	297	78	0	80	71	0	670
5:15 PM to 5:30 PM			0	17	0	121	0	0	0	0	0	0	249	26	0	62	59	0	534
5:30 PM to 5:45 PM			0	21	0	119	0	1	1	0	0	0	216	39	0	70	47	0	514
5:45 PM to 6:00 PM			0	19	0	117	0	0	0	0	2	0	193	23	0	58	59	0	471
HOURLY TOTALS																			
4:00 PM to 5:00 PM			0	95	0	583	0	3	2	0	1	0	977	169	3	250	272	0	2355
4:15 PM to 5:15 PM			0	93	0	524	0	2	1	0	2	0	1000	191	2	259	244	0	2318
4:30 PM to 5:30 PM			0	87	0	506	0	2	1	0	2	0	1047	187	0	258	252	0	2342
4:45 PM to 5:45 PM			0	84	0	483	0	3	2	0	2	0	1003	175	0	274	242	0	2268
5:00 PM to 6:00 PM			0	81	0	475	0	1	1	0	4	0	955	166	0	270	236	0	2189
PEAK HOUR SUMMARY																			
4:00 PM to 5:00 PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL		
	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR			
VOLUME		0	95	0	583	0	3	2	0	1	0	977	169	3	250	272	0	2355	
PHF BY MOVEMENT		0.00	0.91	0.00	0.82	0.00	0.38	0.50	0.00	0.25	0.00	0.89	0.75	0.38	0.88	0.69	0.00	OVERALL	
PHF BY APPROACH		0.83				0.42				0.87				0.77				0.83	
BICYCLE		0				0				1				1				2	
PEDESTRIAN		0				0				2				5				7	
PEDESTRIAN BY LEG:		N-LEG				S-LEG				E-LEG				W-LEG					
		0				7				0				0				7	

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B.A.Y.M.E.T.R.I.C.S.

BICYCLE TURNING MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD		SURVEY DATE: 2/11/2016		DAY: THURSDAY	
N-S APPROACH: CLAWITER ROAD		SURVEY TIME: 4:00 PM		TO 6:00 PM	
E-W APPROACH: WINTON AVENUE		JURISDICTION: HAYWARD		FILE: 3601011-59PM	

<p>PEAK HOUR 4:00 PM to 5:00 PM</p> <p style="text-align: center;">NORTH</p> <p style="text-align: center;">WINTON AVENUE</p> <p style="text-align: center;">CLAWITER ROAD</p>	<p>PEAK HOUR TOTAL BICYCLE VOLUMES 4</p> <p>TOTAL N-END 0</p> <p>TOTAL W-END 2</p> <p>TOTAL E-END 2</p> <p>TOTAL S-END 0</p>
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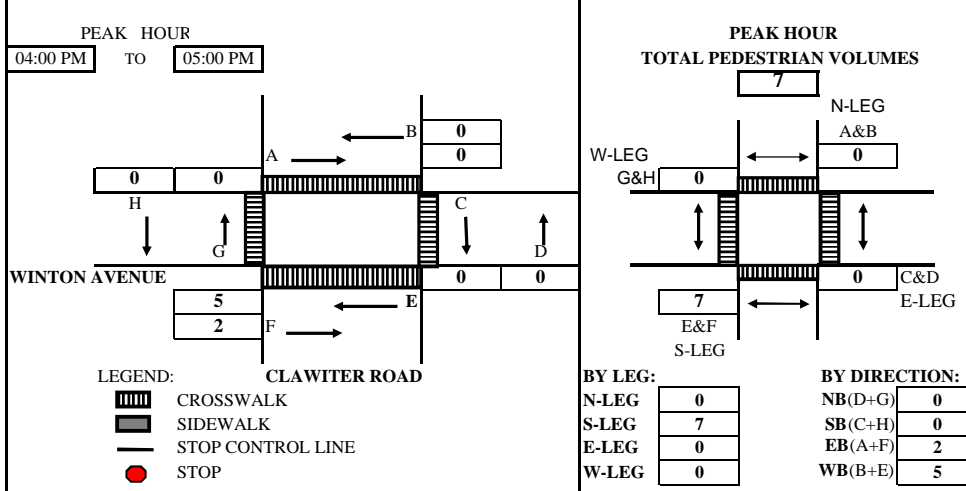
TIME PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																	
4:00 PM to 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM to 4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
4:30 PM to 4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
4:45 PM to 5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
5:00 PM to 5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
5:15 PM to 5:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	5
5:30 PM to 5:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	8
5:45 PM to 6:00 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0	9
TOTAL BY PERIOD																	
4:00 PM to 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM to 4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
4:30 PM to 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM to 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM to 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM to 5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3
5:30 PM to 5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3
5:45 PM to 6:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
HOURLY TOTALS																	
4:00 PM to 5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
4:15 PM to 5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
4:30 PM to 5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3
4:45 PM to 5:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	6
5:00 PM to 6:00 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0	7

TEL: (510) 232 - 1271 E MAIL: Baymetrics@gmail.com

4:00 PM to 5:00 PM					
APPROACH VOLUME	NB	SB	EB	WB	TOTAL
BICYCLE	0	0	1	1	2

B.A.Y.M.E.T.R.I.C.S. PEDESTRIAN MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD		SURVEY DATE: 2/11/2016	
N-S APPROACH: CLAWITER ROAD		DAY: THURSDAY	
E-W APPROACH: WINTON AVENUE		JURISDICTION: HAYWARD	
SURVEY PERIOD: 4:00 PM TO 6:00 PM		FILE: 3601011-59PM	



TIME PERIOD		NORTH X-WALK		EAST X-WALK		SOUTH X-WALK		WEST X-WALK		TOTAL	
From	To	A	B	C	D	E	F	G	H		
SURVEY DATA											
04:00 PM	---	04:15 PM	0	0	0	0	2	1	0	0	3
04:15 PM	---	04:30 PM	0	0	0	0	3	2	0	0	5
04:30 PM	---	04:45 PM	0	0	0	0	5	2	0	0	7
04:45 PM	---	05:00 PM	0	0	0	0	5	2	0	0	7
05:00 PM	---	05:15 PM	0	0	0	0	5	3	0	0	8
05:15 PM	---	05:30 PM	0	0	0	0	6	3	0	0	9
05:30 PM	---	05:45 PM	0	0	0	0	7	3	0	0	10
05:45 PM	---	06:00 PM	0	0	0	0	7	3	0	0	10
TOTAL BY PERIOD											
04:00 PM	---	04:15 PM	0	0	0	0	2	1	0	0	3
04:15 PM	---	04:30 PM	0	0	0	0	1	1	0	0	2
04:30 PM	---	04:45 PM	0	0	0	0	2	0	0	0	2
04:45 PM	---	05:00 PM	0	0	0	0	0	0	0	0	0
05:00 PM	---	05:15 PM	0	0	0	0	0	1	0	0	1
05:15 PM	---	05:30 PM	0	0	0	0	1	0	0	0	1
05:30 PM	---	05:45 PM	0	0	0	0	1	0	0	0	1
05:45 PM	---	06:00 PM	0	0	0	0	0	0	0	0	0
HOURLY TOTALS											
04:00 PM	---	05:00 PM	0	0	0	0	5	2	0	0	7
04:15 PM	---	05:15 PM	0	0	0	0	3	2	0	0	5
04:30 PM	---	05:30 PM	0	0	0	0	3	1	0	0	4
04:45 PM	---	05:45 PM	0	0	0	0	2	1	0	0	3
05:00 PM	---	06:00 PM	0	0	0	0	2	1	0	0	3

Tel : (510) 232-1271

E MAIL: Baymetrics@gmail.com

12:00 AM to 12:00 AM						
VOLUME BY DIRECTION		NB	SB	EB	WB	TOTAL
PEDESTRIAN		0	0	2	5	7
VOLUME BY LEG		N-LEG	S-LEG	E-LEG	W-LEG	TOTAL
PEDESTRIAN		0	7	0	0	7

B. A. Y. M. E. T. R. I. C. S.

INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:		TRAFFIC COUNTS IN HAYWARD				SURVEY DATE:		2/3/2016		DAY:		WEDNESDAY	
N-S APPROACH:		HESPERIAN BOULEVARD				SURVEY TIME:		7:00 AM		TO		9:00 AM	
E-W APPROACH:		WINTON AVENUE				JURISDICTION:		HAYWARD		FILE:		3601011-61AM	

<p>PEAK HOUR 7:30 AM to 8:30 AM</p> <p style="text-align: center;">NORTH</p> <p style="text-align: center;">WINTON AVENUE</p> <p style="text-align: center;">HESPERIAN BOULEVARD</p>	<p style="text-align: center;">ARRIVAL / DEPARTURE VOLUMES</p> <p style="text-align: center;">PHF = 0.85</p> <p style="text-align: center;">2162 973</p> <p style="text-align: center;">PHF = 0.89</p> <p style="text-align: center;">2049 1315</p> <p style="text-align: center;">577 586</p> <p style="text-align: center;">PHF = 0.91</p> <p style="text-align: center;">1253 807</p> <p style="text-align: center;">PHF = 0.88</p>
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TIME PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT		
SURVEY DATA																		
7:00 AM to 7:15 AM	3	5	63	25	17	237	278	35	69	10	44	236	7	1029				
7:15 AM to 7:30 AM	4	17	126	45	49	441	569	68	163	23	87	480	26	2098				
7:30 AM to 7:45 AM	7	25	267	77	69	745	878	107	247	34	145	752	47	3400				
7:45 AM to 8:00 AM	10	36	424	104	95	992	1162	158	333	40	199	969	78	4600				
8:00 AM to 8:15 AM	17	47	568	137	134	1189	1363	226	419	44	233	1251	130	5758				
8:15 AM to 8:30 AM	19	55	743	182	157	1458	1606	269	504	58	273	1454	181	6959				
8:30 AM to 8:45 AM	21	68	850	213	185	1729	1803	324	585	67	365	1660	206	8076				
8:45 AM to 9:00 AM	25	80	983	240	229	2003	2011	359	676	77	430	1887	227	9227				
TOTAL BY PERIOD																		
7:00 AM to 7:15 AM	3	5	63	25	0	17	237	278	0	35	69	10	0	44	236	7	1029	
7:15 AM to 7:30 AM	1	12	63	20	0	32	204	291	0	33	94	13	0	43	244	19	1069	
7:30 AM to 7:45 AM	3	8	141	32	0	20	304	309	0	39	84	11	0	58	272	21	1302	
7:45 AM to 8:00 AM	3	11	157	27	0	26	247	284	0	51	86	6	0	54	217	31	1200	
8:00 AM to 8:15 AM	7	11	144	33	0	39	197	201	0	68	86	4	0	34	282	52	1158	
8:15 AM to 8:30 AM	2	8	175	45	0	23	269	243	0	43	85	14	0	40	203	51	1201	
8:30 AM to 8:45 AM	2	13	107	31	0	28	271	197	0	55	81	9	0	92	206	25	1117	
8:45 AM to 9:00 AM	4	12	133	27	0	44	274	208	0	35	91	10	0	65	227	21	1151	
HOURLY TOTALS																		
7:00 AM to 8:00 AM	10	36	424	104	0	95	992	1162	0	158	333	40	0	199	969	78	4600	
7:15 AM to 8:15 AM	14	42	505	112	0	117	952	1085	0	191	350	34	0	189	1015	123	4729	
7:30 AM to 8:30 AM	15	38	617	137	0	108	1017	1037	0	201	341	35	0	186	974	155	4861	
7:45 AM to 8:45 AM	14	43	583	136	0	116	984	925	0	217	338	33	0	220	908	159	4676	
8:00 AM to 9:00 AM	15	44	559	136	0	134	1011	849	0	201	343	37	0	231	918	149	4627	
PEAK HOUR SUMMARY																		
7:30 AM to 8:30 AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR		
VOLUME		15	38	617	137	0	108	1017	1037	0	201	341	35	0	186	974	155	4861
PHF BY MOVEMENT		0.54	0.86	0.88	0.76	0.00	0.69	0.84	0.84	0.00	0.74	0.99	0.63	0.00	0.80	0.86	0.75	OVERALL
PHF BY APPROACH		0.88				0.85				0.91				0.89				0.93
BICYCLE		1				0				0				2				3
PEDESTRIAN		8				10				8				12				38
		N-LEG				S-LEG				E-LEG				W-LEG				
PEDESTRIAN BY LEG:		6				14				8				10				38

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B.A.Y.M.E.T.R.I.C.S.
BICYCLE TURNING MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD		SURVEY DATE: 2/3/2016		DAY: WEDNESDAY	
N-S APPROACH: HESPERIAN BOULEVARD		SURVEY TIME: 7:00 AM		TO 9:00 AM	
E-W APPROACH: WINTON AVENUE		JURISDICTION: HAYWARD		FILE: 3601011-61AM	

PEAK HOUR 7:30 AM to 8:30 AM		NORTH 		PEAK HOUR TOTAL BICYCLE VOLUMES 6	
WINTON AVENUE HESPERIAN BOULEVARD		TOTAL N-END 0		TOTAL E-END 3	
		TOTAL W-END 2		TOTAL S-END 1	

TIME PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																	
7:00 AM to 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM to 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM to 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM to 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
8:00 AM to 8:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	3
8:15 AM to 8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	3
8:30 AM to 8:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	3
8:45 AM to 9:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	4
TOTAL BY PERIOD																	
7:00 AM to 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM to 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM to 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM to 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
8:00 AM to 8:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM to 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM to 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM to 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
HOURLY TOTALS																	
7:00 AM to 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
7:15 AM to 8:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	3
7:30 AM to 8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	3
7:45 AM to 8:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	3
8:00 AM to 9:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2

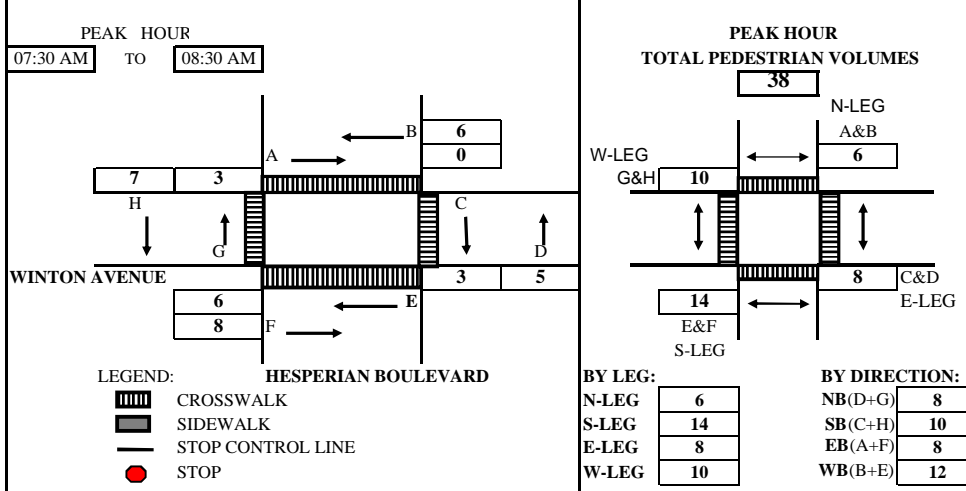
TEL: (510) 232 - 1271 E MAIL: Baymetrics@gmail.com

7:30 AM to 8:30 AM					
APPROACH VOLUME	NB	SB	EB	WB	TOTAL
BICYCLE	1	0	0	2	3

B.A.Y.M.E.T.R.I.C.S.

PEDESTRIAN MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD	SURVEY DATE: 2/3/2016
N-S APPROACH: HESPERIAN BOULEVARD	DAY: WEDNESDAY
E-W APPROACH: WINTON AVENUE	JURISDICTION: HAYWARD
SURVEY PERIOD: 7:00 AM TO 9:00 AM	FILE: 3601011-61AM



TIME PERIOD	NORTH X-WALK		EAST X-WALK		SOUTH X-WALK		WEST X-WALK		TOTAL
From To	A	B	C	D	E	F	G	H	

SURVEY DATA									
TIME PERIOD	A	B	C	D	E	F	G	H	TOTAL
07:00 AM --- 07:15 AM	1	1	3	2	3	1	0	4	15
07:15 AM --- 07:30 AM	1	4	6	3	6	2	0	9	31
07:30 AM --- 07:45 AM	1	5	8	4	7	2	1	11	39
07:45 AM --- 08:00 AM	1	8	8	5	8	6	3	11	50
08:00 AM --- 08:15 AM	1	8	8	6	10	9	3	13	58
08:15 AM --- 08:30 AM	1	10	9	8	12	10	3	16	69
08:30 AM --- 08:45 AM	1	10	12	9	12	11	3	17	75
08:45 AM --- 09:00 AM	1	10	15	9	15	11	4	21	86

TOTAL BY PERIOD									
TIME PERIOD	A	B	C	D	E	F	G	H	TOTAL
07:00 AM --- 07:15 AM	1	1	3	2	3	1	0	4	15
07:15 AM --- 07:30 AM	0	3	3	1	3	1	0	5	16
07:30 AM --- 07:45 AM	0	1	2	1	1	0	1	2	8
07:45 AM --- 08:00 AM	0	3	0	1	1	4	2	0	11
08:00 AM --- 08:15 AM	0	0	0	1	2	3	0	2	8
08:15 AM --- 08:30 AM	0	2	1	2	2	1	0	3	11
08:30 AM --- 08:45 AM	0	0	3	1	0	1	0	1	6
08:45 AM --- 09:00 AM	0	0	3	0	3	0	1	4	11

HOURLY TOTALS									
TIME PERIOD	A	B	C	D	E	F	G	H	TOTAL
07:00 AM --- 08:00 AM	1	8	8	5	8	6	3	11	50
07:15 AM --- 08:15 AM	0	7	5	4	7	8	3	9	43
07:30 AM --- 08:30 AM	0	6	3	5	6	8	3	7	38
07:45 AM --- 08:45 AM	0	5	4	5	5	9	2	6	36
08:00 AM --- 09:00 AM	0	2	7	4	7	5	1	10	36

Tel : (510) 232-1271 E MAIL: Baymetrics@gmail.com

12:00 AM to 12:00 AM					
VOLUME BY DIRECTION	NB	SB	EB	WB	TOTAL
PEDESTRIAN	8	10	8	12	38
VOLUME BY LEG	N-LEG	S-LEG	E-LEG	W-LEG	TOTAL
PEDESTRIAN	6	14	8	10	38

B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:		TRAFFIC COUNTS IN HAYWARD				SURVEY DATE:		2/3/2016		DAY:		WEDNESDAY	
N-S APPROACH:		HESPERIAN BOULEVARD				SURVEY TIME:		4:00 PM		TO		6:00 PM	
E-W APPROACH:		WINTON AVENUE				JURISDICTION:		HAYWARD		FILE:		3601011-61PM	

<p>PEAK HOUR 4:30 PM to 5:30 PM</p> <p style="text-align: center;">NORTH</p> <p style="text-align: center;">WINTON AVENUE</p> <p style="text-align: center;">HESPERIAN BOULEVARD</p>	<p style="text-align: center;">ARRIVAL / DEPARTURE VOLUMES</p> <p>PHF = 0.86</p> <p>1077 2062</p> <p>PHF = 0.87</p> <p>500 802</p> <p>1761 1369</p> <p>PHF = 0.91</p> <p>1076 1367</p> <p>PHF = 0.95</p>
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TIME PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL			
	From	To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT		THRU	RIGHT	
SURVEY DATA																				
4:00 PM to 4:15 PM			8	4	259	41	3	30	147	41			176	272	16	4	60	102	50	1213
4:15 PM to 4:30 PM			12	10	528	98	5	75	334	75			331	492	29	9	114	185	94	2391
4:30 PM to 4:45 PM			18	16	819	153	5	122	489	117			523	774	37	10	187	265	148	3683
4:45 PM to 5:00 PM			21	19	1133	188	8	167	689	156			679	1009	50	12	250	335	198	4914
5:00 PM to 5:15 PM			32	25	1413	240	9	200	843	202			865	1279	63	19	323	427	257	6197
5:15 PM to 5:30 PM			36	28	1677	274	12	238	1059	257			1021	1511	81	20	389	485	310	7398
5:30 PM to 5:45 PM			44	34	2001	330	13	271	1234	288			1202	1725	95	22	458	573	374	8664
5:45 PM to 6:00 PM			52	42	2246	381	13	311	1425	318			1351	1996	113	23	531	628	423	9853
TOTAL BY PERIOD																				
4:00 PM to 4:15 PM			8	4	259	41	3	30	147	41	0		176	272	16	4	60	102	50	1213
4:15 PM to 4:30 PM			4	6	269	57	2	45	187	34	0		155	220	13	5	54	83	44	1178
4:30 PM to 4:45 PM			6	6	291	55	0	47	155	42	0		192	282	8	1	73	80	54	1292
4:45 PM to 5:00 PM			3	3	314	35	3	45	200	39	0		156	235	13	2	63	70	50	1231
5:00 PM to 5:15 PM			11	6	280	52	1	33	154	46	0		186	270	13	7	73	92	59	1283
5:15 PM to 5:30 PM			4	3	264	34	3	38	216	55	0		156	232	18	1	66	58	53	1201
5:30 PM to 5:45 PM			8	6	324	56	1	33	175	31	0		181	214	14	2	69	88	64	1266
5:45 PM to 6:00 PM			8	8	245	51	0	40	191	30	0		149	271	18	1	73	55	49	1189
HOURLY TOTALS																				
4:00 PM to 5:00 PM			21	19	1133	188	8	167	689	156	0		679	1009	50	12	250	335	198	4914
4:15 PM to 5:15 PM			24	21	1154	199	6	170	696	161	0		689	1007	47	15	263	325	207	4984
4:30 PM to 5:30 PM			24	18	1149	176	7	163	725	182	0		690	1019	52	11	275	300	216	5007
4:45 PM to 5:45 PM			26	18	1182	177	8	149	745	171	0		679	951	58	12	271	308	226	4981
5:00 PM to 6:00 PM			31	23	1113	193	5	144	736	162	0		672	987	63	11	281	293	225	4939
PEAK HOUR SUMMARY																				
4:30 PM to 5:30 PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL			
	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR				
VOLUME		24	18	1149	176	7	163	725	182	0	690	1019	52	11	275	300	216	5007		
PHF BY MOVEMENT		0.55	0.75	0.91	0.80	0.58	0.87	0.84	0.83	0.00	0.90	0.90	0.72	0.39	0.94	0.82	0.92	OVERALL		
PHF BY APPROACH		0.95				0.86				0.91				0.87				0.97		
BICYCLE		0				2				0				1				3		
PEDESTRIAN		18				15				15				14				62		
		N-LEG				S-LEG				E-LEG				W-LEG						
PEDESTRIAN BY LEG:		4				25				24				9				62		

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B.A.Y.M.E.T.R.I.C.S.

BICYCLE TURNING MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD		SURVEY DATE: 2/3/2016		DAY: WEDNESDAY	
N-S APPROACH: HESPERIAN BOULEVARD		SURVEY TIME: 4:00 PM		TO 6:00 PM	
E-W APPROACH: WINTON AVENUE		JURISDICTION: HAYWARD		FILE: 3601011-61PM	

<p>PEAK HOUR 4:30 PM to 5:30 PM</p>	<p>PEAK HOUR TOTAL BICYCLE VOLUMES: 6</p> <p>TOTAL N-END: 3</p> <p>TOTAL W-END: 0</p> <p>TOTAL E-END: 2</p> <p>TOTAL S-END: 1</p>
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TIME PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																	
4:00 PM to 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM to 4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM to 4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM to 5:00 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:00 PM to 5:15 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	3
5:15 PM to 5:30 PM	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	4
5:30 PM to 5:45 PM	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	1	5
5:45 PM to 6:00 PM	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	2	6
TOTAL BY PERIOD																	
4:00 PM to 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM to 4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM to 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM to 5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00 PM to 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
5:15 PM to 5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:30 PM to 5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM to 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
HOURLY TOTALS																	
4:00 PM to 5:00 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:15 PM to 5:15 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	3
4:30 PM to 5:30 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	3
4:45 PM to 5:45 PM	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	4
5:00 PM to 6:00 PM	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	4

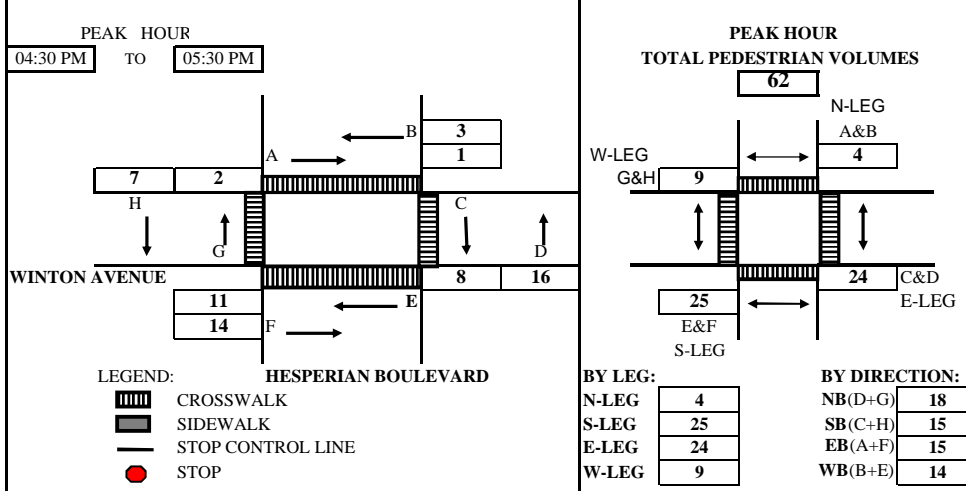
TEL: (510) 232 - 1271 E MAIL: Baymetrics@gmail.com

4:30 PM to 5:30 PM					
APPROACH VOLUME	NB	SB	EB	WB	TOTAL
BICYCLE	0	2	0	1	3

B.A.Y.M.E.T.R.I.C.S.

PEDESTRIAN MOVEMENT SUMMARY

PROJECT: TRAFFIC COUNTS IN HAYWARD	SURVEY DATE: 2/3/2016
N-S APPROACH: HESPERIAN BOULEVARD	DAY: WEDNESDAY
E-W APPROACH: WINTON AVENUE	JURISDICTION: HAYWARD
SURVEY PERIOD: 4:00 PM TO 6:00 PM	FILE: 3601011-61PM



TIME PERIOD		NORTH X-WALK		EAST X-WALK		SOUTH X-WALK		WEST X-WALK		TOTAL
From	To	A	B	C	D	E	F	G	H	
SURVEY DATA										
04:00 PM	--- 04:15 PM	3	2	1	4	2	0	0	3	15
04:15 PM	--- 04:30 PM	7	3	5	7	3	4	3	5	37
04:30 PM	--- 04:45 PM	7	3	8	9	3	8	4	6	48
04:45 PM	--- 05:00 PM	7	5	10	17	9	16	4	7	75
05:00 PM	--- 05:15 PM	8	6	13	19	14	17	4	9	90
05:15 PM	--- 05:30 PM	8	6	13	23	14	18	5	12	99
05:30 PM	--- 05:45 PM	9	6	14	26	14	22	7	12	110
05:45 PM	--- 06:00 PM	9	8	14	29	17	24	7	14	122
TOTAL BY PERIOD										
04:00 PM	--- 04:15 PM	3	2	1	4	2	0	0	3	15
04:15 PM	--- 04:30 PM	4	1	4	3	1	4	3	2	22
04:30 PM	--- 04:45 PM	0	0	3	2	0	4	1	1	11
04:45 PM	--- 05:00 PM	0	2	2	8	6	8	0	1	27
05:00 PM	--- 05:15 PM	1	1	3	2	5	1	0	2	15
05:15 PM	--- 05:30 PM	0	0	0	4	0	1	1	3	9
05:30 PM	--- 05:45 PM	1	0	1	3	0	4	2	0	11
05:45 PM	--- 06:00 PM	0	2	0	3	3	2	0	2	12
HOURLY TOTALS										
04:00 PM	--- 05:00 PM	7	5	10	17	9	16	4	7	75
04:15 PM	--- 05:15 PM	5	4	12	15	12	17	4	6	75
04:30 PM	--- 05:30 PM	1	3	8	16	11	14	2	7	62
04:45 PM	--- 05:45 PM	2	3	6	17	11	14	3	6	62
05:00 PM	--- 06:00 PM	2	3	4	12	8	8	3	7	47

Tel : (510) 232-1271 E MAIL: Baymetrics@gmail.com

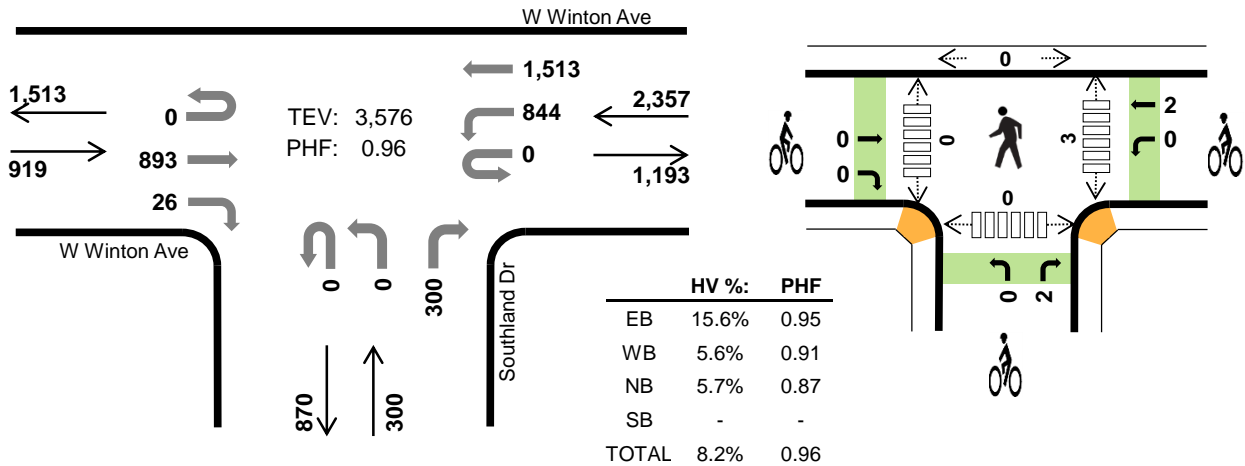
12:00 AM	to	12:00 AM					
VOLUME BY DIRECTION			NB	SB	EB	WB	TOTAL
PEDESTRIAN			18	15	15	14	62
VOLUME BY LEG			N-LEG	S-LEG	E-LEG	W-LEG	TOTAL
PEDESTRIAN			4	25	24	9	62

Southland Dr W Winton Ave



Peak Hour

Date: 03/30/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



Two-Hour Count Summaries

Interval Start	W Winton Ave Eastbound				W Winton Ave Westbound				Southland Dr Northbound				0 Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	186	8	0	129	311	0	0	0	0	71	0	0	0	0	705	0	
7:15 AM	0	0	195	4	0	150	349	0	0	0	0	64	0	0	0	0	762	0	
7:30 AM	0	0	198	6	0	178	389	0	0	0	0	74	0	0	0	0	845	0	
7:45 AM	0	0	212	5	0	233	411	0	0	0	0	66	0	0	0	0	927	3,239	
8:00 AM	0	0	230	10	0	210	377	0	0	0	0	76	0	0	0	0	903	3,437	
8:15 AM	0	0	215	6	0	205	368	0	0	0	0	86	0	0	0	0	880	3,555	
8:30 AM	0	0	236	5	0	196	357	0	0	0	0	72	0	0	0	0	866	3,576	
8:45 AM	0	0	206	15	0	178	347	0	0	0	0	66	0	0	0	0	812	3,461	
Count Total	0	0	1,678	59	0	1,479	2,909	0	0	0	0	575	0	0	0	0	6,700	0	
Peak Hour	All	0	0	893	26	0	844	1,513	0	0	0	0	300	0	0	0	0	3,576	0
	HV	0	0	143	0	0	18	114	0	0	0	0	17	0	0	0	0	292	0
	HV%	-	-	16%	0%	-	2%	8%	-	-	-	-	6%	-	-	-	-	8%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	38	34	6	0	78	0	1	0	0	1	0	0	0	2	2
7:15 AM	38	34	2	0	74	0	0	0	0	0	0	0	0	1	1
7:30 AM	31	26	7	0	64	0	0	0	0	0	0	0	0	0	0
7:45 AM	40	27	6	0	73	0	0	0	0	0	0	0	0	0	0
8:00 AM	42	30	4	0	76	0	0	0	0	0	0	0	0	0	0
8:15 AM	29	42	2	0	73	0	0	0	0	0	3	0	0	0	3
8:30 AM	32	33	5	0	70	0	2	2	0	4	0	0	0	0	0
8:45 AM	44	29	3	0	76	0	0	0	0	0	0	0	0	0	0
Count Total	294	255	35	0	584	0	3	2	0	5	3	0	0	3	6
Peak Hr	143	132	17	0	292	0	2	2	0	4	3	0	0	0	3

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	W Winton Ave				W Winton Ave				Southland Dr				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	38	0	0	6	28	0	0	0	0	6	0	0	0	0	78	0
7:15 AM	0	0	38	0	0	8	26	0	0	0	0	2	0	0	0	0	74	0
7:30 AM	0	0	30	1	0	3	23	0	0	0	0	7	0	0	0	0	64	0
7:45 AM	0	0	40	0	0	4	23	0	0	0	0	6	0	0	0	0	73	289
8:00 AM	0	0	42	0	0	2	28	0	0	0	0	4	0	0	0	0	76	287
8:15 AM	0	0	29	0	0	6	36	0	0	0	0	2	0	0	0	0	73	286
8:30 AM	0	0	32	0	0	6	27	0	0	0	0	5	0	0	0	0	70	292
8:45 AM	0	0	42	2	0	4	25	0	0	0	0	3	0	0	0	0	76	295
Count Total	0	0	291	3	0	39	216	0	0	0	0	35	0	0	0	0	584	0
Peak Hour	0	0	143	0	0	18	114	0	0	0	0	17	0	0	0	0	292	0

Two-Hour Count Summaries - Bikes

Interval Start	W Winton Ave			W Winton Ave			Southland Dr			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	2	0	0	0	2	0	0	0	4	4
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	0	0	1	2	0	0	0	2	0	0	0	5	0
Peak Hour	0	0	0	0	2	0	0	0	2	0	0	0	4	0

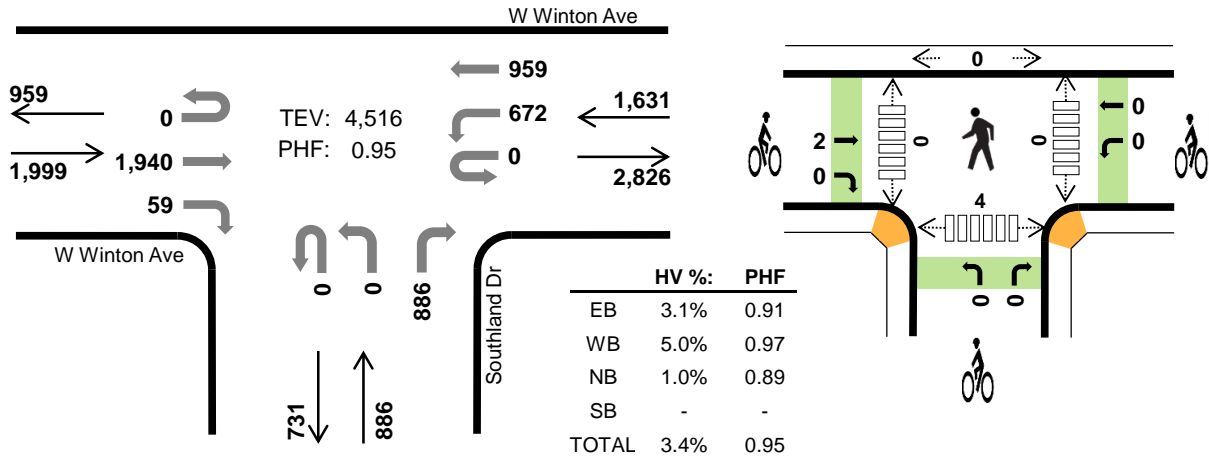
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Southland Dr W Winton Ave



Peak Hour

Date: 03/30/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



Two-Hour Count Summaries

Interval Start	W Winton Ave Eastbound				W Winton Ave Westbound				Southland Dr Northbound				0 Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	420	8	0	190	221	0	0	0	0	255	0	0	0	0	1,094	0	
4:15 PM	0	0	475	13	0	160	217	0	0	0	0	217	0	0	0	0	1,082	0	
4:30 PM	0	0	487	16	0	157	191	0	0	0	0	233	0	0	0	0	1,084	0	
4:45 PM	0	0	469	14	0	166	253	0	0	0	0	215	0	0	0	0	1,117	4,377	
5:00 PM	0	0	477	13	0	177	217	0	0	0	0	202	0	0	0	0	1,086	4,369	
5:15 PM	0	0	455	20	0	167	238	0	0	0	0	249	0	0	0	0	1,129	4,416	
5:30 PM	0	0	539	12	0	162	251	0	0	0	0	220	0	0	0	0	1,184	4,516	
5:45 PM	0	0	358	16	0	196	263	0	0	0	0	172	0	0	0	0	1,005	4,404	
Count Total	0	0	3,680	112	0	1,375	1,851	0	0	0	0	1,763	0	0	0	0	8,781	0	
Peak Hour	All	0	0	1,940	59	0	672	959	0	0	0	0	886	0	0	0	0	4,516	0
	HV	0	0	60	2	0	7	75	0	0	0	0	9	0	0	0	0	153	0
	HV%	-	-	3%	3%	-	1%	8%	-	-	-	-	1%	-	-	-	-	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	20	30	3	0	53	0	0	0	0	0	0	0	0	6	6
4:15 PM	29	29	3	0	61	0	0	0	0	0	0	0	0	0	0
4:30 PM	18	20	3	0	41	0	0	0	0	0	0	0	0	2	2
4:45 PM	14	23	0	0	37	1	0	0	0	1	0	0	0	0	0
5:00 PM	15	24	3	0	42	0	0	0	0	0	0	0	0	1	1
5:15 PM	17	21	5	0	43	1	0	0	0	1	0	0	0	2	2
5:30 PM	16	14	1	0	31	0	0	0	0	0	0	0	0	1	1
5:45 PM	12	13	0	0	25	1	0	0	0	1	0	0	0	2	2
Count Total	141	174	18	0	333	3	0	0	0	3	0	0	0	14	14
Peak Hr	62	82	9	0	153	2	0	0	0	2	0	0	0	4	4

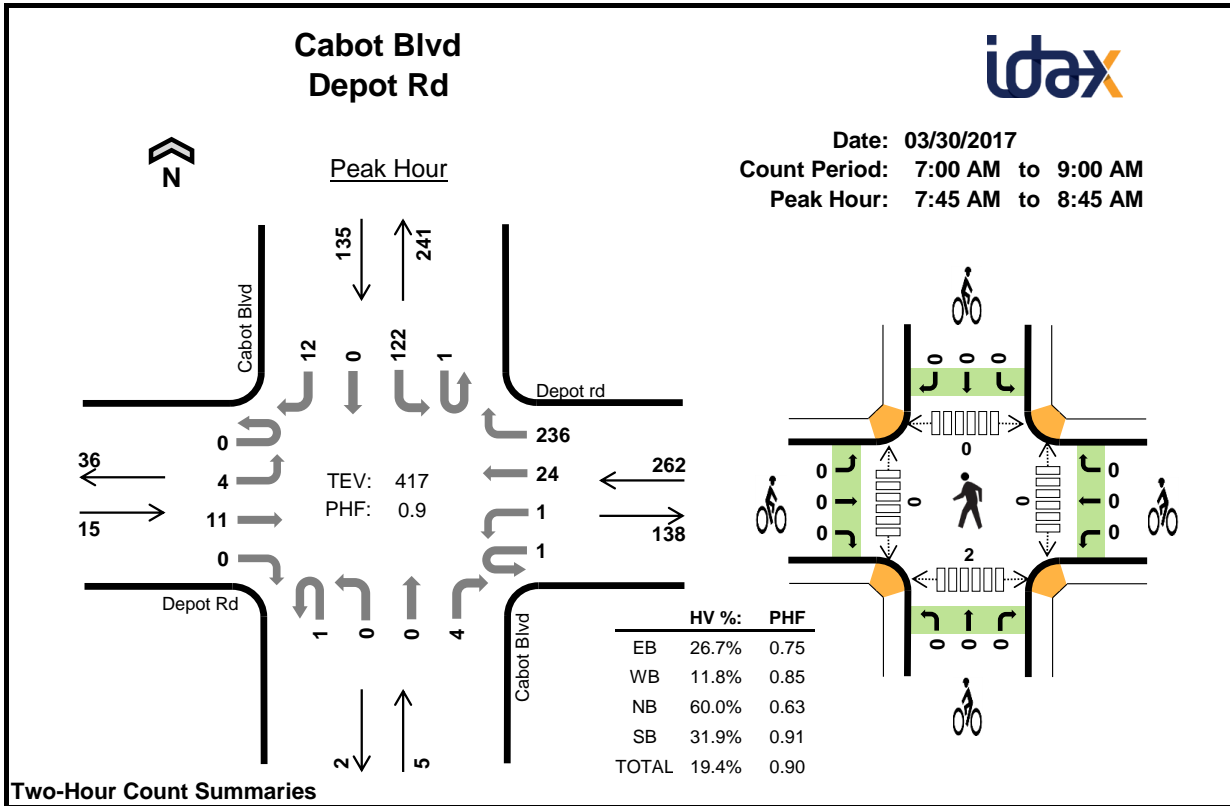
Two-Hour Count Summaries - Heavy Vehicles

Interval Start	W Winton Ave				W Winton Ave				Southland Dr				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	20	0	0	2	28	0	0	0	0	3	0	0	0	0	53	0
4:15 PM	0	0	29	0	0	2	27	0	0	0	0	3	0	0	0	0	61	0
4:30 PM	0	0	18	0	0	1	19	0	0	0	0	3	0	0	0	0	41	0
4:45 PM	0	0	14	0	0	1	22	0	0	0	0	0	0	0	0	0	37	192
5:00 PM	0	0	15	0	0	2	22	0	0	0	0	3	0	0	0	0	42	181
5:15 PM	0	0	16	1	0	1	20	0	0	0	0	5	0	0	0	0	43	163
5:30 PM	0	0	15	1	0	3	11	0	0	0	0	1	0	0	0	0	31	153
5:45 PM	0	0	12	0	0	3	10	0	0	0	0	0	0	0	0	0	25	141
Count Total	0	0	139	2	0	15	159	0	0	0	0	18	0	0	0	0	333	0
Peak Hour	0	0	60	2	0	7	75	0	0	0	0	9	0	0	0	0	153	0

Two-Hour Count Summaries - Bikes

Interval Start	W Winton Ave			W Winton Ave			Southland Dr			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Peak Hour	0	2	0	0	0	0	0	0	0	0	0	0	0	2

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start	Depot Rd Eastbound				Depot rd Westbound				Cabot Blvd Northbound				Cabot Blvd Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	1	4	0	0	1	5	48	0	0	0	1	0	26	1	1	88	0	
7:15 AM	0	0	7	0	0	1	7	51	0	0	0	1	0	28	0	4	99	0	
7:30 AM	0	0	4	0	0	0	5	53	0	0	0	0	0	34	2	2	100	0	
7:45 AM	0	1	1	0	1	0	6	70	0	0	0	1	0	35	0	1	116	403	
8:00 AM	0	1	3	0	0	1	12	53	1	0	0	0	1	24	0	5	101	416	
8:15 AM	0	1	3	0	0	0	2	59	0	0	0	1	0	29	0	3	98	415	
8:30 AM	0	1	4	0	0	0	4	54	0	0	0	2	0	34	0	3	102	417	
8:45 AM	0	1	4	0	0	1	7	46	0	0	0	0	0	35	0	6	100	401	
Count Total	0	6	30	0	1	4	48	434	1	0	0	6	1	245	3	25	804	0	
Peak Hour	All	0	4	11	0	1	1	24	236	1	0	0	4	1	122	0	12	417	0
	HV	0	0	4	0	0	0	4	27	0	0	0	3	0	43	0	0	81	0
	HV%	-	0%	36%	-	0%	0%	17%	11%	0%	-	-	75%	0%	35%	-	0%	19%	0

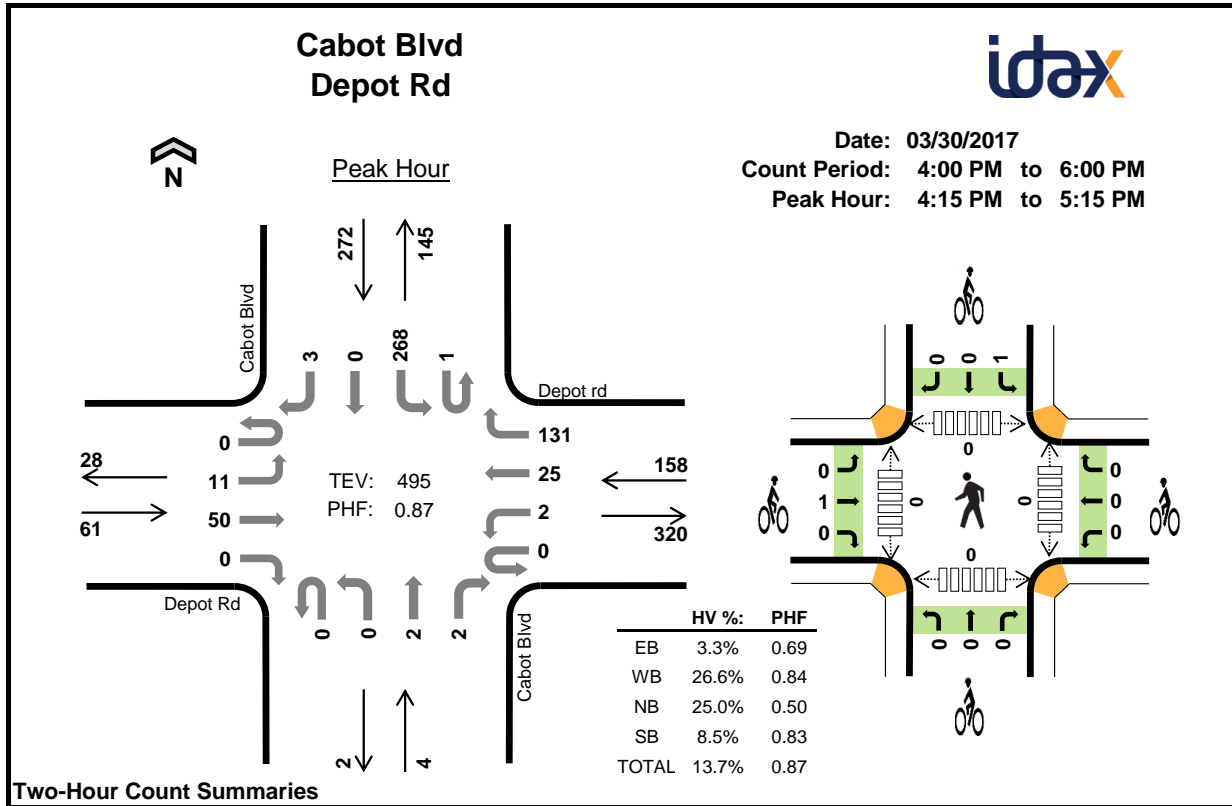
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	5	0	12	18	0	0	0	0	0	0	0	0	0	0
7:15 AM	4	5	0	7	16	0	0	0	0	0	0	0	0	0	0
7:30 AM	1	4	0	14	19	0	0	0	0	0	0	0	0	1	1
7:45 AM	1	6	1	9	17	0	0	0	0	0	0	0	0	1	1
8:00 AM	1	10	0	13	24	0	0	0	0	0	0	0	0	0	0
8:15 AM	2	7	0	8	17	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	8	2	13	23	0	0	0	0	0	0	0	0	1	1
8:45 AM	2	10	0	16	28	0	0	0	0	0	0	0	0	0	0
Count Total	12	55	3	92	162	0	0	0	0	0	0	0	0	3	3
Peak Hour	4	31	3	43	81	0	0	0	0	0	0	0	0	2	2

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Depot Rd				Depot rd				Cabot Blvd				Cabot Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	0	0	0	1	4	0	0	0	0	0	12	0	0	18	0
7:15 AM	0	0	4	0	0	0	2	3	0	0	0	0	0	6	0	1	16	0
7:30 AM	0	0	1	0	0	0	0	4	0	0	0	0	0	13	1	0	19	0
7:45 AM	0	0	1	0	0	0	0	6	0	0	0	1	0	9	0	0	17	70
8:00 AM	0	0	1	0	0	0	2	8	0	0	0	0	0	13	0	0	24	76
8:15 AM	0	0	2	0	0	0	0	7	0	0	0	0	0	8	0	0	17	77
8:30 AM	0	0	0	0	0	0	2	6	0	0	0	2	0	13	0	0	23	81
8:45 AM	0	0	2	0	0	0	0	10	0	0	0	0	0	16	0	0	28	92
Count Total	0	0	12	0	0	0	7	48	0	0	0	3	0	90	1	1	162	0
Peak Hour	0	0	4	0	0	0	4	27	0	0	0	3	0	43	0	0	81	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Depot Rd			Depot rd			Cabot Blvd			Cabot Blvd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start	Depot Rd				Depot rd				Cabot Blvd				Cabot Blvd				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Northbound		Southbound		UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	3	1	0	0	0	8	43	0	0	2	3	0	62	0	1	123	0	
4:15 PM	0	4	8	0	0	0	7	40	0	0	0	1	0	46	0	3	109	0	
4:30 PM	0	1	17	0	0	1	7	37	0	0	0	1	1	77	0	0	142	0	
4:45 PM	0	2	7	0	0	1	4	29	0	0	2	0	0	63	0	0	108	482	
5:00 PM	0	4	18	0	0	0	7	25	0	0	0	0	0	82	0	0	136	495	
5:15 PM	0	5	7	0	0	2	5	16	0	0	0	0	0	44	0	2	81	467	
5:30 PM	0	1	7	0	0	1	4	12	0	0	1	1	0	65	0	1	93	418	
5:45 PM	0	4	7	0	0	2	0	10	0	0	0	0	0	24	0	0	47	357	
Count Total	0	24	72	0	0	7	42	212	0	0	5	6	1	463	0	7	839	0	
Peak Hour	All	0	11	50	0	0	2	25	131	0	0	2	2	1	268	0	3	495	0
	HV	0	0	2	0	0	1	6	35	0	0	0	1	0	23	0	0	68	0
	HV%	-	0%	4%	-	-	50%	24%	27%	-	-	0%	50%	0%	9%	-	0%	14%	0

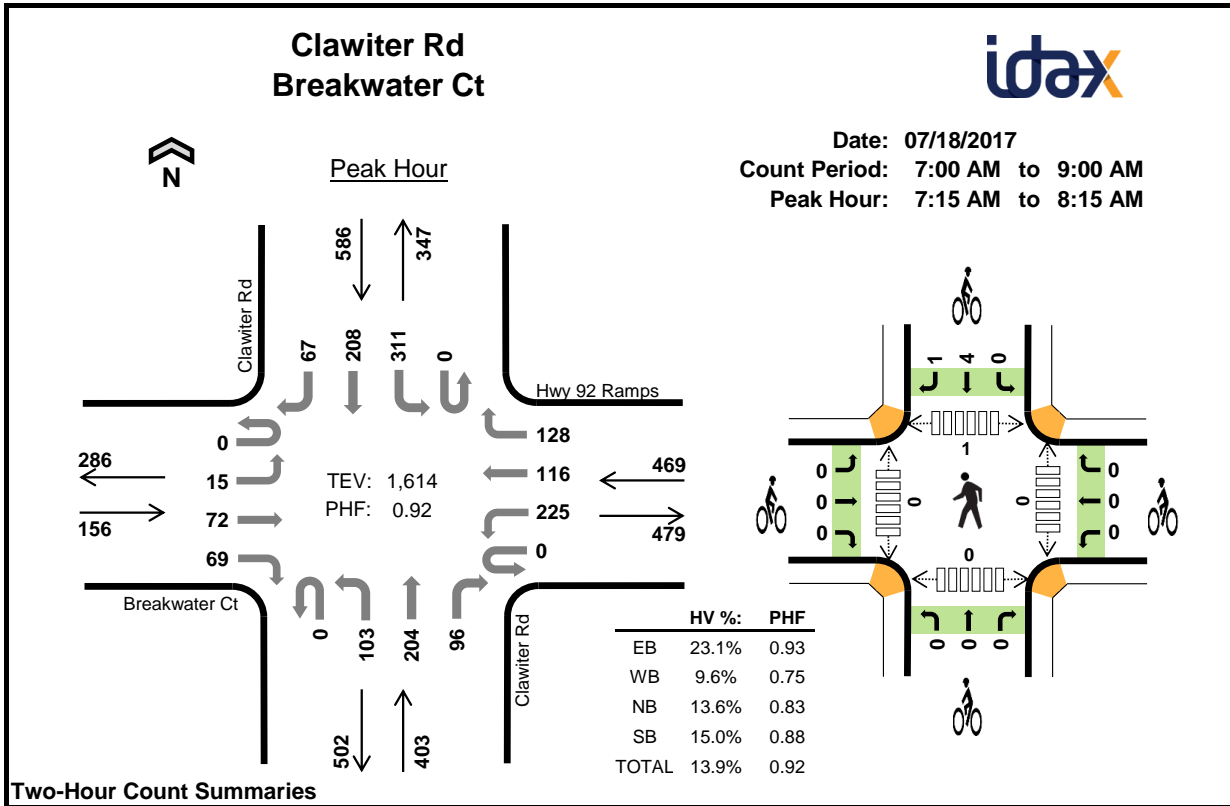
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	17	0	8	25	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	13	1	2	17	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	10	0	7	17	0	0	0	1	1	0	0	0	0	0
4:45 PM	0	13	0	7	20	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	6	0	7	14	1	0	0	0	1	0	0	0	0	0
5:15 PM	0	11	0	1	12	1	0	0	0	1	0	0	0	0	0
5:30 PM	1	6	0	6	13	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	5	0	1	6	0	0	0	0	0	0	0	0	0	0
Count Total	3	81	1	39	124	2	0	0	1	3	0	0	0	0	0
Peak Hour	2	42	1	23	68	1	0	0	1	2	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Depot Rd				Depot rd				Cabot Blvd				Cabot Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	2	15	0	0	0	0	0	7	0	1	25	0
4:15 PM	0	0	1	0	0	0	1	12	0	0	0	1	0	2	0	0	17	0
4:30 PM	0	0	0	0	0	0	1	9	0	0	0	0	0	7	0	0	17	0
4:45 PM	0	0	0	0	0	1	2	10	0	0	0	0	0	7	0	0	20	79
5:00 PM	0	0	1	0	0	0	2	4	0	0	0	0	0	7	0	0	14	68
5:15 PM	0	0	0	0	0	1	3	7	0	0	0	0	0	1	0	0	12	63
5:30 PM	0	0	1	0	0	1	0	5	0	0	0	0	0	6	0	0	13	59
5:45 PM	0	0	0	0	0	1	0	4	0	0	0	0	0	1	0	0	6	45
Count Total	0	0	3	0	0	4	11	66	0	0	0	1	0	38	0	1	124	0
Peak Hour	0	0	2	0	0	1	6	35	0	0	0	1	0	23	0	0	68	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Depot Rd			Depot rd			Cabot Blvd			Cabot Blvd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Count Total	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0
Peak Hour	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

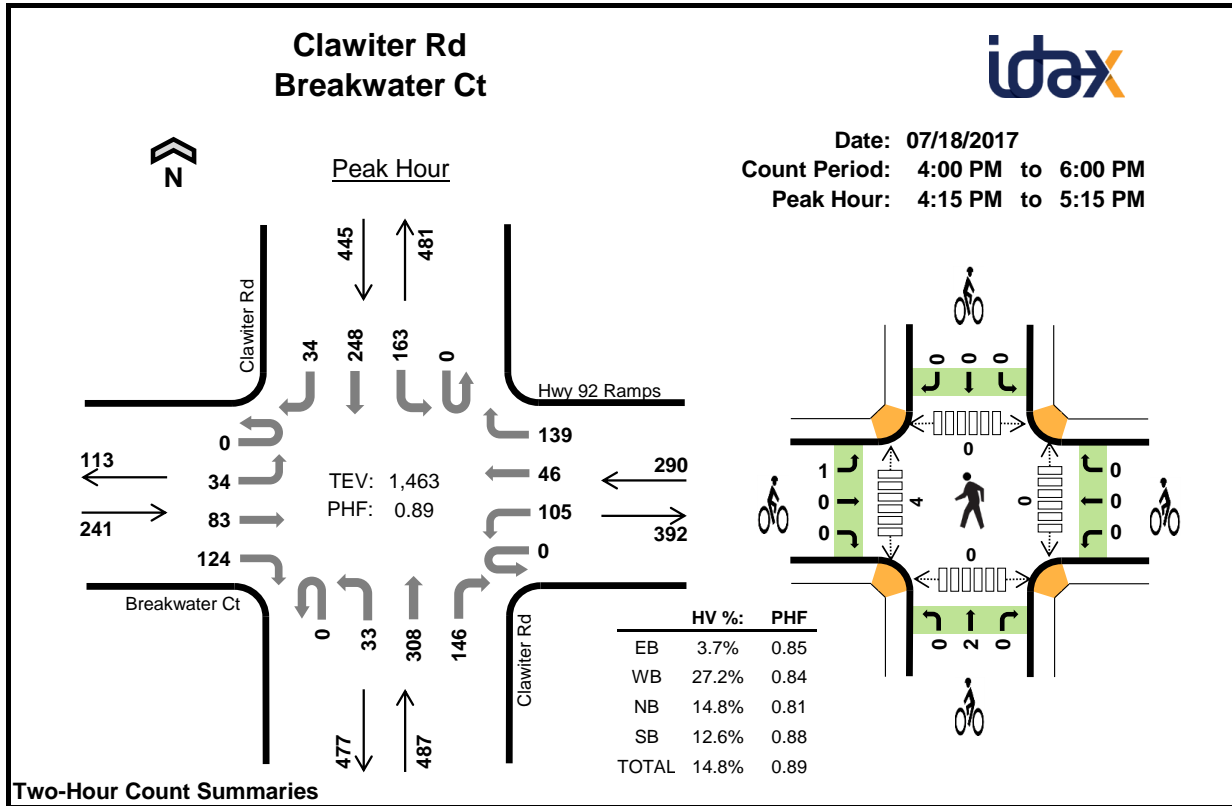
Interval Start	Breakwater Ct				Hwy 92 Ramps				Clawiter Rd				Clawiter Rd				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Westbound		Northbound		Northbound		Southbound		Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	4	17	19	0	27	20	17	0	20	28	39	0	75	24	13	303	0	
7:15 AM	0	1	23	16	0	43	26	18	0	33	59	30	0	89	40	9	387	0	
7:30 AM	0	1	22	17	0	41	20	20	0	24	48	32	0	82	63	21	391	0	
7:45 AM	0	10	14	18	0	58	36	50	0	22	51	19	0	77	64	21	440	1,521	
8:00 AM	0	3	13	18	0	83	34	40	0	24	46	15	0	63	41	16	396	1,614	
8:15 AM	0	6	11	23	0	83	20	37	0	21	46	15	0	48	49	6	365	1,592	
8:30 AM	0	2	8	12	0	86	37	44	0	29	43	13	0	37	57	7	375	1,576	
8:45 AM	0	1	7	22	0	89	38	54	0	21	52	15	0	28	41	13	381	1,517	
Count Total	0	28	115	145	0	510	231	280	0	194	373	178	0	499	379	106	3,038	0	
Peak Hour	All	0	15	72	69	0	225	116	128	0	103	204	96	0	311	208	67	1,614	0
	HV	0	1	14	21	0	18	13	14	0	10	30	15	0	37	43	8	224	0
	HV%	-	7%	19%	30%	-	8%	11%	11%	-	10%	15%	16%	-	12%	21%	12%	14%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	12	12	19	18	61	0	0	0	1	1	0	0	0	0	0
7:15 AM	6	11	13	20	50	0	0	0	0	0	0	0	1	0	1
7:30 AM	14	9	14	26	63	0	0	0	1	1	0	0	0	0	0
7:45 AM	7	13	10	25	55	0	0	0	1	1	0	0	0	0	0
8:00 AM	9	12	18	17	56	0	0	0	3	3	0	0	0	0	0
8:15 AM	12	9	12	17	50	0	3	0	1	4	0	0	0	0	0
8:30 AM	9	16	13	27	65	0	0	0	1	1	0	1	0	0	1
8:45 AM	3	22	9	24	58	0	0	0	1	1	0	0	0	0	0
Count Total	72	104	108	174	458	0	3	0	9	12	0	1	1	0	2
Peak Hour	36	45	55	88	224	0	0	0	5	5	0	0	1	0	1

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Breakwater Ct				Hwy 92 Ramps				Clawiter Rd				Clawiter Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	5	7	0	2	3	7	0	3	7	9	0	13	4	1	61	0
7:15 AM	0	0	3	3	0	2	5	4	0	2	6	5	0	11	8	1	50	0
7:30 AM	0	1	6	7	0	4	3	2	0	0	10	4	0	9	13	4	63	0
7:45 AM	0	0	3	4	0	6	2	5	0	2	6	2	0	9	14	2	55	229
8:00 AM	0	0	2	7	0	6	3	3	0	6	8	4	0	8	8	1	56	224
8:15 AM	0	3	4	5	0	6	3	0	0	0	9	3	0	7	7	3	50	224
8:30 AM	0	0	4	5	0	7	3	6	0	6	6	1	0	6	19	2	65	226
8:45 AM	0	0	1	2	0	9	3	10	0	1	7	1	0	4	18	2	58	229
Count Total	0	4	28	40	0	42	25	37	0	20	59	29	0	67	91	16	458	0
Peak Hour	0	1	14	21	0	18	13	14	0	10	30	15	0	37	43	8	224	0
Two-Hour Count Summaries - Bikes																		
Interval Start	Breakwater Ct			Hwy 92 Ramps			Clawiter Rd			Clawiter Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	5		
8:15 AM	0	0	0	0	0	0	3	0	0	0	0	0	1	0	4	9		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9		
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9		
Count Total	0	0	0	0	0	0	3	0	0	0	0	0	8	1	12	0		
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5	0		

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



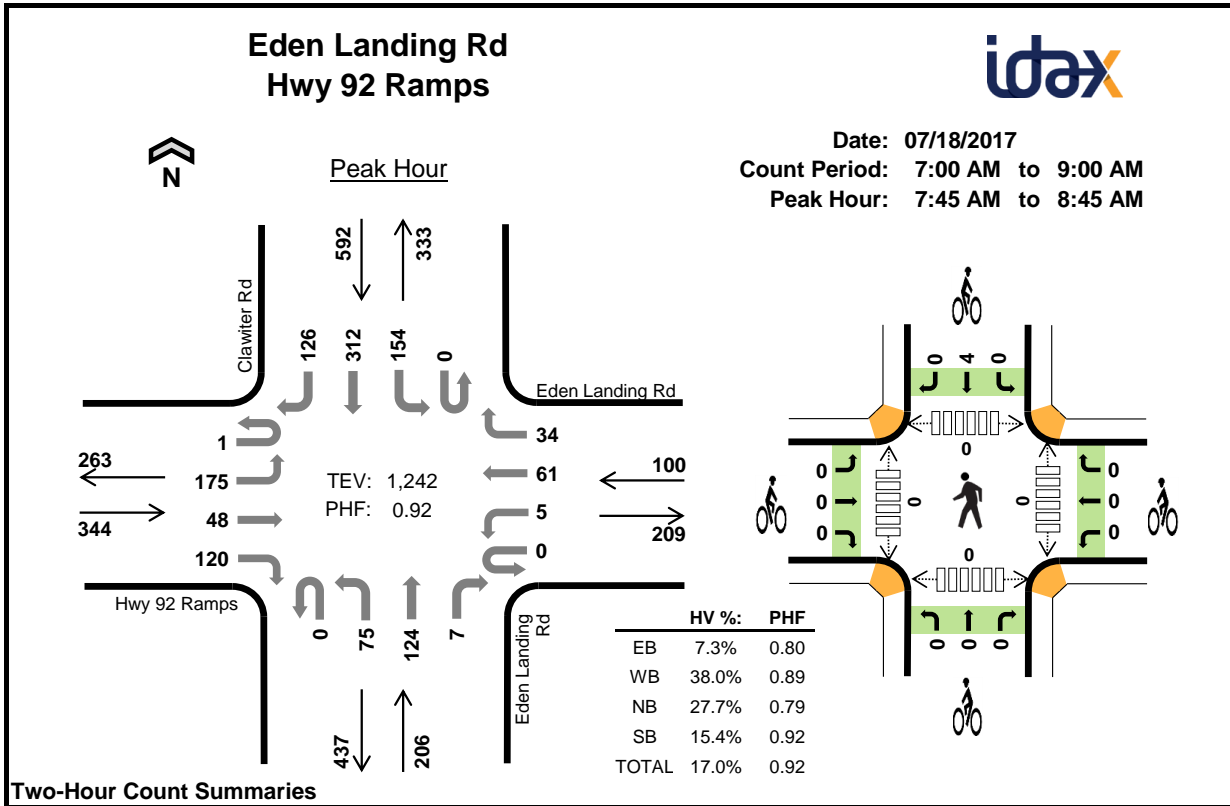
Two-Hour Count Summaries

Interval Start	Breakwater Ct				Hwy 92 Ramps				Clawiter Rd				Clawiter Rd				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Westbound		Northbound		Northbound		Southbound		Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	10	11	29	0	26	11	31	0	15	60	26	0	47	61	10	337	0	
4:15 PM	0	12	26	26	0	23	7	42	0	6	68	28	0	32	55	11	336	0	
4:30 PM	0	4	21	34	0	29	10	31	0	9	73	36	0	43	61	8	359	0	
4:45 PM	0	9	13	25	0	29	14	43	0	12	67	37	0	40	60	9	358	1,390	
5:00 PM	0	9	23	39	0	24	15	23	0	6	100	45	0	48	72	6	410	1,463	
5:15 PM	0	9	15	38	0	15	8	32	0	11	90	44	0	33	28	6	329	1,456	
5:30 PM	0	5	18	41	0	13	8	17	0	8	59	48	0	52	69	11	349	1,446	
5:45 PM	0	7	8	37	0	19	10	23	0	5	60	21	0	36	48	5	279	1,367	
Count Total	0	65	135	269	0	178	83	242	0	72	577	285	0	331	454	66	2,757	0	
Peak Hour	All	0	34	83	124	0	105	46	139	0	33	308	146	0	163	248	34	1,463	0
	HV	0	6	0	3	0	20	15	44	0	12	55	5	0	6	48	2	216	0
	HV%	-	18%	0%	2%	-	19%	33%	32%	-	36%	18%	3%	-	4%	19%	6%	15%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	15	14	18	49	0	0	0	0	0	0	0	0	0	0
4:15 PM	2	20	10	15	47	0	0	1	0	1	0	2	0	0	2
4:30 PM	2	24	20	11	57	0	0	1	0	1	0	0	0	0	0
4:45 PM	5	22	24	18	69	0	0	0	0	0	0	1	0	0	1
5:00 PM	0	13	18	12	43	1	0	0	0	1	0	1	0	0	1
5:15 PM	3	15	16	5	39	0	0	0	0	0	1	0	1	0	2
5:30 PM	5	7	12	7	31	1	0	0	1	2	0	0	0	0	0
5:45 PM	1	16	10	14	41	0	0	2	0	2	0	0	0	0	0
Count Total	20	132	124	100	376	2	0	4	1	7	1	4	1	0	6
Peak Hour	9	79	72	56	216	1	0	2	0	3	0	4	0	0	4

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Breakwater Ct				Hwy 92 Ramps				Clawiter Rd				Clawiter Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	0	1	0	3	4	8	0	5	8	1	0	3	13	2	49	0
4:15 PM	0	1	0	1	0	5	2	13	0	0	10	0	0	1	14	0	47	0
4:30 PM	0	1	0	1	0	6	6	12	0	4	14	2	0	2	8	1	57	0
4:45 PM	0	4	0	1	0	4	4	14	0	6	16	2	0	1	16	1	69	222
5:00 PM	0	0	0	0	0	5	3	5	0	2	15	1	0	2	10	0	43	216
5:15 PM	0	0	1	2	0	3	2	10	0	1	13	2	0	1	4	0	39	208
5:30 PM	0	0	1	4	0	2	0	5	0	1	8	3	0	2	5	0	31	182
5:45 PM	0	1	0	0	0	4	2	10	0	1	9	0	0	4	9	1	41	154
Count Total	0	8	2	10	0	32	23	77	0	20	93	11	0	16	79	5	376	0
Peak Hour	0	6	0	3	0	20	15	44	0	12	55	5	0	6	48	2	216	0
Two-Hour Count Summaries - Bikes																		
Interval Start	Breakwater Ct			Hwy 92 Ramps			Clawiter Rd			Clawiter Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	3
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	5
Count Total	2	0	0	0	0	0	0	0	0	4	0	0	0	0	1	0	7	0
Peak Hour	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	0
<i>Note: U-Turn volumes for bikes are included in Left-Turn, if any.</i>																		



Two-Hour Count Summaries

Interval Start	Hwy 92 Ramps				Eden Landing Rd				Eden Landing Rd				Clawiter Rd				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Westbound		Northbound		Northbound		Southbound		Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	1	44	6	28	0	1	10	8	0	20	46	0	0	15	33	24	236	0	
7:15 AM	0	54	6	22	0	0	12	13	0	10	46	1	0	30	53	18	265	0	
7:30 AM	0	51	4	40	0	0	9	5	0	13	51	1	0	30	60	28	292	0	
7:45 AM	0	43	12	26	0	1	16	6	0	25	37	3	0	39	69	36	313	1,106	
8:00 AM	1	42	7	34	0	3	17	8	0	16	35	2	0	32	76	28	301	1,171	
8:15 AM	0	42	12	17	0	1	13	11	0	13	30	1	0	38	82	31	291	1,197	
8:30 AM	0	48	17	43	0	0	15	9	0	21	22	1	0	45	85	31	337	1,242	
8:45 AM	0	44	11	43	0	0	9	9	0	16	28	0	0	47	69	37	313	1,242	
Count Total	2	368	75	253	0	6	101	69	0	134	295	9	0	276	527	233	2,348	0	
Peak Hour	All	1	175	48	120	0	5	61	34	0	75	124	7	0	154	312	126	1,242	0
	HV	0	17	1	7	0	1	26	11	0	29	28	0	0	11	33	47	211	0
	HV%	0%	10%	2%	6%	-	20%	43%	32%	-	39%	23%	0%	-	7%	11%	37%	17%	0

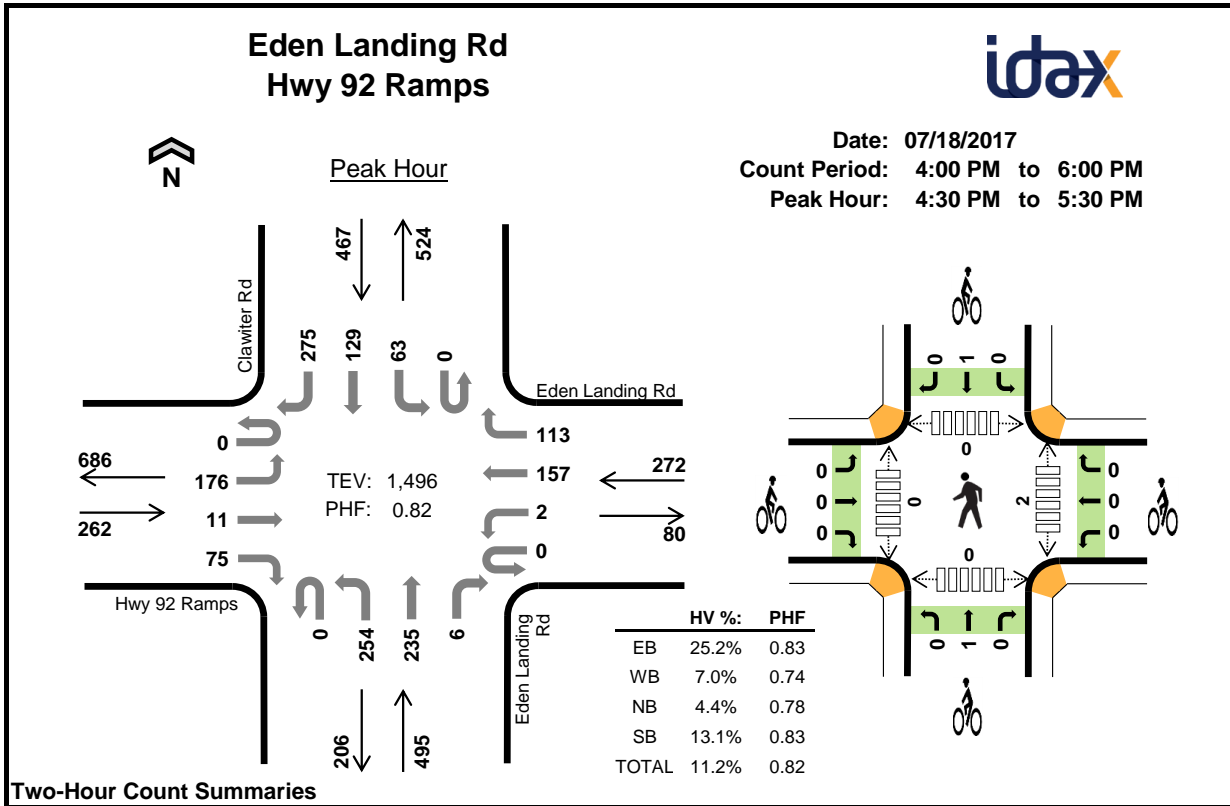
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	6	4	20	11	41	0	0	0	0	0	0	0	0	0	0
7:15 AM	4	10	15	16	45	0	0	0	1	1	0	0	0	0	0
7:30 AM	6	5	11	24	46	0	0	0	1	1	0	0	0	0	0
7:45 AM	5	10	9	23	47	0	0	0	0	0	0	0	0	0	0
8:00 AM	6	10	19	19	54	0	0	0	3	3	0	0	0	0	0
8:15 AM	4	11	13	19	47	0	0	0	1	1	0	0	0	0	0
8:30 AM	10	7	16	30	63	0	0	0	0	0	0	0	0	0	0
8:45 AM	7	1	10	30	48	0	0	0	1	1	0	0	0	0	0
Count Total	48	58	113	172	391	0	0	0	7	7	0	0	0	0	0
Peak Hour	25	38	57	91	211	0	0	0	4	4	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Hwy 92 Ramps				Eden Landing Rd				Eden Landing Rd				Clawiter Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	4	1	1	0	0	2	2	0	7	13	0	0	1	3	7	41	0
7:15 AM	0	3	0	1	0	0	7	3	0	6	9	0	0	4	4	8	45	0
7:30 AM	0	4	1	1	0	0	3	2	0	4	7	0	0	2	8	14	46	0
7:45 AM	0	3	0	2	0	0	9	1	0	6	3	0	0	2	7	14	47	179
8:00 AM	0	4	0	2	0	0	6	4	0	8	11	0	0	3	7	9	54	192
8:15 AM	0	3	0	1	0	1	6	4	0	4	9	0	0	3	7	9	47	194
8:30 AM	0	7	1	2	0	0	5	2	0	11	5	0	0	3	12	15	63	211
8:45 AM	0	4	2	1	0	0	1	0	0	7	3	0	0	7	5	18	48	212
Count Total	0	32	5	11	0	1	39	18	0	53	60	0	0	25	53	94	391	0
Peak Hour	0	17	1	7	0	1	26	11	0	29	28	0	0	11	33	47	211	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Hwy 92 Ramps			Eden Landing Rd			Eden Landing Rd			Clawiter Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	5	5
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	5	5
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	5	5
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	1	6	0	7	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start	Hwy 92 Ramps				Eden Landing Rd				Eden Landing Rd				Clawiter Rd				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Westbound		Northbound		Southbound		Southbound		Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	42	4	16	0	0	53	24	0	49	41	2	0	22	29	64	346	0	
4:15 PM	0	34	2	19	0	0	27	25	0	46	41	1	0	20	31	47	293	0	
4:30 PM	0	37	3	14	0	2	42	33	0	59	47	4	0	20	36	65	362	0	
4:45 PM	0	46	3	30	0	0	26	17	0	43	60	0	0	17	35	67	344	1,345	
5:00 PM	0	50	2	13	0	0	52	40	0	83	74	2	0	15	33	92	456	1,455	
5:15 PM	0	43	3	18	0	0	37	23	0	69	54	0	0	11	25	51	334	1,496	
5:30 PM	0	34	0	13	0	2	31	16	0	53	65	2	0	11	39	76	342	1,476	
5:45 PM	0	33	2	19	0	0	25	16	0	27	35	0	0	9	33	63	262	1,394	
Count Total	0	319	19	142	0	4	293	194	0	429	417	11	0	125	261	525	2,739	0	
Peak Hour	All	0	176	11	75	0	2	157	113	0	254	235	6	0	63	129	275	1,496	0
	HV	0	50	4	12	0	0	7	12	0	8	14	0	0	14	24	23	168	0
	HV%	-	28%	36%	16%	-	0%	4%	11%	-	3%	6%	0%	-	22%	19%	8%	11%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	15	5	11	17	48	0	0	0	0	0	0	0	0	0	0
4:15 PM	6	6	6	19	37	0	0	0	0	0	0	0	0	0	0
4:30 PM	16	4	6	13	39	0	0	1	0	1	0	0	0	0	0
4:45 PM	20	6	5	21	52	0	0	0	0	0	1	0	0	0	1
5:00 PM	19	5	5	16	45	0	0	0	0	0	0	0	0	0	0
5:15 PM	11	4	6	11	32	0	0	0	1	1	1	0	0	0	1
5:30 PM	7	0	7	10	24	1	0	1	0	2	0	0	0	0	0
5:45 PM	8	1	6	13	28	0	1	0	0	1	0	0	0	0	0
Count Total	102	31	52	120	305	1	1	2	1	5	2	0	0	0	2
Peak Hour	66	19	22	61	168	0	0	1	1	2	2	0	0	0	2

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Hwy 92 Ramps				Eden Landing Rd				Eden Landing Rd				Clawiter Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	9	1	5	0	0	2	3	0	8	2	1	0	6	5	6	48	0
4:15 PM	0	3	0	3	0	0	3	3	0	2	4	0	0	4	8	7	37	0
4:30 PM	0	11	1	4	0	0	1	3	0	3	3	0	0	4	5	4	39	0
4:45 PM	0	15	1	4	0	0	3	3	0	2	3	0	0	4	7	10	52	176
5:00 PM	0	18	0	1	0	0	2	3	0	0	5	0	0	3	7	6	45	173
5:15 PM	0	6	2	3	0	0	1	3	0	3	3	0	0	3	5	3	32	168
5:30 PM	0	6	0	1	0	0	0	0	0	1	6	0	0	2	4	4	24	153
5:45 PM	0	6	0	2	0	0	1	0	0	1	5	0	0	4	3	6	28	129
Count Total	0	74	5	23	0	0	13	18	0	20	31	1	0	30	44	46	305	0
Peak Hour	0	50	4	12	0	0	7	12	0	8	14	0	0	14	24	23	168	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Hwy 92 Ramps			Eden Landing Rd			Eden Landing Rd			Clawiter Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
5:30 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	3
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	4
Count Total	0	1	0	0	0	0	1	0	0	2	0	0	0	1	0	0	5	0
Peak Hour	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Appendix B
Volume Summary

Intersection Number:	1													
Traffic Node Number:	1													
Intersection Name:	Cabot Boulevard & West Winton Avenue													
Peak Hour:	AM													
Count Date:	02/11/16													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Date of Analysis: 07/07/20													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		2	16	73	170	75	305	17	22	23	16	40	3	762
Background Growth		0	1	4	9	4	16	1	1	1	1	2	0	40
Background Conditions		2	17	77	179	79	321	18	23	24	17	42	3	802
Project Trips		0	0	0	0	143	0	0	0	7	10	139	0	299
Existing + Project		2	16	73	170	218	305	17	22	30	26	179	3	1061
Background + Project		2	17	77	179	222	321	18	23	31	27	181	3	1101
Cumulative Growth		0	4	16	37	17	67	4	5	5	4	9	1	169
Cumulative Baseline Conditions		2	20	89	207	92	372	21	27	28	20	49	4	931
Cumulative + Proj Conditions		2	20	89	207	235	372	21	27	35	30	188	4	1230
Intersection Number:	2													
Traffic Node Number:	2													
Intersection Name:	Corsair Boulevard & West Winton Avenue													
Peak Hour:	AM													
Count Date:	03/30/17													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Date of Analysis: 07/07/20													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		7	0	87	240	995	12	4	1	0	0	334	7	1687
Background Growth		0	0	4	12	51	1	0	0	0	0	17	0	85
Background Conditions		7	0	91	252	1046	13	4	1	0	0	351	7	1772
Project Trips		0	0	0	0	143	0	0	0	0	0	139	0	282
Existing + Project		7	0	87	240	1138	12	4	1	0	0	473	7	1969
Background + Project		7	0	91	252	1189	13	4	1	0	0	490	7	2054
Cumulative Growth		2	0	19	53	219	3	1	0	0	0	74	2	373
Cumulative Baseline Conditions		9	0	106	293	1214	15	5	1	0	0	408	9	2060
Cumulative + Proj Conditions		9	0	106	293	1357	15	5	1	0	0	547	9	2342

Intersection Number:	3												
Traffic Node Number:	3												
Intersection Name:	Clawiter Road			& West Winton Avenue									
Peak Hour:	AM			Date of Analysis: 07/07/20									
Count Date:	02/11/16												
Scenario:	2791 W. Winton Avenue Traffic Study												
			Annual Growth Rate			1%							
			Number of Background Years			5							
			Number of Cumulative Years			20							
Movements													
Scenario:	North Approach			East Approach			South Approach			West Approach			Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8
Existing Conditions	0	0	0	1	1076	958	220	0	148	153	340	1	2897
Background Growth	0	0	0	0	55	49	11	0	8	8	17	0	148
Background Conditions	0	0	0	1	1131	1007	231	0	156	161	357	1	3045
Project Trips	0	0	0	0	108	0	0	0	35	33	107	0	283
Existing + Project	0	0	0	1	1184	958	220	0	183	186	447	1	3180
Background + Project	0	0	0	1	1239	1007	231	0	191	194	464	1	3328
Cumulative Growth	0	0	0	0	237	211	48	0	33	34	75	0	638
Cumulative Baseline Conditions	0	0	0	1	1313	1169	268	0	181	187	415	1	3535
Cumulative + Proj Conditions	0	0	0	1	1421	1169	268	0	216	220	522	1	3818
Intersection Number:	4												
Traffic Node Number:	4												
Intersection Name:	Hesperian Boulevard			& West Winton Avenue									
Peak Hour:	AM			Date of Analysis: 07/07/20									
Count Date:	02/03/16												
Scenario:	2791 W. Winton Avenue Traffic Study												
			Annual Growth Rate			1%							
			Number of Background Years			5							
			Number of Cumulative Years			20							
Movements													
Scenario:	North Approach			East Approach			South Approach			West Approach			Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8
Existing Conditions	1079	1058	112	161	1014	194	143	642	55	36	355	209	5058
Background Growth	55	54	6	8	52	10	7	33	3	2	18	11	259
Background Conditions	1134	1112	118	169	1066	204	150	675	58	38	373	220	5317
Project Trips	21	0	0	0	61	0	0	0	26	26	60	21	215
Existing + Project	1100	1058	112	161	1075	194	143	642	81	62	415	230	5273
Background + Project	1155	1112	118	169	1127	204	150	675	84	64	433	241	5532
Cumulative Growth	238	233	25	35	223	43	31	141	12	8	78	46	1113
Cumulative Baseline Conditions	1317	1291	137	196	1237	237	174	783	67	44	433	255	6171
Cumulative + Proj Conditions	1338	1291	137	196	1298	237	174	783	93	70	493	276	6386

Intersection Number:	5													
Traffic Node Number:	5													
Intersection Name:	Southland Drive & West Winton Avenue													
Peak Hour:	AM													
Count Date:	03/30/17													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		0	0	0	0	1559	870	309	0	0	27	920	0	3685
Background Growth		0	0	0	0	80	44	16	0	0	1	47	0	188
Background Conditions		0	0	0	0	1639	914	325	0	0	28	967	0	3873
Project Trips		0	0	0	0	61	0	0	0	0	0	60	0	121
Existing + Project		0	0	0	0	1620	870	309	0	0	27	980	0	3806
Background + Project		0	0	0	0	1700	914	325	0	0	28	1027	0	3994
Cumulative Growth		0	0	0	0	343	192	68	0	0	6	203	0	812
Cumulative Baseline Conditions		0	0	0	0	1902	1062	377	0	0	33	1123	0	4497
Cumulative + Proj Conditions		0	0	0	0	1963	1062	377	0	0	33	1183	0	4618
Intersection Number:	6													
Traffic Node Number:	6													
Intersection Name:	Clawiter Road & Depot Road													
Peak Hour:	AM													
Count Date:	09/12/19													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		221	574	6	9	251	88	33	61	24	30	102	47	1446
Background Growth		11	29	0	0	13	4	2	3	1	2	5	2	72
Background Conditions		232	603	6	9	264	92	35	64	25	32	107	49	1518
Project Trips		0	19	14	16	7	0	0	19	0	0	10	0	85
Existing + Project		221	593	20	25	258	88	33	80	24	30	112	47	1531
Background + Project		232	622	20	25	271	92	35	83	25	32	117	49	1603
Cumulative Growth		49	126	1	2	55	19	7	13	5	7	22	10	316
Cumulative Baseline Conditions		270	700	7	11	306	107	40	74	29	37	124	57	1762
Cumulative + Proj Conditions		270	719	21	27	313	107	40	93	29	37	134	57	1847

Intersection Number:	7													
Traffic Node Number:	7													
Intersection Name:	Cabot Boulevard & Depot Road													
Peak Hour:	AM													
Count Date:	03/30/17													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Date of Analysis: 07/07/20													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		12	0	127	243	25	2	4	0	1	0	11	4	429
Background Growth		1	0	6	12	1	0	0	0	0	0	1	0	21
Background Conditions		13	0	133	255	26	2	4	0	1	0	12	4	450
Project Trips		0	0	10	7	0	0	0	0	0	0	0	0	17
Existing + Project		12	0	137	250	25	2	4	0	1	0	11	4	446
Background + Project		13	0	143	262	26	2	4	0	1	0	12	4	467
Cumulative Growth		3	0	28	54	6	0	1	0	0	0	2	1	95
Cumulative Baseline Conditions		15	0	155	297	31	2	5	0	1	0	13	5	524
Cumulative + Proj Conditions		15	0	165	304	31	2	5	0	1	0	13	5	541

Intersection Number:	8													
Traffic Node Number:	8													
Intersection Name:	Clawiter Road & SR 92 Westbound Ramps/Breakwater Avenue													
Peak Hour:	AM													
Count Date:	07/18/17													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Date of Analysis: 07/07/20													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		69	214	320	132	120	232	99	210	106	71	74	15	1662
Background Growth		4	11	16	7	6	12	5	11	5	4	4	1	86
Background Conditions		73	225	336	139	126	244	104	221	111	75	78	16	1748
Project Trips		0	0	19	0	0	0	0	19	0	0	0	0	38
Existing + Project		69	214	339	132	120	232	99	229	106	71	74	15	1700
Background + Project		73	225	355	139	126	244	104	240	111	75	78	16	1786
Cumulative Growth		15	47	70	29	26	51	22	46	23	16	16	3	364
Cumulative Baseline Conditions		84	261	390	161	146	283	121	256	129	87	90	18	2026
Cumulative + Proj Conditions		84	261	409	161	146	283	121	275	129	87	90	18	2064

Intersection Number:	9													
Traffic Node Number:	9													
Intersection Name:	Clawiter Road & SR 92 Eastbound Ramps/Eden Landing Road													
Peak Hour:	AM													
Count Date:	07/18/17													
Scenario:	2791 W. Winton Avenue Traffic Study													
													Annual Growth Rate	1%
													Number of Background Years	5
													Number of Cumulative Years	20
Movements														
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		130	321	159	35	63	5	7	128	77	124	49	181	1279
Background Growth		7	16	8	2	3	0	0	7	4	6	2	9	64
Background Conditions		137	337	167	37	66	5	7	135	81	130	51	190	1343
Project Trips		0	0	0	0	0	0	0	0	0	0	0	19	19
Existing + Project		130	321	159	35	63	5	7	128	77	124	49	200	1298
Background + Project		137	337	167	37	66	5	7	135	81	130	51	209	1362
Cumulative Growth		29	71	35	8	14	1	2	28	17	27	11	40	283
Cumulative Baseline Conditions		159	392	194	43	77	6	9	156	94	151	60	221	1562
Cumulative + Proj Conditions		159	392	194	43	77	6	9	156	94	151	60	240	1581
Intersection Number:	10													
Traffic Node Number:	10													
Intersection Name:	Industrial Boulevard & Depot Road													
Peak Hour:	AM													
Count Date:	09/12/19													
Scenario:	2791 W. Winton Avenue Traffic Study													
													Annual Growth Rate	1%
													Number of Background Years	5
													Number of Cumulative Years	20
Movements														
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		26	510	39	62	86	107	93	374	275	114	23	12	1721
Background Growth		1	26	2	3	4	5	5	19	14	6	1	1	87
Background Conditions		27	536	41	65	90	112	98	393	289	120	24	13	1808
Project Trips		0	0	0	0	0	0	0	0	23	23	0	0	46
Existing + Project		26	510	39	62	86	107	93	374	298	137	23	12	1767
Background + Project		27	536	41	65	90	112	98	393	312	143	24	13	1854
Cumulative Growth		6	112	9	14	19	24	20	82	61	25	5	3	380
Cumulative Baseline Conditions		32	622	48	76	105	131	113	456	336	139	28	15	2101
Cumulative + Proj Conditions		32	622	48	76	105	131	113	456	359	162	28	15	2147

Intersection Number:	11													
Traffic Node Number:	11													
Intersection Name:	Industrial Boulevard & SR 92 Westbound Ramps/Cryer Street													
Peak Hour:	AM													
Count Date:	09/12/19													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		161	601	11	19	36	132	96	844	452	161	6	197	2716
Background Growth		8	31	1	1	2	7	5	43	23	8	0	10	139
Background Conditions		169	632	12	20	38	139	101	887	475	169	6	207	2855
Project Trips		0	23	0	0	0	0	0	7	0	0	0	16	46
Existing + Project		161	624	11	19	36	132	96	851	452	161	6	213	2762
Background + Project		169	655	12	20	38	139	101	894	475	169	6	223	2901
Cumulative Growth		35	132	2	4	8	29	21	186	100	35	1	43	596
Cumulative Baseline Conditions		196	733	13	23	44	161	117	1030	552	196	7	240	3312
Cumulative + Proj Conditions		196	756	13	23	44	161	117	1037	552	196	7	256	3358

Intersection Number:	12													
Traffic Node Number:	12													
Intersection Name:	Industrial Boulevard & SR 92 Eastbound Ramps/Sleepy Hollow Avenue													
Peak Hour:	AM													
Count Date:	09/12/19													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		183	670	52	149	51	16	7	1130	161	389	4	117	2929
Background Growth		9	34	3	8	3	1	0	58	8	20	0	6	150
Background Conditions		192	704	55	157	54	17	7	1188	169	409	4	123	3079
Project Trips		16	7	0	0	0	0	0	7	0	0	0	30	
Existing + Project		199	677	52	149	51	16	7	1137	161	389	4	117	2959
Background + Project		208	711	55	157	54	17	7	1195	169	409	4	123	3109
Cumulative Growth		40	148	11	33	11	4	2	249	35	86	1	26	646
Cumulative Baseline Conditions		223	818	63	182	62	20	9	1379	196	475	5	143	3575
Cumulative + Proj Conditions		239	825	63	182	62	20	9	1386	196	475	5	143	3605

Intersection Number:	13													
Traffic Node Number:	13													
Intersection Name:	Hesperian Boulevard & Depot Road/Cathy Way													
Peak Hour:	AM											Date of Analysis: 07/07/20		
Count Date:	09/12/19													
Scenario:	2791 W. Winton Avenue Traffic Study													
												Annual Growth Rate	1%	
												Number of Background Years	5	
												Number of Cumulative Years	20	
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		127	1116	32	31	145	152	79	815	455	387	75	158	3572
Background Growth		6	57	2	2	7	8	4	42	23	20	4	8	183
Background Conditions		133	1173	34	33	152	160	83	857	478	407	79	166	3755
Project Trips		0	26	0	0	0	0	0	26	0	0	0	0	52
Existing + Project		127	1142	32	31	145	152	79	841	455	387	75	158	3624
Background + Project		133	1199	34	33	152	160	83	883	478	407	79	166	3807
Cumulative Growth		28	246	7	7	32	33	17	179	100	85	17	35	786
Cumulative Baseline Conditions		155	1362	39	38	177	185	96	994	555	472	92	193	4358
Cumulative + Proj Conditions		155	1388	39	38	177	185	96	1020	555	472	92	193	4410

Intersection Number:	1													
Traffic Node Number:	1													
Intersection Name:	Cabot Boulevard & West Winton Avenue													
Peak Hour:	PM													
Count Date:	02/11/16													
Scenario:	2791 W. Winton Avenue Traffic Study													
													Annual Growth Rate	1%
													Number of Background Years	5
													Number of Cumulative Years	20
Movements														
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		5	27	161	51	54	54	99	20	18	19	121	2	631
Background Growth		0	1	8	3	3	3	5	1	1	1	6	0	32
Background Conditions		5	28	169	54	57	57	104	21	19	20	127	2	663
Project Trips		0	0	0	0	331	0	0	0	17	30	317	0	695
Existing + Project		5	27	161	51	385	54	99	20	35	49	438	2	1326
Background + Project		5	28	169	54	388	57	104	21	36	50	444	2	1358
Cumulative Growth		1	6	35	11	12	12	22	4	4	4	27	0	138
Cumulative Baseline Conditions		6	33	196	62	66	66	121	24	22	23	148	2	769
Cumulative + Proj Conditions		6	33	196	62	397	66	121	24	39	53	465	2	1464
Intersection Number:	2													
Traffic Node Number:	2													
Intersection Name:	Corsair Boulevard & West Winton Avenue													
Peak Hour:	PM													
Count Date:	03/30/17													
Scenario:	2791 W. Winton Avenue Traffic Study													
													Annual Growth Rate	1%
													Number of Background Years	5
													Number of Cumulative Years	20
Movements														
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		3	0	256	55	313	2	14	0	1	1	1005	5	1655
Background Growth		0	0	13	3	16	0	1	0	0	0	51	0	84
Background Conditions		3	0	269	58	329	2	15	0	1	1	1056	5	1739
Project Trips		0	0	0	0	331	0	0	0	0	0	317	0	648
Existing + Project		3	0	256	55	644	2	14	0	1	1	1322	5	2303
Background + Project		3	0	269	58	660	2	15	0	1	1	1373	5	2387
Cumulative Growth		1	0	56	12	69	0	3	0	0	0	221	1	363
Cumulative Baseline Conditions		4	0	312	67	382	2	17	0	1	1	1226	6	2018
Cumulative + Proj Conditions		4	0	312	67	713	2	17	0	1	1	1543	6	2666

Intersection Number:	3													
Traffic Node Number:	3													
Intersection Name:	Clawiter Road & West Winton Avenue													
Peak Hour:	PM													
Count Date:	02/11/16													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Date of Analysis: 07/07/20													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
Movements														
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		0	2	3	0	283	263	607	0	99	176	1017	1	2451
Background Growth		0	0	0	0	14	13	31	0	5	9	52	0	124
Background Conditions		0	2	3	0	297	276	638	0	104	185	1069	1	2575
Project Trips		0	0	0	0	265	0	0	0	66	52	265	0	648
Existing + Project		0	2	3	0	548	263	607	0	165	228	1282	1	3099
Background + Project		0	2	3	0	562	276	638	0	170	237	1334	1	3223
Cumulative Growth		0	0	1	0	62	58	134	0	22	39	224	0	540
Cumulative Baseline Conditions		0	2	4	0	345	321	741	0	121	215	1241	1	2991
Cumulative + Proj Conditions		0	2	4	0	610	321	741	0	187	267	1506	1	3639

Intersection Number:	4													
Traffic Node Number:	4													
Intersection Name:	Hesperian Boulevard & West Winton Avenue													
Peak Hour:	PM													
Count Date:	02/03/16													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Date of Analysis: 07/07/20													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
Movements														
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		189	754	177	225	312	298	183	1196	44	54	1060	718	5210
Background Growth		10	38	9	11	16	15	9	61	2	3	54	37	265
Background Conditions		199	792	186	236	328	313	192	1257	46	57	1114	755	5475
Project Trips		71	0	0	0	139	0	0	0	56	55	139	71	531
Existing + Project		260	754	177	225	451	298	183	1196	100	109	1199	789	5741
Background + Project		270	792	186	236	467	313	192	1257	102	112	1253	826	6006
Cumulative Growth		42	166	39	50	69	66	40	263	10	12	233	158	1148
Cumulative Baseline Conditions		231	920	216	275	381	364	223	1459	54	66	1293	876	6358
Cumulative + Proj Conditions		302	920	216	275	520	364	223	1459	110	121	1432	947	6889

Intersection Number:	5													
Traffic Node Number:	5													
Intersection Name:	Southland Drive & West Winton Avenue													
Peak Hour:	PM													
Count Date:	03/30/17													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		0	0	0	0	988	692	913	0	0	61	1999	0	4653
Background Growth		0	0	0	0	50	35	47	0	0	3	102	0	237
Background Conditions		0	0	0	0	1038	727	960	0	0	64	2101	0	4890
Project Trips		0	0	0	0	139	0	0	0	0	0	139	0	278
Existing + Project		0	0	0	0	1127	692	913	0	0	61	2138	0	4931
Background + Project		0	0	0	0	1177	727	960	0	0	64	2240	0	5168
Cumulative Growth		0	0	0	0	218	152	201	0	0	13	440	0	1024
Cumulative Baseline Conditions		0	0	0	0	1206	844	1114	0	0	74	2439	0	5677
Cumulative + Proj Conditions		0	0	0	0	1345	844	1114	0	0	74	2578	0	5955
Intersection Number:	6													
Traffic Node Number:	6													
Intersection Name:	Clawiter Road & Depot Road													
Peak Hour:	PM													
Count Date:	0912/2019													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		36	100	8	13	61	14	175	360	24	25	340	175	1331
Background Growth		2	5	0	1	3	1	9	18	1	1	17	9	67
Background Conditions		38	105	8	14	64	15	184	378	25	26	357	184	1398
Project Trips		0	38	14	27	17	0	0	39	0	0	30	0	165
Existing + Project		36	138	22	40	78	14	175	399	24	25	370	175	1496
Background + Project		38	143	22	41	81	15	184	417	25	26	387	184	1563
Cumulative Growth		8	22	2	3	13	3	39	79	5	6	75	39	294
Cumulative Baseline Conditions		44	122	10	16	74	17	214	439	29	31	415	214	1625
Cumulative + Proj Conditions		44	160	24	43	91	17	214	478	29	31	445	214	1790

Intersection Number:	7													
Traffic Node Number:	7													
Intersection Name:	Cabot Boulevard & Depot Road													
Peak Hour:	PM													
Count Date:	03/30/17													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Date of Analysis: 07/07/20													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		3	0	277	135	26	2	2	2	0	0	52	11	510
Background Growth		0	0	14	7	1	0	0	0	0	0	3	1	26
Background Conditions		3	0	291	142	27	2	2	2	0	0	55	12	536
Project Trips		0	0	30	17	0	0	0	0	0	0	0	0	47
Existing + Project		3	0	307	152	26	2	2	2	0	0	52	11	557
Background + Project		3	0	321	159	27	2	2	2	0	0	55	12	583
Cumulative Growth		1	0	61	30	6	0	0	0	0	0	11	2	111
Cumulative Baseline Conditions		4	0	338	165	32	2	2	2	0	0	63	13	621
Cumulative + Proj Conditions		4	0	368	182	32	2	2	2	0	0	63	13	668
Intersection Number:	8													
Traffic Node Number:	8													
Intersection Name:	Clawiter Road & SR 92 Westbound Ramps/Breakwater Avenue													
Peak Hour:	PM													
Count Date:	07/18/17													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Date of Analysis: 07/07/20													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		35	256	168	143	47	108	150	317	34	128	86	35	1507
Background Growth		2	13	9	7	2	6	8	16	2	7	4	2	78
Background Conditions		37	269	177	150	49	114	158	333	36	135	90	37	1585
Project Trips		0	0	38	0	0	0	0	39	0	0	0	0	77
Existing + Project		35	256	206	143	47	108	150	356	34	128	86	35	1584
Background + Project		37	269	215	150	49	114	158	372	36	135	90	37	1662
Cumulative Growth		8	56	37	31	10	24	33	70	7	28	19	8	331
Cumulative Baseline Conditions		43	312	205	174	57	132	183	387	41	156	105	43	1838
Cumulative + Proj Conditions		43	312	243	174	57	132	183	426	41	156	105	43	1915

Intersection Number:	9													
Traffic Node Number:	9													
Intersection Name:	Clawiter Road & SR 92 Eastbound Ramps/Eden Landing Road													
Peak Hour:	PM													
Count Date:	07/18/17													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		283	133	65	116	162	2	6	242	262	77	11	181	1540
Background Growth		14	7	3	6	8	0	0	12	13	4	1	9	77
Background Conditions		297	140	68	122	170	2	6	254	275	81	12	190	1617
Project Trips		0	0	0	0	0	0	0	0	0	0	0	39	39
Existing + Project		283	133	65	116	162	2	6	242	262	77	11	220	1579
Background + Project		297	140	68	122	170	2	6	254	275	81	12	229	1656
Cumulative Growth		62	29	14	26	36	0	1	53	58	17	2	40	338
Cumulative Baseline Conditions		345	162	79	142	198	2	7	295	320	94	13	221	1878
Cumulative + Proj Conditions		345	162	79	142	198	2	7	295	320	94	13	260	1917
Intersection Number:	10													
Traffic Node Number:	10													
Intersection Name:	Industrial Boulevard & Depot Road													
Peak Hour:	PM													
Count Date:	09/12/19													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
	Movements													
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		13	389	67	17	13	44	134	504	67	263	234	56	1801
Background Growth		1	20	3	1	1	2	7	26	3	13	12	3	92
Background Conditions		14	409	70	18	14	46	141	530	70	276	246	59	1893
Project Trips		0	0	0	0	0	0	0	0	44	44	0	0	88
Existing + Project		13	389	67	17	13	44	134	504	111	307	234	56	1889
Background + Project		14	409	70	18	14	46	141	530	114	320	246	59	1981
Cumulative Growth		3	86	15	4	3	10	30	111	15	58	52	12	399
Cumulative Baseline Conditions		16	475	82	21	16	54	164	615	82	321	286	68	2200
Cumulative + Proj Conditions		16	475	82	21	16	54	164	615	126	365	286	68	2288

Intersection Number:	11													
Traffic Node Number:	11													
Intersection Name:	Industrial Boulevard & SR 92 Westbound Ramps/Cryer Street													
Peak Hour:	PM													
Count Date:	09/12/19													
Scenario:	2791 W. Winton Avenue Traffic Study													
	Annual Growth Rate 1%													
	Number of Background Years 5													
	Number of Cumulative Years 20													
Movements														
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		96	895	19	12	6	35	87	614	294	161	33	139	2391
Background Growth		5	46	1	1	0	2	4	31	15	8	2	7	122
Background Conditions		101	941	20	13	6	37	91	645	309	169	35	146	2513
Project Trips		0	44	0	0	0	0	0	17	0	0	0	27	88
Existing + Project		96	939	19	12	6	35	87	631	294	161	33	166	2479
Background + Project		101	985	20	13	6	37	91	662	309	169	35	173	2601
Cumulative Growth		21	197	4	3	1	8	19	135	65	35	7	31	526
Cumulative Baseline Conditions		117	1092	23	15	7	43	106	749	359	196	40	170	2917
Cumulative + Proj Conditions		117	1136	23	15	7	43	106	766	359	196	40	197	3005
Movements														
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		227	785	71	46	15	0	17	744	80	793	84	214	3076
Background Growth		12	40	4	2	1	0	1	38	4	40	4	11	157
Background Conditions		239	825	75	48	16	0	18	782	84	833	88	225	3233
Project Trips		27	17	0	0	0	0	0	17	0	0	0	61	
Existing + Project		254	802	71	46	15	0	17	761	80	793	84	214	3137
Background + Project		266	842	75	48	16	0	18	799	84	833	88	225	3294
Cumulative Growth		50	173	16	10	3	0	4	164	18	175	18	47	678
Cumulative Baseline Conditions		277	958	87	56	18	0	21	908	98	968	102	261	3754
Cumulative + Proj Conditions		304	975	87	56	18	0	21	925	98	968	102	261	3815
Movements														
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		227	785	71	46	15	0	17	744	80	793	84	214	3076
Background Growth		12	40	4	2	1	0	1	38	4	40	4	11	157
Background Conditions		239	825	75	48	16	0	18	782	84	833	88	225	3233
Project Trips		27	17	0	0	0	0	0	17	0	0	0	61	
Existing + Project		254	802	71	46	15	0	17	761	80	793	84	214	3137
Background + Project		266	842	75	48	16	0	18	799	84	833	88	225	3294
Cumulative Growth		50	173	16	10	3	0	4	164	18	175	18	47	678
Cumulative Baseline Conditions		277	958	87	56	18	0	21	908	98	968	102	261	3754
Cumulative + Proj Conditions		304	975	87	56	18	0	21	925	98	968	102	261	3815

Intersection Number:	13													
Traffic Node Number:	13													
Intersection Name:	Hesperian Boulevard & Depot Road/Cathy Way													
Peak Hour:	PM											Date of Analysis: 07/07/20		
Count Date:	09/12/19													
Scenario:	2791 W. Winton Avenue Traffic Study													
												Annual Growth Rate	1%	
												Number of Background Years	5	
												Number of Cumulative Years	20	
Movements														
	North Approach			East Approach			South Approach			West Approach				
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total	
	INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
Existing Conditions		107	843	35	37	37	49	127	1350	226	331	95	199	3436
Background Growth		5	43	2	2	2	2	6	69	12	17	5	10	175
Background Conditions		112	886	37	39	39	51	133	1419	238	348	100	209	3611
Project Trips		0	55	0	0	0	0	0	56	0	0	0	0	111
Existing + Project		107	898	35	37	37	49	127	1406	226	331	95	199	3547
Background + Project		112	941	37	39	39	51	133	1475	238	348	100	209	3722
Cumulative Growth		24	186	8	8	8	11	28	297	50	73	21	44	758
Cumulative Baseline Conditions		131	1029	43	45	45	60	155	1647	276	404	116	243	4194
Cumulative + Proj Conditions		131	1084	43	45	45	60	155	1703	276	404	116	243	4305

Appendix C

Level of Service Calculations

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗		↵	↕	↗	↵	↕	↗
Traffic Vol, veh/h	3	40	16	305	75	170	23	22	17	73	16	2
Future Vol, veh/h	3	40	16	305	75	170	23	22	17	73	16	2
Peak Hour Factor	0.52	0.52	0.52	0.80	0.80	0.80	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	6	77	31	381	94	213	29	28	22	84	18	2
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	10	15.6	10.2	11.4
HCM LOS	A	C	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	45%	0%	100%	13%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	55%	0%	0%	87%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	22	17	3	27	29	305	50	195	73	16
LT Vol	23	0	0	3	0	0	305	0	0	73	0
Through Vol	0	22	0	0	27	13	0	50	25	0	16
RT Vol	0	0	17	0	0	16	0	0	170	0	0
Lane Flow Rate	29	28	22	6	51	56	381	62	244	84	18
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.062	0.056	0.039	0.012	0.096	0.1	0.655	0.099	0.344	0.175	0.036
Departure Headway (Hd)	7.588	7.088	6.388	7.255	6.755	6.373	6.188	5.688	5.078	7.508	7.008
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	472	505	560	494	531	562	587	631	709	478	511
Service Time	5.328	4.828	4.128	4.992	4.492	4.11	3.912	3.412	2.802	5.247	4.747
HCM Lane V/C Ratio	0.061	0.055	0.039	0.012	0.096	0.1	0.649	0.098	0.344	0.176	0.035
HCM Control Delay	10.8	10.3	9.4	10.1	10.2	9.8	19.9	9	10.5	11.8	10
HCM Lane LOS	B	B	A	B	B	A	C	A	B	B	A
HCM 95th-tile Q	0.2	0.2	0.1	0	0.3	0.3	4.8	0.3	1.5	0.6	0.1

HCM Signalized Intersection Capacity Analysis

Existing AM

2: Winton Ave & Corsair Blvd

08/03/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑			↑↑			↑		↖↗		↗
Traffic Volume (vph)	7	334	0	12	995	240	0	1	4	87	0	7
Future Volume (vph)	7	334	0	12	995	240	0	1	4	87	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Lane Util. Factor	1.00	0.95			0.95			1.00		0.97		1.00
Frbp, ped/bikes	1.00	1.00			1.00			1.00		1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		1.00
Frt	1.00	1.00			0.97			0.89		1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00		0.95		1.00
Satd. Flow (prot)	1611	3223			3115			1506		3127		1420
Flt Permitted	0.16	1.00			0.95			1.00		0.95		1.00
Satd. Flow (perm)	280	3223			2964			1506		3127		1420
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.42	0.42	0.42	0.84	0.84	0.84
Adj. Flow (vph)	8	375	0	13	1059	255	0	2	10	104	0	8
RTOR Reduction (vph)	0	0	0	0	17	0	0	10	0	0	0	7
Lane Group Flow (vph)	8	375	0	0	1310	0	0	2	0	104	0	1
Confl. Peds. (#/hr)	1		6	6			1					1
Confl. Bikes (#/hr)							2					
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Perm	NA		Perm	NA			NA		Prot		Perm
Protected Phases		2			6			3		4		
Permitted Phases	2			6								4
Actuated Green, G (s)	42.5	42.5			42.5			1.0		6.1		6.1
Effective Green, g (s)	42.5	42.5			42.5			1.0		6.1		6.1
Actuated g/C Ratio	0.67	0.67			0.67			0.02		0.10		0.10
Clearance Time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0		3.0
Lane Grp Cap (vph)	188	2170			1996			23		302		137
v/s Ratio Prot		0.12						c0.00		c0.03		
v/s Ratio Perm	0.03				c0.44							0.00
v/c Ratio	0.04	0.17			0.66			0.09		0.34		0.01
Uniform Delay, d1	3.5	3.8			6.0			30.6		26.6		25.8
Progression Factor	1.00	1.00			1.00			1.00		1.00		1.00
Incremental Delay, d2	0.1	0.0			0.8			1.8		0.7		0.0
Delay (s)	3.6	3.8			6.8			32.4		27.3		25.8
Level of Service	A	A			A			C		C		C
Approach Delay (s)		3.8			6.8			32.4			27.2	
Approach LOS		A			A			C			C	

Intersection Summary























HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis























3: Clawiter Rd & Winton Ave

Existing AM

08/03/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	340	153	958	1076	1	148	0	220	0	0	0
Future Volume (vph)	1	340	153	958	1076	1	148	0	220	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5			
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95	1.00			
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99			
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Frt	1.00	0.95		1.00	1.00		1.00	1.00	0.85			
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00			
Satd. Flow (prot)	1612	3037		3127	3223		1531	1531	1422			
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00			
Satd. Flow (perm)	1612	3037		3127	3223		1220	1220	1422			
Peak-hour factor, PHF	0.87	0.87	0.87	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	1	391	176	1168	1312	1	163	0	242	0	0	0
RTOR Reduction (vph)	0	45	0	0	0	0	0	0	209	0	0	0
Lane Group Flow (vph)	1	522	0	1168	1313	0	81	82	33	0	0	0
Confl. Peds. (#/hr)			6			2						
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm		
Protected Phases	5	2		1	6			4				8
Permitted Phases							4		4		8	
Actuated Green, G (s)	0.8	25.1		38.1	62.4		11.9	11.9	11.9			
Effective Green, g (s)	0.8	25.1		38.1	62.4		11.9	11.9	11.9			
Actuated g/C Ratio	0.01	0.28		0.43	0.70		0.13	0.13	0.13			
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	14	860		1344	2269		163	163	190			
v/s Ratio Prot	0.00	0.17		c0.37	c0.41							
v/s Ratio Perm							0.07	c0.07	0.02			
v/c Ratio	0.07	0.61		0.87	0.58		0.50	0.50	0.17			
Uniform Delay, d1	43.5	27.5		23.0	6.5		35.6	35.6	34.0			
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.2	1.2		6.2	0.4		2.4	2.4	0.4			
Delay (s)	45.7	28.7		29.2	6.9		37.9	38.0	34.4			
Level of Service	D	C		C	A		D	D	C			
Approach Delay (s)		28.7			17.4			35.9			0.0	
Approach LOS		C			B			D			A	
Intersection Summary												
HCM 2000 Control Delay			21.4			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			88.6			Sum of lost time (s)			13.5			
Intersection Capacity Utilization			57.3%			ICU Level of Service			B			
Analysis Period (min)			15									
c	Critical Lane Group											



















HCM 2010 Signalized Intersection Summary
4: Hesperian Blvd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	355	36	194	1014	161	55	642	143	112	1058	1079
Future Volume (veh/h)	209	355	36	194	1014	161	55	642	143	112	1058	1079
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1696	1696	1900	1696	1696	1696	1696	1696	1696
Adj Flow Rate, veh/h	230	390	40	218	1139	181	62	730	162	132	1245	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	290	1397	141	282	1304	207	77	1617	500	189	1675	521
Arrive On Green	0.09	0.33	0.33	0.09	0.32	0.32	0.05	0.35	0.35	0.06	0.36	0.00
Sat Flow, veh/h	3134	4271	430	3134	4019	638	1616	4631	1432	3134	4631	1442
Grp Volume(v), veh/h	230	280	150	218	875	445	62	730	162	132	1245	0
Grp Sat Flow(s),veh/h/ln	1567	1544	1614	1567	1544	1569	1616	1544	1432	1567	1544	1442
Q Serve(g_s), s	7.5	7.0	7.1	7.1	27.7	27.7	3.9	12.6	8.6	4.3	24.3	0.0
Cycle Q Clear(g_c), s	7.5	7.0	7.1	7.1	27.7	27.7	3.9	12.6	8.6	4.3	24.3	0.0
Prop In Lane	1.00		0.27	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	1010	528	282	1002	509	77	1617	500	189	1675	521
V/C Ratio(X)	0.79	0.28	0.28	0.77	0.87	0.87	0.80	0.45	0.32	0.70	0.74	0.00
Avail Cap(c_a), veh/h	348	1010	528	408	1057	537	117	1617	500	281	1675	521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.1	25.8	25.9	46.2	33.0	33.0	48.9	26.1	24.8	47.8	28.9	0.0
Incr Delay (d2), s/veh	10.1	0.1	0.3	5.6	7.9	14.3	20.4	0.9	1.7	4.6	3.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	3.0	3.2	3.3	12.9	14.0	2.2	5.5	3.6	2.0	10.8	0.0
LnGrp Delay(d),s/veh	56.1	26.0	26.2	51.7	41.0	47.4	69.3	27.0	26.5	52.4	31.9	0.0
LnGrp LOS	E	C	C	D	D	D	E	C	C	D	C	
Approach Vol, veh/h		660			1538			954			1377	
Approach Delay, s/veh		36.5			44.3			29.6			33.9	
Approach LOS		D			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	40.7	13.8	38.4	9.5	42.0	14.1	38.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.3	35.7	13.5	33.5	7.5	37.5	11.5	35.5				
Max Q Clear Time (g_c+I1), s	6.3	14.6	9.1	9.1	5.9	26.3	9.5	29.7				
Green Ext Time (p_c), s	0.1	5.8	0.3	2.8	0.0	6.4	0.2	3.9				
Intersection Summary												
HCM 2010 Ctrl Delay				36.9								
HCM 2010 LOS				D								

HCM Signalized Intersection Capacity Analysis
5: Southland Dr & Winton Ave

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖↙	↑↑		↗↘
Traffic Volume (vph)	920	27	870	1559	0	309
Future Volume (vph)	920	27	870	1559	0	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frpb, ped/bikes	1.00		1.00	1.00		0.98
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4612		3127	3223		2494
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4612		3127	3223		2494
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1000	29	946	1695	0	336
RTOR Reduction (vph)	3	0	0	0	0	129
Lane Group Flow (vph)	1026	0	946	1695	0	207
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	NA		Prot	NA		Perm
Protected Phases	2		4	6		
Permitted Phases						8
Actuated Green, G (s)	63.1		36.7	63.1		36.7
Effective Green, g (s)	63.1		36.7	63.1		36.7
Actuated g/C Ratio	0.58		0.34	0.58		0.34
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2674		1054	1869		841
v/s Ratio Prot	0.22		c0.30	c0.53		
v/s Ratio Perm						0.08
v/c Ratio	0.38		0.90	0.91		0.25
Uniform Delay, d1	12.3		34.3	20.2		26.1
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1		10.1	6.8		0.2
Delay (s)	12.4		44.4	27.0		26.2
Level of Service	B		D	C		C
Approach Delay (s)	12.4			33.2	26.2	
Approach LOS	B			C	C	
Intersection Summary						
HCM 2000 Control Delay			27.3		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.90			
Actuated Cycle Length (s)			108.8		Sum of lost time (s)	9.0
Intersection Capacity Utilization			58.3%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
6: Clawiter Rd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	102	30	88	251	9	24	61	33	6	574	221
Future Volume (veh/h)	47	102	30	88	251	9	24	61	33	6	574	221
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	54	117	34	105	299	11	32	80	43	6	604	233
Adj No. of Lanes	0	2	0	0	2	1	0	2	0	0	2	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	243	73	191	582	341	212	466	268	95	1134	519
Arrive On Green	0.12	0.12	0.12	0.22	0.22	0.22	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	908	2048	615	888	2700	1583	253	1421	818	9	3460	1583
Grp Volume(v), veh/h	108	0	97	215	189	11	74	0	81	327	283	233
Grp Sat Flow(s),veh/h/ln	1817	0	1754	1818	1770	1583	942	0	1551	1858	1610	1583
Q Serve(g_s), s	2.2	0.0	2.1	4.2	3.7	0.2	0.2	0.0	1.5	0.0	5.7	4.6
Cycle Q Clear(g_c), s	2.2	0.0	2.1	4.2	3.7	0.2	6.0	0.0	1.5	5.7	5.7	4.6
Prop In Lane	0.50		0.35	0.49		1.00	0.44		0.53	0.02		1.00
Lane Grp Cap(c), veh/h	215	0	208	392	382	341	438	0	508	701	528	519
V/C Ratio(X)	0.50	0.00	0.47	0.55	0.50	0.03	0.17	0.00	0.16	0.47	0.54	0.45
Avail Cap(c_a), veh/h	979	0	945	1253	1219	1091	1225	0	1690	2108	1755	1725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.5	0.0	16.4	13.9	13.7	12.4	9.5	0.0	9.5	10.9	10.9	10.6
Incr Delay (d2), s/veh	1.8	0.0	1.6	1.2	1.0	0.0	0.2	0.0	0.1	0.5	0.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.1	2.2	1.9	0.1	0.6	0.0	0.7	3.0	2.6	2.1
LnGrp Delay(d),s/veh	18.3	0.0	18.0	15.1	14.7	12.4	9.7	0.0	9.7	11.4	11.8	11.2
LnGrp LOS	B		B	B	B	B	A		A	B	B	B
Approach Vol, veh/h		205			415			155			843	
Approach Delay, s/veh		18.2			14.9			9.7			11.5	
Approach LOS		B			B			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.6		9.2		17.6		13.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		43.5		21.5		43.5		27.5				
Max Q Clear Time (g_c+I1), s		8.0		4.2		7.7		6.2				
Green Ext Time (p_c), s		1.2		1.0		5.4		2.5				
Intersection Summary												
HCM 2010 Ctrl Delay			13.0									
HCM 2010 LOS			B									

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

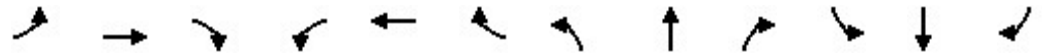
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	4	11	0	2	25	243	1	0	4	127	0	12
Future Vol, veh/h	4	11	0	2	25	243	1	0	4	127	0	12
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.63	0.63	0.63	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	15	0	2	29	286	2	0	6	140	0	13
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	1
HCM Control Delay	8.3	9.9	8.1	10
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	27%	1%	100%	0%	0%
Vol Thru, %	0%	0%	73%	9%	0%	100%	0%
Vol Right, %	0%	100%	0%	90%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	4	15	270	127	0	12
LT Vol	1	0	4	2	127	0	0
Through Vol	0	0	11	25	0	0	0
RT Vol	0	4	0	243	0	0	12
Lane Flow Rate	2	6	20	318	140	0	13
Geometry Grp	8	8	7	7	7	7	7
Degree of Util (X)	0.003	0.009	0.03	0.387	0.226	0	0.017
Departure Headway (Hd)	6.264	5.052	5.399	4.389	5.83	5.326	4.621
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	570	705	663	820	615	0	773
Service Time	4.019	2.806	3.133	2.11	3.568	3.064	2.358
HCM Lane V/C Ratio	0.004	0.009	0.03	0.388	0.228	0	0.017
HCM Control Delay	9	7.9	8.3	9.9	10.3	8.1	7.4
HCM Lane LOS	A	A	A	A	B	N	A
HCM 95th-tile Q	0	0	0.1	1.8	0.9	0	0.1

HCM Signalized Intersection Capacity Analysis

8: Clawiter Rd & Breakwater Ave/SR 92 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔	↔	↔	↔			↔	↔		↔↔	↔	
Traffic Volume (vph)	15	74	71	232	120	132	106	210	99	320	214	69	
Future Volume (vph)	15	74	71	232	120	132	106	210	99	320	214	69	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00		0.95	1.00	
Frbp, ped/bikes		1.00	1.00	1.00	0.99			1.00	1.00		1.00	0.97	
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.92			1.00	0.85		1.00	0.85	
Flt Protected		0.99	1.00	0.95	1.00			0.98	1.00		0.97	1.00	
Satd. Flow (prot)		1847	1583	1770	1704			1832	1583		3436	1541	
Flt Permitted		0.89	1.00	0.95	1.00			0.98	1.00		0.97	1.00	
Satd. Flow (perm)		1659	1583	1770	1704			1832	1583		3436	1541	
Peak-hour factor, PHF	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83	0.88	0.88	0.88	
Adj. Flow (vph)	16	80	76	309	160	176	128	253	119	364	243	78	
RTOR Reduction (vph)	0	0	67	0	34	0	0	0	88	0	0	61	
Lane Group Flow (vph)	0	96	9	309	302	0	0	381	31	0	607	17	
Confl. Peds. (#/hr)							1						
Confl. Bikes (#/hr)												4	
Turn Type	custom	NA	custom	Split	NA		Split	NA	Perm	Split	NA	Perm	
Protected Phases				4	4		2	2		6	6		
Permitted Phases	8	8	8						2			6	
Actuated Green, G (s)		11.2	11.2	21.7	21.7			25.3	25.3		21.6	21.6	
Effective Green, g (s)		11.2	11.2	21.7	21.7			25.3	25.3		21.6	21.6	
Actuated g/C Ratio		0.11	0.11	0.22	0.22			0.26	0.26		0.22	0.22	
Clearance Time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		189	181	392	378			473	409		758	340	
v/s Ratio Prot				0.17	c0.18			c0.21			c0.18		
v/s Ratio Perm		c0.06	0.01						0.02			0.01	
v/c Ratio		0.51	0.05	0.79	0.80			0.81	0.08		0.94dl	0.05	
Uniform Delay, d1		40.7	38.6	35.9	36.0			33.9	27.4		36.1	30.0	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.1	0.1	10.1	11.2			9.7	0.1		6.1	0.1	
Delay (s)		42.9	38.7	46.0	47.2			43.6	27.5		42.1	30.1	
Level of Service		D	D	D	D			D	C		D	C	
Approach Delay (s)		41.0			46.6			39.8			40.8		
Approach LOS		D			D			D			D		
Intersection Summary													
HCM 2000 Control Delay			42.4									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.76										
Actuated Cycle Length (s)			97.8									Sum of lost time (s)	18.0
Intersection Capacity Utilization			65.4%									ICU Level of Service	C
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													

HCM 2010 AWSC
 9: Clawiter Rd & SR 92 EB Ramps/Eden Landing Rd























Intersection	
Intersection Delay, s/veh	20.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔			↖↗			↖↗	↗
Traffic Vol, veh/h	181	49	124	5	63	35	77	128	7	159	321	130
Future Vol, veh/h	181	49	124	5	63	35	77	128	7	159	321	130
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	226	61	155	6	71	39	97	162	9	173	349	141
Number of Lanes	0	1	1	0	1	0	0	2	0	0	2	1






















Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	2
HCM Control Delay	23.9	15.8	17.5	20.6
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	55%	0%	79%	0%	5%	60%	0%	0%
Vol Thru, %	45%	90%	21%	0%	61%	40%	100%	0%
Vol Right, %	0%	10%	0%	100%	34%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	141	71	230	124	103	266	214	130
LT Vol	77	0	181	0	5	159	0	0
Through Vol	64	64	49	0	63	107	214	0
RT Vol	0	7	0	124	35	0	0	130
Lane Flow Rate	178	90	288	155	116	289	233	141
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.453	0.219	0.698	0.328	0.296	0.663	0.513	0.284
Departure Headway (Hd)	9.142	8.787	8.738	7.621	9.211	8.252	7.945	7.225
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	394	409	414	473	390	439	456	499
Service Time	6.894	6.539	6.459	5.342	6.965	5.973	5.666	4.946
HCM Lane V/C Ratio	0.452	0.22	0.696	0.328	0.297	0.658	0.511	0.283
HCM Control Delay	19.3	14	29.3	14	15.8	25.8	18.8	12.8
HCM Lane LOS	C	B	D	B	C	D	C	B
HCM 95th-tile Q	2.3	0.8	5.2	1.4	1.2	4.7	2.9	1.2

HCM 2010 Signalized Intersection Summary
10: Industrial Blvd & Depot Rd























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (veh/h)	12	23	114	107	86	62	275	374	93	39	510	26
Future Volume (veh/h)	12	23	114	107	86	62	275	374	93	39	510	26
Number	7	4	14	3	8	18	1	1	16	5	12	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1624	1377	1900	1841	1900	1712	1712	1759	1759	1881	1881
Adj Flow Rate, veh/h	13	26	128	119	96	69	302	302	0	43	0	0
Adj No. of Lanes	1	1	1	0	1	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	25	17	38	2	2	2	11	11	8	8	1	1
Cap, veh/h	553	460	329	307	185	104	376	376	335	84	70	70
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.23	0.23	0.00	0.05	0.00	0.00
Sat Flow, veh/h	990	1624	1162	494	652	368	1630	1630	1495	1675	1599	1599
Grp Volume(v), veh/h	13	26	128	284	0	0	302	302	0	43	0	0
Grp Sat Flow(s),veh/h/ln	990	1624	1162	1515	0	0	1630	1630	1495	1675	1599	1599
Q Serve(g_s), s	0.0	0.4	2.7	3.2	0.0	0.0	5.3	5.3	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.4	2.7	4.9	0.0	0.0	5.3	5.3	0.0	0.8	0.0	0.0
Prop In Lane	1.00		1.00	0.42		0.24	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	553	460	329	596	0	0	376	376	335	84	70	70
V/C Ratio(X)	0.02	0.06	0.39	0.48	0.00	0.00	0.80	0.80	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	1003	1198	857	1258	0	0	561	561	1887	577	2018	2018
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.9	8.0	8.8	9.5	0.0	0.0	11.1	11.1	0.0	14.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.7	0.6	0.0	0.0	5.1	5.1	0.0	4.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.9	2.1	0.0	0.0	2.9	2.9	0.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	7.9	8.0	9.6	10.1	0.0	0.0	16.2	16.2	0.0	18.9	0.0	0.0
LnGrp LOS	A	A	A	B			B	B		B		
Approach Vol, veh/h		167			284		713	713		43		
Approach Delay, s/veh		9.2			10.1		13.2	13.2		18.9		
Approach LOS		A			B		B	B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	5.8		13.1	6.0	11.3		13.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	38.5		22.5	10.5	38.5		22.5				
Max Q Clear Time (g_c+I1), s	7.3	0.0		4.7	2.8	5.3		6.9				
Green Ext Time (p_c), s	0.3	0.0		0.6	0.0	1.4		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			12.1									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 11: Industrial Blvd & SR 92 WB Ramps/Cryer St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	6	161	132	36	19	452	844	96	11	601	161
Future Volume (veh/h)	197	6	161	132	36	19	452	844	96	11	601	161
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1812	1792	1900	1871	1900	1727	1813	1900	1900	1624	1776
Adj Flow Rate, veh/h	253	8	0	213	58	31	497	927	105	12	646	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.78	0.78	0.78	0.62	0.62	0.62	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	6	0	0	0	10	5	5	0	17	7
Cap, veh/h	332	8	489	530	124	519	490	1437	163	106	686	336
Arrive On Green	0.32	0.32	0.00	0.32	0.32	0.32	0.30	0.46	0.46	0.06	0.22	0.00
Sat Flow, veh/h	775	25	1524	1415	385	1615	1645	3117	353	1810	3085	1509
Grp Volume(v), veh/h	261	0	0	271	0	31	497	512	520	12	646	0
Grp Sat Flow(s),veh/h/ln	800	0	1524	1800	0	1615	1645	1722	1748	1810	1543	1509
Q Serve(g_s), s	17.1	0.0	0.0	0.0	0.0	1.1	25.3	19.4	19.4	0.5	17.5	0.0
Cycle Q Clear(g_c), s	27.3	0.0	0.0	10.2	0.0	1.1	25.3	19.4	19.4	0.5	17.5	0.0
Prop In Lane	0.97		1.00	0.79		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	340	0	489	654	0	519	490	794	806	106	686	336
V/C Ratio(X)	0.77	0.00	0.00	0.41	0.00	0.06	1.02	0.64	0.64	0.11	0.94	0.00
Avail Cap(c_a), veh/h	340	0	489	654	0	519	490	794	806	106	686	336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.1	0.0	0.0	23.1	0.0	20.0	29.9	17.6	17.6	37.9	32.5	0.0
Incr Delay (d2), s/veh	10.1	0.0	0.0	0.4	0.0	0.0	44.5	1.8	1.8	0.5	21.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	0.0	5.1	0.0	0.5	17.5	9.5	9.6	0.3	9.5	0.0
LnGrp Delay(d),s/veh	44.2	0.0	0.0	23.5	0.0	20.0	74.4	19.4	19.3	38.4	53.8	0.0
LnGrp LOS	D			C		C	F	B	B	D	D	
Approach Vol, veh/h		261			302			1529			658	
Approach Delay, s/veh		44.2			23.1			37.2			53.5	
Approach LOS		D			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	43.7		31.8	29.8	23.4		31.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	39.2		27.3	25.3	18.9		27.3				
Max Q Clear Time (g_c+I1), s	2.5	21.4		29.3	27.3	19.5		12.2				
Green Ext Time (p_c), s	0.0	6.4		0.0	0.0	0.0		1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			40.2									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary

12: Industrial Blvd & SR 92 EB Ramps/Sleepy Hollow Ave


























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	4	389	16	51	149	161	1130	7	52	670	183
Future Volume (veh/h)	117	4	389	16	51	149	161	1130	7	52	670	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1735	1776	1900	1900	1827	1462	1776	1667	1792	1727	1624
Adj Flow Rate, veh/h	121	4	401	20	63	184	179	1256	8	55	713	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	25	25	7	0	0	4	30	7	14	6	10	17
Cap, veh/h	96	2	852	60	159	640	212	1214	510	78	831	349
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.15	0.36	0.36	0.05	0.25	0.00
Sat Flow, veh/h	0	4	1509	0	387	1553	1392	3374	1417	1707	3282	1380
Grp Volume(v), veh/h	125	0	401	83	0	184	179	1256	8	55	713	0
Grp Sat Flow(s),veh/h/ln	4	0	1509	387	0	1553	1392	1687	1417	1707	1641	1380
Q Serve(g_s), s	0.0	0.0	11.7	0.0	0.0	5.9	9.3	26.6	0.3	2.4	15.3	0.0
Cycle Q Clear(g_c), s	30.5	0.0	11.7	30.5	0.0	5.9	9.3	26.6	0.3	2.4	15.3	0.0
Prop In Lane	0.97		1.00	0.24		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	97	0	852	220	0	640	212	1214	510	78	831	349
V/C Ratio(X)	1.29	0.00	0.47	0.38	0.00	0.29	0.84	1.03	0.02	0.70	0.86	0.00
Avail Cap(c_a), veh/h	97	0	852	220	0	640	385	1214	510	473	909	382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.5	0.0	9.6	17.4	0.0	14.5	30.5	23.7	15.3	34.8	26.4	0.0
Incr Delay (d2), s/veh	185.9	0.0	0.4	1.1	0.0	0.2	8.8	35.1	0.0	11.0	7.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	4.9	1.1	0.0	2.5	4.0	18.2	0.1	1.4	7.8	0.0
LnGrp Delay(d),s/veh	222.4	0.0	10.0	18.4	0.0	14.8	39.3	58.8	15.3	45.8	34.1	0.0
LnGrp LOS	F		A	B		B	D	F	B	D	C	
Approach Vol, veh/h		526			267			1443			768	
Approach Delay, s/veh		60.5			15.9			56.1			35.0	
Approach LOS		E			B			E			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	31.1		35.0	15.8	23.2		35.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.5	20.5		30.5	20.5	20.5		30.5				
Max Q Clear Time (g_c+I1), s	4.4	28.6		32.5	11.3	17.3		32.5				
Green Ext Time (p_c), s	0.1	0.0		0.0	0.3	1.4		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			47.9									
HCM 2010 LOS			D									

HCM Signalized Intersection Capacity Analysis

13: Hesperian Blvd & Depot Rd/Cathy Wy

Existing AM

08/03/2020

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	158	75	387	152	145	31	455	815	79	32	1116	127		
Future Volume (vph)	158	75	387	152	145	31	455	815	79	32	1116	127		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5			
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.91			
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00		1.00	0.99		1.00	0.99			
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00			
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.98			
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00			
Satd. Flow (prot)	1715	1762	1424	1770	1821		1787	4983		1805	4933			
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00			
Satd. Flow (perm)	1715	1762	1424	1770	1821		1787	4983		1805	4933			
Peak-hour factor, PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.82	0.82	0.82	0.82	0.82	0.82		
Adj. Flow (vph)	223	106	545	173	165	35	555	994	96	39	1361	155		
RTOR Reduction (vph)	0	0	334	0	5	0	0	6	0	0	9	0		
Lane Group Flow (vph)	163	166	211	173	195	0	555	1084	0	39	1507	0		
Confl. Peds. (#/hr)			28	28					12			14		
Confl. Bikes (#/hr)						1								
Heavy Vehicles (%)	0%	1%	4%	2%	1%	3%	1%	2%	3%	0%	3%	0%		
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA			
Protected Phases	8	8		4	4		5	2		1	6			
Permitted Phases			8											
Actuated Green, G (s)	27.4	27.4	27.4	20.8	20.8		41.3	80.4		8.4	47.5			
Effective Green, g (s)	27.4	27.4	27.4	20.8	20.8		41.3	80.4		8.4	47.5			
Actuated g/C Ratio	0.18	0.18	0.18	0.13	0.13		0.27	0.52		0.05	0.31			
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	303	311	251	237	244		476	2584		97	1511			
v/s Ratio Prot	0.10	0.09		0.10	c0.11		c0.31	0.22		0.02	c0.31			
v/s Ratio Perm			c0.15											
v/c Ratio	0.54	0.53	0.84	0.73	0.80		1.17	0.42		0.40	1.00			
Uniform Delay, d1	58.0	58.0	61.7	64.4	65.1		56.9	22.9		70.9	53.7			
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00			
Incremental Delay, d2	1.8	1.8	21.2	10.7	16.5		95.5	0.5		2.7	22.5			
Delay (s)	59.9	59.8	82.8	75.1	81.5		152.3	23.4		73.6	76.2			
Level of Service	E	E	F	E	F		F	C		E	E			
Approach Delay (s)		74.2			78.6			66.9			76.2			
Approach LOS		E			E			E			E			
Intersection Summary														
HCM 2000 Control Delay			72.6				HCM 2000 Level of Service				E			
HCM 2000 Volume to Capacity ratio			0.99											
Actuated Cycle Length (s)			155.0				Sum of lost time (s)			18.0				
Intersection Capacity Utilization			85.9%				ICU Level of Service			E				
Analysis Period (min)			15											
c Critical Lane Group														

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B






















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↔		↵	↕↔		↵	↕	↵	↵	↕	↵
Traffic Vol, veh/h	2	121	19	54	54	51	18	20	99	161	27	5
Future Vol, veh/h	2	121	19	54	54	51	18	20	99	161	27	5
Peak Hour Factor	0.52	0.52	0.52	0.80	0.80	0.80	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	4	233	37	68	68	64	23	26	127	185	31	6
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	11.3	10.3	10.3	13.2
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	68%	0%	100%	26%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	32%	0%	0%	74%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	20	99	2	81	59	54	36	69	161	27
LT Vol	18	0	0	2	0	0	54	0	0	161	0
Through Vol	0	20	0	0	81	40	0	36	18	0	27
RT Vol	0	0	99	0	0	19	0	0	51	0	0
Lane Flow Rate	23	26	127	4	155	114	68	45	86	185	31
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.046	0.048	0.213	0.007	0.28	0.199	0.134	0.083	0.147	0.364	0.057
Departure Headway (Hd)	7.251	6.751	6.051	7.007	6.507	6.283	7.163	6.663	6.146	7.081	6.581
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	493	530	591	510	552	571	500	537	582	507	543
Service Time	5.002	4.502	3.802	4.754	4.254	4.03	4.916	4.416	3.898	4.829	4.329
HCM Lane V/C Ratio	0.047	0.049	0.215	0.008	0.281	0.2	0.136	0.084	0.148	0.365	0.057
HCM Control Delay	10.4	9.8	10.4	9.8	11.8	10.6	11	10	10	13.9	9.7
HCM Lane LOS	B	A	B	A	B	B	B	A	A	B	A
HCM 95th-tile Q	0.1	0.2	0.8	0	1.1	0.7	0.5	0.3	0.5	1.6	0.2























HCM Signalized Intersection Capacity Analysis

2: Winton Ave & Corsair Blvd























													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 					 			
Traffic Volume (vph)	5	1005	1	2	313	55	1	0	14	256	0	3	
Future Volume (vph)	5	1005	1	2	313	55	1	0	14	256	0	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	4.5			4.5			4.5		4.5		4.5	
Lane Util. Factor	1.00	0.95			0.95			1.00		0.97		1.00	
Frbp, ped/bikes	1.00	1.00			1.00			1.00		1.00		0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		1.00	
Frt	1.00	1.00			0.98			0.87		1.00		0.85	
Flt Protected	0.95	1.00			1.00			1.00		0.95		1.00	
Satd. Flow (prot)	1610	3223			3139			1476		3127		1422	
Flt Permitted	0.52	1.00			0.95			1.00		0.95		1.00	
Satd. Flow (perm)	880	3223			2986			1476		3127		1422	
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.42	0.42	0.42	0.84	0.84	0.84	
Adj. Flow (vph)	6	1129	1	2	333	59	2	0	33	305	0	4	
RTOR Reduction (vph)	0	0	0	0	17	0	0	34	0	0	0	3	
Lane Group Flow (vph)	6	1130	0	0	377	0	0	1	0	305	0	1	
Confl. Peds. (#/hr)	1		6	6			1					1	
Confl. Bikes (#/hr)							2						
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot		Perm	
Protected Phases		2			6			3		4			
Permitted Phases	2			6			3					4	
Actuated Green, G (s)	27.3	27.3			27.3			1.9		9.0		9.0	
Effective Green, g (s)	27.3	27.3			27.3			1.9		9.0		9.0	
Actuated g/C Ratio	0.53	0.53			0.53			0.04		0.17		0.17	
Clearance Time (s)	4.5	4.5			4.5			4.5		4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0		3.0	
Lane Grp Cap (vph)	464	1701			1576			54		544		247	
v/s Ratio Prot		c0.35								c0.10			
v/s Ratio Perm	0.01				0.13			0.00				0.00	
v/c Ratio	0.01	0.66			0.24			0.02		0.56		0.00	
Uniform Delay, d1	5.8	8.9			6.6			24.0		19.5		17.6	
Progression Factor	1.00	1.00			1.00			1.00		1.00		1.00	
Incremental Delay, d2	0.0	1.0			0.1			0.2		1.3		0.0	
Delay (s)	5.8	9.9			6.7			24.2		20.9		17.6	
Level of Service	A	A			A			C		C		B	
Approach Delay (s)		9.8			6.7			24.2			20.8		
Approach LOS		A			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			11.3									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.61										
Actuated Cycle Length (s)			51.7									Sum of lost time (s)	13.5
Intersection Capacity Utilization			48.9%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Clawiter Rd & Winton Ave

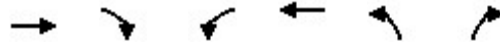
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1017	176	263	283	0	99	0	607	3	2	0
Future Volume (vph)	1	1017	176	263	283	0	99	0	607	3	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1612	3133		3127	3223		1531	1531	1423	1612	1696	
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00	0.72	1.00	
Satd. Flow (perm)	1612	3133		3127	3223		1219	1219	1423	1220	1696	
Peak-hour factor, PHF	0.87	0.87	0.87	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	1	1169	202	321	345	0	109	0	667	3	2	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	299	0	0	0
Lane Group Flow (vph)	1	1361	0	321	345	0	54	55	368	3	2	0
Confl. Peds. (#/hr)			6			2						
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4		8	
Actuated Green, G (s)	1.0	52.4		16.6	68.0		27.5	27.5	27.5	27.5	27.5	
Effective Green, g (s)	1.0	52.4		16.6	68.0		27.5	27.5	27.5	27.5	27.5	
Actuated g/C Ratio	0.01	0.48		0.15	0.62		0.25	0.25	0.25	0.25	0.25	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	14	1492		471	1992		304	304	355	305	424	
v/s Ratio Prot	0.00	c0.43		c0.10	0.11							0.00
v/s Ratio Perm							0.04	0.05	c0.26	0.00		
v/c Ratio	0.07	0.91		0.68	0.17		0.18	0.18	1.04	0.01	0.00	
Uniform Delay, d1	54.0	26.7		44.2	9.0		32.4	32.4	41.2	31.0	31.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	10.0		4.0	0.2		0.3	0.3	57.4	0.0	0.0	
Delay (s)	56.2	36.6		48.2	9.2		32.7	32.7	98.6	31.0	31.0	
Level of Service	E	D		D	A		C	C	F	C	C	
Approach Delay (s)		36.7			28.0			89.4			31.0	
Approach LOS		D			C			F			C	
Intersection Summary												
HCM 2000 Control Delay			49.1				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)				13.5	
Intersection Capacity Utilization			86.8%				ICU Level of Service				E	
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 Signalized Intersection Summary
4: Hesperian Blvd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	718	1060	54	298	312	225	44	1196	183	177	754	189
Future Volume (veh/h)	718	1060	54	298	312	225	44	1196	183	177	754	189
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1696	1696	1900	1696	1696	1696	1696	1696	1696
Adj Flow Rate, veh/h	789	1165	59	335	351	253	50	1359	208	208	887	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	849	1320	67	386	447	203	62	1661	514	256	1861	579
Arrive On Green	0.27	0.29	0.29	0.12	0.14	0.14	0.04	0.36	0.36	0.08	0.40	0.00
Sat Flow, veh/h	3134	4511	228	3134	3088	1403	1616	4631	1432	3134	4631	1442
Grp Volume(v), veh/h	789	797	427	335	351	253	50	1359	208	208	887	0
Grp Sat Flow(s),veh/h/ln	1567	1544	1652	1567	1544	1403	1616	1544	1432	1567	1544	1442
Q Serve(g_s), s	30.7	30.8	30.8	13.1	13.7	18.1	3.8	33.3	13.6	8.2	17.7	0.0
Cycle Q Clear(g_c), s	30.7	30.8	30.8	13.1	13.7	18.1	3.8	33.3	13.6	8.2	17.7	0.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	849	903	483	386	447	203	62	1661	514	256	1861	579
V/C Ratio(X)	0.93	0.88	0.88	0.87	0.79	1.25	0.80	0.82	0.40	0.81	0.48	0.00
Avail Cap(c_a), veh/h	905	916	490	429	447	203	128	1661	514	278	1861	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.22	0.22	0.22	0.86	0.86	0.86	0.75	0.75	0.75	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.4	42.2	42.2	53.8	51.6	53.5	59.6	36.4	30.1	56.4	27.7	0.0
Incr Delay (d2), s/veh	4.3	2.5	4.5	14.0	7.7	140.7	16.0	3.5	1.8	15.5	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.8	13.4	14.6	6.4	6.3	14.9	2.0	14.8	5.6	4.1	7.7	0.0
LnGrp Delay(d),s/veh	48.7	44.6	46.7	67.9	59.3	194.1	75.6	39.9	31.8	71.9	28.5	0.0
LnGrp LOS	D	D	D	E	E	F	E	D	C	E	C	
Approach Vol, veh/h		2013			939			1617			1095	
Approach Delay, s/veh		46.7			98.7			39.9			36.8	
Approach LOS		D			F			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.7	49.3	19.9	41.1	9.3	54.7	38.3	22.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	11.1	41.7	17.1	37.1	9.9	42.9	36.1	18.1				
Max Q Clear Time (g_c+I1), s	10.2	35.3	15.1	32.8	5.8	19.7	32.7	20.1				
Green Ext Time (p_c), s	0.1	4.7	0.3	2.9	0.0	6.7	1.2	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			51.5									
HCM 2010 LOS			D									



















HCM Signalized Intersection Capacity Analysis

5: Southland Dr & Winton Ave



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↔	↑↑		↔
Traffic Volume (vph)	1999	61	692	988	0	913
Future Volume (vph)	1999	61	692	988	0	913
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frpb, ped/bikes	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4611		3127	3223		2538
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4611		3127	3223		2538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2173	66	752	1074	0	992
RTOR Reduction (vph)	2	0	0	0	0	17
Lane Group Flow (vph)	2237	0	752	1074	0	975
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	NA		Prot	NA		Over
Protected Phases	2		4	6		4
Permitted Phases						
Actuated Green, G (s)	89.3		36.7	89.3		36.7
Effective Green, g (s)	89.3		36.7	89.3		36.7
Actuated g/C Ratio	0.66		0.27	0.66		0.27
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	3050		850	2131		689
v/s Ratio Prot	c0.49		0.24	0.33		c0.38
v/s Ratio Perm						
v/c Ratio	0.73		0.88	0.50		1.41
Uniform Delay, d1	15.0		47.1	11.6		49.1
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	1.6		10.9	0.9		195.0
Delay (s)	16.6		58.0	12.5		244.2
Level of Service	B		E	B		F
Approach Delay (s)	16.6			31.2	244.2	
Approach LOS	B			C	F	
Intersection Summary						
HCM 2000 Control Delay			66.5		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.93			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			79.7%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
6: Clawiter Rd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	340	25	14	61	13	24	360	175	8	100	36
Future Volume (veh/h)	175	340	25	14	61	13	24	360	175	8	100	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	201	391	29	17	73	15	32	474	230	8	105	38
Adj No. of Lanes	0	2	0	0	2	1	0	2	0	0	2	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	306	637	49	52	238	127	110	782	368	121	1142	557
Arrive On Green	0.27	0.27	0.27	0.08	0.08	0.08	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1123	2336	178	646	2954	1583	70	2222	1046	92	3243	1583
Grp Volume(v), veh/h	323	0	298	48	42	15	404	0	332	60	53	38
Grp Sat Flow(s),veh/h/ln	1807	0	1831	1830	1770	1583	1828	0	1511	1724	1610	1583
Q Serve(g_s), s	7.3	0.0	6.5	1.1	1.0	0.4	0.1	0.0	8.4	0.0	1.0	0.7
Cycle Q Clear(g_c), s	7.3	0.0	6.5	1.1	1.0	0.4	8.2	0.0	8.4	1.0	1.0	0.7
Prop In Lane	0.62		0.10	0.35		1.00	0.08		0.69	0.13		1.00
Lane Grp Cap(c), veh/h	492	0	499	147	142	127	728	0	532	696	567	557
V/C Ratio(X)	0.66	0.00	0.60	0.33	0.29	0.12	0.55	0.00	0.62	0.09	0.09	0.07
Avail Cap(c_a), veh/h	849	0	860	1100	1063	951	1800	0	1436	1624	1531	1505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	14.5	19.9	19.8	19.5	12.3	0.0	12.3	9.9	9.9	9.8
Incr Delay (d2), s/veh	1.5	0.0	1.1	1.3	1.1	0.4	0.7	0.0	1.2	0.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	3.4	0.6	0.5	0.2	4.3	0.0	3.6	0.5	0.4	0.3
LnGrp Delay(d),s/veh	16.2	0.0	15.6	21.1	20.9	19.9	12.9	0.0	13.5	10.0	10.0	9.9
LnGrp LOS	B		B	C	C	B	B		B	A	B	A
Approach Vol, veh/h		621			105			736			151	
Approach Delay, s/veh		15.9			20.9			13.2			10.0	
Approach LOS		B			C			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.6		17.0		20.6		8.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		43.5		21.5		43.5		27.5				
Max Q Clear Time (g_c+I1), s		10.4		9.3		3.0		3.1				
Green Ext Time (p_c), s		5.8		3.2		0.8		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			14.5									
HCM 2010 LOS			B									

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	11	52	0	2	26	135	0	2	2	277	0	3
Future Vol, veh/h	11	52	0	2	26	135	0	2	2	277	0	3
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.63	0.63	0.63	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	69	0	2	31	159	0	3	3	304	0	3
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	1
HCM Control Delay	9.4	9.6	8.6	13.8
HCM LOS	A	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	17%	1%	100%	0%	0%
Vol Thru, %	100%	50%	83%	16%	0%	100%	0%
Vol Right, %	0%	50%	0%	83%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	4	63	163	277	0	3
LT Vol	0	0	11	2	277	0	0
Through Vol	0	2	52	26	0	0	0
RT Vol	0	2	0	135	0	0	3
Lane Flow Rate	0	6	84	192	304	0	3
Geometry Grp	8	8	7	7	7	7	7
Degree of Util (X)	0	0.01	0.135	0.266	0.486	0	0.004
Departure Headway (Hd)	6.152	5.798	5.767	4.992	5.745	5.242	4.537
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	0	621	618	717	624	0	782
Service Time	3.852	3.498	3.532	2.745	3.511	3.008	2.303
HCM Lane V/C Ratio	0	0.01	0.136	0.268	0.487	0	0.004
HCM Control Delay	8.9	8.6	9.4	9.6	13.9	8	7.3
HCM Lane LOS	N	A	A	A	B	N	A
HCM 95th-tile Q	0	0	0.5	1.1	2.7	0	0

HCM Signalized Intersection Capacity Analysis

8: Clawiter Rd & Breakwater Ave/SR 92 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗			↖	↗		↖↗	↖
Traffic Volume (vph)	35	86	128	108	47	143	34	317	150	168	256	35
Future Volume (vph)	35	86	128	108	47	143	34	317	150	168	256	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00		0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	0.99			1.00	1.00		1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	0.89			1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00	0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)		1836	1583	1770	1636			1854	1583		3470	1540
Flt Permitted		0.83	1.00	0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (perm)		1543	1583	1770	1636			1854	1583		3470	1540
Peak-hour factor, PHF	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83	0.88	0.88	0.88
Adj. Flow (vph)	38	92	138	144	63	191	41	382	181	191	291	40
RTOR Reduction (vph)	0	0	118	0	101	0	0	0	129	0	0	32
Lane Group Flow (vph)	0	130	20	144	153	0	0	423	52	0	482	8
Confl. Peds. (#/hr)							1					
Confl. Bikes (#/hr)												4
Turn Type	custom	NA	custom	Split	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases				4	4		2	2		6	6	
Permitted Phases	8	8	8						2			6
Actuated Green, G (s)		13.0	13.0	14.6	14.6			26.0	26.0		18.4	18.4
Effective Green, g (s)		13.0	13.0	14.6	14.6			26.0	26.0		18.4	18.4
Actuated g/C Ratio		0.14	0.14	0.16	0.16			0.29	0.29		0.20	0.20
Clearance Time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		222	228	287	265			535	457		709	314
v/s Ratio Prot				0.08	c0.09			c0.23			c0.14	
v/s Ratio Perm		c0.08	0.01						0.03			0.01
v/c Ratio		0.59	0.09	0.50	0.58			0.79	0.11		0.68	0.03
Uniform Delay, d1		36.0	33.4	34.4	34.8			29.5	23.5		33.1	28.6
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		3.9	0.2	1.4	3.0			7.8	0.1		2.6	0.0
Delay (s)		39.9	33.5	35.8	37.9			37.3	23.6		35.7	28.7
Level of Service		D	C	D	D			D	C		D	C
Approach Delay (s)		36.6			37.1			33.2			35.1	
Approach LOS		D			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			35.1			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			63.5%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												























Intersection	
Intersection Delay, s/veh	86.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔			↖↗			↖↗	↗
Traffic Vol, veh/h	181	11	77	2	162	116	262	242	6	65	133	283
Future Vol, veh/h	181	11	77	2	162	116	262	242	6	65	133	283
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	226	14	96	2	182	130	332	306	8	71	145	308
Number of Lanes	0	1	1	0	1	0	0	2	0	0	2	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	2
HCM Control Delay	33.4	56.8	173.7	32.2
HCM LOS	D	F	F	D






















Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	68%	0%	94%	0%	1%	59%	0%	0%
Vol Thru, %	32%	95%	6%	0%	58%	41%	100%	0%
Vol Right, %	0%	5%	0%	100%	41%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	383	127	192	77	280	109	89	283
LT Vol	262	0	181	0	2	65	0	0
Through Vol	121	121	11	0	162	44	89	0
RT Vol	0	6	0	77	116	0	0	283
Lane Flow Rate	485	161	240	96	315	119	96	308
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	1.4	0.447	0.723	0.259	0.875	0.338	0.266	0.79
Departure Headway (Hd)	10.399	10.002	11.793	10.558	10.903	11.104	10.791	10.053
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	349	360	310	343	333	326	335	363
Service Time	8.165	7.768	9.493	8.258	8.603	8.804	8.491	7.753
HCM Lane V/C Ratio	1.39	0.447	0.774	0.28	0.946	0.365	0.287	0.848
HCM Control Delay	224.4	20.7	40	16.9	56.8	19.4	17.4	41.7
HCM Lane LOS	F	C	E	C	F	C	C	E
HCM 95th-tile Q	24.6	2.2	5.2	1	8.1	1.5	1.1	6.6

HCM 2010 Signalized Intersection Summary
10: Industrial Blvd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (veh/h)	56	234	263	44	13	17	67	504	134	67	389	13
Future Volume (veh/h)	56	234	263	44	13	17	67	504	134	67	389	13
Number	7	4	14	3	8	18	1	1	16	5	12	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1624	1377	1900	1828	1900	1712	1712	1759	1759	1881	1881
Adj Flow Rate, veh/h	63	263	296	49	14	19	74	74	0	74	0	0
Adj No. of Lanes	1	1	1	0	1	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	25	17	38	2	2	2	11	11	8	8	1	1
Cap, veh/h	574	554	397	277	83	65	114	114	375	117	401	401
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.07	0.07	0.00	0.07	0.00	0.00
Sat Flow, veh/h	1115	1624	1163	389	244	191	1630	1630	1495	1675	1599	1599
Grp Volume(v), veh/h	63	263	296	82	0	0	74	74	0	74	0	0
Grp Sat Flow(s),veh/h/ln	1115	1624	1163	824	0	0	1630	1630	1495	1675	1599	1599
Q Serve(g_s), s	0.0	5.1	9.0	0.3	0.0	0.0	1.8	1.8	0.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	1.4	5.1	9.0	5.4	0.0	0.0	1.8	1.8	0.0	1.7	0.0	0.0
Prop In Lane	1.00		1.00	0.60		0.23	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	574	554	397	425	0	0	114	114	375	117	401	401
V/C Ratio(X)	0.11	0.47	0.75	0.19	0.00	0.00	0.65	0.65	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	822	914	655	655	0	0	428	428	1440	440	1540	1540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.1	10.3	11.6	9.3	0.0	0.0	18.1	18.1	0.0	18.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.6	2.8	0.2	0.0	0.0	6.0	6.0	0.0	5.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.4	3.1	0.6	0.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0
LnGrp Delay(d),s/veh	9.2	11.0	14.4	9.5	0.0	0.0	24.1	24.1	0.0	23.5	0.0	0.0
LnGrp LOS	A	B	B	A			C	C		C		
Approach Vol, veh/h		622			82		628	628		74		
Approach Delay, s/veh		12.4			9.5		15.5	15.5		23.5		
Approach LOS		B			A		B	B		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	14.5		18.1	7.3	14.5		18.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	38.5		22.5	10.5	38.5		22.5				
Max Q Clear Time (g_c+I1), s	3.8	0.0		11.0	3.7	7.9		7.4				
Green Ext Time (p_c), s	0.1	0.0		2.5	0.1	2.0		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			14.2									
HCM 2010 LOS			B									























HCM 2010 Signalized Intersection Summary

11: Industrial Blvd & SR 92 WB Ramps/Cryer St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	33	161	35	6	12	294	614	87	19	895	96
Future Volume (veh/h)	139	33	161	35	6	12	294	614	87	19	895	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1826	1792	1900	1868	1900	1727	1814	1900	1900	1624	1776
Adj Flow Rate, veh/h	178	42	0	56	10	19	323	675	96	20	962	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.78	0.78	0.78	0.62	0.62	0.62	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	6	0	0	0	10	5	5	0	17	7
Cap, veh/h	333	53	349	401	63	369	383	1404	199	150	969	474
Arrive On Green	0.23	0.23	0.00	0.23	0.23	0.23	0.23	0.46	0.46	0.08	0.31	0.00
Sat Flow, veh/h	984	233	1524	1269	275	1615	1645	3027	430	1810	3085	1509
Grp Volume(v), veh/h	220	0	0	66	0	19	323	384	387	20	962	0
Grp Sat Flow(s),veh/h/ln	1217	0	1524	1544	0	1615	1645	1723	1734	1810	1543	1509
Q Serve(g_s), s	8.9	0.0	0.0	0.0	0.0	0.6	11.3	9.2	9.3	0.6	18.7	0.0
Cycle Q Clear(g_c), s	10.8	0.0	0.0	2.0	0.0	0.6	11.3	9.2	9.3	0.6	18.7	0.0
Prop In Lane	0.81		1.00	0.85		1.00	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	387	0	349	464	0	369	383	799	804	150	969	474
V/C Ratio(X)	0.57	0.00	0.00	0.14	0.00	0.05	0.84	0.48	0.48	0.13	0.99	0.00
Avail Cap(c_a), veh/h	706	0	691	784	0	733	692	1123	1130	150	969	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.0	0.0	0.0	18.6	0.0	18.1	22.0	11.1	11.1	25.6	20.6	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.1	0.0	0.1	5.1	0.4	0.4	0.4	26.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	0.0	0.9	0.0	0.3	5.7	4.5	4.5	0.3	11.5	0.0
LnGrp Delay(d),s/veh	24.3	0.0	0.0	18.8	0.0	18.2	27.2	11.6	11.6	26.0	47.5	0.0
LnGrp LOS	C			B		B	C	B	B	C	D	
Approach Vol, veh/h		220			85			1094			982	
Approach Delay, s/veh		24.3			18.6			16.2			47.1	
Approach LOS		C			B			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	32.4		18.3	18.5	23.4		18.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	39.2		27.3	25.3	18.9		27.3				
Max Q Clear Time (g_c+I1), s	2.6	11.3		12.8	13.3	20.7		4.0				
Green Ext Time (p_c), s	0.0	5.1		1.0	0.8	0.0		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			29.8									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary

12: Industrial Blvd & SR 92 EB Ramps/Sleepy Hollow Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	84	793	0	15	46	80	744	17	71	785	227
Future Volume (veh/h)	214	84	793	0	15	46	80	744	17	71	785	227
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1674	1776	1900	1900	1827	1462	1776	1667	1792	1727	1624
Adj Flow Rate, veh/h	221	87	818	0	19	57	89	827	19	76	835	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	25	25	7	0	0	4	30	7	14	6	10	17
Cap, veh/h	432	135	633	0	656	536	104	1121	471	109	1055	444
Arrive On Green	0.35	0.35	0.35	0.00	0.35	0.35	0.07	0.33	0.33	0.06	0.32	0.00
Sat Flow, veh/h	908	391	1509	0	1900	1553	1392	3374	1417	1707	3282	1380
Grp Volume(v), veh/h	308	0	818	0	19	57	89	827	19	76	835	0
Grp Sat Flow(s),veh/h/ln	1299	0	1509	0	1900	1553	1392	1687	1417	1707	1641	1380
Q Serve(g_s), s	10.2	0.0	18.0	0.0	0.3	1.3	3.3	11.3	0.5	2.3	12.1	0.0
Cycle Q Clear(g_c), s	10.6	0.0	18.0	0.0	0.3	1.3	3.3	11.3	0.5	2.3	12.1	0.0
Prop In Lane	0.72		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	567	0	633	0	656	536	104	1121	471	109	1055	444
V/C Ratio(X)	0.54	0.00	1.29	0.00	0.03	0.11	0.86	0.74	0.04	0.70	0.79	0.00
Avail Cap(c_a), veh/h	567	0	633	0	656	536	280	1520	638	164	1132	476
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.6	0.0	15.1	0.0	11.3	11.6	23.9	15.4	11.8	23.9	16.1	0.0
Incr Delay (d2), s/veh	1.1	0.0	142.7	0.0	0.0	0.1	17.6	1.3	0.0	7.7	3.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	34.1	0.0	0.2	0.6	1.8	5.4	0.2	1.3	6.0	0.0
LnGrp Delay(d),s/veh	15.7	0.0	157.9	0.0	11.3	11.7	41.4	16.7	11.8	31.6	19.8	0.0
LnGrp LOS	B		F		B	B	D	B	B	C	B	
Approach Vol, veh/h		1126			76			935			911	
Approach Delay, s/veh		119.0			11.6			18.9			20.8	
Approach LOS		F			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	21.8		22.5	8.4	21.3		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	4.3	13.3		20.0	5.3	14.1		3.3				
Green Ext Time (p_c), s	0.0	4.0		0.0	0.1	2.0		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			56.3									
HCM 2010 LOS			E									

HCM Signalized Intersection Capacity Analysis

13: Hesperian Blvd & Depot Rd/Cathy Wy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↸	↶	↷		↶	↷		↶	↷	↸
Traffic Volume (vph)	199	95	331	49	37	37	226	1350	127	35	843	107
Future Volume (vph)	199	95	331	49	37	37	226	1350	127	35	843	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.92	1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1762	1424	1770	1710		1787	4985		1805	4923	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1762	1424	1770	1710		1787	4985		1805	4923	
Peak-hour factor, PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	280	134	466	56	42	42	276	1646	155	43	1028	130
RTOR Reduction (vph)	0	0	382	0	26	0	0	5	0	0	8	0
Lane Group Flow (vph)	204	210	84	56	58	0	276	1796	0	43	1150	0
Confl. Peds. (#/hr)			28	28					12			14
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	4%	2%	1%	3%	1%	2%	3%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases			8									
Actuated Green, G (s)	27.4	27.4	27.4	10.7	10.7		29.1	90.5		8.4	69.8	
Effective Green, g (s)	27.4	27.4	27.4	10.7	10.7		29.1	90.5		8.4	69.8	
Actuated g/C Ratio	0.18	0.18	0.18	0.07	0.07		0.19	0.58		0.05	0.45	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	303	311	251	122	118		335	2910		97	2216	
v/s Ratio Prot	0.12	c0.12		0.03	c0.03		c0.15	c0.36		0.02	c0.23	
v/s Ratio Perm			0.06									
v/c Ratio	0.67	0.68	0.33	0.46	0.49		0.82	0.62		0.44	0.52	
Uniform Delay, d1	59.6	59.6	55.8	69.4	69.5		60.5	21.0		71.0	30.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.8	5.7	0.8	2.7	3.2		15.0	1.0		3.2	0.9	
Delay (s)	65.4	65.3	56.6	72.1	72.7		75.5	22.0		74.2	31.4	
Level of Service	E	E	E	E	E		E	C		E	C	
Approach Delay (s)		60.7			72.5			29.1			33.0	
Approach LOS		E			E			C			C	

Intersection Summary

HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	155.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗		↵	↕	↗	↵	↕	↗
Traffic Vol, veh/h	3	179	26	305	218	170	30	22	17	73	16	2
Future Vol, veh/h	3	179	26	305	218	170	30	22	17	73	16	2
Peak Hour Factor	0.52	0.52	0.52	0.80	0.80	0.80	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	6	344	50	381	273	213	38	28	22	84	18	2
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	15.1	20.2	11.9	13.4
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	70%	0%	100%	30%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	30%	0%	0%	70%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	22	17	3	119	86	305	145	243	73	16
LT Vol	30	0	0	3	0	0	305	0	0	73	0
Through Vol	0	22	0	0	119	60	0	145	73	0	16
RT Vol	0	0	17	0	0	26	0	0	170	0	0
Lane Flow Rate	38	28	22	6	229	165	381	182	303	84	18
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.096	0.066	0.047	0.012	0.465	0.329	0.746	0.33	0.51	0.207	0.043
Departure Headway (Hd)	8.955	8.455	7.755	7.796	7.296	7.184	7.041	6.541	6.051	8.881	8.381
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	402	426	464	456	491	504	511	545	592	406	429
Service Time	6.667	6.167	5.467	5.596	5.096	4.884	4.83	4.33	3.839	6.593	6.093
HCM Lane V/C Ratio	0.095	0.066	0.047	0.013	0.466	0.327	0.746	0.334	0.512	0.207	0.042
HCM Control Delay	12.6	11.8	10.8	10.7	16.4	13.4	27.9	12.6	15.1	13.9	11.5
HCM Lane LOS	B	B	B	B	C	B	D	B	C	B	B
HCM 95th-tile Q	0.3	0.2	0.1	0	2.4	1.4	6.3	1.4	2.9	0.8	0.1

HCM Signalized Intersection Capacity Analysis
2: Winton Ave & Corsair Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↗	↑↑			↑↑			↑		↖↗		↖		
Traffic Volume (vph)	7	473	0	12	1138	240	0	1	4	87	0	7		
Future Volume (vph)	7	473	0	12	1138	240	0	1	4	87	0	7		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.5	4.5			4.5			4.5		4.5		4.5		
Lane Util. Factor	1.00	0.95			0.95			1.00		0.97		1.00		
Frbp, ped/bikes	1.00	1.00			1.00			1.00		1.00		0.98		
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		1.00		
Frt	1.00	1.00			0.97			0.89		1.00		0.85		
Flt Protected	0.95	1.00			1.00			1.00		0.95		1.00		
Satd. Flow (prot)	1611	3223			3126			1506		3127		1420		
Flt Permitted	0.14	1.00			0.95			1.00		0.95		1.00		
Satd. Flow (perm)	233	3223			2971			1506		3127		1420		
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.42	0.42	0.42	0.84	0.84	0.84		
Adj. Flow (vph)	8	531	0	13	1211	255	0	2	10	104	0	8		
RTOR Reduction (vph)	0	0	0	0	13	0	0	10	0	0	0	7		
Lane Group Flow (vph)	8	531	0	0	1466	0	0	2	0	104	0	1		
Confl. Peds. (#/hr)	1		6	6			1					1		
Confl. Bikes (#/hr)							2							
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%		
Turn Type	Perm	NA		Perm	NA			NA		Prot		Perm		
Protected Phases		2			6			3		4				
Permitted Phases	2			6								4		
Actuated Green, G (s)	50.0	50.0			50.0			1.0		6.2		6.2		
Effective Green, g (s)	50.0	50.0			50.0			1.0		6.2		6.2		
Actuated g/C Ratio	0.71	0.71			0.71			0.01		0.09		0.09		
Clearance Time (s)	4.5	4.5			4.5			4.5		4.5		4.5		
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0		3.0		
Lane Grp Cap (vph)	164	2279			2101			21		274		124		
v/s Ratio Prot		0.16						c0.00		c0.03				
v/s Ratio Perm	0.03				c0.49							0.00		
v/c Ratio	0.05	0.23			0.70			0.10		0.38		0.01		
Uniform Delay, d1	3.1	3.6			6.0			34.4		30.4		29.4		
Progression Factor	1.00	1.00			1.00			1.00		1.00		1.00		
Incremental Delay, d2	0.1	0.1			1.0			2.1		0.9		0.0		
Delay (s)	3.3	3.7			7.0			36.5		31.3		29.5		
Level of Service	A	A			A			D		C		C		
Approach Delay (s)		3.7			7.0			36.5			31.2			
Approach LOS		A			A			D			C			
Intersection Summary														
HCM 2000 Control Delay			7.6									HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio			0.65											
Actuated Cycle Length (s)			70.7							13.5				
Intersection Capacity Utilization			64.1%										ICU Level of Service	C
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis
3: Clawiter Rd & Winton Ave

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗	↗	↖	↗	↗
Traffic Volume (vph)	1	447	186	958	1184	1	183	0	220	0	0	0
Future Volume (vph)	1	447	186	958	1184	1	183	0	220	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5			
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95	1.00			
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99			
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Frt	1.00	0.96		1.00	1.00		1.00	1.00	0.85			
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00			
Satd. Flow (prot)	1612	3045		3127	3223		1531	1531	1422			
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00			
Satd. Flow (perm)	1612	3045		3127	3223		1220	1220	1422			
Peak-hour factor, PHF	0.87	0.87	0.87	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	1	514	214	1168	1444	1	201	0	242	0	0	0
RTOR Reduction (vph)	0	38	0	0	0	0	0	0	209	0	0	0
Lane Group Flow (vph)	1	690	0	1168	1445	0	100	101	33	0	0	0
Confl. Peds. (#/hr)			6			2						
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm		
Protected Phases	5	2		1	6			4				8
Permitted Phases							4		4		8	
Actuated Green, G (s)	0.8	29.6		40.6	69.4		13.1	13.1	13.1			
Effective Green, g (s)	0.8	29.6		40.6	69.4		13.1	13.1	13.1			
Actuated g/C Ratio	0.01	0.31		0.42	0.72		0.14	0.14	0.14			
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	13	931		1311	2310		165	165	192			
v/s Ratio Prot	0.00	c0.23		c0.37	0.45							
v/s Ratio Perm							0.08	c0.08	0.02			
v/c Ratio	0.08	0.74		0.89	0.63		0.61	0.61	0.17			
Uniform Delay, d1	47.6	30.2		26.0	7.0		39.4	39.5	37.0			
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.5	3.2		8.0	0.5		6.2	6.6	0.4			
Delay (s)	50.2	33.4		34.0	7.6		45.6	46.0	37.5			
Level of Service	D	C		C	A		D	D	D			
Approach Delay (s)		33.4			19.4			41.2			0.0	
Approach LOS		C			B			D			A	

Intersection Summary

HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



















HCM 2010 Signalized Intersection Summary
4: Hesperian Blvd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	415	62	194	1075	161	81	642	143	112	1058	1100
Future Volume (veh/h)	230	415	62	194	1075	161	81	642	143	112	1058	1100
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1696	1696	1900	1696	1696	1696	1696	1696	1696
Adj Flow Rate, veh/h	253	456	68	218	1208	181	92	730	162	132	1245	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	308	1350	197	279	1306	196	112	1642	508	186	1598	498
Arrive On Green	0.10	0.33	0.33	0.09	0.32	0.32	0.07	0.35	0.35	0.06	0.35	0.00
Sat Flow, veh/h	3134	4075	595	3134	4055	608	1616	4631	1432	3134	4631	1442
Grp Volume(v), veh/h	253	343	181	218	920	469	92	730	162	132	1245	0
Grp Sat Flow(s),veh/h/ln	1567	1544	1582	1567	1544	1575	1616	1544	1432	1567	1544	1442
Q Serve(g_s), s	8.6	9.1	9.4	7.4	31.3	31.3	6.1	13.1	8.9	4.5	26.2	0.0
Cycle Q Clear(g_c), s	8.6	9.1	9.4	7.4	31.3	31.3	6.1	13.1	8.9	4.5	26.2	0.0
Prop In Lane	1.00		0.38	1.00		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	308	1023	524	279	994	507	112	1642	508	186	1598	498
V/C Ratio(X)	0.82	0.34	0.34	0.78	0.93	0.93	0.83	0.44	0.32	0.71	0.78	0.00
Avail Cap(c_a), veh/h	332	1023	524	389	1009	515	112	1642	508	268	1598	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.1	27.3	27.4	48.5	35.6	35.6	49.9	26.9	25.5	50.2	31.9	0.0
Incr Delay (d2), s/veh	14.3	0.2	0.4	6.8	13.7	22.7	37.4	0.9	1.7	4.9	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.9	4.1	3.5	15.2	16.8	3.9	5.7	3.7	2.1	11.7	0.0
LnGrp Delay(d),s/veh	62.3	27.5	27.8	55.2	49.3	58.2	87.4	27.7	27.2	55.0	35.7	0.0
LnGrp LOS	E	C	C	E	D	E	F	C	C	E	D	
Approach Vol, veh/h		777			1607			984			1377	
Approach Delay, s/veh		38.9			52.7			33.2			37.5	
Approach LOS		D			D			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	43.0	14.2	40.5	12.0	42.0	15.2	39.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.3	35.7	13.5	33.5	7.5	37.5	11.5	35.5				
Max Q Clear Time (g_c+I1), s	6.5	15.1	9.4	11.4	8.1	28.2	10.6	33.3				
Green Ext Time (p_c), s	0.1	5.8	0.3	3.4	0.0	5.6	0.1	1.7				
Intersection Summary												
HCM 2010 Ctrl Delay			42.0									
HCM 2010 LOS			D									

HCM Signalized Intersection Capacity Analysis
5: Southland Dr & Winton Ave

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖↙	↑↑		↗↘
Traffic Volume (vph)	980	27	870	1620	0	309
Future Volume (vph)	980	27	870	1620	0	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frbp, ped/bikes	1.00		1.00	1.00		0.98
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4613		3127	3223		2494
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4613		3127	3223		2494
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1065	29	946	1761	0	336
RTOR Reduction (vph)	3	0	0	0	0	110
Lane Group Flow (vph)	1091	0	946	1761	0	226
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	NA		Prot	NA		Perm
Protected Phases	2		4	6		
Permitted Phases						8
Actuated Green, G (s)	64.5		37.1	64.5		37.1
Effective Green, g (s)	64.5		37.1	64.5		37.1
Actuated g/C Ratio	0.58		0.34	0.58		0.34
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2690		1048	1879		836
v/s Ratio Prot	0.24		c0.30	c0.55		
v/s Ratio Perm						0.09
v/c Ratio	0.41		0.90	0.94		0.27
Uniform Delay, d1	12.6		35.0	21.2		26.9
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1		10.7	9.5		0.2
Delay (s)	12.7		45.8	30.7		27.0
Level of Service	B		D	C		C
Approach Delay (s)	12.7			36.0	27.0	
Approach LOS	B			D	C	
Intersection Summary						
HCM 2000 Control Delay			29.1		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.92			
Actuated Cycle Length (s)			110.6		Sum of lost time (s)	9.0
Intersection Capacity Utilization			59.5%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
6: Clawiter Rd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	112	30	88	258	25	24	80	33	20	593	221
Future Volume (veh/h)	47	112	30	88	258	25	24	80	33	20	593	221
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	54	129	34	105	307	30	32	105	43	21	624	233
Adj No. of Lanes	0	2	0	0	2	1	0	2	0	0	2	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	262	72	189	589	343	194	558	241	107	1146	533
Arrive On Green	0.12	0.12	0.12	0.22	0.22	0.22	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	859	2137	583	871	2718	1583	223	1657	715	46	3404	1583
Grp Volume(v), veh/h	114	0	103	219	193	30	86	0	94	345	300	233
Grp Sat Flow(s),veh/h/ln	1820	0	1760	1819	1770	1583	1027	0	1569	1839	1610	1583
Q Serve(g_s), s	2.5	0.0	2.3	4.5	4.0	0.6	0.3	0.0	1.8	0.0	6.3	4.8
Cycle Q Clear(g_c), s	2.5	0.0	2.3	4.5	4.0	0.6	6.6	0.0	1.8	6.3	6.3	4.8
Prop In Lane	0.47		0.33	0.48		1.00	0.37		0.46	0.06		1.00
Lane Grp Cap(c), veh/h	223	0	216	394	383	343	464	0	528	711	542	533
V/C Ratio(X)	0.51	0.00	0.48	0.56	0.50	0.09	0.18	0.00	0.18	0.49	0.55	0.44
Avail Cap(c_a), veh/h	939	0	908	1201	1168	1045	1235	0	1639	1990	1682	1654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	17.0	14.5	14.3	13.0	9.7	0.0	9.8	11.3	11.3	10.7
Incr Delay (d2), s/veh	1.8	0.0	1.6	1.2	1.0	0.1	0.2	0.0	0.2	0.5	0.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.2	2.4	2.0	0.3	0.7	0.0	0.8	3.3	2.9	2.2
LnGrp Delay(d),s/veh	18.9	0.0	18.6	15.8	15.4	13.1	9.9	0.0	9.9	11.8	12.1	11.3
LnGrp LOS	B		B	B	B	B	A		A	B	B	B
Approach Vol, veh/h		217			442			180			878	
Approach Delay, s/veh		18.8			15.4			9.9			11.8	
Approach LOS		B			B			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.5		9.6		18.5		13.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		43.5		21.5		43.5		27.5				
Max Q Clear Time (g_c+I1), s		8.6		4.5		8.3		6.5				
Green Ext Time (p_c), s		1.4		1.1		5.7		2.6				
Intersection Summary												
HCM 2010 Ctrl Delay			13.4									
HCM 2010 LOS			B									

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	4	11	0	2	25	250	1	0	4	137	0	12
Future Vol, veh/h	4	11	0	2	25	250	1	0	4	137	0	12
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.63	0.63	0.63	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	15	0	2	29	294	2	0	6	151	0	13
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	1
HCM Control Delay	8.4	10.1	8.1	10.3
HCM LOS	A	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	27%	1%	100%	0%	0%
Vol Thru, %	0%	0%	73%	9%	0%	100%	0%
Vol Right, %	0%	100%	0%	90%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	4	15	277	137	0	12
LT Vol	1	0	4	2	137	0	0
Through Vol	0	0	11	25	0	0	0
RT Vol	0	4	0	250	0	0	12
Lane Flow Rate	2	6	20	326	151	0	13
Geometry Grp	8	8	7	7	7	7	7
Degree of Util (X)	0.003	0.009	0.03	0.4	0.245	0	0.017
Departure Headway (Hd)	6.318	5.105	5.447	4.423	5.854	5.35	4.644
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	565	697	657	815	613	0	769
Service Time	4.077	2.863	3.184	2.144	3.594	3.09	2.384
HCM Lane V/C Ratio	0.004	0.009	0.03	0.4	0.246	0	0.017
HCM Control Delay	9.1	7.9	8.4	10.1	10.5	8.1	7.5
HCM Lane LOS	A	A	A	B	B	N	A
HCM 95th-tile Q	0	0	0.1	1.9	1	0	0.1

HCM Signalized Intersection Capacity Analysis
8: Clawiter Rd & Breakwater Ave/SR 92 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↖	↗	↖	↗			↖	↗		↖↗	↖↗	
Traffic Volume (vph)	15	74	71	232	120	132	106	229	99	339	214	69	
Future Volume (vph)	15	74	71	232	120	132	106	229	99	339	214	69	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00		0.95	1.00	
Frbp, ped/bikes		1.00	1.00	1.00	0.99			1.00	1.00		1.00	0.97	
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.92			1.00	0.85		1.00	0.85	
Flt Protected		0.99	1.00	0.95	1.00			0.98	1.00		0.97	1.00	
Satd. Flow (prot)		1847	1583	1770	1704			1834	1583		3434	1541	
Flt Permitted		0.89	1.00	0.95	1.00			0.98	1.00		0.97	1.00	
Satd. Flow (perm)		1658	1583	1770	1704			1834	1583		3434	1541	
Peak-hour factor, PHF	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83	0.88	0.88	0.88	
Adj. Flow (vph)	16	80	76	309	160	176	128	276	119	385	243	78	
RTOR Reduction (vph)	0	0	67	0	34	0	0	0	87	0	0	61	
Lane Group Flow (vph)	0	96	9	309	302	0	0	404	32	0	628	17	
Confl. Peds. (#/hr)							1						
Confl. Bikes (#/hr)												4	
Turn Type	custom	NA	custom	Split	NA		Split	NA	Perm	Split	NA	Perm	
Protected Phases				4	4		2	2		6	6		
Permitted Phases	8	8	8						2			6	
Actuated Green, G (s)		11.2	11.2	21.8	21.8			26.5	26.5		22.2	22.2	
Effective Green, g (s)		11.2	11.2	21.8	21.8			26.5	26.5		22.2	22.2	
Actuated g/C Ratio		0.11	0.11	0.22	0.22			0.27	0.27		0.22	0.22	
Clearance Time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		186	177	387	372			487	420		764	343	
v/s Ratio Prot				0.17	c0.18			c0.22			c0.18		
v/s Ratio Perm		c0.06	0.01						0.02			0.01	
v/c Ratio		0.52	0.05	0.80	0.81			0.83	0.08		0.98dl	0.05	
Uniform Delay, d1		41.7	39.5	36.9	37.0			34.5	27.4		36.9	30.5	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.4	0.1	10.9	12.6			11.2	0.1		7.1	0.1	
Delay (s)		44.1	39.6	47.8	49.6			45.7	27.5		44.0	30.5	
Level of Service		D	D	D	D			D	C		D	C	
Approach Delay (s)		42.1			48.7			41.5			42.5		
Approach LOS		D			D			D			D		
Intersection Summary													
HCM 2000 Control Delay			44.2		HCM 2000 Level of Service					D			
HCM 2000 Volume to Capacity ratio			0.78										
Actuated Cycle Length (s)			99.7		Sum of lost time (s)					18.0			
Intersection Capacity Utilization			67.5%		ICU Level of Service					C			
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													























Intersection	
Intersection Delay, s/veh	22.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔			↖↗			↖↗	↗
Traffic Vol, veh/h	200	49	124	5	63	35	77	128	7	159	321	130
Future Vol, veh/h	200	49	124	5	63	35	77	128	7	159	321	130
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	250	61	155	6	71	39	97	162	9	173	349	141
Number of Lanes	0	1	1	0	1	0	0	2	0	0	2	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	2
HCM Control Delay	27.7	16.1	17.9	21.2
HCM LOS	D	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	55%	0%	80%	0%	5%	60%	0%	0%
Vol Thru, %	45%	90%	20%	0%	61%	40%	100%	0%
Vol Right, %	0%	10%	0%	100%	34%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	141	71	249	124	103	266	214	130
LT Vol	77	0	200	0	5	159	0	0
Through Vol	64	64	49	0	63	107	214	0
RT Vol	0	7	0	124	35	0	0	130
Lane Flow Rate	178	90	311	155	116	289	233	141
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.46	0.223	0.76	0.33	0.301	0.673	0.522	0.289
Departure Headway (Hd)	9.288	8.932	8.796	7.67	9.351	8.381	8.073	7.353
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	387	402	414	470	384	434	449	490
Service Time	7.045	6.688	6.52	5.394	7.111	6.103	5.795	5.074
HCM Lane V/C Ratio	0.46	0.224	0.751	0.33	0.302	0.666	0.519	0.288
HCM Control Delay	19.8	14.2	34.5	14.1	16.1	26.7	19.3	13
HCM Lane LOS	C	B	D	B	C	D	C	B
HCM 95th-tile Q	2.3	0.8	6.3	1.4	1.2	4.8	2.9	1.2























HCM 2010 Signalized Intersection Summary
10: Industrial Blvd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (veh/h)	12	23	137	107	86	62	298	374	93	39	510	26
Future Volume (veh/h)	12	23	137	107	86	62	298	374	93	39	510	26
Number	7	4	14	3	8	18	1	1	16	5	12	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1624	1377	1900	1841	1900	1712	1712	1759	1759	1881	1881
Adj Flow Rate, veh/h	13	26	154	119	96	69	327	327	0	43	0	0
Adj No. of Lanes	1	1	1	0	1	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	25	17	38	2	2	2	11	11	8	8	1	1
Cap, veh/h	553	463	331	306	185	104	403	403	335	84	43	43
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.25	0.25	0.00	0.05	0.00	0.00
Sat Flow, veh/h	990	1624	1162	488	649	365	1630	1630	1495	1675	1599	1599
Grp Volume(v), veh/h	13	26	154	284	0	0	327	327	0	43	0	0
Grp Sat Flow(s),veh/h/ln	990	1624	1162	1501	0	0	1630	1630	1495	1675	1599	1599
Q Serve(g_s), s	0.0	0.4	3.3	3.2	0.0	0.0	5.8	5.8	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.4	3.3	4.9	0.0	0.0	5.8	5.8	0.0	0.8	0.0	0.0
Prop In Lane	1.00		1.00	0.42		0.24	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	553	463	331	595	0	0	403	403	335	84	43	43
V/C Ratio(X)	0.02	0.06	0.46	0.48	0.00	0.00	0.81	0.81	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	998	1193	854	1242	0	0	559	559	1880	574	2010	2010
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.9	7.9	9.0	9.5	0.0	0.0	10.9	10.9	0.0	14.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	0.6	0.0	0.0	6.2	6.2	0.0	4.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	1.2	2.1	0.0	0.0	3.2	3.2	0.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	7.9	8.0	10.0	10.1	0.0	0.0	17.1	17.1	0.0	19.0	0.0	0.0
LnGrp LOS	A	A	B	B			B	B		B		
Approach Vol, veh/h		193			284		738	738		43		
Approach Delay, s/veh		9.6			10.1		13.8	13.8		19.0		
Approach LOS		A			B		B	B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.1	5.3		13.2	6.0	11.4		13.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	38.5		22.5	10.5	38.5		22.5				
Max Q Clear Time (g_c+I1), s	7.8	0.0		5.3	2.8	5.3		6.9				
Green Ext Time (p_c), s	0.3	0.0		0.7	0.0	1.4		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			12.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 11: Industrial Blvd & SR 92 WB Ramps/Cryer St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	6	161	132	36	19	452	851	96	11	624	161
Future Volume (veh/h)	213	6	161	132	36	19	452	851	96	11	624	161
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1812	1792	1900	1871	1900	1727	1813	1900	1900	1624	1776
Adj Flow Rate, veh/h	273	8	0	213	58	31	497	935	105	12	671	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.78	0.78	0.78	0.62	0.62	0.62	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	6	0	0	0	10	5	5	0	17	7
Cap, veh/h	333	7	489	530	124	519	490	1439	162	106	686	336
Arrive On Green	0.32	0.32	0.00	0.32	0.32	0.32	0.30	0.46	0.46	0.06	0.22	0.00
Sat Flow, veh/h	776	23	1524	1415	385	1615	1645	3120	350	1810	3085	1509
Grp Volume(v), veh/h	281	0	0	271	0	31	497	516	524	12	671	0
Grp Sat Flow(s),veh/h/ln	799	0	1524	1800	0	1615	1645	1722	1748	1810	1543	1509
Q Serve(g_s), s	17.1	0.0	0.0	0.0	0.0	1.1	25.3	19.6	19.6	0.5	18.4	0.0
Cycle Q Clear(g_c), s	27.3	0.0	0.0	10.2	0.0	1.1	25.3	19.6	19.6	0.5	18.4	0.0
Prop In Lane	0.97		1.00	0.79		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	340	0	489	654	0	519	490	794	806	106	686	336
V/C Ratio(X)	0.83	0.00	0.00	0.41	0.00	0.06	1.02	0.65	0.65	0.11	0.98	0.00
Avail Cap(c_a), veh/h	340	0	489	654	0	519	490	794	806	106	686	336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.7	0.0	0.0	23.1	0.0	20.0	29.9	17.6	17.6	37.9	32.8	0.0
Incr Delay (d2), s/veh	15.3	0.0	0.0	0.4	0.0	0.0	44.5	1.9	1.8	0.5	28.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	0.0	5.1	0.0	0.5	17.5	9.7	9.9	0.3	10.6	0.0
LnGrp Delay(d),s/veh	50.0	0.0	0.0	23.5	0.0	20.0	74.4	19.5	19.5	38.4	61.7	0.0
LnGrp LOS	D			C		C	F	B	B	D	E	
Approach Vol, veh/h		281			302			1537			683	
Approach Delay, s/veh		50.0			23.1			37.2			61.2	
Approach LOS		D			C			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	43.7		31.8	29.8	23.4		31.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	39.2		27.3	25.3	18.9		27.3				
Max Q Clear Time (g_c+I1), s	2.5	21.6		29.3	27.3	20.4		12.2				
Green Ext Time (p_c), s	0.0	6.4		0.0	0.0	0.0		1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			42.8									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 12: Industrial Blvd & SR 92 EB Ramps/Sleepy Hollow Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	4	389	16	51	149	161	1137	7	52	677	199
Future Volume (veh/h)	117	4	389	16	51	149	161	1137	7	52	677	199
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1735	1776	1900	1900	1827	1462	1776	1667	1792	1727	1624
Adj Flow Rate, veh/h	121	4	401	20	63	184	179	1263	8	55	720	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	25	25	7	0	0	4	30	7	14	6	10	17
Cap, veh/h	96	2	851	60	159	638	212	1219	512	78	835	351
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.15	0.36	0.36	0.05	0.25	0.00
Sat Flow, veh/h	0	4	1509	0	387	1553	1392	3374	1417	1707	3282	1380
Grp Volume(v), veh/h	125	0	401	83	0	184	179	1263	8	55	720	0
Grp Sat Flow(s),veh/h/ln	4	0	1509	387	0	1553	1392	1687	1417	1707	1641	1380
Q Serve(g_s), s	0.0	0.0	11.7	0.0	0.0	5.9	9.3	26.8	0.3	2.4	15.5	0.0
Cycle Q Clear(g_c), s	30.5	0.0	11.7	30.5	0.0	5.9	9.3	26.8	0.3	2.4	15.5	0.0
Prop In Lane	0.97		1.00	0.24		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	97	0	851	219	0	638	212	1219	512	78	835	351
V/C Ratio(X)	1.29	0.00	0.47	0.38	0.00	0.29	0.84	1.04	0.02	0.71	0.86	0.00
Avail Cap(c_a), veh/h	97	0	851	219	0	638	385	1219	512	472	907	381
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.6	0.0	9.6	17.4	0.0	14.6	30.6	23.7	15.2	34.9	26.4	0.0
Incr Delay (d2), s/veh	187.0	0.0	0.4	1.1	0.0	0.2	8.8	35.7	0.0	11.0	8.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	4.9	1.1	0.0	2.5	4.1	18.4	0.1	1.4	7.9	0.0
LnGrp Delay(d),s/veh	223.6	0.0	10.0	18.5	0.0	14.8	39.4	59.4	15.2	45.9	34.5	0.0
LnGrp LOS	F		B	B		B	D	F	B	D	C	
Approach Vol, veh/h		526			267			1450			775	
Approach Delay, s/veh		60.8			16.0			56.7			35.3	
Approach LOS		E			B			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	31.3		35.0	15.8	23.4		35.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.5	20.5		30.5	20.5	20.5		30.5				
Max Q Clear Time (g_c+I1), s	4.4	28.8		32.5	11.3	17.5		32.5				
Green Ext Time (p_c), s	0.1	0.0		0.0	0.3	1.3		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			48.3									
HCM 2010 LOS			D									

HCM Signalized Intersection Capacity Analysis
13: Hesperian Blvd & Depot Rd/Cathy Wy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (vph)	158	75	387	152	145	31	455	841	79	32	1142	127
Future Volume (vph)	158	75	387	152	145	31	455	841	79	32	1142	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.98	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1762	1424	1770	1821		1787	4986		1805	4935	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1762	1424	1770	1821		1787	4986		1805	4935	
Peak-hour factor, PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	223	106	545	173	165	35	555	1026	96	39	1393	155
RTOR Reduction (vph)	0	0	334	0	5	0	0	6	0	0	9	0
Lane Group Flow (vph)	163	166	211	173	195	0	555	1116	0	39	1539	0
Confl. Peds. (#/hr)			28	28					12			14
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	4%	2%	1%	3%	1%	2%	3%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases			8									
Actuated Green, G (s)	27.4	27.4	27.4	20.8	20.8		41.3	80.4		8.4	47.5	
Effective Green, g (s)	27.4	27.4	27.4	20.8	20.8		41.3	80.4		8.4	47.5	
Actuated g/C Ratio	0.18	0.18	0.18	0.13	0.13		0.27	0.52		0.05	0.31	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	303	311	251	237	244		476	2586		97	1512	
v/s Ratio Prot	0.10	0.09		0.10	c0.11		c0.31	0.22		0.02	c0.31	
v/s Ratio Perm			c0.15									
v/c Ratio	0.54	0.53	0.84	0.73	0.80		1.17	0.43		0.40	1.02	
Uniform Delay, d1	58.0	58.0	61.7	64.4	65.1		56.9	23.1		70.9	53.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	1.8	21.2	10.7	16.5		95.5	0.5		2.7	27.7	
Delay (s)	59.9	59.8	82.8	75.1	81.5		152.3	23.7		73.6	81.5	
Level of Service	E	E	F	E	F		F	C		E	F	
Approach Delay (s)		74.2			78.6			66.2			81.3	
Approach LOS		E			E			E			F	
Intersection Summary												
HCM 2000 Control Delay			74.1				HCM 2000 Level of Service				E	
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			155.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			86.4%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

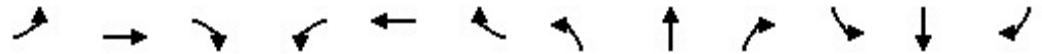
Intersection	
Intersection Delay, s/veh	73.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↔		↵	↕↔		↵	↕	↵	↵	↕	↕
Traffic Vol, veh/h	2	438	49	54	385	51	35	20	99	161	27	5
Future Vol, veh/h	2	438	49	54	385	51	35	20	99	161	27	5
Peak Hour Factor	0.52	0.52	0.52	0.80	0.80	0.80	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	4	842	94	68	481	64	45	26	127	185	31	6
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	126.1	29.3	16.3	23.1
HCM LOS	F	D	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	75%	0%	100%	72%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	25%	0%	0%	28%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	20	99	2	292	195	54	257	179	161	27
LT Vol	35	0	0	2	0	0	54	0	0	161	0
Through Vol	0	20	0	0	292	146	0	257	128	0	27
RT Vol	0	0	99	0	0	49	0	0	51	0	0
Lane Flow Rate	45	26	127	4	562	375	68	321	224	185	31
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.131	0.071	0.33	0.01	1.313	0.859	0.174	0.785	0.536	0.532	0.085
Departure Headway (Hd)	10.908	10.408	9.708	8.92	8.42	8.244	9.589	9.089	8.89	10.735	10.235
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	331	346	373	401	432	439	377	401	408	339	352
Service Time	8.608	8.108	7.408	6.688	6.188	6.012	7.289	6.789	6.59	8.435	7.935
HCM Lane V/C Ratio	0.136	0.075	0.34	0.01	1.301	0.854	0.18	0.8	0.549	0.546	0.088
HCM Control Delay	15.2	13.9	17.1	11.8	181.5	44.2	14.3	37.9	21.4	25	13.9
HCM Lane LOS	C	B	C	B	F	E	B	E	C	C	B
HCM 95th-tile Q	0.4	0.2	1.4	0	25	8.6	0.6	6.7	3.1	3	0.3

HCM Signalized Intersection Capacity Analysis
2: Winton Ave & Corsair Blvd

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑			↑		↘↘		↗
Traffic Volume (vph)	5	1322	1	2	644	55	1	0	14	256	0	3
Future Volume (vph)	5	1322	1	2	644	55	1	0	14	256	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Lane Util. Factor	1.00	0.95			0.95			1.00		0.97		1.00
Frbp, ped/bikes	1.00	1.00			1.00			1.00		1.00		0.99
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		1.00
Frt	1.00	1.00			0.99			0.87		1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00		0.95		1.00
Satd. Flow (prot)	1611	3223			3179			1476		3127		1422
Flt Permitted	0.35	1.00			0.95			1.00		0.95		1.00
Satd. Flow (perm)	586	3223			3028			1476		3127		1422
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.42	0.42	0.42	0.84	0.84	0.84
Adj. Flow (vph)	6	1485	1	2	685	59	2	0	33	305	0	4
RTOR Reduction (vph)	0	0	0	0	6	0	0	33	0	0	0	3
Lane Group Flow (vph)	6	1486	0	0	740	0	0	2	0	305	0	1
Confl. Peds. (#/hr)	1		6	6			1					1
Confl. Bikes (#/hr)							2					
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot		Perm
Protected Phases		2			6			3		4		
Permitted Phases	2			6			3					4
Actuated Green, G (s)	42.7	42.7			42.7			3.0		9.2		9.2
Effective Green, g (s)	42.7	42.7			42.7			3.0		9.2		9.2
Actuated g/C Ratio	0.62	0.62			0.62			0.04		0.13		0.13
Clearance Time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0		3.0
Lane Grp Cap (vph)	365	2012			1890			64		420		191
v/s Ratio Prot		c0.46								c0.10		
v/s Ratio Perm	0.01				0.24			0.00				0.00
v/c Ratio	0.02	0.74			0.39			0.02		0.73		0.00
Uniform Delay, d1	4.9	9.0			6.4			31.3		28.4		25.6
Progression Factor	1.00	1.00			1.00			1.00		1.00		1.00
Incremental Delay, d2	0.0	1.5			0.1			0.2		6.1		0.0
Delay (s)	4.9	10.4			6.5			31.5		34.5		25.6
Level of Service	A	B			A			C		C		C
Approach Delay (s)		10.4			6.5			31.5			34.4	
Approach LOS		B			A			C			C	

Intersection Summary		
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.70	B
Actuated Cycle Length (s)	68.4	Sum of lost time (s)
Intersection Capacity Utilization	57.6%	13.5
Analysis Period (min)	15	ICU Level of Service
		B

HCM Signalized Intersection Capacity Analysis

3: Clawiter Rd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1282	228	263	548	0	165	0	607	3	2	0
Future Volume (vph)	1	1282	228	263	548	0	165	0	607	3	2	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1612	3131		3127	3223		1531	1531	1423	1612	1696	
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00	0.69	1.00	
Satd. Flow (perm)	1612	3131		3127	3223		1219	1219	1423	1173	1696	
Peak-hour factor, PHF	0.87	0.87	0.87	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	1	1474	262	321	668	0	181	0	667	3	2	0
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	306	0	0	0
Lane Group Flow (vph)	1	1725	0	321	668	0	90	91	361	3	2	0
Confl. Peds. (#/hr)			6			2						
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4		8	
Actuated Green, G (s)	1.0	52.4		16.6	68.0		27.5	27.5	27.5	27.5	27.5	
Effective Green, g (s)	1.0	52.4		16.6	68.0		27.5	27.5	27.5	27.5	27.5	
Actuated g/C Ratio	0.01	0.48		0.15	0.62		0.25	0.25	0.25	0.25	0.25	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	14	1491		471	1992		304	304	355	293	424	
v/s Ratio Prot	0.00	c0.55		c0.10	0.21							0.00
v/s Ratio Perm							0.07	0.07	c0.25	0.00		
v/c Ratio	0.07	1.16		0.68	0.34		0.30	0.30	1.02	0.01	0.00	
Uniform Delay, d1	54.0	28.8		44.2	10.1		33.4	33.4	41.2	31.0	31.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	78.6		4.0	0.5		0.5	0.6	52.1	0.0	0.0	
Delay (s)	56.2	107.4		48.2	10.6		34.0	34.0	93.4	31.0	31.0	
Level of Service	E	F		D	B		C	C	F	C	C	
Approach Delay (s)		107.4			22.8			80.7			31.0	
Approach LOS		F			C			F			C	
Intersection Summary												
HCM 2000 Control Delay			77.6				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			95.8%				ICU Level of Service			F		
Analysis Period (min)			15									
c	Critical Lane Group											



















HCM 2010 Signalized Intersection Summary
4: Hesperian Blvd & Winton Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	789	1199	109	298	451	225	100	1196	183	177	754	260
Future Volume (veh/h)	789	1199	109	298	451	225	100	1196	183	177	754	260
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1696	1696	1900	1696	1696	1696	1696	1696	1696
Adj Flow Rate, veh/h	867	1318	120	335	507	253	114	1359	208	208	887	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	908	1450	132	374	511	233	136	1504	465	238	1466	456
Arrive On Green	0.29	0.34	0.34	0.12	0.17	0.17	0.08	0.32	0.32	0.08	0.32	0.00
Sat Flow, veh/h	3134	4316	393	3134	3088	1406	1616	4631	1431	3134	4631	1442
Grp Volume(v), veh/h	867	943	495	335	507	253	114	1359	208	208	887	0
Grp Sat Flow(s),veh/h/ln	1567	1544	1621	1567	1544	1406	1616	1544	1431	1567	1544	1442
Q Serve(g_s), s	34.0	36.5	36.5	13.2	20.5	20.7	8.7	35.1	14.4	8.2	20.2	0.0
Cycle Q Clear(g_c), s	34.0	36.5	36.5	13.2	20.5	20.7	8.7	35.1	14.4	8.2	20.2	0.0
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	908	1037	545	374	511	233	136	1504	465	238	1466	456
V/C Ratio(X)	0.96	0.91	0.91	0.90	0.99	1.09	0.84	0.90	0.45	0.87	0.61	0.00
Avail Cap(c_a), veh/h	915	1045	549	374	511	233	167	1504	465	238	1466	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.80	0.80	0.80	0.73	0.73	0.73	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.6	39.7	39.7	54.3	52.1	52.2	56.4	40.3	33.3	57.2	36.1	0.0
Incr Delay (d2), s/veh	3.0	1.3	2.4	19.7	33.4	78.1	19.6	7.0	2.3	28.0	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.1	15.8	16.7	6.7	11.1	13.1	4.6	15.9	6.0	4.5	8.9	0.0
LnGrp Delay(d),s/veh	46.6	41.0	42.0	74.0	85.5	130.2	76.0	47.3	35.6	85.1	38.0	0.0
LnGrp LOS	D	D	D	E	F	F	E	D	D	F	D	
Approach Vol, veh/h		2305			1095			1681			1095	
Approach Delay, s/veh		43.3			92.3			47.8			46.9	
Approach LOS		D			F			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	45.1	19.4	46.5	15.0	44.1	40.7	25.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.5	40.3	14.9	42.3	12.9	36.9	36.5	20.7				
Max Q Clear Time (g_c+I1), s	10.2	37.1	15.2	38.5	10.7	22.2	36.0	22.7				
Green Ext Time (p_c), s	0.0	2.6	0.0	2.9	0.1	5.5	0.2	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				53.9								
HCM 2010 LOS				D								

HCM Signalized Intersection Capacity Analysis
5: Southland Dr & Winton Ave

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖↗	↑↑		↖↗
Traffic Volume (vph)	2138	61	692	1127	0	913
Future Volume (vph)	2138	61	692	1127	0	913
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frpb, ped/bikes	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4612		3127	3223		2538
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4612		3127	3223		2538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2324	66	752	1225	0	992
RTOR Reduction (vph)	2	0	0	0	0	13
Lane Group Flow (vph)	2388	0	752	1225	0	979
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	NA		Prot	NA		Over
Protected Phases	2		4	6		4
Permitted Phases						
Actuated Green, G (s)	90.8		35.2	90.8		35.2
Effective Green, g (s)	90.8		35.2	90.8		35.2
Actuated g/C Ratio	0.67		0.26	0.67		0.26
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	3101		815	2167		661
v/s Ratio Prot	c0.52		0.24	0.38		c0.39
v/s Ratio Perm						
v/c Ratio	0.77		0.92	0.57		1.48
Uniform Delay, d1	15.0		48.6	11.7		49.9
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	1.9		15.8	1.1		224.9
Delay (s)	16.9		64.4	12.7		274.8
Level of Service	B		E	B		F
Approach Delay (s)	16.9			32.4	274.8	
Approach LOS	B			C	F	
Intersection Summary						
HCM 2000 Control Delay			70.4		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.97			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			82.4%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
6: Clawiter Rd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	370	25	14	78	40	24	399	175	22	138	36
Future Volume (veh/h)	175	370	25	14	78	40	24	399	175	22	138	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	201	425	29	17	93	48	32	525	230	23	145	38
Adj No. of Lanes	0	2	0	0	2	1	0	2	0	0	2	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	661	47	48	276	142	102	832	355	160	882	573
Arrive On Green	0.27	0.27	0.27	0.09	0.09	0.09	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1066	2407	169	530	3076	1583	66	2300	981	178	2437	1583
Grp Volume(v), veh/h	341	0	314	59	51	48	430	0	357	73	95	38
Grp Sat Flow(s),veh/h/ln	1809	0	1833	1836	1770	1583	1826	0	1522	1004	1610	1583
Q Serve(g_s), s	8.3	0.0	7.4	1.5	1.3	1.4	0.5	0.0	9.6	0.3	2.0	0.8
Cycle Q Clear(g_c), s	8.3	0.0	7.4	1.5	1.3	1.4	9.5	0.0	9.6	10.0	2.0	0.8
Prop In Lane	0.59		0.09	0.29		1.00	0.07		0.64	0.31		1.00
Lane Grp Cap(c), veh/h	497	0	504	165	159	142	739	0	551	459	583	573
V/C Ratio(X)	0.69	0.00	0.62	0.36	0.32	0.34	0.58	0.00	0.65	0.16	0.16	0.07
Avail Cap(c_a), veh/h	789	0	799	1024	986	883	1669	0	1342	1098	1420	1396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	0.0	15.7	21.1	21.0	21.1	13.1	0.0	13.1	10.8	10.7	10.3
Incr Delay (d2), s/veh	1.7	0.0	1.3	1.3	1.2	1.4	0.7	0.0	1.3	0.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	3.8	0.8	0.7	0.7	4.9	0.0	4.2	0.7	0.9	0.3
LnGrp Delay(d),s/veh	17.7	0.0	16.9	22.4	22.2	22.5	13.8	0.0	14.4	10.9	10.8	10.3
LnGrp LOS	B		B	C	C	C	B		B	B	B	B
Approach Vol, veh/h		655			158			787			206	
Approach Delay, s/veh		17.3			22.4			14.1			10.8	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.4		18.1		22.4		8.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		43.5		21.5		43.5		27.5				
Max Q Clear Time (g_c+I1), s		11.6		10.3		12.0		3.5				
Green Ext Time (p_c), s		6.2		3.2		1.3		0.7				
Intersection Summary												
HCM 2010 Ctrl Delay			15.6									
HCM 2010 LOS			B									

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	11	52	0	2	26	152	0	2	2	307	0	3
Future Vol, veh/h	11	52	0	2	26	152	0	2	2	307	0	3
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.63	0.63	0.63	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	69	0	2	31	179	0	3	3	337	0	3
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	1
HCM Control Delay	9.6	10	8.7	15.3
HCM LOS	A	A	A	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	17%	1%	100%	0%	0%
Vol Thru, %	100%	50%	83%	14%	0%	100%	0%
Vol Right, %	0%	50%	0%	84%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	4	63	180	307	0	3
LT Vol	0	0	11	2	307	0	0
Through Vol	0	2	52	26	0	0	0
RT Vol	0	2	0	152	0	0	3
Lane Flow Rate	0	6	84	212	337	0	3
Geometry Grp	8	8	7	7	7	7	7
Degree of Util (X)	0	0.011	0.138	0.299	0.544	0	0.004
Departure Headway (Hd)	6.32	5.965	5.908	5.091	5.802	5.298	4.594
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	0	604	602	701	617	0	771
Service Time	4.02	3.665	3.69	2.855	3.58	3.076	2.371
HCM Lane V/C Ratio	0	0.01	0.14	0.302	0.546	0	0.004
HCM Control Delay	9	8.7	9.6	10	15.4	8.1	7.4
HCM Lane LOS	N	A	A	A	C	N	A
HCM 95th-tile Q	0	0	0.5	1.3	3.3	0	0

HCM Signalized Intersection Capacity Analysis

8: Clawiter Rd & Breakwater Ave/SR 92 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗			↖	↗		↖↗	↖
Traffic Volume (vph)	35	86	128	108	47	143	34	356	150	206	256	35
Future Volume (vph)	35	86	128	108	47	143	34	356	150	206	256	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00		0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	0.99			1.00	1.00		1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	0.89			1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00	0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)		1836	1583	1770	1636			1855	1583		3462	1540
Flt Permitted		0.83	1.00	0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (perm)		1539	1583	1770	1636			1855	1583		3462	1540
Peak-hour factor, PHF	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83	0.88	0.88	0.88
Adj. Flow (vph)	38	92	138	144	63	191	41	429	181	234	291	40
RTOR Reduction (vph)	0	0	119	0	102	0	0	0	125	0	0	32
Lane Group Flow (vph)	0	130	19	144	152	0	0	470	56	0	525	8
Confl. Peds. (#/hr)							1					
Confl. Bikes (#/hr)												4
Turn Type	custom	NA	custom	Split	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases				4	4		2	2		6	6	
Permitted Phases	8	8	8						2			6
Actuated Green, G (s)		13.1	13.1	14.8	14.8			29.2	29.2		19.6	19.6
Effective Green, g (s)		13.1	13.1	14.8	14.8			29.2	29.2		19.6	19.6
Actuated g/C Ratio		0.14	0.14	0.16	0.16			0.31	0.31		0.21	0.21
Clearance Time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		212	218	276	255			571	488		716	318
v/s Ratio Prot				0.08	c0.09			c0.25			c0.15	
v/s Ratio Perm		c0.08	0.01						0.04			0.01
v/c Ratio		0.61	0.09	0.52	0.60			0.82	0.11		0.73	0.03
Uniform Delay, d1		38.4	35.6	36.7	37.2			30.4	23.5		35.1	29.9
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		5.2	0.2	1.8	3.7			9.3	0.1		3.9	0.0
Delay (s)		43.6	35.8	38.5	40.9			39.7	23.6		39.0	30.0
Level of Service		D	D	D	D			D	C		D	C
Approach Delay (s)		39.6			40.0			35.2			38.4	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			37.8			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			94.7			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			66.6%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 AWSC
 9: Clawiter Rd & SR 92 EB Ramps/Eden Landing Rd























Intersection	
Intersection Delay, s/veh	97.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔			↖↗			↖↗	↗
Traffic Vol, veh/h	220	11	77	2	162	116	262	242	6	65	133	283
Future Vol, veh/h	220	11	77	2	162	116	262	242	6	65	133	283
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	275	14	96	2	182	130	332	306	8	71	145	308
Number of Lanes	0	1	1	0	1	0	0	2	0	0	2	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	2
HCM Control Delay	50.8	64	192.5	35.6
HCM LOS	F	F	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	68%	0%	95%	0%	1%	59%	0%	0%
Vol Thru, %	32%	95%	5%	0%	58%	41%	100%	0%
Vol Right, %	0%	5%	0%	100%	41%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	383	127	231	77	280	109	89	283
LT Vol	262	0	220	0	2	65	0	0
Through Vol	121	121	11	0	162	44	89	0
RT Vol	0	6	0	77	116	0	0	283
Lane Flow Rate	485	161	289	96	315	119	96	308
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	1.456	0.465	0.881	0.262	0.905	0.35	0.276	0.82
Departure Headway (Hd)	10.814	10.416	12.029	10.786	11.367	11.58	11.266	10.525
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	339	346	303	335	321	313	321	348
Service Time	8.594	8.195	9.729	8.486	9.067	9.28	8.966	8.225
HCM Lane V/C Ratio	1.431	0.465	0.954	0.287	0.981	0.38	0.299	0.885
HCM Control Delay	249.1	22	62	17.3	64	20.4	18.2	47
HCM Lane LOS	F	C	F	C	F	C	C	E
HCM 95th-tile Q	25.8	2.4	8	1	8.7	1.5	1.1	7.1

HCM 2010 Signalized Intersection Summary
10: Industrial Blvd & Depot Rd























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (veh/h)	56	234	307	44	13	17	111	504	134	67	389	13
Future Volume (veh/h)	56	234	307	44	13	17	111	504	134	67	389	13
Number	7	4	14	3	8	18	1	1	16	5	12	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1624	1377	1900	1828	1900	1712	1712	1759	1759	1881	1881
Adj Flow Rate, veh/h	63	263	345	49	14	19	122	122	0	74	0	0
Adj No. of Lanes	1	1	1	0	1	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	25	17	38	2	2	2	11	11	8	8	1	1
Cap, veh/h	593	601	431	284	85	71	153	153	367	115	351	351
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.09	0.09	0.00	0.07	0.00	0.00
Sat Flow, veh/h	1115	1624	1164	402	230	191	1630	1630	1495	1675	1599	1599
Grp Volume(v), veh/h	63	263	345	82	0	0	122	122	0	74	0	0
Grp Sat Flow(s),veh/h/ln	1115	1624	1164	823	0	0	1630	1630	1495	1675	1599	1599
Q Serve(g_s), s	0.0	5.2	11.3	0.3	0.0	0.0	3.1	3.1	0.0	1.8	0.0	0.0
Cycle Q Clear(g_c), s	1.5	5.2	11.3	5.5	0.0	0.0	3.1	3.1	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	0.60		0.23	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	593	601	431	439	0	0	153	153	367	115	351	351
V/C Ratio(X)	0.11	0.44	0.80	0.19	0.00	0.00	0.80	0.80	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	768	856	614	597	0	0	401	401	1349	412	1443	1443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.9	10.1	12.0	9.1	0.0	0.0	18.9	18.9	0.0	19.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.5	5.0	0.2	0.0	0.0	9.0	9.0	0.0	6.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.3	4.1	0.7	0.0	0.0	1.8	1.8	0.0	1.0	0.0	0.0
LnGrp Delay(d),s/veh	9.0	10.6	17.0	9.3	0.0	0.0	27.9	27.9	0.0	25.3	0.0	0.0
LnGrp LOS	A	B	B	A			C	C		C		
Approach Vol, veh/h		671			82		676	676		74		
Approach Delay, s/veh		13.8			9.3		17.8	17.8		25.3		
Approach LOS		B			A		B	B		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	13.9		20.3	7.4	15.0		20.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	38.5		22.5	10.5	38.5		22.5				
Max Q Clear Time (g_c+I1), s	5.1	0.0		13.3	3.8	8.4		7.5				
Green Ext Time (p_c), s	0.1	0.0		2.3	0.1	2.0		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			15.9									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 11: Industrial Blvd & SR 92 WB Ramps/Cryer St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	33	161	35	6	12	294	631	87	19	939	96
Future Volume (veh/h)	166	33	161	35	6	12	294	631	87	19	939	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1824	1792	1900	1868	1900	1727	1814	1900	1900	1624	1776
Adj Flow Rate, veh/h	213	42	0	56	10	19	323	693	96	20	1010	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.78	0.78	0.78	0.62	0.62	0.62	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	6	0	0	0	10	5	5	0	17	7
Cap, veh/h	366	51	385	434	69	408	380	1375	190	144	929	455
Arrive On Green	0.25	0.25	0.00	0.25	0.25	0.25	0.23	0.45	0.45	0.08	0.30	0.00
Sat Flow, veh/h	1031	203	1524	1300	274	1615	1645	3038	421	1810	3085	1509
Grp Volume(v), veh/h	255	0	0	66	0	19	323	393	396	20	1010	0
Grp Sat Flow(s),veh/h/ln	1234	0	1524	1574	0	1615	1645	1723	1736	1810	1543	1509
Q Serve(g_s), s	10.8	0.0	0.0	0.0	0.0	0.6	11.8	10.1	10.2	0.6	18.9	0.0
Cycle Q Clear(g_c), s	12.8	0.0	0.0	2.0	0.0	0.6	11.8	10.1	10.2	0.6	18.9	0.0
Prop In Lane	0.84		1.00	0.85		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	417	0	385	504	0	408	380	780	786	144	929	455
V/C Ratio(X)	0.61	0.00	0.00	0.13	0.00	0.05	0.85	0.50	0.50	0.14	1.09	0.00
Avail Cap(c_a), veh/h	674	0	663	763	0	703	663	1076	1084	144	929	455
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.2	0.0	0.0	18.2	0.0	17.7	23.1	12.2	12.2	26.9	21.9	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.1	0.0	0.0	5.4	0.5	0.5	0.4	56.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.0	0.9	0.0	0.3	5.9	4.9	5.0	0.3	15.1	0.0
LnGrp Delay(d),s/veh	24.7	0.0	0.0	18.4	0.0	17.8	28.4	12.7	12.7	27.3	77.9	0.0
LnGrp LOS	C			B		B	C	B	B	C	F	
Approach Vol, veh/h		255			85			1112			1030	
Approach Delay, s/veh		24.7			18.2			17.3			76.9	
Approach LOS		C			B			B			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	32.9		20.4	19.0	23.4		20.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	39.2		27.3	25.3	18.9		27.3				
Max Q Clear Time (g_c+I1), s	2.6	12.2		14.8	13.8	20.9		4.0				
Green Ext Time (p_c), s	0.0	5.3		1.1	0.8	0.0		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			42.8									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary

12: Industrial Blvd & SR 92 EB Ramps/Sleepy Hollow Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	84	793	0	15	46	80	761	17	71	802	254
Future Volume (veh/h)	214	84	793	0	15	46	80	761	17	71	802	254
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1674	1776	1900	1900	1827	1462	1776	1667	1792	1727	1624
Adj Flow Rate, veh/h	221	87	818	0	19	57	89	846	19	76	853	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	25	25	7	0	0	4	30	7	14	6	10	17
Cap, veh/h	429	133	630	0	651	532	104	1136	477	109	1069	450
Arrive On Green	0.34	0.34	0.34	0.00	0.34	0.34	0.07	0.34	0.34	0.06	0.33	0.00
Sat Flow, veh/h	908	389	1509	0	1900	1553	1392	3374	1417	1707	3282	1380
Grp Volume(v), veh/h	308	0	818	0	19	57	89	846	19	76	853	0
Grp Sat Flow(s),veh/h/ln	1297	0	1509	0	1900	1553	1392	1687	1417	1707	1641	1380
Q Serve(g_s), s	10.4	0.0	18.0	0.0	0.3	1.3	3.3	11.7	0.5	2.3	12.4	0.0
Cycle Q Clear(g_c), s	10.7	0.0	18.0	0.0	0.3	1.3	3.3	11.7	0.5	2.3	12.4	0.0
Prop In Lane	0.72		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	562	0	630	0	651	532	104	1136	477	109	1069	450
V/C Ratio(X)	0.55	0.00	1.30	0.00	0.03	0.11	0.86	0.74	0.04	0.70	0.80	0.00
Avail Cap(c_a), veh/h	562	0	630	0	651	532	278	1509	634	162	1124	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.8	0.0	15.3	0.0	11.5	11.8	24.0	15.4	11.7	24.1	16.1	0.0
Incr Delay (d2), s/veh	1.1	0.0	145.9	0.0	0.0	0.1	17.5	1.4	0.0	7.8	4.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	34.6	0.0	0.2	0.6	1.8	5.6	0.2	1.3	6.2	0.0
LnGrp Delay(d),s/veh	16.0	0.0	161.2	0.0	11.5	11.9	41.6	16.8	11.7	31.9	20.1	0.0
LnGrp LOS	B		F		B	B	D	B	B	C	C	
Approach Vol, veh/h		1126			76			954			929	
Approach Delay, s/veh		121.5			11.8			19.1			21.1	
Approach LOS		F			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	22.2		22.5	8.4	21.6		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	4.3	13.7		20.0	5.3	14.4		3.3				
Green Ext Time (p_c), s	0.0	4.0		0.0	0.1	1.8		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			56.9									
HCM 2010 LOS			E									

HCM Signalized Intersection Capacity Analysis

13: Hesperian Blvd & Depot Rd/Cathy Wy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱		↰	↑↑↑		↰	↑↑↑	
Traffic Volume (vph)	199	95	331	49	37	37	226	1406	127	35	898	107
Future Volume (vph)	199	95	331	49	37	37	226	1406	127	35	898	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.92	1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1762	1424	1770	1710		1787	4989		1805	4929	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1762	1424	1770	1710		1787	4989		1805	4929	
Peak-hour factor, PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	280	134	466	56	42	42	276	1715	155	43	1095	130
RTOR Reduction (vph)	0	0	382	0	26	0	0	5	0	0	8	0
Lane Group Flow (vph)	204	210	84	56	58	0	276	1865	0	43	1217	0
Confl. Peds. (#/hr)			28	28					12			14
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	4%	2%	1%	3%	1%	2%	3%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases			8									
Actuated Green, G (s)	27.4	27.4	27.4	10.7	10.7		29.1	90.5		8.4	69.8	
Effective Green, g (s)	27.4	27.4	27.4	10.7	10.7		29.1	90.5		8.4	69.8	
Actuated g/C Ratio	0.18	0.18	0.18	0.07	0.07		0.19	0.58		0.05	0.45	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	303	311	251	122	118		335	2912		97	2219	
v/s Ratio Prot	0.12	c0.12		0.03	c0.03		c0.15	c0.37		0.02	c0.25	
v/s Ratio Perm			0.06									
v/c Ratio	0.67	0.68	0.33	0.46	0.49		0.82	0.64		0.44	0.55	
Uniform Delay, d1	59.6	59.6	55.8	69.4	69.5		60.5	21.4		71.0	31.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.8	5.7	0.8	2.7	3.2		15.0	1.1		3.2	1.0	
Delay (s)	65.4	65.3	56.6	72.1	72.7		75.5	22.5		74.2	32.1	
Level of Service	E	E	E	E	E		E	C		E	C	
Approach Delay (s)		60.7			72.5			29.3			33.5	
Approach LOS		E			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			38.1				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			155.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			60.4%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗		↵	↕	↗	↵	↕	↗
Traffic Vol, veh/h	3	42	17	321	79	179	24	23	18	77	17	2
Future Vol, veh/h	3	42	17	321	79	179	24	23	18	77	17	2
Peak Hour Factor	0.52	0.52	0.52	0.80	0.80	0.80	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	6	81	33	401	99	224	31	29	23	89	20	2
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	10.2	16.9	10.4	11.7
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	45%	0%	100%	13%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	55%	0%	0%	87%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	23	18	3	28	31	321	53	205	77	17
LT Vol	24	0	0	3	0	0	321	0	0	77	0
Through Vol	0	23	0	0	28	14	0	53	26	0	17
RT Vol	0	0	18	0	0	17	0	0	179	0	0
Lane Flow Rate	31	29	23	6	54	60	401	66	257	89	20
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.066	0.059	0.042	0.012	0.103	0.107	0.697	0.105	0.367	0.187	0.039
Departure Headway (Hd)	7.712	7.212	6.512	7.369	6.869	6.485	6.254	5.754	5.143	7.625	7.125
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	465	497	549	486	522	553	578	624	701	471	503
Service Time	5.456	4.956	4.256	5.111	4.611	4.227	3.976	3.476	2.866	5.367	4.867
HCM Lane V/C Ratio	0.067	0.058	0.042	0.012	0.103	0.108	0.694	0.106	0.367	0.189	0.04
HCM Control Delay	11	10.4	9.5	10.2	10.4	10	22.1	9.2	10.8	12.1	10.2
HCM Lane LOS	B	B	A	B	B	A	C	A	B	B	B
HCM 95th-tile Q	0.2	0.2	0.1	0	0.3	0.4	5.5	0.4	1.7	0.7	0.1

HCM Signalized Intersection Capacity Analysis
2: Winton Ave & Corsair Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑			↑↑			↑		↖↗		↗
Traffic Volume (vph)	7	351	0	13	1046	252	0	1	4	91	0	7
Future Volume (vph)	7	351	0	13	1046	252	0	1	4	91	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Lane Util. Factor	1.00	0.95			0.95			1.00		0.97		1.00
Frbp, ped/bikes	1.00	1.00			1.00			1.00		1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		1.00
Frt	1.00	1.00			0.97			0.89		1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00		0.95		1.00
Satd. Flow (prot)	1611	3223			3115			1506		3127		1420
Flt Permitted	0.15	1.00			0.95			1.00		0.95		1.00
Satd. Flow (perm)	257	3223			2962			1506		3127		1420
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.42	0.42	0.42	0.84	0.84	0.84
Adj. Flow (vph)	8	394	0	14	1113	268	0	2	10	108	0	8
RTOR Reduction (vph)	0	0	0	0	16	0	0	10	0	0	0	7
Lane Group Flow (vph)	8	394	0	0	1379	0	0	2	0	108	0	1
Confl. Peds. (#/hr)	1		6	6			1					1
Confl. Bikes (#/hr)							2					
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Perm	NA		Perm	NA			NA		Prot		Perm
Protected Phases		2			6			3		4		
Permitted Phases	2			6								4
Actuated Green, G (s)	45.4	45.4			45.4			1.0		6.2		6.2
Effective Green, g (s)	45.4	45.4			45.4			1.0		6.2		6.2
Actuated g/C Ratio	0.69	0.69			0.69			0.02		0.09		0.09
Clearance Time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0		3.0
Lane Grp Cap (vph)	176	2213			2034			22		293		133
v/s Ratio Prot		0.12						c0.00		c0.03		
v/s Ratio Perm	0.03				c0.47							0.00
v/c Ratio	0.05	0.18			0.68			0.10		0.37		0.01
Uniform Delay, d1	3.3	3.7			6.1			32.1		28.1		27.2
Progression Factor	1.00	1.00			1.00			1.00		1.00		1.00
Incremental Delay, d2	0.1	0.0			0.9			1.9		0.8		0.0
Delay (s)	3.5	3.7			7.0			34.0		28.9		27.2
Level of Service	A	A			A			C		C		C
Approach Delay (s)		3.7			7.0			34.0			28.8	
Approach LOS		A			A			C			C	

Intersection Summary

HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			























HCM Signalized Intersection Capacity Analysis

3: Clawiter Rd & Winton Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	357	161	1007	1131	1	156	0	231	0	0	0
Future Volume (vph)	1	357	161	1007	1131	1	156	0	231	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5			
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95	1.00			
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99			
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Frt	1.00	0.95		1.00	1.00		1.00	1.00	0.85			
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00			
Satd. Flow (prot)	1612	3036		3127	3223		1531	1531	1422			
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00			
Satd. Flow (perm)	1612	3036		3127	3223		1220	1220	1422			
Peak-hour factor, PHF	0.87	0.87	0.87	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	1	410	185	1228	1379	1	171	0	254	0	0	0
RTOR Reduction (vph)	0	45	0	0	0	0	0	0	220	0	0	0
Lane Group Flow (vph)	1	550	0	1228	1380	0	85	86	34	0	0	0
Confl. Peds. (#/hr)			6			2						
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm		
Protected Phases	5	2		1	6			4				8
Permitted Phases							4		4	8		
Actuated Green, G (s)	0.8	26.1		40.7	66.0		12.2	12.2	12.2			
Effective Green, g (s)	0.8	26.1		40.7	66.0		12.2	12.2	12.2			
Actuated g/C Ratio	0.01	0.28		0.44	0.71		0.13	0.13	0.13			
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	13	856		1375	2299		160	160	187			
v/s Ratio Prot	0.00	0.18		c0.39	c0.43							
v/s Ratio Perm							0.07	c0.07	0.02			
v/c Ratio	0.08	0.64		0.89	0.60		0.53	0.54	0.18			
Uniform Delay, d1	45.5	29.1		23.9	6.6		37.5	37.5	35.7			
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.5	1.7		7.8	0.4		3.4	3.4	0.5			
Delay (s)	48.0	30.8		31.7	7.1		40.8	41.0	36.2			
Level of Service	D	C		C	A		D	D	D			
Approach Delay (s)		30.8			18.7			38.1			0.0	
Approach LOS		C			B			D			A	
Intersection Summary												
HCM 2000 Control Delay			22.9				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			92.5				Sum of lost time (s)				13.5	
Intersection Capacity Utilization			59.5%				ICU Level of Service				B	
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 Signalized Intersection Summary
4: Hesperian Blvd & Winton Ave



















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	373	38	204	1066	169	58	675	150	118	1112	1134
Future Volume (veh/h)	220	373	38	204	1066	169	58	675	150	118	1112	1134
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1696	1696	1900	1696	1696	1696	1696	1696	1696
Adj Flow Rate, veh/h	242	410	42	229	1198	190	66	767	170	139	1308	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	300	1413	142	291	1318	209	82	1591	492	195	1644	512
Arrive On Green	0.10	0.33	0.33	0.09	0.33	0.33	0.05	0.34	0.34	0.06	0.35	0.00
Sat Flow, veh/h	3134	4271	430	3134	4020	637	1616	4631	1432	3134	4631	1442
Grp Volume(v), veh/h	242	294	158	229	920	468	66	767	170	139	1308	0
Grp Sat Flow(s),veh/h/ln	1567	1544	1614	1567	1544	1570	1616	1544	1432	1567	1544	1442
Q Serve(g_s), s	8.0	7.5	7.6	7.6	30.1	30.1	4.3	13.8	9.3	4.6	26.8	0.0
Cycle Q Clear(g_c), s	8.0	7.5	7.6	7.6	30.1	30.1	4.3	13.8	9.3	4.6	26.8	0.0
Prop In Lane	1.00		0.27	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	300	1021	534	291	1013	515	82	1591	492	195	1644	512
V/C Ratio(X)	0.81	0.29	0.30	0.79	0.91	0.91	0.80	0.48	0.35	0.71	0.80	0.00
Avail Cap(c_a), veh/h	341	1021	534	401	1038	527	115	1591	492	276	1644	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.8	26.1	26.2	46.9	34.0	34.0	49.6	27.3	25.8	48.6	30.6	0.0
Incr Delay (d2), s/veh	12.0	0.2	0.3	7.0	11.4	19.4	23.5	1.0	1.9	4.9	4.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	3.2	3.5	3.6	14.4	15.8	2.4	6.0	4.0	2.1	12.0	0.0
LnGrp Delay(d),s/veh	58.8	26.3	26.5	53.8	45.4	53.4	73.1	28.3	27.7	53.5	34.7	0.0
LnGrp LOS	E	C	C	D	D	D	E	C	C	D	C	
Approach Vol, veh/h		694			1617			1003			1447	
Approach Delay, s/veh		37.7			48.9			31.2			36.5	
Approach LOS		D			D			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	40.8	14.3	39.4	9.9	42.0	14.6	39.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.3	35.7	13.5	33.5	7.5	37.5	11.5	35.5				
Max Q Clear Time (g_c+I1), s	6.6	15.8	9.6	9.6	6.3	28.8	10.0	32.1				
Green Ext Time (p_c), s	0.1	6.0	0.3	3.0	0.0	5.5	0.1	2.5				
Intersection Summary												
HCM 2010 Ctrl Delay				39.8								
HCM 2010 LOS				D								

HCM Signalized Intersection Capacity Analysis
5: Southland Dr & Winton Ave



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖↗	↑↑		↖↗
Traffic Volume (vph)	967	28	914	1639	0	325
Future Volume (vph)	967	28	914	1639	0	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frbp, ped/bikes	1.00		1.00	1.00		0.98
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4612		3127	3223		2493
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4612		3127	3223		2493
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1051	30	993	1782	0	353
RTOR Reduction (vph)	3	0	0	0	0	114
Lane Group Flow (vph)	1078	0	993	1782	0	239
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	NA		Prot	NA		Perm
Protected Phases	2		4	6		
Permitted Phases						8
Actuated Green, G (s)	65.7		38.5	65.7		38.5
Effective Green, g (s)	65.7		38.5	65.7		38.5
Actuated g/C Ratio	0.58		0.34	0.58		0.34
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2676		1063	1870		847
v/s Ratio Prot	0.23		c0.32	c0.55		
v/s Ratio Perm						0.10
v/c Ratio	0.40		0.93	0.95		0.28
Uniform Delay, d1	13.0		36.1	22.3		27.3
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1		14.4	11.6		0.2
Delay (s)	13.1		50.5	33.9		27.5
Level of Service	B		D	C		C
Approach Delay (s)	13.1			39.8	27.5	
Approach LOS	B			D	C	
Intersection Summary						
HCM 2000 Control Delay			31.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.95			
Actuated Cycle Length (s)			113.2		Sum of lost time (s)	9.0
Intersection Capacity Utilization			60.5%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
6: Clawiter Rd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	107	32	92	264	9	25	64	35	6	603	232
Future Volume (veh/h)	49	107	32	92	264	9	25	64	35	6	603	232
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	56	123	37	110	314	11	33	84	46	6	635	244
Adj No. of Lanes	0	2	0	0	2	1	0	2	0	0	2	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	109	249	78	195	594	348	204	463	274	91	1159	530
Arrive On Green	0.12	0.12	0.12	0.22	0.22	0.22	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	894	2041	635	886	2702	1583	241	1384	818	9	3460	1583
Grp Volume(v), veh/h	114	0	102	226	198	11	76	0	87	344	297	244
Grp Sat Flow(s),veh/h/ln	1818	0	1751	1818	1770	1583	892	0	1551	1859	1610	1583
Q Serve(g_s), s	2.5	0.0	2.3	4.6	4.1	0.2	0.3	0.0	1.7	0.0	6.3	5.1
Cycle Q Clear(g_c), s	2.5	0.0	2.3	4.6	4.1	0.2	6.6	0.0	1.7	6.3	6.3	5.1
Prop In Lane	0.49		0.36	0.49		1.00	0.44		0.53	0.02		1.00
Lane Grp Cap(c), veh/h	222	0	214	400	389	348	422	0	519	710	539	530
V/C Ratio(X)	0.51	0.00	0.48	0.56	0.51	0.03	0.18	0.00	0.17	0.48	0.55	0.46
Avail Cap(c_a), veh/h	936	0	901	1197	1165	1042	1132	0	1615	2015	1677	1649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	17.1	14.5	14.3	12.8	9.8	0.0	9.8	11.3	11.3	10.9
Incr Delay (d2), s/veh	1.8	0.0	1.6	1.3	1.0	0.0	0.2	0.0	0.2	0.5	0.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.2	2.5	2.1	0.1	0.6	0.0	0.7	3.3	2.9	2.3
LnGrp Delay(d),s/veh	19.0	0.0	18.7	15.8	15.4	12.8	10.0	0.0	9.9	11.8	12.2	11.5
LnGrp LOS	B		B	B	B	B	B		A	B	B	B
Approach Vol, veh/h		216			435			163			885	
Approach Delay, s/veh		18.9			15.5			10.0			11.9	
Approach LOS		B			B			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.5		9.6		18.5		13.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		43.5		21.5		43.5		27.5				
Max Q Clear Time (g_c+I1), s		8.6		4.5		8.3		6.6				
Green Ext Time (p_c), s		1.3		1.1		5.7		2.6				
Intersection Summary												
HCM 2010 Ctrl Delay			13.5									
HCM 2010 LOS			B									

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	4	12	0	2	26	255	1	0	4	133	0	13
Future Vol, veh/h	4	12	0	2	26	255	1	0	4	133	0	13
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.63	0.63	0.63	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	16	0	2	31	300	2	0	6	146	0	14
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	1
HCM Control Delay	8.3	10.2	8.1	10.2
HCM LOS	A	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	25%	1%	100%	0%	0%
Vol Thru, %	0%	0%	75%	9%	0%	100%	0%
Vol Right, %	0%	100%	0%	90%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	4	16	283	133	0	13
LT Vol	1	0	4	2	133	0	0
Through Vol	0	0	12	26	0	0	0
RT Vol	0	4	0	255	0	0	13
Lane Flow Rate	2	6	21	333	146	0	14
Geometry Grp	8	8	7	7	7	7	7
Degree of Util (X)	0.003	0.009	0.032	0.408	0.238	0	0.018
Departure Headway (Hd)	6.331	5.118	5.435	4.416	5.872	5.367	4.661
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	563	696	659	816	611	0	766
Service Time	4.089	2.875	3.168	2.135	3.614	3.109	2.403
HCM Lane V/C Ratio	0.004	0.009	0.032	0.408	0.239	0	0.018
HCM Control Delay	9.1	7.9	8.3	10.2	10.5	8.1	7.5
HCM Lane LOS	A	A	A	B	B	N	A
HCM 95th-tile Q	0	0	0.1	2	0.9	0	0.1

HCM Signalized Intersection Capacity Analysis
8: Clawiter Rd & Breakwater Ave/SR 92 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗			↖	↗		↖↗	↖↗
Traffic Volume (vph)	16	78	75	244	126	139	111	221	104	336	225	73
Future Volume (vph)	16	78	75	244	126	139	111	221	104	336	225	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00		0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	0.99			1.00	1.00		1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	0.92			1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00	0.95	1.00			0.98	1.00		0.97	1.00
Satd. Flow (prot)		1847	1583	1770	1704			1832	1583		3436	1541
Flt Permitted		0.89	1.00	0.95	1.00			0.98	1.00		0.97	1.00
Satd. Flow (perm)		1649	1583	1770	1704			1832	1583		3436	1541
Peak-hour factor, PHF	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83	0.88	0.88	0.88
Adj. Flow (vph)	17	84	81	325	168	185	134	266	125	382	256	83
RTOR Reduction (vph)	0	0	72	0	34	0	0	0	92	0	0	65
Lane Group Flow (vph)	0	101	9	325	319	0	0	400	33	0	638	18
Confl. Peds. (#/hr)						1						
Confl. Bikes (#/hr)												4
Turn Type	custom	NA	custom	Split	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases				4	4		2	2		6	6	
Permitted Phases	8	8	8						2			6
Actuated Green, G (s)		11.6	11.6	22.7	22.7			26.5	26.5		22.6	22.6
Effective Green, g (s)		11.6	11.6	22.7	22.7			26.5	26.5		22.6	22.6
Actuated g/C Ratio		0.11	0.11	0.22	0.22			0.26	0.26		0.22	0.22
Clearance Time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		188	181	396	381			478	413		765	343
v/s Ratio Prot				0.18	c0.19			c0.22			c0.19	
v/s Ratio Perm		c0.06	0.01						0.02			0.01
v/c Ratio		0.54	0.05	0.82	0.84			0.84	0.08		0.97dl	0.05
Uniform Delay, d1		42.4	40.0	37.4	37.6			35.4	28.2		37.6	31.0
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		2.9	0.1	12.8	14.7			12.1	0.1		7.8	0.1
Delay (s)		45.3	40.1	50.2	52.3			47.5	28.3		45.4	31.1
Level of Service		D	D	D	D			D	C		D	C
Approach Delay (s)		43.0			51.3			42.9			43.8	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			45.9			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			101.4			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			67.8%			ICU Level of Service				C		
Analysis Period (min)			15									
dl Defacto Left Lane. Recode with 1 though lane as a left lane.												
c Critical Lane Group												























Intersection	
Intersection Delay, s/veh	23.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔			↖↗			↖↗	↗
Traffic Vol, veh/h	190	51	130	5	66	37	81	135	7	167	337	137
Future Vol, veh/h	190	51	130	5	66	37	81	135	7	167	337	137
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	238	64	163	6	74	42	103	171	9	182	366	149
Number of Lanes	0	1	1	0	1	0	0	2	0	0	2	1






















Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	2
HCM Control Delay	27.6	16.8	19	23.2
HCM LOS	D	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	55%	0%	79%	0%	5%	60%	0%	0%
Vol Thru, %	45%	91%	21%	0%	61%	40%	100%	0%
Vol Right, %	0%	9%	0%	100%	34%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	149	75	241	130	108	279	225	137
LT Vol	81	0	190	0	5	167	0	0
Through Vol	68	68	51	0	66	112	225	0
RT Vol	0	7	0	130	37	0	0	137
Lane Flow Rate	188	94	301	162	121	304	244	149
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.494	0.238	0.752	0.355	0.322	0.716	0.555	0.308
Departure Headway (Hd)	9.455	9.102	8.984	7.864	9.559	8.484	8.176	7.455
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	382	394	404	458	376	428	442	482
Service Time	7.21	6.857	6.73	5.61	7.319	6.228	5.92	5.198
HCM Lane V/C Ratio	0.492	0.239	0.745	0.354	0.322	0.71	0.552	0.309
HCM Control Delay	21.1	14.7	34.5	14.9	16.8	30	20.7	13.5
HCM Lane LOS	C	B	D	B	C	D	C	B
HCM 95th-tile Q	2.6	0.9	6.1	1.6	1.4	5.5	3.3	1.3























HCM 2010 Signalized Intersection Summary
10: Industrial Blvd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (veh/h)	13	24	120	112	90	65	289	393	98	41	536	27
Future Volume (veh/h)	13	24	120	112	90	65	289	393	98	41	536	27
Number	7	4	14	3	8	18	1	1	16	5	12	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1624	1377	1900	1841	1900	1712	1712	1759	1759	1881	1881
Adj Flow Rate, veh/h	15	27	135	124	100	72	318	318	0	45	0	0
Adj No. of Lanes	1	1	1	0	1	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	25	17	38	2	2	2	11	11	8	8	1	1
Cap, veh/h	544	472	338	306	188	107	392	392	342	87	64	64
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.24	0.24	0.00	0.05	0.00	0.00
Sat Flow, veh/h	983	1624	1162	495	647	367	1630	1630	1495	1675	1599	1599
Grp Volume(v), veh/h	15	27	135	296	0	0	318	318	0	45	0	0
Grp Sat Flow(s),veh/h/ln	983	1624	1162	1509	0	0	1630	1630	1495	1675	1599	1599
Q Serve(g_s), s	0.0	0.4	2.9	3.6	0.0	0.0	5.8	5.8	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.4	2.9	5.3	0.0	0.0	5.8	5.8	0.0	0.8	0.0	0.0
Prop In Lane	1.00		1.00	0.42		0.24	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	544	472	338	601	0	0	392	392	342	87	64	64
V/C Ratio(X)	0.03	0.06	0.40	0.49	0.00	0.00	0.81	0.81	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	961	1161	831	1217	0	0	544	544	1829	559	1956	1956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.0	8.1	9.0	9.7	0.0	0.0	11.3	11.3	0.0	14.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.8	0.6	0.0	0.0	6.4	6.4	0.0	4.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	1.0	2.3	0.0	0.0	3.3	3.3	0.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	8.0	8.1	9.7	10.3	0.0	0.0	17.7	17.7	0.0	19.3	0.0	0.0
LnGrp LOS	A	A	A	B			B	B		B		
Approach Vol, veh/h		177			296		750	750		45		
Approach Delay, s/veh		9.3			10.3		14.1	14.1		19.3		
Approach LOS		A			B		B	B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.1	5.8		13.6	6.1	11.7		13.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	38.5		22.5	10.5	38.5		22.5				
Max Q Clear Time (g_c+I1), s	7.8	0.0		4.9	2.8	5.6		7.3				
Green Ext Time (p_c), s	0.3	0.0		0.6	0.0	1.5		1.7				
Intersection Summary												
HCM 2010 Ctrl Delay			12.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 11: Industrial Blvd & SR 92 WB Ramps/Cryer St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	6	169	139	38	20	475	887	101	12	632	169
Future Volume (veh/h)	207	6	169	139	38	20	475	887	101	12	632	169
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1812	1792	1900	1871	1900	1727	1813	1900	1900	1624	1776
Adj Flow Rate, veh/h	265	8	0	224	61	32	522	975	111	13	680	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.78	0.78	0.78	0.62	0.62	0.62	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	6	0	0	0	10	5	5	0	17	7
Cap, veh/h	323	7	489	530	124	519	490	1437	164	106	686	336
Arrive On Green	0.32	0.32	0.00	0.32	0.32	0.32	0.30	0.46	0.46	0.06	0.22	0.00
Sat Flow, veh/h	745	22	1524	1415	385	1615	1645	3115	355	1810	3085	1509
Grp Volume(v), veh/h	273	0	0	285	0	32	522	539	547	13	680	0
Grp Sat Flow(s),veh/h/ln	767	0	1524	1800	0	1615	1645	1722	1747	1810	1543	1509
Q Serve(g_s), s	16.4	0.0	0.0	0.0	0.0	1.2	25.3	20.9	20.9	0.6	18.7	0.0
Cycle Q Clear(g_c), s	27.3	0.0	0.0	10.9	0.0	1.2	25.3	20.9	20.9	0.6	18.7	0.0
Prop In Lane	0.97		1.00	0.79		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	330	0	489	654	0	519	490	794	806	106	686	336
V/C Ratio(X)	0.83	0.00	0.00	0.44	0.00	0.06	1.07	0.68	0.68	0.12	0.99	0.00
Avail Cap(c_a), veh/h	330	0	489	654	0	519	490	794	806	106	686	336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.1	0.0	0.0	23.3	0.0	20.0	29.9	18.0	18.0	37.9	33.0	0.0
Incr Delay (d2), s/veh	15.9	0.0	0.0	0.5	0.0	0.0	59.4	2.3	2.3	0.5	32.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.0	5.5	0.0	0.5	19.5	10.4	10.5	0.3	11.0	0.0
LnGrp Delay(d),s/veh	50.9	0.0	0.0	23.7	0.0	20.0	89.3	20.3	20.3	38.4	65.0	0.0
LnGrp LOS	D			C		C	F	C	C	D	E	
Approach Vol, veh/h		273			317			1608			693	
Approach Delay, s/veh		50.9			23.4			42.7			64.5	
Approach LOS		D			C			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	43.7		31.8	29.8	23.4		31.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	39.2		27.3	25.3	18.9		27.3				
Max Q Clear Time (g_c+I1), s	2.6	22.9		29.3	27.3	20.7		12.9				
Green Ext Time (p_c), s	0.0	6.5		0.0	0.0	0.0		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			46.6									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 12: Industrial Blvd & SR 92 EB Ramps/Sleepy Hollow Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	4	409	17	54	157	169	1188	7	55	704	192
Future Volume (veh/h)	123	4	409	17	54	157	169	1188	7	55	704	192
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1735	1776	1900	1900	1827	1462	1776	1667	1792	1727	1624
Adj Flow Rate, veh/h	127	4	422	21	67	194	188	1320	8	59	749	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	25	25	7	0	0	4	30	7	14	6	10	17
Cap, veh/h	114	2	678	72	179	451	221	1486	624	88	1093	460
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.16	0.44	0.44	0.05	0.33	0.00
Sat Flow, veh/h	0	6	1509	0	616	1553	1392	3374	1417	1707	3282	1380
Grp Volume(v), veh/h	131	0	422	88	0	194	188	1320	8	59	749	0
Grp Sat Flow(s),veh/h/ln	6	0	1509	616	0	1553	1392	1687	1417	1707	1641	1380
Q Serve(g_s), s	0.0	0.0	13.3	0.0	0.0	6.3	8.1	22.3	0.2	2.1	12.2	0.0
Cycle Q Clear(g_c), s	18.0	0.0	13.3	18.0	0.0	6.3	8.1	22.3	0.2	2.1	12.2	0.0
Prop In Lane	0.97		1.00	0.24		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	0	678	251	0	451	221	1486	624	88	1093	460
V/C Ratio(X)	1.13	0.00	0.62	0.35	0.00	0.43	0.85	0.89	0.01	0.67	0.69	0.00
Avail Cap(c_a), veh/h	116	0	678	251	0	451	281	1551	651	138	1111	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.7	0.0	13.1	17.6	0.0	17.8	25.4	15.9	9.8	28.9	17.9	0.0
Incr Delay (d2), s/veh	122.2	0.0	1.8	0.8	0.0	0.7	17.6	6.5	0.0	8.6	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	5.7	1.2	0.0	2.8	4.2	11.6	0.1	1.2	5.8	0.0
LnGrp Delay(d),s/veh	152.9	0.0	14.8	18.4	0.0	18.5	42.9	22.5	9.8	37.5	19.6	0.0
LnGrp LOS	F		B	B		B	D	C	A	D	B	
Approach Vol, veh/h		553			282			1516			808	
Approach Delay, s/veh		47.5			18.5			24.9			20.9	
Approach LOS		D			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	31.8		22.5	14.4	25.1		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	28.5		18.0	12.5	21.0		18.0				
Max Q Clear Time (g_c+I1), s	4.1	24.3		20.0	10.1	14.2		20.0				
Green Ext Time (p_c), s	0.0	3.0		0.0	0.1	2.7		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			27.3									
HCM 2010 LOS			C									

HCM Signalized Intersection Capacity Analysis
13: Hesperian Blvd & Depot Rd/Cathy Wy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (vph)	166	79	407	160	152	33	478	857	83	34	1173	133
Future Volume (vph)	166	79	407	160	152	33	478	857	83	34	1173	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.98	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1762	1428	1770	1819		1787	4983		1805	4935	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1762	1428	1770	1819		1787	4983		1805	4935	
Peak-hour factor, PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	234	111	573	182	173	38	583	1045	101	41	1430	162
RTOR Reduction (vph)	0	0	436	0	5	0	0	7	0	0	9	0
Lane Group Flow (vph)	171	174	137	182	206	0	583	1139	0	41	1583	0
Confl. Peds. (#/hr)			28	28					12			14
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	4%	2%	1%	3%	1%	2%	3%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases			8									
Actuated Green, G (s)	19.6	19.6	19.6	18.1	18.1		47.6	87.2		7.1	46.7	
Effective Green, g (s)	19.6	19.6	19.6	18.1	18.1		47.6	87.2		7.1	46.7	
Actuated g/C Ratio	0.13	0.13	0.13	0.12	0.12		0.32	0.58		0.05	0.31	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	224	230	186	213	219		567	2896		85	1536	
v/s Ratio Prot	c0.10	0.10		0.10	c0.11		c0.33	0.23		0.02	c0.32	
v/s Ratio Perm			0.10									
v/c Ratio	0.76	0.76	0.74	0.85	0.94		1.03	0.39		0.48	1.03	
Uniform Delay, d1	63.0	62.9	62.7	64.7	65.4		51.2	17.0		69.7	51.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.3	13.2	14.2	26.8	43.6		45.2	0.4		4.3	31.2	
Delay (s)	77.2	76.1	77.0	91.4	109.0		96.4	17.4		73.9	82.9	
Level of Service	E	E	E	F	F		F	B		E	F	
Approach Delay (s)		76.9			100.8			44.1			82.6	
Approach LOS		E			F			D			F	

Intersection Summary

HCM 2000 Control Delay	68.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗		↵	↕	↗	↵	↕	↗
Traffic Vol, veh/h	2	127	20	57	57	54	19	21	104	169	28	5
Future Vol, veh/h	2	127	20	57	57	54	19	21	104	169	28	5
Peak Hour Factor	0.52	0.52	0.52	0.80	0.80	0.80	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	4	244	38	71	71	68	24	27	133	194	32	6
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	11.6	10.6	10.6	13.7
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	68%	0%	100%	26%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	32%	0%	0%	74%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	19	21	104	2	85	62	57	38	73	169	28
LT Vol	19	0	0	2	0	0	57	0	0	169	0
Through Vol	0	21	0	0	85	42	0	38	19	0	28
RT Vol	0	0	104	0	0	20	0	0	54	0	0
Lane Flow Rate	24	27	133	4	163	120	71	48	91	194	32
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.05	0.051	0.229	0.008	0.299	0.213	0.144	0.089	0.159	0.388	0.06
Departure Headway (Hd)	7.372	6.872	6.172	7.116	6.616	6.391	7.279	6.779	6.261	7.193	6.693
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	485	520	580	502	542	560	492	527	570	499	534
Service Time	5.134	4.634	3.934	4.874	4.374	4.149	5.042	4.542	4.025	4.953	4.453
HCM Lane V/C Ratio	0.049	0.052	0.229	0.008	0.301	0.214	0.144	0.091	0.16	0.389	0.06
HCM Control Delay	10.5	10	10.8	9.9	12.2	10.9	11.3	10.2	10.2	14.5	9.9
HCM Lane LOS	B	A	B	A	B	B	B	B	B	B	A
HCM 95th-tile Q	0.2	0.2	0.9	0	1.2	0.8	0.5	0.3	0.6	1.8	0.2

HCM Signalized Intersection Capacity Analysis
2: Winton Ave & Corsair Blvd

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑			↑		↘↘		↗
Traffic Volume (vph)	5	1056	1	2	329	58	1	0	15	269	0	3
Future Volume (vph)	5	1056	1	2	329	58	1	0	15	269	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Lane Util. Factor	1.00	0.95			0.95			1.00		0.97		1.00
Frbp, ped/bikes	1.00	1.00			1.00			1.00		1.00		0.99
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		1.00
Frt	1.00	1.00			0.98			0.87		1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00		0.95		1.00
Satd. Flow (prot)	1610	3223			3139			1476		3127		1422
Flt Permitted	0.51	1.00			0.95			1.00		0.95		1.00
Satd. Flow (perm)	864	3223			2986			1476		3127		1422
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.42	0.42	0.42	0.84	0.84	0.84
Adj. Flow (vph)	6	1187	1	2	350	62	2	0	36	320	0	4
RTOR Reduction (vph)	0	0	0	0	17	0	0	37	0	0	0	3
Lane Group Flow (vph)	6	1188	0	0	397	0	0	1	0	320	0	1
Confl. Peds. (#/hr)	1		6	6			1					1
Confl. Bikes (#/hr)							2					
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot		Perm
Protected Phases		2			6			3		4		
Permitted Phases	2			6			3					4
Actuated Green, G (s)	26.0	26.0			26.0			1.8		8.8		8.8
Effective Green, g (s)	26.0	26.0			26.0			1.8		8.8		8.8
Actuated g/C Ratio	0.52	0.52			0.52			0.04		0.18		0.18
Clearance Time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0		3.0
Lane Grp Cap (vph)	448	1672			1549			53		549		249
v/s Ratio Prot		c0.37								c0.10		
v/s Ratio Perm	0.01				0.13			0.00				0.00
v/c Ratio	0.01	0.71			0.26			0.03		0.58		0.00
Uniform Delay, d1	5.8	9.2			6.7			23.3		19.0		17.0
Progression Factor	1.00	1.00			1.00			1.00		1.00		1.00
Incremental Delay, d2	0.0	1.4			0.1			0.2		1.6		0.0
Delay (s)	5.8	10.6			6.8			23.5		20.5		17.0
Level of Service	A	B			A			C		C		B
Approach Delay (s)		10.6			6.8			23.5			20.5	
Approach LOS		B			A			C			C	























Intersection Summary

HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	50.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

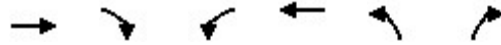
HCM Signalized Intersection Capacity Analysis
3: Clawiter Rd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1069	185	276	297	0	104	0	638	3	2	0
Future Volume (vph)	1	1069	185	276	297	0	104	0	638	3	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1612	3133		3127	3223		1531	1531	1422	1612	1696	
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00	0.72	1.00	
Satd. Flow (perm)	1612	3133		3127	3223		1219	1219	1422	1218	1696	
Peak-hour factor, PHF	0.87	0.87	0.87	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	1	1229	213	337	362	0	114	0	701	3	2	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	570	0	0	0
Lane Group Flow (vph)	1	1435	0	337	362	0	57	57	131	3	2	0
Confl. Peds. (#/hr)			6			2						
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4				8
Permitted Phases							4		4		8	
Actuated Green, G (s)	1.0	63.5		17.5	80.0		15.5	15.5	15.5	15.5	15.5	
Effective Green, g (s)	1.0	63.5		17.5	80.0		15.5	15.5	15.5	15.5	15.5	
Actuated g/C Ratio	0.01	0.58		0.16	0.73		0.14	0.14	0.14	0.14	0.14	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	14	1808		497	2344		171	171	200	171	238	
v/s Ratio Prot	0.00	c0.46		c0.11	0.11							0.00
v/s Ratio Perm							0.05	0.05	c0.09	0.00		
v/c Ratio	0.07	0.79		0.68	0.15		0.33	0.33	0.66	0.02	0.01	
Uniform Delay, d1	54.0	18.1		43.6	4.6		42.6	42.6	44.7	40.7	40.6	
Progression Factor	1.00	1.00		0.68	2.15		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	3.7		3.2	0.1		1.2	1.2	7.6	0.0	0.0	
Delay (s)	56.2	21.8		32.7	10.0		43.7	43.7	52.3	40.7	40.7	
Level of Service	E	C		C	B		D	D	D	D	D	
Approach Delay (s)		21.8			21.0			51.1				40.7
Approach LOS		C			C			D				D
Intersection Summary												
HCM 2000 Control Delay			29.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			90.5%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 Signalized Intersection Summary
4: Hesperian Blvd & Winton Ave



















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	755	1114	57	313	328	236	46	1257	192	186	792	199
Future Volume (veh/h)	755	1114	57	313	328	236	46	1257	192	186	792	199
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1696	1696	1900	1696	1696	1696	1696	1696	1696
Adj Flow Rate, veh/h	830	1224	63	352	369	265	52	1428	218	219	932	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	861	1414	73	390	505	230	65	1478	457	248	1659	516
Arrive On Green	0.09	0.10	0.10	0.12	0.16	0.16	0.04	0.32	0.32	0.08	0.36	0.00
Sat Flow, veh/h	3134	4507	232	3134	3088	1405	1616	4631	1431	3134	4631	1442
Grp Volume(v), veh/h	830	838	449	352	369	265	52	1428	218	219	932	0
Grp Sat Flow(s),veh/h/ln	1567	1544	1652	1567	1544	1405	1616	1544	1431	1567	1544	1442
Q Serve(g_s), s	29.0	29.4	29.4	12.2	12.5	18.0	3.5	33.4	13.5	7.6	17.8	0.0
Cycle Q Clear(g_c), s	29.0	29.4	29.4	12.2	12.5	18.0	3.5	33.4	13.5	7.6	17.8	0.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	861	968	518	390	505	230	65	1478	457	248	1659	516
V/C Ratio(X)	0.96	0.87	0.87	0.90	0.73	1.15	0.80	0.97	0.48	0.88	0.56	0.00
Avail Cap(c_a), veh/h	861	968	518	390	505	230	140	1478	457	248	1659	516
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.45	0.45	0.45	0.67	0.67	0.67	0.60	0.60	0.60	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.5	47.0	47.0	47.5	43.7	46.0	52.4	36.9	30.1	50.1	28.4	0.0
Incr Delay (d2), s/veh	13.1	4.0	7.1	17.2	3.6	96.7	12.8	11.7	2.1	29.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	13.1	14.5	6.2	5.6	13.1	1.8	15.8	5.6	4.3	7.8	0.0
LnGrp Delay(d),s/veh	62.6	51.0	54.1	64.7	47.3	142.7	65.1	48.6	32.2	79.1	29.8	0.0
LnGrp LOS	E	D	D	E	D	F	E	D	C	E	C	
Approach Vol, veh/h		2117			986			1698			1151	
Approach Delay, s/veh		56.2			79.2			47.0			39.1	
Approach LOS		E			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.2	39.6	18.2	39.0	8.9	43.9	34.7	22.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	8.7	35.1	13.7	34.5	9.5	34.3	30.2	18.0				
Max Q Clear Time (g_c+I1), s	9.6	35.4	14.2	31.4	5.5	19.8	31.0	20.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.2	0.0	5.7	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			54.1									
HCM 2010 LOS			D									

HCM Signalized Intersection Capacity Analysis
5: Southland Dr & Winton Ave



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↔	↑↑		↔
Traffic Volume (vph)	2101	64	727	1038	0	960
Future Volume (vph)	2101	64	727	1038	0	960
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frbp, ped/bikes	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4611		3127	3223		2538
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4611		3127	3223		2538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2284	70	790	1128	0	1043
RTOR Reduction (vph)	3	0	0	0	0	2
Lane Group Flow (vph)	2351	0	790	1128	0	1041
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	NA		Prot	NA		Over
Protected Phases	2		4	6		4
Permitted Phases						
Actuated Green, G (s)	51.1		39.9	51.1		39.9
Effective Green, g (s)	51.1		39.9	51.1		39.9
Actuated g/C Ratio	0.51		0.40	0.51		0.40
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2356		1247	1646		1012
v/s Ratio Prot	c0.51		0.25	0.35		c0.41
v/s Ratio Perm						
v/c Ratio	1.00		0.63	0.69		1.03
Uniform Delay, d1	24.4		24.2	18.4		30.1
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	18.0		1.1	2.3		35.7
Delay (s)	42.4		25.2	20.7		65.8
Level of Service	D		C	C		E
Approach Delay (s)	42.4			22.6	65.8	
Approach LOS	D			C	E	
Intersection Summary						
HCM 2000 Control Delay			39.8		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.01			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			83.4%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
6: Clawiter Rd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	357	26	15	64	14	25	378	184	8	105	38
Future Volume (veh/h)	184	357	26	15	64	14	25	378	184	8	105	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	211	410	30	18	76	17	33	497	242	8	111	40
Adj No. of Lanes	0	2	0	0	2	1	0	2	0	0	2	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	311	646	49	55	249	134	112	730	346	118	1072	522
Arrive On Green	0.28	0.28	0.28	0.08	0.08	0.08	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1125	2337	176	655	2945	1583	71	2216	1050	76	3253	1583
Grp Volume(v), veh/h	339	0	312	50	44	17	424	0	348	63	56	40
Grp Sat Flow(s),veh/h/ln	1806	0	1832	1830	1770	1583	1827	0	1510	1719	1610	1583
Q Serve(g_s), s	7.3	0.0	6.5	1.1	1.0	0.4	1.6	0.0	8.8	0.0	1.0	0.8
Cycle Q Clear(g_c), s	7.3	0.0	6.5	1.1	1.0	0.4	8.7	0.0	8.8	8.8	1.0	0.8
Prop In Lane	0.62		0.10	0.36		1.00	0.08		0.70	0.13		1.00
Lane Grp Cap(c), veh/h	500	0	507	155	150	134	691	0	498	660	531	522
V/C Ratio(X)	0.68	0.00	0.62	0.32	0.29	0.13	0.61	0.00	0.70	0.10	0.10	0.08
Avail Cap(c_a), veh/h	749	0	759	754	729	653	937	0	705	873	752	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.1	0.0	13.8	18.8	18.8	18.5	12.7	0.0	12.8	10.2	10.2	10.1
Incr Delay (d2), s/veh	1.6	0.0	1.2	1.2	1.1	0.4	0.9	0.0	1.8	0.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	3.4	0.6	0.5	0.2	4.5	0.0	3.8	0.5	0.5	0.3
LnGrp Delay(d),s/veh	15.7	0.0	15.0	20.0	19.8	18.9	13.6	0.0	14.5	10.2	10.2	10.1
LnGrp LOS	B		B	C	B	B	B		B	B	B	B
Approach Vol, veh/h		651			111			772			159	
Approach Delay, s/veh		15.4			19.8			14.0			10.2	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.9		16.6		18.9		8.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.4		18.1		20.4		18.0				
Max Q Clear Time (g_c+I1), s		10.8		9.3		10.8		3.1				
Green Ext Time (p_c), s		3.6		2.8		0.5		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				14.6								
HCM 2010 LOS				B								

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	12	55	0	2	27	142	0	2	2	291	0	3
Future Vol, veh/h	12	55	0	2	27	142	0	2	2	291	0	3
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.63	0.63	0.63	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	73	0	2	32	167	0	3	3	320	0	3
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	1
HCM Control Delay	9.6	9.8	8.7	14.5
HCM LOS	A	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	18%	1%	100%	0%	0%
Vol Thru, %	100%	50%	82%	16%	0%	100%	0%
Vol Right, %	0%	50%	0%	83%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	4	67	171	291	0	3
LT Vol	0	0	12	2	291	0	0
Through Vol	0	2	55	27	0	0	0
RT Vol	0	2	0	142	0	0	3
Lane Flow Rate	0	6	89	201	320	0	3
Geometry Grp	8	8	7	7	7	7	7
Degree of Util (X)	0	0.01	0.145	0.282	0.514	0	0.004
Departure Headway (Hd)	6.251	5.897	5.836	5.051	5.786	5.283	4.578
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	0	611	610	708	620	0	774
Service Time	3.951	3.597	3.609	2.809	3.559	3.056	2.351
HCM Lane V/C Ratio	0	0.01	0.146	0.284	0.516	0	0.004
HCM Control Delay	9	8.7	9.6	9.8	14.6	8.1	7.4
HCM Lane LOS	N	A	A	A	B	N	A
HCM 95th-tile Q	0	0	0.5	1.2	2.9	0	0

HCM Signalized Intersection Capacity Analysis
8: Clawiter Rd & Breakwater Ave/SR 92 WB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	37	90	135	114	49	150	36	333	158	177	269	37	
Future Volume (vph)	37	90	135	114	49	150	36	333	158	177	269	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00		0.95	1.00	
Frbp, ped/bikes		1.00	1.00	1.00	0.99			1.00	1.00		1.00	0.97	
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.89			1.00	0.85		1.00	0.85	
Flt Protected		0.99	1.00	0.95	1.00			1.00	1.00		0.98	1.00	
Satd. Flow (prot)		1836	1583	1770	1635			1854	1583		3470	1540	
Flt Permitted		0.82	1.00	0.95	1.00			1.00	1.00		0.98	1.00	
Satd. Flow (perm)		1535	1583	1770	1635			1854	1583		3470	1540	
Peak-hour factor, PHF	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83	0.88	0.88	0.88	
Adj. Flow (vph)	40	97	145	152	65	200	43	401	190	201	306	42	
RTOR Reduction (vph)	0	0	122	0	129	0	0	0	144	0	0	33	
Lane Group Flow (vph)	0	137	23	152	136	0	0	444	46	0	507	9	
Confl. Peds. (#/hr)							1						
Confl. Bikes (#/hr)												4	
Turn Type	custom	NA	custom	Split	NA		Split	NA	Perm	Split	NA	Perm	
Protected Phases				4	4		2	2		6	6		
Permitted Phases	8	8	8						2			6	
Actuated Green, G (s)		12.0	12.0	12.2	12.2			18.3	18.3		15.6	15.6	
Effective Green, g (s)		12.0	12.0	12.2	12.2			18.3	18.3		15.6	15.6	
Actuated g/C Ratio		0.16	0.16	0.16	0.16			0.24	0.24		0.20	0.20	
Clearance Time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		242	249	283	262			445	380		711	315	
v/s Ratio Prot				c0.09	0.08			c0.24			c0.15		
v/s Ratio Perm		c0.09	0.01						0.03			0.01	
v/c Ratio		0.57	0.09	0.54	0.52			1.00	0.12		0.71	0.03	
Uniform Delay, d1		29.6	27.4	29.4	29.3			28.9	22.6		28.2	24.2	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.0	0.2	2.0	1.7			41.8	0.1		3.4	0.0	
Delay (s)		32.7	27.6	31.3	31.0			70.7	22.7		31.6	24.2	
Level of Service		C	C	C	C			E	C		C	C	
Approach Delay (s)		30.0			31.1			56.3			31.0		
Approach LOS		C			C			E			C		
Intersection Summary													
HCM 2000 Control Delay			39.4									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			76.1									Sum of lost time (s)	18.0
Intersection Capacity Utilization			65.9%									ICU Level of Service	C
Analysis Period (min)			15										

c Critical Lane Group























Intersection	
Intersection Delay, s/veh	107.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔			↔			↖	↗
Traffic Vol, veh/h	190	12	81	2	170	122	275	254	6	68	140	297
Future Vol, veh/h	190	12	81	2	170	122	275	254	6	68	140	297
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	238	15	101	2	191	137	348	322	8	74	152	323
Number of Lanes	0	1	1	0	1	0	0	2	0	0	2	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	2
HCM Control Delay	39.6	72.9	216.3	39.1
HCM LOS	E	F	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	68%	0%	94%	0%	1%	59%	0%	0%
Vol Thru, %	32%	95%	6%	0%	58%	41%	100%	0%
Vol Right, %	0%	5%	0%	100%	41%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	402	133	202	81	294	115	93	297
LT Vol	275	0	190	0	2	68	0	0
Through Vol	127	127	12	0	170	47	93	0
RT Vol	0	6	0	81	122	0	0	297
Lane Flow Rate	509	168	252	101	330	125	101	323
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	1.53	0.488	0.783	0.281	0.947	0.365	0.289	0.857
Departure Headway (Hd)	10.827	10.43	12.324	11.085	11.405	11.621	11.307	10.566
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	336	345	295	326	320	312	320	345
Service Time	8.605	8.208	10.024	8.785	9.105	9.321	9.007	8.266
HCM Lane V/C Ratio	1.515	0.487	0.854	0.31	1.031	0.401	0.316	0.936
HCM Control Delay	280.3	22.8	48.2	18.1	72.9	20.9	18.5	52.6
HCM Lane LOS	F	C	E	C	F	C	C	F
HCM 95th-tile Q	28.5	2.6	6.1	1.1	9.6	1.6	1.2	7.9























HCM 2010 Signalized Intersection Summary
10: Industrial Blvd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (veh/h)	59	246	276	46	14	18	70	530	141	70	409	14
Future Volume (veh/h)	59	246	276	46	14	18	70	530	141	70	409	14
Number	7	4	14	3	8	18	1	1	16	5	12	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1624	1377	1900	1829	1900	1712	1712	1759	1759	1881	1881
Adj Flow Rate, veh/h	66	276	310	51	16	20	77	77	0	77	0	0
Adj No. of Lanes	1	1	1	0	1	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	25	17	38	2	2	2	11	11	8	8	1	1
Cap, veh/h	568	553	396	267	86	63	117	117	374	120	400	400
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.07	0.07	0.00	0.07	0.00	0.00
Sat Flow, veh/h	1112	1624	1163	363	254	184	1630	1630	1495	1675	1599	1599
Grp Volume(v), veh/h	66	276	310	87	0	0	77	77	0	77	0	0
Grp Sat Flow(s),veh/h/ln	1112	1624	1163	802	0	0	1630	1630	1495	1675	1599	1599
Q Serve(g_s), s	0.0	5.4	9.6	0.4	0.0	0.0	1.8	1.8	0.0	1.8	0.0	0.0
Cycle Q Clear(g_c), s	1.6	5.4	9.6	5.8	0.0	0.0	1.8	1.8	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	0.59		0.23	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	568	553	396	416	0	0	117	117	374	120	400	400
V/C Ratio(X)	0.12	0.50	0.78	0.21	0.00	0.00	0.66	0.66	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	690	731	524	529	0	0	208	208	692	210	736	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.2	10.5	11.8	9.4	0.0	0.0	18.1	18.1	0.0	18.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	5.6	0.2	0.0	0.0	6.1	6.1	0.0	5.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.5	3.7	0.7	0.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0
LnGrp Delay(d),s/veh	9.3	11.2	17.4	9.6	0.0	0.0	24.2	24.2	0.0	23.6	0.0	0.0
LnGrp LOS	A	B	B	A			C	C		C		
Approach Vol, veh/h		652			87		659	659		77		
Approach Delay, s/veh		13.9			9.6		15.8	15.8		23.6		
Approach LOS		B			A		B	B		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	14.5		18.1	7.4	14.5		18.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	18.4		18.0	5.0	18.5		18.0				
Max Q Clear Time (g_c+I1), s	3.8	0.0		11.6	3.8	8.3		7.8				
Green Ext Time (p_c), s	0.0	0.0		1.8	0.0	1.6		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			15.0									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 11: Industrial Blvd & SR 92 WB Ramps/Cryer St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	35	169	37	6	13	309	645	91	20	941	101
Future Volume (veh/h)	146	35	169	37	6	13	309	645	91	20	941	101
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1826	1792	1900	1868	1900	1727	1814	1900	1900	1624	1776
Adj Flow Rate, veh/h	187	45	0	60	10	21	340	709	100	22	1012	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.78	0.78	0.78	0.62	0.62	0.62	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	6	0	0	0	10	5	5	0	17	7
Cap, veh/h	292	51	337	367	55	357	379	1670	235	112	1179	577
Arrive On Green	0.22	0.22	0.00	0.22	0.22	0.22	0.23	0.55	0.55	0.06	0.38	0.00
Sat Flow, veh/h	957	230	1524	1290	250	1615	1645	3031	427	1810	3085	1509
Grp Volume(v), veh/h	232	0	0	70	0	21	340	403	406	22	1012	0
Grp Sat Flow(s),veh/h/ln	1187	0	1524	1540	0	1615	1645	1723	1735	1810	1543	1509
Q Serve(g_s), s	12.9	0.0	0.0	0.0	0.0	0.8	16.3	11.1	11.1	0.9	24.5	0.0
Cycle Q Clear(g_c), s	15.8	0.0	0.0	2.9	0.0	0.8	16.3	11.1	11.1	0.9	24.5	0.0
Prop In Lane	0.81		1.00	0.86		1.00	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	342	0	337	423	0	357	379	949	956	112	1179	577
V/C Ratio(X)	0.68	0.00	0.00	0.17	0.00	0.06	0.90	0.42	0.42	0.20	0.86	0.00
Avail Cap(c_a), veh/h	353	0	348	433	0	368	456	1120	1128	118	1351	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.2	0.0	0.0	25.7	0.0	24.9	30.3	10.7	10.7	36.1	23.0	0.0
Incr Delay (d2), s/veh	4.9	0.0	0.0	0.2	0.0	0.1	17.9	0.3	0.3	0.9	5.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	0.0	1.3	0.0	0.4	9.3	5.3	5.4	0.5	11.3	0.0
LnGrp Delay(d),s/veh	37.1	0.0	0.0	25.9	0.0	25.0	48.2	11.0	11.0	37.0	28.2	0.0
LnGrp LOS	D			C		C	D	B	B	D	C	
Approach Vol, veh/h		232			91			1149			1034	
Approach Delay, s/veh		37.1			25.7			22.0			28.4	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	49.2		22.4	23.2	35.5		22.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.3	52.7		18.5	22.5	35.5		18.5				
Max Q Clear Time (g_c+I1), s	2.9	13.1		17.8	18.3	26.5		4.9				
Green Ext Time (p_c), s	0.0	5.8		0.1	0.4	4.5		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			26.2									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 12: Industrial Blvd & SR 92 EB Ramps/Sleepy Hollow Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	88	833	0	16	48	84	782	18	75	825	239
Future Volume (veh/h)	225	88	833	0	16	48	84	782	18	75	825	239
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1674	1776	1900	1900	1827	1462	1776	1667	1792	1727	1624
Adj Flow Rate, veh/h	232	91	859	0	20	59	93	869	20	80	878	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	25	25	7	0	0	4	30	7	14	6	10	17
Cap, veh/h	424	125	630	0	644	527	109	1151	483	111	1076	453
Arrive On Green	0.34	0.34	0.34	0.00	0.34	0.34	0.08	0.34	0.34	0.07	0.33	0.00
Sat Flow, veh/h	906	368	1509	0	1900	1553	1392	3374	1417	1707	3282	1380
Grp Volume(v), veh/h	323	0	859	0	20	59	93	869	20	80	878	0
Grp Sat Flow(s),veh/h/ln	1274	0	1509	0	1900	1553	1392	1687	1417	1707	1641	1380
Q Serve(g_s), s	11.6	0.0	18.0	0.0	0.4	1.4	3.5	12.1	0.5	2.4	13.0	0.0
Cycle Q Clear(g_c), s	12.0	0.0	18.0	0.0	0.4	1.4	3.5	12.1	0.5	2.4	13.0	0.0
Prop In Lane	0.72		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	549	0	630	0	644	527	109	1151	483	111	1076	453
V/C Ratio(X)	0.59	0.00	1.36	0.00	0.03	0.11	0.85	0.75	0.04	0.72	0.82	0.00
Avail Cap(c_a), veh/h	549	0	630	0	644	527	275	1488	625	164	1113	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.6	0.0	15.5	0.0	11.7	12.0	24.1	15.5	11.7	24.3	16.4	0.0
Incr Delay (d2), s/veh	1.7	0.0	173.4	0.0	0.0	0.1	16.4	1.7	0.0	8.4	4.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	39.4	0.0	0.2	0.6	1.8	5.8	0.2	1.4	6.6	0.0
LnGrp Delay(d),s/veh	17.3	0.0	188.8	0.0	11.7	12.1	40.6	17.2	11.7	32.7	21.0	0.0
LnGrp LOS	B		F		B	B	D	B	B	C	C	
Approach Vol, veh/h		1182			79			982			958	
Approach Delay, s/veh		141.9			12.0			19.3			22.0	
Approach LOS		F			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	22.6		22.5	8.7	21.9		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	23.4		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	4.4	14.1		20.0	5.5	15.0		3.4				
Green Ext Time (p_c), s	0.0	4.0		0.0	0.1	1.6		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			65.2									
HCM 2010 LOS			E									

HCM Signalized Intersection Capacity Analysis
13: Hesperian Blvd & Depot Rd/Cathy Wy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	100	348	51	39	39	238	1419	133	37	886	112
Future Volume (vph)	209	100	348	51	39	39	238	1419	133	37	886	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1762	1470	1770	1710		1787	4995		1805	4937	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1762	1470	1770	1710		1787	4995		1805	4937	
Peak-hour factor, PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	294	141	490	58	44	44	290	1730	162	45	1080	137
RTOR Reduction (vph)	0	0	384	0	40	0	0	10	0	0	16	0
Lane Group Flow (vph)	215	220	106	58	48	0	290	1882	0	45	1201	0
Confl. Peds. (#/hr)			28	28					12			14
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	4%	2%	1%	3%	1%	2%	3%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases			8									
Actuated Green, G (s)	19.5	19.5	19.5	7.4	7.4		19.1	42.1		3.0	26.0	
Effective Green, g (s)	19.5	19.5	19.5	7.4	7.4		19.1	42.1		3.0	26.0	
Actuated g/C Ratio	0.22	0.22	0.22	0.08	0.08		0.21	0.47		0.03	0.29	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	371	381	318	145	140		379	2336		60	1426	
v/s Ratio Prot	c0.13	0.12		c0.03	0.03		0.16	c0.38		0.02	c0.24	
v/s Ratio Perm			0.07									
v/c Ratio	0.58	0.58	0.33	0.40	0.34		0.77	0.81		0.75	0.84	
Uniform Delay, d1	31.6	31.6	29.8	39.2	39.0		33.3	20.5		43.1	30.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	2.1	0.6	1.8	1.5		8.9	3.1		40.4	6.2	
Delay (s)	33.8	33.7	30.4	41.0	40.4		42.2	23.5		83.5	36.3	
Level of Service	C	C	C	D	D		D	C		F	D	
Approach Delay (s)		32.0			40.7			26.0			37.9	
Approach LOS		C			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			31.0				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			61.0%				ICU Level of Service			B		
Analysis Period (min)			15									
c	Critical Lane Group											

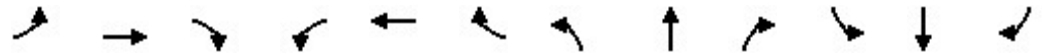
Intersection	
Intersection Delay, s/veh	19.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗		↵	↕	↗	↵	↕	↗
Traffic Vol, veh/h	3	181	27	321	222	179	31	23	18	77	17	2
Future Vol, veh/h	3	181	27	321	222	179	31	23	18	77	17	2
Peak Hour Factor	0.52	0.52	0.52	0.80	0.80	0.80	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	6	348	52	401	278	224	40	29	23	89	20	2
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	15.6	22.5	12.1	13.7
HCM LOS	C	C	B	B























Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	69%	0%	100%	29%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	31%	0%	0%	71%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	23	18	3	121	87	321	148	253	77	17
LT Vol	31	0	0	3	0	0	321	0	0	77	0
Through Vol	0	23	0	0	121	60	0	148	74	0	17
RT Vol	0	0	18	0	0	27	0	0	179	0	0
Lane Flow Rate	40	29	23	6	232	168	401	185	316	89	20
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.1	0.07	0.051	0.013	0.485	0.341	0.793	0.34	0.538	0.222	0.046
Departure Headway (Hd)	9.101	8.601	7.901	8.025	7.525	7.309	7.22	6.72	6.224	9.017	8.517
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	395	418	455	449	483	495	506	538	582	400	422
Service Time	6.821	6.321	5.621	5.725	5.225	5.009	4.92	4.42	3.924	6.737	6.237
HCM Lane V/C Ratio	0.101	0.069	0.051	0.013	0.48	0.339	0.792	0.344	0.543	0.223	0.047
HCM Control Delay	12.8	12	11	10.8	17.1	13.7	32.2	12.8	15.9	14.3	11.6
HCM Lane LOS	B	B	B	B	C	B	D	B	C	B	B
HCM 95th-tile Q	0.3	0.2	0.2	0	2.6	1.5	7.3	1.5	3.2	0.8	0.1

HCM Signalized Intersection Capacity Analysis
2: Winton Ave & Corsair Blvd

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↙	↑↑			↑↑			↑		↙↘		↘		
Traffic Volume (vph)	7	490	0	13	1189	252	0	1	4	91	0	7		
Future Volume (vph)	7	490	0	13	1189	252	0	1	4	91	0	7		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.5	4.5			4.5			4.5		4.5		4.5		
Lane Util. Factor	1.00	0.95			0.95			1.00		0.97		1.00		
Frbp, ped/bikes	1.00	1.00			1.00			1.00		1.00		0.98		
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		1.00		
Frt	1.00	1.00			0.97			0.89		1.00		0.85		
Flt Protected	0.95	1.00			1.00			1.00		0.95		1.00		
Satd. Flow (prot)	1611	3223			3126			1506		3127		1417		
Flt Permitted	0.13	1.00			0.95			1.00		0.95		1.00		
Satd. Flow (perm)	215	3223			2970			1506		3127		1417		
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.42	0.42	0.42	0.84	0.84	0.84		
Adj. Flow (vph)	8	551	0	14	1265	268	0	2	10	108	0	8		
RTOR Reduction (vph)	0	0	0	0	14	0	0	10	0	0	0	8		
Lane Group Flow (vph)	8	551	0	0	1533	0	0	2	0	108	0	0		
Confl. Peds. (#/hr)	1		6	6			1					1		
Confl. Bikes (#/hr)							2							
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%		
Turn Type	Perm	NA		Perm	NA			NA		Prot		Perm		
Protected Phases		2			6			3		4				
Permitted Phases	2			6								4		
Actuated Green, G (s)	46.2	46.2			46.2			1.2		3.7		3.7		
Effective Green, g (s)	46.2	46.2			46.2			1.2		3.7		3.7		
Actuated g/C Ratio	0.72	0.72			0.72			0.02		0.06		0.06		
Clearance Time (s)	4.5	4.5			4.5			4.5		4.5		4.5		
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0		3.0		
Lane Grp Cap (vph)	153	2304			2124			27		179		81		
v/s Ratio Prot		0.17						c0.00		c0.03				
v/s Ratio Perm	0.04				c0.52							0.00		
v/c Ratio	0.05	0.24			0.72			0.08		0.60		0.01		
Uniform Delay, d1	2.7	3.2			5.4			31.2		29.7		28.7		
Progression Factor	1.00	1.00			1.00			1.00		1.00		1.00		
Incremental Delay, d2	0.1	0.1			1.2			1.3		5.6		0.0		
Delay (s)	2.9	3.2			6.7			32.4		35.4		28.7		
Level of Service	A	A			A			C		D		C		
Approach Delay (s)		3.2			6.7			32.4			34.9			
Approach LOS		A			A			C			C			
Intersection Summary														
HCM 2000 Control Delay			7.4									HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio			0.70											
Actuated Cycle Length (s)			64.6							13.5				
Intersection Capacity Utilization			66.8%										ICU Level of Service	C
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis
3: Clawiter Rd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	464	194	1007	1239	1	191	0	231	0	0	0
Future Volume (vph)	1	464	194	1007	1239	1	191	0	231	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5			
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95	1.00			
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99			
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Frt	1.00	0.96		1.00	1.00		1.00	1.00	0.85			
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00			
Satd. Flow (prot)	1612	3046		3127	3223		1531	1531	1422			
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00			
Satd. Flow (perm)	1612	3046		3127	3223		1220	1220	1422			
Peak-hour factor, PHF	0.87	0.87	0.87	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	1	533	223	1228	1511	1	210	0	254	0	0	0
RTOR Reduction (vph)	0	47	0	0	0	0	0	0	218	0	0	0
Lane Group Flow (vph)	1	709	0	1228	1512	0	105	105	36	0	0	0
Confl. Peds. (#/hr)			6			2						
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm		
Protected Phases	5	2		1	6			4				8
Permitted Phases							4		4		8	
Actuated Green, G (s)	0.9	25.5		35.6	60.2		12.5	12.5	12.5			
Effective Green, g (s)	0.9	25.5		35.6	60.2		12.5	12.5	12.5			
Actuated g/C Ratio	0.01	0.29		0.41	0.69		0.14	0.14	0.14			
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	16	891		1278	2227		175	175	204			
v/s Ratio Prot	0.00	c0.23		c0.39	0.47							
v/s Ratio Perm							c0.09	0.09	0.03			
v/c Ratio	0.06	0.80		0.96	0.68		0.60	0.60	0.18			
Uniform Delay, d1	42.7	28.4		25.1	7.8		35.0	35.0	32.8			
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Incremental Delay, d2	1.6	5.0		16.6	0.8		5.5	5.5	0.4			
Delay (s)	44.3	33.4		41.7	8.7		40.4	40.4	33.2			
Level of Service	D	C		D	A		D	D	C			
Approach Delay (s)		33.4			23.5			36.5			0.0	
Approach LOS		C			C			D			A	
Intersection Summary												
HCM 2000 Control Delay			26.9				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			87.1				Sum of lost time (s)		13.5			
Intersection Capacity Utilization			64.5%				ICU Level of Service		C			
Analysis Period (min)			15									
c	Critical Lane Group											



















HCM 2010 Signalized Intersection Summary
4: Hesperian Blvd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	433	64	204	1127	169	84	675	150	118	1112	1155
Future Volume (veh/h)	241	433	64	204	1127	169	84	675	150	118	1112	1155
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1696	1696	1900	1696	1696	1696	1696	1696	1696
Adj Flow Rate, veh/h	265	476	70	229	1266	190	95	767	170	139	1308	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	303	1309	189	301	1297	195	117	1477	456	202	1441	449
Arrive On Green	0.10	0.32	0.32	0.10	0.32	0.32	0.07	0.32	0.32	0.06	0.31	0.00
Sat Flow, veh/h	3134	4082	589	3134	4054	608	1616	4631	1431	3134	4631	1442
Grp Volume(v), veh/h	265	358	188	229	964	492	95	767	170	139	1308	0
Grp Sat Flow(s),veh/h/ln	1567	1544	1583	1567	1544	1575	1616	1544	1431	1567	1544	1442
Q Serve(g_s), s	7.5	8.0	8.3	6.4	27.8	27.8	5.2	12.2	8.3	3.9	24.4	0.0
Cycle Q Clear(g_c), s	7.5	8.0	8.3	6.4	27.8	27.8	5.2	12.2	8.3	3.9	24.4	0.0
Prop In Lane	1.00		0.37	1.00		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	990	508	301	988	504	117	1477	456	202	1441	449
V/C Ratio(X)	0.87	0.36	0.37	0.76	0.98	0.98	0.81	0.52	0.37	0.69	0.91	0.00
Avail Cap(c_a), veh/h	303	990	508	418	988	504	117	1477	456	282	1441	449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	40.1	23.5	23.6	39.7	30.3	30.3	41.2	25.0	23.7	41.2	29.8	0.0
Incr Delay (d2), s/veh	23.5	0.2	0.5	5.3	22.8	33.8	34.0	1.3	2.3	4.1	9.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	3.5	3.7	3.0	14.9	16.8	3.4	5.4	3.6	1.8	11.7	0.0
LnGrp Delay(d),s/veh	63.6	23.7	24.0	45.0	53.1	64.0	75.2	26.3	26.0	45.3	39.7	0.0
LnGrp LOS	E	C	C	D	D	E	E	C	C	D	D	
Approach Vol, veh/h		811			1685			1032			1447	
Approach Delay, s/veh		36.8			55.2			30.8			40.2	
Approach LOS		D			E			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	33.2	13.1	33.4	11.0	32.5	13.2	33.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	8.1	26.4	12.0	25.5	6.5	28.0	8.7	28.8				
Max Q Clear Time (g_c+I1), s	5.9	14.2	8.4	10.3	7.2	26.4	9.5	29.8				
Green Ext Time (p_c), s	0.1	4.8	0.3	3.1	0.0	1.2	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				42.8								
HCM 2010 LOS				D								

HCM Signalized Intersection Capacity Analysis
5: Southland Dr & Winton Ave

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖↙	↑↑		↗↘
Traffic Volume (vph)	1027	28	914	1700	0	325
Future Volume (vph)	1027	28	914	1700	0	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frbp, ped/bikes	1.00		1.00	1.00		0.98
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4613		3127	3223		2496
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4613		3127	3223		2496
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1116	30	993	1848	0	353
RTOR Reduction (vph)	3	0	0	0	0	103
Lane Group Flow (vph)	1143	0	993	1848	0	250
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	NA		Prot	NA		Perm
Protected Phases	2		4	6		
Permitted Phases						8
Actuated Green, G (s)	52.5		28.5	52.5		28.5
Effective Green, g (s)	52.5		28.5	52.5		28.5
Actuated g/C Ratio	0.58		0.32	0.58		0.32
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2690		990	1880		790
v/s Ratio Prot	0.25		c0.32	c0.57		
v/s Ratio Perm						0.10
v/c Ratio	0.42		1.00	0.98		0.32
Uniform Delay, d1	10.4		30.8	18.3		23.4
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1		29.3	16.8		0.2
Delay (s)	10.5		60.1	35.1		23.6
Level of Service	B		E	D		C
Approach Delay (s)	10.5			43.8	23.6	
Approach LOS	B			D	C	
Intersection Summary						
HCM 2000 Control Delay			33.4		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.99			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			61.7%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
6: Clawiter Rd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	117	32	92	271	25	25	83	35	20	622	232
Future Volume (veh/h)	49	117	32	92	271	25	25	83	35	20	622	232
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	56	134	37	110	323	30	33	109	46	21	655	244
Adj No. of Lanes	0	2	0	0	2	1	0	2	0	0	2	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	268	77	187	587	342	185	521	231	109	1089	506
Arrive On Green	0.13	0.13	0.13	0.22	0.22	0.22	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	851	2119	606	869	2720	1583	192	1631	723	44	3406	1583
Grp Volume(v), veh/h	120	0	107	230	203	30	88	0	100	362	314	244
Grp Sat Flow(s),veh/h/ln	1820	0	1756	1819	1770	1583	979	0	1567	1840	1610	1583
Q Serve(g_s), s	2.5	0.0	2.3	4.5	4.1	0.6	0.3	0.0	1.8	0.0	6.6	5.0
Cycle Q Clear(g_c), s	2.5	0.0	2.3	4.5	4.1	0.6	6.9	0.0	1.8	6.6	6.6	5.0
Prop In Lane	0.47		0.34	0.48		1.00	0.37		0.46	0.06		1.00
Lane Grp Cap(c), veh/h	231	0	222	393	382	342	437	0	501	684	515	506
V/C Ratio(X)	0.52	0.00	0.48	0.59	0.53	0.09	0.20	0.00	0.20	0.53	0.61	0.48
Avail Cap(c_a), veh/h	820	0	791	819	797	713	642	0	804	1033	826	812
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	16.2	14.1	13.9	12.5	9.9	0.0	9.9	11.5	11.5	10.9
Incr Delay (d2), s/veh	1.8	0.0	1.6	1.4	1.1	0.1	0.2	0.0	0.2	0.6	1.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.2	2.4	2.1	0.3	0.7	0.0	0.8	3.4	3.0	2.2
LnGrp Delay(d),s/veh	18.1	0.0	17.9	15.5	15.0	12.6	10.1	0.0	10.1	12.1	12.7	11.6
LnGrp LOS	B		B	B	B	B	B		B	B	B	B
Approach Vol, veh/h		227			463			188			920	
Approach Delay, s/veh		18.0			15.1			10.1			12.2	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.3		9.6		17.3		13.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.5		18.0		20.5		18.0				
Max Q Clear Time (g_c+I1), s		8.9		4.5		8.6		6.5				
Green Ext Time (p_c), s		0.9		1.0		4.2		2.1				
Intersection Summary												
HCM 2010 Ctrl Delay			13.4									
HCM 2010 LOS			B									

Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	4	12	0	2	26	262	1	0	4	143	0	13
Future Vol, veh/h	4	12	0	2	26	262	1	0	4	143	0	13
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.63	0.63	0.63	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	16	0	2	31	308	2	0	6	157	0	14
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	1
HCM Control Delay	8.4	10.4	8.2	10.4
HCM LOS	A	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	25%	1%	100%	0%	0%
Vol Thru, %	0%	0%	75%	9%	0%	100%	0%
Vol Right, %	0%	100%	0%	90%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	4	16	290	143	0	13
LT Vol	1	0	4	2	143	0	0
Through Vol	0	0	12	26	0	0	0
RT Vol	0	4	0	262	0	0	13
Lane Flow Rate	2	6	21	341	157	0	14
Geometry Grp	8	8	7	7	7	7	7
Degree of Util (X)	0.003	0.009	0.032	0.422	0.257	0	0.019
Departure Headway (Hd)	6.385	5.171	5.482	4.449	5.895	5.391	4.685
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	558	688	652	812	608	0	761
Service Time	4.151	2.936	3.222	2.171	3.641	3.137	2.43
HCM Lane V/C Ratio	0.004	0.009	0.032	0.42	0.258	0	0.018
HCM Control Delay	9.2	8	8.4	10.4	10.7	8.1	7.5
HCM Lane LOS	A	A	A	B	B	N	A
HCM 95th-tile Q	0	0	0.1	2.1	1	0	0.1

HCM Signalized Intersection Capacity Analysis
8: Clawiter Rd & Breakwater Ave/SR 92 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗			↖	↗		↖↗	↖↗
Traffic Volume (vph)	16	78	75	244	126	139	111	240	104	355	225	73
Future Volume (vph)	16	78	75	244	126	139	111	240	104	355	225	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00		0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	0.99			1.00	1.00		1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	0.92			1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00	0.95	1.00			0.98	1.00		0.97	1.00
Satd. Flow (prot)		1847	1583	1770	1704			1834	1583		3434	1541
Flt Permitted		0.88	1.00	0.95	1.00			0.98	1.00		0.97	1.00
Satd. Flow (perm)		1646	1583	1770	1704			1834	1583		3434	1541
Peak-hour factor, PHF	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83	0.88	0.88	0.88
Adj. Flow (vph)	17	84	81	325	168	185	134	289	125	403	256	83
RTOR Reduction (vph)	0	0	71	0	43	0	0	0	97	0	0	65
Lane Group Flow (vph)	0	101	10	325	310	0	0	423	28	0	659	18
Confl. Peds. (#/hr)						1						
Confl. Bikes (#/hr)												4
Turn Type	custom	NA	custom	Split	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases				4	4		2	2		6	6	
Permitted Phases	8	8	8						2			6
Actuated Green, G (s)		10.2	10.2	17.6	17.6			18.0	18.0		18.0	18.0
Effective Green, g (s)		10.2	10.2	17.6	17.6			18.0	18.0		18.0	18.0
Actuated g/C Ratio		0.12	0.12	0.22	0.22			0.22	0.22		0.22	0.22
Clearance Time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		205	197	380	366			403	348		755	339
v/s Ratio Prot				c0.18	0.18			c0.23			c0.19	
v/s Ratio Perm		c0.06	0.01						0.02			0.01
v/c Ratio		0.49	0.05	0.86	0.85			1.05	0.08		1.04dl	0.05
Uniform Delay, d1		33.4	31.5	30.9	30.8			31.9	25.3		30.8	25.2
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		1.9	0.1	16.9	16.3			58.4	0.1		10.9	0.1
Delay (s)		35.2	31.6	47.8	47.1			90.3	25.4		41.7	25.2
Level of Service		D	C	D	D			F	C		D	C
Approach Delay (s)		33.6			47.4			75.5			39.8	
Approach LOS		C			D			E			D	
Intersection Summary												
HCM 2000 Control Delay			50.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			81.8			Sum of lost time (s)				18.0		
Intersection Capacity Utilization			69.9%			ICU Level of Service				C		
Analysis Period (min)			15									
dl Defacto Left Lane. Recode with 1 though lane as a left lane.												
c Critical Lane Group												























Intersection	
Intersection Delay, s/veh	25.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔			↖↗			↖↗	↗
Traffic Vol, veh/h	209	51	130	5	66	37	81	135	7	167	337	137
Future Vol, veh/h	209	51	130	5	66	37	81	135	7	167	337	137
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	261	64	163	6	74	42	103	171	9	182	366	149
Number of Lanes	0	1	1	0	1	0	0	2	0	0	2	1






















Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	2
HCM Control Delay	32.7	17.1	19.5	24
HCM LOS	D	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	55%	0%	80%	0%	5%	60%	0%	0%
Vol Thru, %	45%	91%	20%	0%	61%	40%	100%	0%
Vol Right, %	0%	9%	0%	100%	34%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	149	75	260	130	108	279	225	137
LT Vol	81	0	209	0	5	167	0	0
Through Vol	68	68	51	0	66	112	225	0
RT Vol	0	7	0	130	37	0	0	137
Lane Flow Rate	188	94	325	162	121	304	244	149
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.502	0.242	0.816	0.357	0.327	0.726	0.563	0.314
Departure Headway (Hd)	9.605	9.252	9.043	7.914	9.706	8.613	8.305	7.583
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	376	389	400	455	370	419	435	474
Service Time	7.363	7.009	6.792	5.663	7.47	6.36	6.052	5.329
HCM Lane V/C Ratio	0.5	0.242	0.813	0.356	0.327	0.726	0.561	0.314
HCM Control Delay	21.7	15	41.5	15	17.1	31.1	21.3	13.8
HCM Lane LOS	C	B	E	B	C	D	C	B
HCM 95th-tile Q	2.7	0.9	7.4	1.6	1.4	5.7	3.4	1.3























HCM 2010 Signalized Intersection Summary
10: Industrial Blvd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (veh/h)	13	24	143	112	90	65	312	393	98	41	536	27
Future Volume (veh/h)	13	24	143	112	90	65	312	393	98	41	536	27
Number	7	4	14	3	8	18	1	1	16	5	12	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1624	1377	1900	1841	1900	1712	1712	1759	1759	1881	1881
Adj Flow Rate, veh/h	15	27	161	124	100	72	343	343	0	45	0	0
Adj No. of Lanes	1	1	1	0	1	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	25	17	38	2	2	2	11	11	8	8	1	1
Cap, veh/h	542	466	333	305	183	104	434	434	341	87	22	22
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.27	0.27	0.00	0.05	0.00	0.00
Sat Flow, veh/h	983	1624	1162	491	640	363	1630	1630	1495	1675	1599	1599
Grp Volume(v), veh/h	15	27	161	296	0	0	343	343	0	45	0	0
Grp Sat Flow(s),veh/h/ln	983	1624	1162	1494	0	0	1630	1630	1495	1675	1599	1599
Q Serve(g_s), s	0.0	0.4	3.6	3.7	0.0	0.0	6.1	6.1	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.4	3.6	5.3	0.0	0.0	6.1	6.1	0.0	0.8	0.0	0.0
Prop In Lane	1.00		1.00	0.42		0.24	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	542	466	333	592	0	0	434	434	341	87	22	22
V/C Ratio(X)	0.03	0.06	0.48	0.50	0.00	0.00	0.79	0.79	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	829	939	672	1010	0	0	812	812	1311	334	924	924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.0	8.1	9.2	9.7	0.0	0.0	10.6	10.6	0.0	14.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	1.1	0.7	0.0	0.0	3.3	3.3	0.0	4.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	1.2	2.3	0.0	0.0	3.1	3.1	0.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	8.0	8.1	10.3	10.4	0.0	0.0	13.9	13.9	0.0	19.1	0.0	0.0
LnGrp LOS	A	A	B	B			B	B		B		
Approach Vol, veh/h		203			296		775	775		45		
Approach Delay, s/veh		9.8			10.4		12.4	12.4		19.1		
Approach LOS		A			B		B	B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.8	4.9		13.4	6.1	11.6		13.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	15.5	18.0		18.0	6.2	27.3		18.0				
Max Q Clear Time (g_c+I1), s	8.1	0.0		5.6	2.8	5.6		7.3				
Green Ext Time (p_c), s	0.7	0.0		0.6	0.0	1.4		1.4				
Intersection Summary												
HCM 2010 Ctrl Delay			11.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 11: Industrial Blvd & SR 92 WB Ramps/Cryer St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	6	169	139	38	20	475	894	101	12	655	169
Future Volume (veh/h)	223	6	169	139	38	20	475	894	101	12	655	169
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1812	1792	1900	1871	1900	1727	1813	1900	1900	1624	1776
Adj Flow Rate, veh/h	286	8	0	224	61	32	522	982	111	13	704	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.78	0.78	0.78	0.62	0.62	0.62	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	6	0	0	0	10	5	5	0	17	7
Cap, veh/h	346	8	526	552	133	557	469	1465	166	90	725	355
Arrive On Green	0.34	0.34	0.00	0.34	0.34	0.34	0.28	0.47	0.47	0.05	0.23	0.00
Sat Flow, veh/h	796	22	1524	1415	385	1615	1645	3118	352	1810	3085	1509
Grp Volume(v), veh/h	294	0	0	285	0	32	522	542	551	13	704	0
Grp Sat Flow(s),veh/h/ln	818	0	1524	1800	0	1615	1645	1722	1748	1810	1543	1509
Q Serve(g_s), s	22.2	0.0	0.0	0.0	0.0	1.3	28.5	24.4	24.4	0.7	22.6	0.0
Cycle Q Clear(g_c), s	34.5	0.0	0.0	12.3	0.0	1.3	28.5	24.4	24.4	0.7	22.6	0.0
Prop In Lane	0.97		1.00	0.79		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	353	0	526	685	0	557	469	810	821	90	725	355
V/C Ratio(X)	0.83	0.00	0.00	0.42	0.00	0.06	1.11	0.67	0.67	0.14	0.97	0.00
Avail Cap(c_a), veh/h	353	0	526	685	0	557	469	810	821	90	725	355
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.4	0.0	0.0	25.5	0.0	21.9	35.7	20.5	20.5	45.5	37.9	0.0
Incr Delay (d2), s/veh	15.4	0.0	0.0	0.4	0.0	0.0	76.3	2.1	2.1	0.7	26.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	0.0	6.2	0.0	0.6	22.8	11.9	12.1	0.4	12.2	0.0
LnGrp Delay(d),s/veh	54.8	0.0	0.0	25.9	0.0	21.9	112.0	22.6	22.6	46.2	64.2	0.0
LnGrp LOS	D			C			C	F	C	C	D	E
Approach Vol, veh/h		294			317			1615			717	
Approach Delay, s/veh		54.8			25.5			51.5			63.9	
Approach LOS		D			C			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	51.5		39.0	33.0	28.0		39.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	47.0		34.5	28.5	23.5		34.5				
Max Q Clear Time (g_c+I1), s	2.7	26.4		36.5	30.5	24.6		14.3				
Green Ext Time (p_c), s	0.0	7.3		0.0	0.0	0.0		1.8				
Intersection Summary												
HCM 2010 Ctrl Delay			52.1									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 12: Industrial Blvd & SR 92 EB Ramps/Sleepy Hollow Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	4	409	17	54	157	169	1195	7	55	711	208
Future Volume (veh/h)	123	4	409	17	54	157	169	1195	7	55	711	208
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1735	1776	1900	1900	1827	1462	1776	1667	1792	1727	1624
Adj Flow Rate, veh/h	127	4	422	21	67	194	188	1328	8	59	756	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	25	25	7	0	0	4	30	7	14	6	10	17
Cap, veh/h	114	2	677	72	178	450	221	1489	625	88	1095	461
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.16	0.44	0.44	0.05	0.33	0.00
Sat Flow, veh/h	0	6	1509	0	616	1553	1392	3374	1417	1707	3282	1380
Grp Volume(v), veh/h	131	0	422	88	0	194	188	1328	8	59	756	0
Grp Sat Flow(s),veh/h/ln	6	0	1509	616	0	1553	1392	1687	1417	1707	1641	1380
Q Serve(g_s), s	0.0	0.0	13.3	0.0	0.0	6.3	8.2	22.5	0.2	2.1	12.4	0.0
Cycle Q Clear(g_c), s	18.0	0.0	13.3	18.0	0.0	6.3	8.2	22.5	0.2	2.1	12.4	0.0
Prop In Lane	0.97		1.00	0.24		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	0	677	250	0	450	221	1489	625	88	1095	461
V/C Ratio(X)	1.13	0.00	0.62	0.35	0.00	0.43	0.85	0.89	0.01	0.67	0.69	0.00
Avail Cap(c_a), veh/h	116	0	677	250	0	450	280	1548	650	137	1110	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.8	0.0	13.1	17.6	0.0	17.9	25.4	16.0	9.7	28.9	17.9	0.0
Incr Delay (d2), s/veh	122.8	0.0	1.8	0.8	0.0	0.7	17.6	6.8	0.0	8.6	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	5.8	1.2	0.0	2.8	4.2	11.7	0.1	1.2	5.8	0.0
LnGrp Delay(d),s/veh	153.6	0.0	14.9	18.5	0.0	18.5	43.0	22.8	9.8	37.5	19.7	0.0
LnGrp LOS	F		B	B		B	D	C	A	D	B	
Approach Vol, veh/h		553			282			1524			815	
Approach Delay, s/veh		47.7			18.5			25.2			21.0	
Approach LOS		D			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	31.9		22.5	14.4	25.2		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	28.5		18.0	12.5	21.0		18.0				
Max Q Clear Time (g_c+I1), s	4.1	24.5		20.0	10.2	14.4		20.0				
Green Ext Time (p_c), s	0.0	2.9		0.0	0.1	2.7		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			27.5									
HCM 2010 LOS			C									

HCM Signalized Intersection Capacity Analysis
13: Hesperian Blvd & Depot Rd/Cathy Wy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (vph)	166	79	407	160	152	33	478	883	83	34	1199	133
Future Volume (vph)	166	79	407	160	152	33	478	883	83	34	1199	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.99	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1762	1428	1770	1819		1787	4986		1805	4937	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1762	1428	1770	1819		1787	4986		1805	4937	
Peak-hour factor, PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	234	111	573	182	173	38	583	1077	101	41	1462	162
RTOR Reduction (vph)	0	0	436	0	5	0	0	7	0	0	9	0
Lane Group Flow (vph)	171	174	137	182	206	0	583	1171	0	41	1615	0
Confl. Peds. (#/hr)			28	28					12			14
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	4%	2%	1%	3%	1%	2%	3%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases			8									
Actuated Green, G (s)	19.6	19.6	19.6	18.1	18.1		47.6	87.2		7.1	46.7	
Effective Green, g (s)	19.6	19.6	19.6	18.1	18.1		47.6	87.2		7.1	46.7	
Actuated g/C Ratio	0.13	0.13	0.13	0.12	0.12		0.32	0.58		0.05	0.31	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	224	230	186	213	219		567	2898		85	1537	
v/s Ratio Prot	c0.10	0.10		0.10	c0.11		c0.33	0.23		0.02	c0.33	
v/s Ratio Perm			0.10									
v/c Ratio	0.76	0.76	0.74	0.85	0.94		1.03	0.40		0.48	1.05	
Uniform Delay, d1	63.0	62.9	62.7	64.7	65.4		51.2	17.2		69.7	51.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.3	13.2	14.2	26.8	43.6		45.2	0.4		4.3	37.6	
Delay (s)	77.2	76.1	77.0	91.4	109.0		96.4	17.6		73.9	89.2	
Level of Service	E	E	E	F	F		F	B		E	F	
Approach Delay (s)		76.9			100.8			43.7			88.9	
Approach LOS		E			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	70.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	79.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗		↵	↕	↗	↵	↕	↗
Traffic Vol, veh/h	2	444	50	57	388	54	36	21	104	169	28	5
Future Vol, veh/h	2	444	50	57	388	54	36	21	104	169	28	5
Peak Hour Factor	0.52	0.52	0.52	0.80	0.80	0.80	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	4	854	96	71	485	68	46	27	133	194	32	6
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	138.6	30.9	16.8	24.8
HCM LOS	F	D	C	C























Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	75%	0%	100%	71%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	25%	0%	0%	29%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	36	21	104	2	296	198	57	259	183	169	28
LT Vol	36	0	0	2	0	0	57	0	0	169	0
Through Vol	0	21	0	0	296	148	0	259	129	0	28
RT Vol	0	0	104	0	0	50	0	0	54	0	0
Lane Flow Rate	46	27	133	4	569	381	71	323	229	194	32
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.136	0.076	0.351	0.01	1.355	0.887	0.187	0.802	0.556	0.565	0.089
Departure Headway (Hd)	11.08	10.58	9.88	9.067	8.567	8.39	9.75	9.25	9.044	10.901	10.401
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	325	341	367	394	427	430	370	394	401	334	347
Service Time	8.78	8.28	7.58	6.843	6.343	6.166	7.45	6.95	6.744	8.601	8.101
HCM Lane V/C Ratio	0.142	0.079	0.362	0.01	1.333	0.886	0.192	0.82	0.571	0.581	0.092
HCM Control Delay	15.5	14.1	17.8	11.9	199.2	49.2	14.7	40.4	22.5	26.9	14.1
HCM Lane LOS	C	B	C	B	F	E	B	E	C	D	B
HCM 95th-tile Q	0.5	0.2	1.5	0	26.5	9.3	0.7	7	3.3	3.3	0.3

HCM Signalized Intersection Capacity Analysis
2: Winton Ave & Corsair Blvd

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑			↘		↘↘		↘
Traffic Volume (vph)	5	1373	1	2	660	58	1	0	15	269	0	3
Future Volume (vph)	5	1373	1	2	660	58	1	0	15	269	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Lane Util. Factor	1.00	0.95			0.95			1.00		0.97		1.00
Frb, ped/bikes	1.00	1.00			1.00			1.00		1.00		0.99
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		1.00
Frt	1.00	1.00			0.99			0.87		1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00		0.95		1.00
Satd. Flow (prot)	1610	3223			3177			1476		3127		1422
Flt Permitted	0.34	1.00			0.95			1.00		0.95		1.00
Satd. Flow (perm)	570	3223			3027			1476		3127		1422
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.42	0.42	0.42	0.84	0.84	0.84
Adj. Flow (vph)	6	1543	1	2	702	62	2	0	36	320	0	4
RTOR Reduction (vph)	0	0	0	0	4	0	0	37	0	0	0	3
Lane Group Flow (vph)	6	1544	0	0	762	0	0	1	0	320	0	1
Confl. Peds. (#/hr)	1		6	6			1					1
Confl. Bikes (#/hr)							2					
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot		Perm
Protected Phases		2			6			3		4		
Permitted Phases	2			6			3					4
Actuated Green, G (s)	76.3	76.3			76.3			3.6		16.6		16.6
Effective Green, g (s)	76.3	76.3			76.3			3.6		16.6		16.6
Actuated g/C Ratio	0.69	0.69			0.69			0.03		0.15		0.15
Clearance Time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0		3.0
Lane Grp Cap (vph)	395	2235			2099			48		471		214
v/s Ratio Prot		c0.48								c0.10		
v/s Ratio Perm	0.01				0.25			0.00				0.00
v/c Ratio	0.02	0.69			0.36			0.03		0.68		0.00
Uniform Delay, d1	5.2	9.9			6.9			51.5		44.2		39.7
Progression Factor	1.00	1.00			0.31			1.00		1.00		1.00
Incremental Delay, d2	0.1	1.8			0.5			0.2		3.9		0.0
Delay (s)	5.3	11.7			2.6			51.7		48.1		39.7
Level of Service	A	B			A			D		D		D
Approach Delay (s)		11.7			2.6			51.7			48.0	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			14.0				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			13.5			
Intersection Capacity Utilization			59.4%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
3: Clawiter Rd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1334	237	276	562	0	170	0	638	3	2	0
Future Volume (vph)	1	1334	237	276	562	0	170	0	638	3	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1612	3131		3127	3223		1531	1531	1422	1612	1696	
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00	0.65	1.00	
Satd. Flow (perm)	1612	3131		3127	3223		1219	1219	1422	1104	1696	
Peak-hour factor, PHF	0.87	0.87	0.87	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	1	1533	272	337	685	0	187	0	701	3	2	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	566	0	0	0
Lane Group Flow (vph)	1	1797	0	337	685	0	93	94	135	3	2	0
Confl. Peds. (#/hr)			6			2						
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4				8
Permitted Phases							4		4		8	
Actuated Green, G (s)	1.0	63.1		17.5	79.6		15.9	15.9	15.9	15.9	15.9	
Effective Green, g (s)	1.0	63.1		17.5	79.6		15.9	15.9	15.9	15.9	15.9	
Actuated g/C Ratio	0.01	0.57		0.16	0.72		0.14	0.14	0.14	0.14	0.14	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	14	1796		497	2332		176	176	205	159	245	
v/s Ratio Prot	0.00	c0.57		c0.11	0.21							0.00
v/s Ratio Perm							0.08	0.08	c0.09	0.00		
v/c Ratio	0.07	1.00		0.68	0.29		0.53	0.53	0.66	0.02	0.01	
Uniform Delay, d1	54.0	23.4		43.6	5.3		43.6	43.6	44.5	40.4	40.3	
Progression Factor	1.37	1.06		0.71	1.03		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	18.5		2.8	0.2		2.8	3.1	7.4	0.0	0.0	
Delay (s)	75.5	43.3		33.8	5.7		46.4	46.7	51.9	40.4	40.3	
Level of Service	E	D		C	A		D	D	D	D	D	
Approach Delay (s)		43.3			15.0			50.7			40.4	
Approach LOS		D			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			37.3				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			99.4%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												



















HCM 2010 Signalized Intersection Summary
4: Hesperian Blvd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	826	1253	112	313	467	236	102	1257	192	186	792	270
Future Volume (veh/h)	826	1253	112	313	467	236	102	1257	192	186	792	270
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1696	1696	1900	1696	1696	1696	1696	1696	1696
Adj Flow Rate, veh/h	908	1377	123	352	525	265	116	1428	218	219	932	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	898	1423	127	379	505	230	140	1440	445	237	1388	432
Arrive On Green	0.09	0.11	0.11	0.04	0.05	0.05	0.09	0.31	0.31	0.08	0.30	0.00
Sat Flow, veh/h	3134	4324	386	3134	3088	1405	1616	4631	1431	3134	4631	1442
Grp Volume(v), veh/h	908	983	517	352	525	265	116	1428	218	219	932	0
Grp Sat Flow(s),veh/h/ln	1567	1544	1622	1567	1544	1405	1616	1544	1431	1567	1544	1442
Q Serve(g_s), s	31.5	34.9	34.9	12.3	18.0	18.0	7.8	33.8	13.6	7.6	19.4	0.0
Cycle Q Clear(g_c), s	31.5	34.9	34.9	12.3	18.0	18.0	7.8	33.8	13.6	7.6	19.4	0.0
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	898	1016	534	379	505	230	140	1440	445	237	1388	432
V/C Ratio(X)	1.01	0.97	0.97	0.93	1.04	1.15	0.83	0.99	0.49	0.93	0.67	0.00
Avail Cap(c_a), veh/h	898	1016	534	379	505	230	170	1440	445	237	1388	432
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.15	0.15	0.15	0.58	0.58	0.58	0.56	0.56	0.56	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.8	48.4	48.4	52.3	52.0	52.0	49.4	37.8	30.8	50.5	33.8	0.0
Incr Delay (d2), s/veh	14.7	5.8	9.3	19.9	41.2	93.9	14.6	15.9	2.1	38.9	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	15.7	17.1	6.4	10.6	13.0	4.0	16.5	5.6	4.6	8.6	0.0
LnGrp Delay(d),s/veh	64.5	54.2	57.8	72.2	93.3	145.9	64.0	53.6	33.0	89.4	36.4	0.0
LnGrp LOS	F	D	E	E	F	F	E	D	C	F	D	
Approach Vol, veh/h		2408			1142			1762			1151	
Approach Delay, s/veh		58.8			99.0			51.8			46.5	
Approach LOS		E			F			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.8	38.7	17.8	40.7	14.0	37.5	36.0	22.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	8.3	34.2	13.3	36.2	11.6	30.9	31.5	18.0				
Max Q Clear Time (g_c+I1), s	9.6	35.8	14.3	36.9	9.8	21.4	33.5	20.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				61.8								
HCM 2010 LOS				E								

HCM Signalized Intersection Capacity Analysis
5: Southland Dr & Winton Ave

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖↙	↑↑		↗↘
Traffic Volume (vph)	2240	64	727	1177	0	960
Future Volume (vph)	2240	64	727	1177	0	960
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frpb, ped/bikes	1.00		1.00	1.00		0.98
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4612		3127	3223		2494
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4612		3127	3223		2494
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2435	70	790	1279	0	1043
RTOR Reduction (vph)	3	0	0	0	0	2
Lane Group Flow (vph)	2502	0	790	1279	0	1041
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	NA		Prot	NA		Perm
Protected Phases	2		4	6		
Permitted Phases						8
Actuated Green, G (s)	58.5		42.5	58.5		42.5
Effective Green, g (s)	58.5		42.5	58.5		42.5
Actuated g/C Ratio	0.53		0.39	0.53		0.39
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2452		1208	1714		963
v/s Ratio Prot	c0.54		0.25	0.40		
v/s Ratio Perm						c0.42
v/c Ratio	1.02		0.65	0.75		1.08
Uniform Delay, d1	25.8		27.7	20.0		33.8
Progression Factor	1.20		1.00	1.00		1.00
Incremental Delay, d2	21.1		1.3	3.0		53.5
Delay (s)	51.9		29.0	23.0		87.3
Level of Service	D		C	C		F
Approach Delay (s)	51.9			25.3	87.3	
Approach LOS	D			C	F	
Intersection Summary						
HCM 2000 Control Delay			48.6		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.05			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			86.1%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
6: Clawiter Rd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	387	26	15	81	41	25	417	184	22	143	38
Future Volume (veh/h)	184	387	26	15	81	41	25	417	184	22	143	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	211	445	30	18	96	49	33	549	242	23	151	40
Adj No. of Lanes	0	2	0	0	2	1	0	2	0	0	2	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	299	672	47	51	290	150	106	768	331	148	798	531
Arrive On Green	0.28	0.28	0.28	0.09	0.09	0.09	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1069	2406	167	542	3064	1583	67	2292	987	137	2379	1583
Grp Volume(v), veh/h	357	0	329	61	53	49	451	0	373	71	103	40
Grp Sat Flow(s),veh/h/ln	1809	0	1833	1836	1770	1583	1825	0	1521	906	1610	1583
Q Serve(g_s), s	8.2	0.0	7.3	1.4	1.3	1.3	2.3	0.0	10.0	0.4	2.1	0.8
Cycle Q Clear(g_c), s	8.2	0.0	7.3	1.4	1.3	1.3	10.0	0.0	10.0	10.4	2.1	0.8
Prop In Lane	0.59		0.09	0.30		1.00	0.07		0.65	0.32		1.00
Lane Grp Cap(c), veh/h	505	0	512	174	167	150	695	0	510	406	540	531
V/C Ratio(X)	0.71	0.00	0.64	0.35	0.32	0.33	0.65	0.00	0.73	0.18	0.19	0.08
Avail Cap(c_a), veh/h	706	0	715	712	686	614	882	0	669	531	708	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	0.0	14.7	19.7	19.6	19.6	13.5	0.0	13.6	11.1	11.0	10.5
Incr Delay (d2), s/veh	1.9	0.0	1.4	1.2	1.1	1.3	1.1	0.0	2.9	0.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	3.8	0.8	0.7	0.6	5.2	0.0	4.6	0.7	0.9	0.4
LnGrp Delay(d),s/veh	16.9	0.0	16.0	20.9	20.7	20.9	14.7	0.0	16.5	11.3	11.1	10.6
LnGrp LOS	B		B	C	C	C	B		B	B	B	B
Approach Vol, veh/h		686			163			824			214	
Approach Delay, s/veh		16.5			20.8			15.5			11.1	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.1		17.5		20.1		8.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.4		18.1		20.4		18.0				
Max Q Clear Time (g_c+I1), s		12.0		10.2		12.4		3.4				
Green Ext Time (p_c), s		3.5		2.7		0.7		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			15.8									
HCM 2010 LOS			B									























Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	12	55	0	2	27	159	0	2	2	321	0	3
Future Vol, veh/h	12	55	0	2	27	159	0	2	2	321	0	3
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.63	0.63	0.63	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	73	0	2	32	187	0	3	3	353	0	3
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	1
HCM Control Delay	9.8	10.3	8.8	16.2
HCM LOS	A	B	A	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	18%	1%	100%	0%	0%
Vol Thru, %	100%	50%	82%	14%	0%	100%	0%
Vol Right, %	0%	50%	0%	85%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	4	67	188	321	0	3
LT Vol	0	0	12	2	321	0	0
Through Vol	0	2	55	27	0	0	0
RT Vol	0	2	0	159	0	0	3
Lane Flow Rate	0	6	89	221	353	0	3
Geometry Grp	8	8	7	7	7	7	7
Degree of Util (X)	0	0.011	0.148	0.316	0.573	0	0.004
Departure Headway (Hd)	6.423	6.068	5.979	5.151	5.845	5.341	4.636
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	0	593	594	692	614	0	763
Service Time	4.123	3.768	3.771	2.922	3.63	3.126	2.42
HCM Lane V/C Ratio	0	0.01	0.15	0.319	0.575	0	0.004
HCM Control Delay	9.1	8.8	9.8	10.3	16.3	8.1	7.4
HCM Lane LOS	N	A	A	B	C	N	A
HCM 95th-tile Q	0	0	0.5	1.4	3.6	0	0

HCM Signalized Intersection Capacity Analysis
8: Clawiter Rd & Breakwater Ave/SR 92 WB Ramps

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	37	90	135	114	49	150	36	372	158	215	269	37	
Future Volume (vph)	37	90	135	114	49	150	36	372	158	215	269	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00		0.95	1.00	
Frbp, ped/bikes		1.00	1.00	1.00	0.99			1.00	1.00		1.00	0.97	
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.89			1.00	0.85		1.00	0.85	
Flt Protected		0.99	1.00	0.95	1.00			1.00	1.00		0.98	1.00	
Satd. Flow (prot)		1836	1583	1770	1635			1855	1583		3462	1541	
Flt Permitted		0.82	1.00	0.95	1.00			1.00	1.00		0.98	1.00	
Satd. Flow (perm)		1536	1583	1770	1635			1855	1583		3462	1541	
Peak-hour factor, PHF	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83	0.88	0.88	0.88	
Adj. Flow (vph)	40	97	145	152	65	200	43	448	190	244	306	42	
RTOR Reduction (vph)	0	0	122	0	130	0	0	0	145	0	0	33	
Lane Group Flow (vph)	0	137	23	152	135	0	0	491	45	0	550	9	
Confl. Peds. (#/hr)							1						
Confl. Bikes (#/hr)												4	
Turn Type	custom	NA	custom	Split	NA		Split	NA	Perm	Split	NA	Perm	
Protected Phases				4	4		2	2		6	6		
Permitted Phases	8	8	8						2			6	
Actuated Green, G (s)		12.1	12.1	12.2	12.2			18.3	18.3		16.4	16.4	
Effective Green, g (s)		12.1	12.1	12.2	12.2			18.3	18.3		16.4	16.4	
Actuated g/C Ratio		0.16	0.16	0.16	0.16			0.24	0.24		0.21	0.21	
Clearance Time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		241	248	280	259			440	376		737	328	
v/s Ratio Prot				c0.09	0.08			c0.26			c0.16		
v/s Ratio Perm		c0.09	0.01						0.03			0.01	
v/c Ratio		0.57	0.09	0.54	0.52			1.12	0.12		0.75	0.03	
Uniform Delay, d1		30.0	27.8	29.8	29.7			29.4	23.0		28.4	24.0	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.1	0.2	2.1	1.9			78.4	0.1		4.1	0.0	
Delay (s)		33.1	27.9	32.0	31.6			107.7	23.2		32.5	24.0	
Level of Service		C	C	C	C			F	C		C	C	
Approach Delay (s)		30.4			31.8			84.1			31.9		
Approach LOS		C			C			F			C		
Intersection Summary													
HCM 2000 Control Delay			49.7									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.78										
Actuated Cycle Length (s)			77.0								18.0		
Intersection Capacity Utilization			69.0%									ICU Level of Service	C
Analysis Period (min)			15										

c Critical Lane Group























Intersection	
Intersection Delay, s/veh	121.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔			↔			↖	↗
Traffic Vol, veh/h	229	12	81	2	170	122	275	254	6	68	140	297
Future Vol, veh/h	229	12	81	2	170	122	275	254	6	68	140	297
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	286	15	101	2	191	137	348	322	8	74	152	323
Number of Lanes	0	1	1	0	1	0	0	2	0	0	2	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	2
HCM Control Delay	62.5	82.4	237.6	43.9
HCM LOS	F	F	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	68%	0%	95%	0%	1%	59%	0%	0%
Vol Thru, %	32%	95%	5%	0%	58%	41%	100%	0%
Vol Right, %	0%	5%	0%	100%	41%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	402	133	241	81	294	115	93	297
LT Vol	275	0	229	0	2	68	0	0
Through Vol	127	127	12	0	170	47	93	0
RT Vol	0	6	0	81	122	0	0	297
Lane Flow Rate	509	168	301	101	330	125	101	323
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	1.592	0.508	0.946	0.285	0.979	0.378	0.299	0.89
Departure Headway (Hd)	11.262	10.863	12.573	11.327	11.887	12.121	11.806	11.063
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	326	332	292	319	307	299	306	329
Service Time	9.052	8.653	10.273	9.027	9.587	9.821	9.506	8.763
HCM Lane V/C Ratio	1.561	0.506	1.031	0.317	1.075	0.418	0.33	0.982
HCM Control Delay	308.1	24.4	77.3	18.5	82.4	22	19.5	60
HCM Lane LOS	F	C	F	C	F	C	C	F
HCM 95th-tile Q	29.8	2.7	9.2	1.1	10.2	1.7	1.2	8.4























HCM 2010 Signalized Intersection Summary
10: Industrial Blvd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (veh/h)	59	246	320	46	14	18	114	530	141	70	409	14
Future Volume (veh/h)	59	246	320	46	14	18	114	530	141	70	409	14
Number	7	4	14	3	8	18	1	1	16	5	12	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1624	1377	1900	1829	1900	1712	1712	1759	1759	1881	1881
Adj Flow Rate, veh/h	66	276	360	51	16	20	125	125	0	77	0	0
Adj No. of Lanes	1	1	1	0	1	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	25	17	38	2	2	2	11	11	8	8	1	1
Cap, veh/h	583	597	428	272	88	68	156	156	370	117	354	354
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.10	0.10	0.00	0.07	0.00	0.00
Sat Flow, veh/h	1112	1624	1164	377	240	184	1630	1630	1495	1675	1599	1599
Grp Volume(v), veh/h	66	276	360	87	0	0	125	125	0	77	0	0
Grp Sat Flow(s),veh/h/ln	1112	1624	1164	800	0	0	1630	1630	1495	1675	1599	1599
Q Serve(g_s), s	0.0	5.5	12.1	0.4	0.0	0.0	3.2	3.2	0.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	1.6	5.5	12.1	5.9	0.0	0.0	3.2	3.2	0.0	1.9	0.0	0.0
Prop In Lane	1.00		1.00	0.59		0.23	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	583	597	428	427	0	0	156	156	370	117	354	354
V/C Ratio(X)	0.11	0.46	0.84	0.20	0.00	0.00	0.80	0.80	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	656	702	503	492	0	0	324	324	727	282	729	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.1	10.3	12.4	9.2	0.0	0.0	18.9	18.9	0.0	19.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.6	10.8	0.2	0.0	0.0	9.1	9.1	0.0	6.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.5	5.1	0.7	0.0	0.0	1.8	1.8	0.0	1.1	0.0	0.0
LnGrp Delay(d),s/veh	9.2	10.9	23.2	9.5	0.0	0.0	28.0	28.0	0.0	25.5	0.0	0.0
LnGrp LOS	A	B	C	A			C	C		C		
Approach Vol, veh/h		702			87		707	707		77		
Approach Delay, s/veh		17.0			9.5		17.9	17.9		25.5		
Approach LOS		B			A		B	B		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	14.0		20.2	7.5	15.1		20.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	8.5	19.5		18.5	7.2	20.8		18.5				
Max Q Clear Time (g_c+I1), s	5.2	0.0		14.1	3.9	8.8		7.9				
Green Ext Time (p_c), s	0.1	0.0		1.5	0.0	1.7		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			17.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 11: Industrial Blvd & SR 92 WB Ramps/Cryer St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	35	169	37	6	13	309	662	91	20	985	101
Future Volume (veh/h)	173	35	169	37	6	13	309	662	91	20	985	101
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1824	1792	1900	1868	1900	1727	1814	1900	1900	1624	1776
Adj Flow Rate, veh/h	222	45	0	60	10	21	340	727	100	22	1059	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.78	0.78	0.78	0.62	0.62	0.62	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	6	0	0	0	10	5	5	0	17	7
Cap, veh/h	302	46	346	382	58	367	373	1694	233	105	1200	587
Arrive On Green	0.23	0.23	0.00	0.23	0.23	0.23	0.23	0.56	0.56	0.06	0.39	0.00
Sat Flow, veh/h	990	201	1524	1339	255	1615	1645	3042	418	1810	3085	1509
Grp Volume(v), veh/h	267	0	0	70	0	21	340	412	415	22	1059	0
Grp Sat Flow(s),veh/h/ln	1191	0	1524	1594	0	1615	1645	1723	1737	1810	1543	1509
Q Serve(g_s), s	16.2	0.0	0.0	0.0	0.0	0.9	17.3	11.9	11.9	1.0	27.4	0.0
Cycle Q Clear(g_c), s	19.2	0.0	0.0	3.0	0.0	0.9	17.3	11.9	11.9	1.0	27.4	0.0
Prop In Lane	0.83		1.00	0.86		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	348	0	346	440	0	367	373	960	967	105	1200	587
V/C Ratio(X)	0.77	0.00	0.00	0.16	0.00	0.06	0.91	0.43	0.43	0.21	0.88	0.00
Avail Cap(c_a), veh/h	348	0	346	440	0	367	393	1038	1047	112	1313	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.5	0.0	0.0	26.7	0.0	25.9	32.3	11.1	11.1	38.5	24.4	0.0
Incr Delay (d2), s/veh	10.0	0.0	0.0	0.2	0.0	0.1	24.5	0.3	0.3	1.0	7.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	0.0	1.4	0.0	0.4	10.4	5.7	5.7	0.5	12.8	0.0
LnGrp Delay(d),s/veh	44.5	0.0	0.0	26.9	0.0	26.0	56.8	11.4	11.4	39.5	31.4	0.0
LnGrp LOS	D			C		C	E	B	B	D	C	
Approach Vol, veh/h		267			91			1167			1081	
Approach Delay, s/veh		44.5			26.7			24.6			31.5	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	52.3		24.0	23.9	37.9		24.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.3	51.7		19.5	20.5	36.5		19.5				
Max Q Clear Time (g_c+I1), s	3.0	13.9		21.2	19.3	29.4		5.0				
Green Ext Time (p_c), s	0.0	5.9		0.0	0.1	4.0		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			29.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 12: Industrial Blvd & SR 92 EB Ramps/Sleepy Hollow Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	88	833	0	16	48	84	799	18	75	842	266
Future Volume (veh/h)	225	88	833	0	16	48	84	799	18	75	842	266
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1674	1776	1900	1900	1827	1462	1776	1667	1792	1727	1624
Adj Flow Rate, veh/h	232	91	859	0	20	59	93	888	20	80	896	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	25	25	7	0	0	4	30	7	14	6	10	17
Cap, veh/h	421	123	627	0	640	523	109	1165	489	111	1089	458
Arrive On Green	0.34	0.34	0.34	0.00	0.34	0.34	0.08	0.35	0.35	0.07	0.33	0.00
Sat Flow, veh/h	906	366	1509	0	1900	1553	1392	3374	1417	1707	3282	1380
Grp Volume(v), veh/h	323	0	859	0	20	59	93	888	20	80	896	0
Grp Sat Flow(s),veh/h/ln	1272	0	1509	0	1900	1553	1392	1687	1417	1707	1641	1380
Q Serve(g_s), s	11.8	0.0	18.0	0.0	0.4	1.4	3.5	12.5	0.5	2.5	13.4	0.0
Cycle Q Clear(g_c), s	12.2	0.0	18.0	0.0	0.4	1.4	3.5	12.5	0.5	2.5	13.4	0.0
Prop In Lane	0.72		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	544	0	627	0	640	523	109	1165	489	111	1089	458
V/C Ratio(X)	0.59	0.00	1.37	0.00	0.03	0.11	0.85	0.76	0.04	0.72	0.82	0.00
Avail Cap(c_a), veh/h	544	0	627	0	640	523	274	1478	621	163	1106	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.9	0.0	15.6	0.0	11.9	12.2	24.3	15.5	11.6	24.5	16.4	0.0
Incr Delay (d2), s/veh	1.7	0.0	176.5	0.0	0.0	0.1	16.4	1.8	0.0	8.5	5.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	39.8	0.0	0.2	0.6	1.8	6.1	0.2	1.4	6.7	0.0
LnGrp Delay(d),s/veh	17.6	0.0	192.1	0.0	11.9	12.3	40.7	17.4	11.6	33.0	21.5	0.0
LnGrp LOS	B		F		B	B	D	B	B	C	C	
Approach Vol, veh/h		1182			79			1001			976	
Approach Delay, s/veh		144.4			12.2			19.4			22.4	
Approach LOS		F			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	22.9		22.5	8.7	22.2		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	23.4		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	4.5	14.5		20.0	5.5	15.4		3.4				
Green Ext Time (p_c), s	0.0	4.0		0.0	0.1	1.5		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			65.8									
HCM 2010 LOS			E									

HCM Signalized Intersection Capacity Analysis
13: Hesperian Blvd & Depot Rd/Cathy Wy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (vph)	209	100	348	51	39	39	238	1475	133	37	941	112
Future Volume (vph)	209	100	348	51	39	39	238	1475	133	37	941	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1762	1470	1770	1710		1787	4998		1805	4942	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1762	1470	1770	1710		1787	4998		1805	4942	
Peak-hour factor, PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	294	141	490	58	44	44	290	1799	162	45	1148	137
RTOR Reduction (vph)	0	0	384	0	40	0	0	10	0	0	16	0
Lane Group Flow (vph)	215	220	106	58	48	0	290	1951	0	45	1269	0
Confl. Peds. (#/hr)			28	28					12			14
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	4%	2%	1%	3%	1%	2%	3%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases			8									
Actuated Green, G (s)	19.5	19.5	19.5	7.4	7.4		19.9	42.1		3.0	25.2	
Effective Green, g (s)	19.5	19.5	19.5	7.4	7.4		19.9	42.1		3.0	25.2	
Actuated g/C Ratio	0.22	0.22	0.22	0.08	0.08		0.22	0.47		0.03	0.28	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	371	381	318	145	140		395	2337		60	1383	
v/s Ratio Prot	c0.13	0.12		c0.03	0.03		0.16	c0.39		0.02	c0.26	
v/s Ratio Perm			0.07									
v/c Ratio	0.58	0.58	0.33	0.40	0.34		0.73	0.84		0.75	0.92	
Uniform Delay, d1	31.6	31.6	29.8	39.2	39.0		32.6	20.9		43.1	31.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	2.1	0.6	1.8	1.5		6.9	3.7		40.4	11.2	
Delay (s)	33.8	33.7	30.4	41.0	40.4		39.5	24.6		83.5	42.5	
Level of Service	C	C	C	D	D		D	C		F	D	
Approach Delay (s)		32.0			40.7			26.5			43.9	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c	Critical Lane Group		






















Intersection	
Intersection Delay, s/veh	20.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗		↵	↕	↗	↵	↕	↗
Traffic Vol, veh/h	4	49	20	372	92	207	28	27	21	89	20	2
Future Vol, veh/h	4	49	20	372	92	207	28	27	21	89	20	2
Peak Hour Factor	0.52	0.52	0.52	0.80	0.80	0.80	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	8	94	38	465	115	259	36	35	27	102	23	2
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	10.8	24	10.9	12.6
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	45%	0%	100%	13%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	55%	0%	0%	87%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	27	21	4	33	36	372	61	238	89	20
LT Vol	28	0	0	4	0	0	372	0	0	89	0
Through Vol	0	27	0	0	33	16	0	61	31	0	20
RT Vol	0	0	21	0	0	20	0	0	207	0	0
Lane Flow Rate	36	35	27	8	63	70	465	77	297	102	23
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.081	0.073	0.052	0.017	0.126	0.133	0.835	0.127	0.442	0.227	0.048
Departure Headway (Hd)	8.106	7.606	6.906	7.74	7.24	6.855	6.466	5.966	5.356	8.003	7.503
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	441	470	517	462	494	522	563	601	671	448	476
Service Time	5.867	5.367	4.667	5.5	5	4.615	4.204	3.704	3.094	5.762	5.262
HCM Lane V/C Ratio	0.082	0.074	0.052	0.017	0.128	0.134	0.826	0.128	0.443	0.228	0.048
HCM Control Delay	11.6	11	10	10.6	11	10.7	33.9	9.6	12.3	13.1	10.6
HCM Lane LOS	B	B	A	B	B	B	D	A	B	B	B
HCM 95th-tile Q	0.3	0.2	0.2	0.1	0.4	0.5	8.6	0.4	2.3	0.9	0.2

HCM Signalized Intersection Capacity Analysis
2: Winton Ave & Corsair Blvd

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		 			 					 				
Traffic Volume (vph)	9	408	0	15	1214	293	0	1	5	106	0	9		
Future Volume (vph)	9	408	0	15	1214	293	0	1	5	106	0	9		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.5	4.5			4.5			4.5		4.5		4.5		
Lane Util. Factor	1.00	0.95			0.95			1.00		0.97		1.00		
Frpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		0.98		
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		1.00		
Frt	1.00	1.00			0.97			0.88		1.00		0.85		
Flt Protected	0.95	1.00			1.00			1.00		0.95		1.00		
Satd. Flow (prot)	1611	3223			3114			1500		3127		1419		
Flt Permitted	0.11	1.00			0.95			1.00		0.95		1.00		
Satd. Flow (perm)	191	3223			2959			1500		3127		1419		
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.42	0.42	0.42	0.84	0.84	0.84		
Adj. Flow (vph)	10	458	0	16	1291	312	0	2	12	126	0	11		
RTOR Reduction (vph)	0	0	0	0	16	0	0	12	0	0	0	10		
Lane Group Flow (vph)	10	458	0	0	1603	0	0	2	0	126	0	1		
Confl. Peds. (#/hr)	1		6	6			1					1		
Confl. Bikes (#/hr)							2							
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%		
Turn Type	Perm	NA		Perm	NA			NA		Prot		Perm		
Protected Phases		2			6			3		4				
Permitted Phases	2			6								4		
Actuated Green, G (s)	49.7	49.7			49.7			1.2		5.1		5.1		
Effective Green, g (s)	49.7	49.7			49.7			1.2		5.1		5.1		
Actuated g/C Ratio	0.72	0.72			0.72			0.02		0.07		0.07		
Clearance Time (s)	4.5	4.5			4.5			4.5		4.5		4.5		
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0		3.0		
Lane Grp Cap (vph)	136	2304			2116			25		229		104		
v/s Ratio Prot		0.14						c0.00		c0.04				
v/s Ratio Perm	0.05				c0.54							0.00		
v/c Ratio	0.07	0.20			0.76			0.09		0.55		0.01		
Uniform Delay, d1	3.0	3.3			6.2			33.6		31.1		29.9		
Progression Factor	1.00	1.00			1.00			1.00		1.00		1.00		
Incremental Delay, d2	0.2	0.0			1.6			1.5		2.8		0.0		
Delay (s)	3.2	3.3			7.8			35.1		33.9		29.9		
Level of Service	A	A			A			D		C		C		
Approach Delay (s)		3.3			7.8			35.1			33.6			
Approach LOS		A			A			D			C			
Intersection Summary														
HCM 2000 Control Delay			8.6									HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio			0.72											
Actuated Cycle Length (s)			69.5							13.5				
Intersection Capacity Utilization			70.7%										ICU Level of Service	C
Analysis Period (min)			15											
c	Critical Lane Group													























HCM Signalized Intersection Capacity Analysis

3: Clawiter Rd & Winton Ave







Attachment X
Cumulative AM
08/04/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	415	187	1169	1313	1	181	0	268	0	0	0
Future Volume (vph)	1	415	187	1169	1313	1	181	0	268	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5			
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95	1.00			
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99			
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Frt	1.00	0.95		1.00	1.00		1.00	1.00	0.85			
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00			
Satd. Flow (prot)	1612	3035		3127	3223		1531	1531	1422			
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00			
Satd. Flow (perm)	1612	3035		3127	3223		1220	1220	1422			
Peak-hour factor, PHF	0.87	0.87	0.87	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	1	477	215	1426	1601	1	199	0	295	0	0	0
RTOR Reduction (vph)	0	49	0	0	0	0	0	0	256	0	0	0
Lane Group Flow (vph)	1	643	0	1426	1602	0	99	100	39	0	0	0
Confl. Peds. (#/hr)			6			2						
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm		
Protected Phases	5	2		1	6			4				8
Permitted Phases							4		4		8	
Actuated Green, G (s)	0.9	26.1		45.6	70.8		13.1	13.1	13.1			
Effective Green, g (s)	0.9	26.1		45.6	70.8		13.1	13.1	13.1			
Actuated g/C Ratio	0.01	0.27		0.46	0.72		0.13	0.13	0.13			
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	14	805		1450	2321		162	162	189			
v/s Ratio Prot	0.00	c0.21		c0.46	0.50							
v/s Ratio Perm							0.08	c0.08	0.03			
v/c Ratio	0.07	0.80		0.98	0.69		0.61	0.62	0.21			
Uniform Delay, d1	48.3	33.6		26.0	7.6		40.2	40.2	38.0			
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.2	5.6		19.6	0.9		6.7	6.8	0.5			
Delay (s)	50.5	39.2		45.6	8.5		46.9	47.1	38.5			
Level of Service	D	D		D	A		D	D	D			
Approach Delay (s)		39.2			26.0			41.9			0.0	
Approach LOS		D			C			D			A	
Intersection Summary												
HCM 2000 Control Delay			30.0				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			98.3				Sum of lost time (s)				13.5	
Intersection Capacity Utilization			67.3%				ICU Level of Service				C	
Analysis Period (min)			15									
c Critical Lane Group												



















HCM 2010 Signalized Intersection Summary
4: Hesperian Blvd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	433	44	237	1237	196	67	783	174	137	1291	1317
Future Volume (veh/h)	255	433	44	237	1237	196	67	783	174	137	1291	1317
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1696	1696	1900	1696	1696	1696	1696	1696	1696
Adj Flow Rate, veh/h	280	476	48	266	1390	220	76	890	198	161	1519	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	305	1427	142	328	1371	217	90	1523	471	217	1587	494
Arrive On Green	0.10	0.33	0.33	0.10	0.34	0.34	0.06	0.33	0.33	0.07	0.34	0.00
Sat Flow, veh/h	3134	4277	425	3134	4021	636	1616	4631	1431	3134	4631	1442
Grp Volume(v), veh/h	280	342	182	266	1067	543	76	890	198	161	1519	0
Grp Sat Flow(s),veh/h/ln	1567	1544	1615	1567	1544	1570	1616	1544	1431	1567	1544	1442
Q Serve(g_s), s	9.7	9.1	9.3	9.1	37.5	37.5	5.1	17.6	11.9	5.5	35.3	0.0
Cycle Q Clear(g_c), s	9.7	9.1	9.3	9.1	37.5	37.5	5.1	17.6	11.9	5.5	35.3	0.0
Prop In Lane	1.00		0.26	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	305	1030	539	328	1053	535	90	1523	471	217	1587	494
V/C Ratio(X)	0.92	0.33	0.34	0.81	1.01	1.01	0.85	0.58	0.42	0.74	0.96	0.00
Avail Cap(c_a), veh/h	305	1030	539	442	1053	535	90	1523	471	305	1587	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.2	27.5	27.5	48.2	36.3	36.3	51.5	30.7	28.8	50.2	35.4	0.0
Incr Delay (d2), s/veh	31.3	0.2	0.4	8.1	31.2	42.6	49.6	1.6	2.7	5.9	14.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	3.9	4.2	4.3	20.5	22.5	3.5	7.7	5.0	2.6	17.2	0.0
LnGrp Delay(d),s/veh	80.5	27.6	27.9	56.3	67.4	78.8	101.1	32.3	31.5	56.1	49.8	0.0
LnGrp LOS	F	C	C	E	F	F	F	C	C	E	D	
Approach Vol, veh/h		804			1876			1164			1680	
Approach Delay, s/veh		46.1			69.2			36.7			50.4	
Approach LOS		D			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	40.7	16.0	41.2	10.6	42.2	15.2	42.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	10.7	33.1	15.5	32.7	6.1	37.7	10.7	37.5				
Max Q Clear Time (g_c+I1), s	7.5	19.6	11.1	11.3	7.1	37.3	11.7	39.5				
Green Ext Time (p_c), s	0.1	5.9	0.4	3.4	0.0	0.4	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			53.3									
HCM 2010 LOS			D									

HCM Signalized Intersection Capacity Analysis
5: Southland Dr & Winton Ave

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙↘	↑↑		↗↖
Traffic Volume (vph)	1123	33	1062	1902	0	377
Future Volume (vph)	1123	33	1062	1902	0	377
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frbp, ped/bikes	1.00		1.00	1.00		0.98
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4611		3127	3223		2491
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4611		3127	3223		2491
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1221	36	1154	2067	0	410
RTOR Reduction (vph)	2	0	0	0	0	81
Lane Group Flow (vph)	1255	0	1154	2067	0	329
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	NA		Prot	NA		Perm
Protected Phases	2		4	6		
Permitted Phases						8
Actuated Green, G (s)	76.8		44.2	76.8		44.2
Effective Green, g (s)	76.8		44.2	76.8		44.2
Actuated g/C Ratio	0.59		0.34	0.59		0.34
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2724		1063	1904		846
v/s Ratio Prot	0.27		c0.37	c0.64		
v/s Ratio Perm						0.13
v/c Ratio	0.46		1.09	1.09		0.39
Uniform Delay, d1	15.0		42.9	26.6		32.6
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1		53.9	48.1		0.3
Delay (s)	15.1		96.8	74.7		32.9
Level of Service	B		F	E		C
Approach Delay (s)	15.1			82.6	32.9	
Approach LOS	B			F	C	
Intersection Summary						
HCM 2000 Control Delay			61.1		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.09			
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			67.8%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
6: Clawiter Rd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	124	37	107	306	11	29	74	40	7	700	270
Future Volume (veh/h)	57	124	37	107	306	11	29	74	40	7	700	270
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	66	143	43	127	364	13	38	97	53	7	737	284
Adj No. of Lanes	0	2	0	0	2	1	0	2	0	0	2	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	273	85	201	614	359	182	423	254	87	1138	521
Arrive On Green	0.13	0.13	0.13	0.23	0.23	0.23	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	902	2034	633	885	2704	1583	183	1285	772	9	3459	1583
Grp Volume(v), veh/h	133	0	119	261	230	13	81	0	107	399	345	284
Grp Sat Flow(s),veh/h/ln	1818	0	1751	1819	1770	1583	681	0	1559	1858	1610	1583
Q Serve(g_s), s	3.0	0.0	2.8	5.6	5.0	0.3	0.6	0.0	2.2	0.0	8.0	6.4
Cycle Q Clear(g_c), s	3.0	0.0	2.8	5.6	5.0	0.3	8.6	0.0	2.2	8.0	8.0	6.4
Prop In Lane	0.50		0.36	0.49		1.00	0.47		0.50	0.02		1.00
Lane Grp Cap(c), veh/h	244	0	235	413	402	359	345	0	513	695	530	521
V/C Ratio(X)	0.54	0.00	0.51	0.63	0.57	0.04	0.23	0.00	0.21	0.57	0.65	0.55
Avail Cap(c_a), veh/h	751	0	723	751	731	654	470	0	733	956	758	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	17.5	15.2	15.0	13.1	10.7	0.0	10.5	12.5	12.5	12.0
Incr Delay (d2), s/veh	1.9	0.0	1.7	1.6	1.3	0.0	0.3	0.0	0.2	0.8	1.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.4	3.0	2.6	0.1	0.7	0.0	0.9	4.2	3.7	2.9
LnGrp Delay(d),s/veh	19.5	0.0	19.2	16.8	16.3	13.2	11.0	0.0	10.7	13.2	13.8	12.9
LnGrp LOS	B		B	B	B	B	B		B	B	B	B
Approach Vol, veh/h		252			504			188			1028	
Approach Delay, s/veh		19.4			16.5			10.9			13.3	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.8		10.4		18.8		14.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.5		18.0		20.5		18.0				
Max Q Clear Time (g_c+I1), s		10.6		5.0		10.0		7.6				
Green Ext Time (p_c), s		0.9		1.2		4.4		2.3				
Intersection Summary												
HCM 2010 Ctrl Delay				14.7								
HCM 2010 LOS				B								

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	5	13	0	2	31	297	1	0	5	155	0	15
Future Vol, veh/h	5	13	0	2	31	297	1	0	5	155	0	15
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.63	0.63	0.63	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	17	0	2	36	349	2	0	8	170	0	16
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	1
HCM Control Delay	8.6	11.5	8.4	10.9
HCM LOS	A	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	28%	1%	100%	0%	0%
Vol Thru, %	0%	0%	72%	9%	0%	100%	0%
Vol Right, %	0%	100%	0%	90%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	5	18	330	155	0	15
LT Vol	1	0	5	2	155	0	0
Through Vol	0	0	13	31	0	0	0
RT Vol	0	5	0	297	0	0	15
Lane Flow Rate	2	8	24	388	170	0	16
Geometry Grp	8	8	7	7	7	7	7
Degree of Util (X)	0.003	0.012	0.037	0.487	0.285	0	0.022
Departure Headway (Hd)	6.563	5.348	5.607	4.512	6.02	5.515	4.808
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	541	663	636	800	594	0	740
Service Time	4.351	3.134	3.361	2.24	3.781	3.276	2.569
HCM Lane V/C Ratio	0.004	0.012	0.038	0.485	0.286	0	0.022
HCM Control Delay	9.4	8.2	8.6	11.5	11.2	8.3	7.7
HCM Lane LOS	A	A	A	B	B	N	A
HCM 95th-tile Q	0	0	0.1	2.7	1.2	0	0.1

HCM Signalized Intersection Capacity Analysis
8: Clawiter Rd & Breakwater Ave/SR 92 WB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	90	87	283	146	161	129	256	121	390	261	84
Future Volume (vph)	18	90	87	283	146	161	129	256	121	390	261	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00		0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	0.99			1.00	1.00		1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	0.92			1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00	0.95	1.00			0.98	1.00		0.97	1.00
Satd. Flow (prot)		1848	1583	1770	1704			1832	1583		3436	1541
Flt Permitted		0.88	1.00	0.95	1.00			0.98	1.00		0.97	1.00
Satd. Flow (perm)		1632	1583	1770	1704			1832	1583		3436	1541
Peak-hour factor, PHF	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83	0.88	0.88	0.88
Adj. Flow (vph)	19	97	94	377	195	215	155	308	146	443	297	95
RTOR Reduction (vph)	0	0	83	0	32	0	0	0	103	0	0	74
Lane Group Flow (vph)	0	116	11	377	378	0	0	463	43	0	740	21
Confl. Peds. (#/hr)							1					
Confl. Bikes (#/hr)												4
Turn Type	custom	NA	custom	Split	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases				4	4		2	2		6	6	
Permitted Phases	8	8	8						2			6
Actuated Green, G (s)		13.1	13.1	26.6	26.6			31.1	31.1		25.6	25.6
Effective Green, g (s)		13.1	13.1	26.6	26.6			31.1	31.1		25.6	25.6
Actuated g/C Ratio		0.11	0.11	0.23	0.23			0.27	0.27		0.22	0.22
Clearance Time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		186	181	411	396			498	430		768	344
v/s Ratio Prot				0.21	c0.22			c0.25			c0.22	
v/s Ratio Perm		c0.07	0.01						0.03			0.01
v/c Ratio		0.62	0.06	0.92	0.95			0.93	0.10		1.12dl	0.06
Uniform Delay, d1		48.3	45.2	42.8	43.3			40.6	31.2		43.9	34.9
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		6.4	0.1	24.9	33.3			23.8	0.1		23.7	0.1
Delay (s)		54.7	45.3	67.7	76.6			64.4	31.3		67.6	35.0
Level of Service		D	D	E	E			E	C		E	D
Approach Delay (s)		50.5			72.3			56.4			63.9	
Approach LOS		D			E			E			E	
Intersection Summary												
HCM 2000 Control Delay			63.6			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			114.4			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			75.8%			ICU Level of Service			D			
Analysis Period (min)			15									
dl Defacto Left Lane. Recode with 1 though lane as a left lane.												
c Critical Lane Group												























Intersection	
Intersection Delay, s/veh	42.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔			↖↗			↖↗	↗
Traffic Vol, veh/h	221	60	151	6	77	43	94	156	9	194	392	159
Future Vol, veh/h	221	60	151	6	77	43	94	156	9	194	392	159
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	276	75	189	7	87	48	119	197	11	211	426	173
Number of Lanes	0	1	1	0	1	0	0	2	0	0	2	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	2
HCM Control Delay	56.3	21.9	27	42.4
HCM LOS	F	C	D	E






















Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	55%	0%	79%	0%	5%	60%	0%	0%
Vol Thru, %	45%	90%	21%	0%	61%	40%	100%	0%
Vol Right, %	0%	10%	0%	100%	34%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	172	87	281	151	126	325	261	159
LT Vol	94	0	221	0	6	194	0	0
Through Vol	78	78	60	0	77	131	261	0
RT Vol	0	9	0	151	43	0	0	159
Lane Flow Rate	218	110	351	189	142	353	284	173
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.651	0.318	0.984	0.47	0.432	0.934	0.727	0.407
Departure Headway (Hd)	10.762	10.398	10.088	8.959	10.981	9.526	9.215	8.488
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	335	346	362	404	328	381	395	425
Service Time	8.526	8.162	7.811	6.682	8.747	7.247	6.936	6.208
HCM Lane V/C Ratio	0.651	0.318	0.97	0.468	0.433	0.927	0.719	0.407
HCM Control Delay	31.6	18	76.2	19.4	21.9	62.5	32.9	16.9
HCM Lane LOS	D	C	F	C	C	F	D	C
HCM 95th-tile Q	4.3	1.3	11.1	2.4	2.1	10	5.6	1.9

HCM 2010 Signalized Intersection Summary
 10: Industrial Blvd & Depot Rd























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (veh/h)	15	28	139	131	105	76	336	456	113	48	622	32
Future Volume (veh/h)	15	28	139	131	105	76	336	456	113	48	622	32
Number	7	4	14	3	8	18	1	1	16	5	12	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1624	1377	1900	1841	1900	1712	1712	1759	1759	1881	1881
Adj Flow Rate, veh/h	17	31	156	146	117	84	369	369	0	53	0	0
Adj No. of Lanes	1	1	1	0	1	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	25	17	38	2	2	2	11	11	8	8	1	1
Cap, veh/h	507	509	364	305	194	113	462	462	364	96	29	29
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.28	0.28	0.00	0.06	0.00	0.00
Sat Flow, veh/h	958	1624	1163	507	620	360	1630	1630	1495	1675	1599	1599
Grp Volume(v), veh/h	17	31	156	347	0	0	369	369	0	53	0	0
Grp Sat Flow(s),veh/h/ln	958	1624	1163	1487	0	0	1630	1630	1495	1675	1599	1599
Q Serve(g_s), s	0.0	0.5	3.7	5.4	0.0	0.0	7.3	7.3	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.5	3.7	7.1	0.0	0.0	7.3	7.3	0.0	1.1	0.0	0.0
Prop In Lane	1.00		1.00	0.42		0.24	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	507	509	364	612	0	0	462	462	364	96	29	29
V/C Ratio(X)	0.03	0.06	0.43	0.57	0.00	0.00	0.80	0.80	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	714	858	615	921	0	0	908	908	1547	326	1074	1074
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	8.4	9.5	10.6	0.0	0.0	11.6	11.6	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.8	0.8	0.0	0.0	3.2	3.2	0.0	4.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	1.3	3.0	0.0	0.0	3.7	3.7	0.0	0.6	0.0	0.0
LnGrp Delay(d),s/veh	8.4	8.5	10.3	11.4	0.0	0.0	14.9	14.9	0.0	20.9	0.0	0.0
LnGrp LOS	A	A	B	B			B	B		C		
Approach Vol, veh/h		204			347		870	870		53		
Approach Delay, s/veh		9.9			11.4		13.5	13.5		20.9		
Approach LOS		A			B		B	B		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.4	5.1		15.5	6.5	13.0		15.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	19.5	23.5		18.5	6.8	36.2		18.5				
Max Q Clear Time (g_c+I1), s	9.3	0.0		5.7	3.1	6.7		9.1				
Green Ext Time (p_c), s	0.9	0.0		0.6	0.0	1.8		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			12.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 11: Industrial Blvd & SR 92 WB Ramps/Cryer St
























Attachment X
 Cumulative AM
 08/30/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	7	196	161	44	23	552	1030	117	13	733	196
Future Volume (veh/h)	240	7	196	161	44	23	552	1030	117	13	733	196
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1812	1792	1900	1871	1900	1727	1813	1900	1900	1624	1776
Adj Flow Rate, veh/h	308	9	0	260	71	37	607	1132	129	14	788	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.78	0.78	0.78	0.62	0.62	0.62	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	6	0	0	0	10	5	5	0	17	7
Cap, veh/h	339	8	565	578	143	599	459	1480	168	75	733	358
Arrive On Green	0.37	0.37	0.00	0.37	0.37	0.37	0.56	0.95	0.95	0.04	0.24	0.00
Sat Flow, veh/h	754	22	1524	1414	386	1615	1645	3115	354	1810	3085	1509
Grp Volume(v), veh/h	317	0	0	331	0	37	607	625	636	14	788	0
Grp Sat Flow(s),veh/h/ln	776	0	1524	1800	0	1615	1645	1722	1747	1810	1543	1509
Q Serve(g_s), s	27.5	0.0	0.0	0.0	0.0	1.8	33.5	7.9	8.0	0.9	28.5	0.0
Cycle Q Clear(g_c), s	44.5	0.0	0.0	17.0	0.0	1.8	33.5	7.9	8.0	0.9	28.5	0.0
Prop In Lane	0.97		1.00	0.79		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	347	0	565	721	0	599	459	818	830	75	733	358
V/C Ratio(X)	0.91	0.00	0.00	0.46	0.00	0.06	1.32	0.76	0.77	0.19	1.08	0.00
Avail Cap(c_a), veh/h	347	0	565	721	0	599	459	818	830	75	733	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.67	0.67	0.67	0.57	0.57	0.00
Uniform Delay (d), s/veh	47.5	0.0	0.0	29.1	0.0	24.3	26.5	1.8	1.8	55.5	45.8	0.0
Incr Delay (d2), s/veh	27.7	0.0	0.0	0.5	0.0	0.0	154.9	4.6	4.6	0.7	47.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	0.0	0.0	8.6	0.0	0.8	34.6	3.8	3.9	0.5	17.0	0.0
LnGrp Delay(d),s/veh	75.2	0.0	0.0	29.6	0.0	24.4	181.4	6.4	6.4	56.2	93.7	0.0
LnGrp LOS	E			C		C	F	A	A	E	F	
Approach Vol, veh/h		317			368			1868			802	
Approach Delay, s/veh		75.2			29.0			63.3			93.0	
Approach LOS		E			C			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	61.5		49.0	38.0	33.0		49.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	57.0		44.5	33.5	28.5		44.5				
Max Q Clear Time (g_c+I1), s	2.9	10.0		46.5	35.5	30.5		19.0				
Green Ext Time (p_c), s	0.0	11.4		0.0	0.0	0.0		2.3				
Intersection Summary												
HCM 2010 Ctrl Delay			67.8									
HCM 2010 LOS			E									

HCM 2010 Signalized Intersection Summary
 12: Industrial Blvd & SR 92 EB Ramps/Sleepy Hollow Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	5	475	20	62	182	196	1379	9	63	818	223
Future Volume (veh/h)	143	5	475	20	62	182	196	1379	9	63	818	223
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1735	1776	1900	1900	1827	1462	1776	1667	1792	1727	1624
Adj Flow Rate, veh/h	147	5	490	25	77	225	218	1532	10	67	870	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	25	25	7	0	0	4	30	7	14	6	10	17
Cap, veh/h	59	0	893	37	95	356	505	1736	729	245	970	408
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.36	0.51	0.51	0.29	0.59	0.00
Sat Flow, veh/h	0	0	1509	0	417	1553	1392	3374	1417	1707	3282	1380
Grp Volume(v), veh/h	152	0	490	102	0	225	218	1532	10	67	870	0
Grp Sat Flow(s),veh/h/ln	0	0	1509	417	0	1553	1392	1687	1417	1707	1641	1380
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	15.7	14.2	48.5	0.4	3.6	27.7	0.0
Cycle Q Clear(g_c), s	27.5	0.0	0.0	27.5	0.0	15.7	14.2	48.5	0.4	3.6	27.7	0.0
Prop In Lane	0.97		1.00	0.25		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	0	893	133	0	356	505	1736	729	245	970	408
V/C Ratio(X)	2.58	0.00	0.55	0.77	0.00	0.63	0.43	0.88	0.01	0.27	0.90	0.00
Avail Cap(c_a), veh/h	59	0	893	133	0	356	505	1954	820	245	1318	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.40	0.40	0.00
Uniform Delay (d), s/veh	60.0	0.0	14.8	39.6	0.0	41.7	28.9	25.9	14.2	37.9	22.9	0.0
Incr Delay (d2), s/veh	755.8	0.0	0.7	23.3	0.0	3.6	0.6	6.9	0.0	0.2	5.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	0.0	9.8	3.6	0.0	7.1	5.5	24.0	0.2	1.7	13.1	0.0
LnGrp Delay(d),s/veh	815.8	0.0	15.5	62.9	0.0	45.3	29.5	32.8	14.3	38.1	28.6	0.0
LnGrp LOS	F		B	E		D	C	C	B	D	C	
Approach Vol, veh/h		642			327			1760			937	
Approach Delay, s/veh		205.0			50.8			32.3			29.3	
Approach LOS		F			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.8	66.2		32.0	48.0	40.0		32.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	69.5		27.5	30.8	48.2		27.5				
Max Q Clear Time (g_c+I1), s	5.6	50.5		29.5	16.2	29.7		29.5				
Green Ext Time (p_c), s	0.0	11.3		0.0	0.5	5.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			63.4									
HCM 2010 LOS			E									

HCM Signalized Intersection Capacity Analysis
13: Hesperian Blvd & Depot Rd/Cathy Wy

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	92	472	185	177	38	555	994	96	39	1362	155
Future Volume (vph)	193	92	472	185	177	38	555	994	96	39	1362	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.98	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1762	1428	1770	1821		1787	4983		1805	4934	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1762	1428	1770	1821		1787	4983		1805	4934	
Peak-hour factor, PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	272	130	665	210	201	43	677	1212	117	48	1661	189
RTOR Reduction (vph)	0	0	408	0	5	0	0	7	0	0	10	0
Lane Group Flow (vph)	199	203	257	210	239	0	677	1322	0	48	1840	0
Confl. Peds. (#/hr)			28	28						12		14
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	4%	2%	1%	3%	1%	2%	3%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases			8									
Actuated Green, G (s)	21.5	21.5	21.5	18.0	18.0		44.5	84.9		7.6	48.0	
Effective Green, g (s)	21.5	21.5	21.5	18.0	18.0		44.5	84.9		7.6	48.0	
Actuated g/C Ratio	0.14	0.14	0.14	0.12	0.12		0.30	0.57		0.05	0.32	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	245	252	204	212	218		530	2820		91	1578	
v/s Ratio Prot	0.12	0.12		0.12	c0.13		c0.38	0.27		0.03	c0.37	
v/s Ratio Perm			c0.18									
v/c Ratio	0.81	0.81	1.26	0.99	1.10		1.28	0.47		0.53	1.17	
Uniform Delay, d1	62.3	62.2	64.2	65.9	66.0		52.8	19.2		69.4	51.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.2	16.9	150.6	58.9	88.7		138.9	0.6		5.4	82.1	
Delay (s)	80.5	79.1	214.9	124.9	154.7		191.6	19.8		74.9	133.1	
Level of Service	F	E	F	F	F		F	B		E	F	
Approach Delay (s)		164.0			140.9			77.8			131.7	
Approach LOS		F			F			E			F	
Intersection Summary												
HCM 2000 Control Delay			118.9				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.21									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			99.4%				ICU Level of Service		F			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

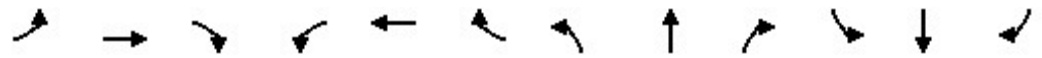
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗		↵	↕	↗	↵	↕	↗
Traffic Vol, veh/h	2	148	23	66	66	62	22	24	121	196	33	6
Future Vol, veh/h	2	148	23	66	66	62	22	24	121	196	33	6
Peak Hour Factor	0.52	0.52	0.52	0.80	0.80	0.80	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	4	285	44	83	83	78	28	31	155	225	38	7
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	13	11.4	11.7	16
HCM LOS	B	B	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	68%	0%	100%	26%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	32%	0%	0%	74%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	22	24	121	2	99	72	66	44	84	196	33
LT Vol	22	0	0	2	0	0	66	0	0	196	0
Through Vol	0	24	0	0	99	49	0	44	22	0	33
RT Vol	0	0	121	0	0	23	0	0	62	0	0
Lane Flow Rate	28	31	155	4	190	139	82	55	105	225	38
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.061	0.062	0.284	0.008	0.368	0.261	0.176	0.11	0.194	0.474	0.074
Departure Headway (Hd)	7.78	7.28	6.58	7.485	6.985	6.762	7.684	7.184	6.667	7.57	7.07
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	458	489	541	476	512	527	464	496	534	473	504
Service Time	5.573	5.073	4.373	5.272	4.772	4.549	5.476	4.976	4.459	5.355	4.855
HCM Lane V/C Ratio	0.061	0.063	0.287	0.008	0.371	0.264	0.177	0.111	0.197	0.476	0.075
HCM Control Delay	11.1	10.6	12	10.3	13.8	12	12.1	10.9	11.1	17.1	10.4
HCM Lane LOS	B	B	B	B	B	B	B	B	B	B	C
HCM 95th-tile Q	0.2	0.2	1.2	0	1.7	1	0.6	0.4	0.7	2.5	0.2

HCM Signalized Intersection Capacity Analysis
2: Winton Ave & Corsair Blvd























Attachment X
Cumulative PM
08/30/2020

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑			↑		↘↘		↘
Traffic Volume (vph)	6	1226	1	2	382	67	1	0	17	312	0	4
Future Volume (vph)	6	1226	1	2	382	67	1	0	17	312	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Lane Util. Factor	1.00	0.95			0.95			1.00		0.97		1.00
Frb, ped/bikes	1.00	1.00			1.00			1.00		1.00		0.99
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		1.00
Frt	1.00	1.00			0.98			0.87		1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00		0.95		1.00
Satd. Flow (prot)	1610	3223			3140			1475		3127		1422
Flt Permitted	0.48	1.00			0.95			1.00		0.95		1.00
Satd. Flow (perm)	811	3223			2987			1475		3127		1422
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.42	0.42	0.42	0.84	0.84	0.84
Adj. Flow (vph)	7	1378	1	2	406	71	2	0	40	371	0	5
RTOR Reduction (vph)	0	0	0	0	15	0	0	40	0	0	0	4
Lane Group Flow (vph)	7	1379	0	0	464	0	0	2	0	371	0	1
Confl. Peds. (#/hr)	1		6	6			1					1
Confl. Bikes (#/hr)							2					
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot		Perm
Protected Phases		2			6			3		4		
Permitted Phases	2			6			3					4
Actuated Green, G (s)	33.8	33.8			33.8			3.0		10.8		10.8
Effective Green, g (s)	33.8	33.8			33.8			3.0		10.8		10.8
Actuated g/C Ratio	0.55	0.55			0.55			0.05		0.18		0.18
Clearance Time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0		3.0
Lane Grp Cap (vph)	448	1782			1652			72		552		251
v/s Ratio Prot		c0.43								c0.12		
v/s Ratio Perm	0.01				0.16			0.00				0.00
v/c Ratio	0.02	0.77			0.28			0.03		0.67		0.00
Uniform Delay, d1	6.2	10.7			7.2			27.7		23.5		20.7
Progression Factor	1.00	1.00			1.00			1.00		1.00		1.00
Incremental Delay, d2	0.0	2.2			0.1			0.2		3.2		0.0
Delay (s)	6.2	12.8			7.3			27.8		26.7		20.7
Level of Service	A	B			A			C		C		C
Approach Delay (s)		12.8			7.3			27.8			26.6	
Approach LOS		B			A			C			C	

Intersection Summary		
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.70	B
Actuated Cycle Length (s)	61.1	Sum of lost time (s)
Intersection Capacity Utilization	56.6%	13.5
Analysis Period (min)	15	ICU Level of Service
		B
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis
3: Clawiter Rd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1241	215	321	345	0	121	0	741	4	2	0
Future Volume (vph)	1	1241	215	321	345	0	121	0	741	4	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95	1.00	1.00	1.00	
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1612	3133		3127	3223		1531	1531	1423	1612	1696	
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00	0.71	1.00	
Satd. Flow (perm)	1612	3133		3127	3223		1219	1219	1423	1206	1696	
Peak-hour factor, PHF	0.87	0.87	0.87	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	1	1426	247	391	421	0	133	0	814	4	2	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	644	0	0	0
Lane Group Flow (vph)	1	1666	0	391	421	0	66	67	170	4	2	0
Confl. Peds. (#/hr)			6			2						
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4				8
Permitted Phases							4		4		8	
Actuated Green, G (s)	1.0	59.2		19.6	77.8		17.7	17.7	17.7	17.7	17.7	
Effective Green, g (s)	1.0	59.2		19.6	77.8		17.7	17.7	17.7	17.7	17.7	
Actuated g/C Ratio	0.01	0.54		0.18	0.71		0.16	0.16	0.16	0.16	0.16	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	14	1686		557	2279		196	196	228	194	272	
v/s Ratio Prot	0.00	c0.53		c0.13	0.13							0.00
v/s Ratio Perm							0.05	0.05	c0.12	0.00		
v/c Ratio	0.07	0.99		0.70	0.18		0.34	0.34	0.75	0.02	0.01	
Uniform Delay, d1	54.0	25.0		42.5	5.4		40.9	41.0	44.0	38.9	38.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	19.2		4.0	0.2		1.0	1.0	12.5	0.0	0.0	
Delay (s)	56.2	44.3		46.4	5.6		42.0	42.0	56.6	38.9	38.8	
Level of Service	E	D		D	A		D	D	E	D	D	
Approach Delay (s)		44.3			25.3			54.5			38.9	
Approach LOS		D			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			42.6				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			102.6%				ICU Level of Service			G		
Analysis Period (min)			15									
c Critical Lane Group												



















HCM 2010 Signalized Intersection Summary
4: Hesperian Blvd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	876	1293	66	364	381	275	54	1459	223	216	920	231
Future Volume (veh/h)	876	1293	66	364	381	275	54	1459	223	216	920	231
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	963	1421	73	409	428	309	61	1658	253	254	1082	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	980	1485	76	446	491	223	79	1757	543	278	1943	605
Arrive On Green	0.28	0.30	0.30	0.13	0.14	0.14	0.04	0.35	0.35	0.08	0.38	0.00
Sat Flow, veh/h	3442	4950	254	3442	3390	1540	1774	5085	1572	3442	5085	1583
Grp Volume(v), veh/h	963	973	521	409	428	309	61	1658	253	254	1082	0
Grp Sat Flow(s),veh/h/ln	1721	1695	1814	1721	1695	1540	1774	1695	1572	1721	1695	1583
Q Serve(g_s), s	34.7	35.2	35.2	14.7	15.4	18.1	4.3	39.6	15.7	9.2	20.9	0.0
Cycle Q Clear(g_c), s	34.7	35.2	35.2	14.7	15.4	18.1	4.3	39.6	15.7	9.2	20.9	0.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	980	1017	544	446	491	223	79	1757	543	278	1943	605
V/C Ratio(X)	0.98	0.96	0.96	0.92	0.87	1.39	0.78	0.94	0.47	0.91	0.56	0.00
Avail Cap(c_a), veh/h	980	1017	544	446	491	223	153	1757	543	278	1943	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.16	0.16	0.16	0.66	0.66	0.66	0.32	0.32	0.32	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.4	43.0	43.0	53.7	52.3	53.5	59.1	39.7	31.9	57.0	30.3	0.0
Incr Delay (d2), s/veh	8.0	4.8	7.9	17.5	11.1	190.9	5.2	4.6	0.9	32.3	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.5	17.2	18.8	8.1	8.0	19.5	2.2	19.2	6.9	5.6	9.9	0.0
LnGrp Delay(d),s/veh	52.4	47.7	50.8	71.2	63.4	244.4	64.3	44.3	32.8	89.3	31.5	0.0
LnGrp LOS	D	D	D	E	E	F	E	D	C	F	C	
Approach Vol, veh/h		2457			1146			1972			1336	
Approach Delay, s/veh		50.2			115.0			43.4			42.5	
Approach LOS		D			F			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.6	47.7	20.7	42.0	10.0	52.3	40.1	22.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	10.1	43.2	16.2	37.5	10.8	42.5	35.6	18.1				
Max Q Clear Time (g_c+I1), s	11.2	41.6	16.7	37.2	6.3	22.9	36.7	20.1				
Green Ext Time (p_c), s	0.0	1.4	0.0	0.2	0.0	7.8	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				57.5								
HCM 2010 LOS				E								

HCM Signalized Intersection Capacity Analysis
5: Southland Dr & Winton Ave

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖↗	↑↑		↖↗
Traffic Volume (vph)	2439	74	844	1206	0	1114
Future Volume (vph)	2439	74	844	1206	0	1114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.0	4.5		4.0
Lane Util. Factor	0.91		0.97	0.95		0.88
Frpb, ped/bikes	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5063		3433	3539		2787
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5063		3433	3539		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2651	80	917	1311	0	1211
RTOR Reduction (vph)	2	0	0	0	0	1
Lane Group Flow (vph)	2729	0	917	1311	0	1210
Confl. Peds. (#/hr)						3
Turn Type	NA		Prot	NA		Over
Protected Phases	2		4	6		4
Permitted Phases						
Actuated Green, G (s)	72.5		54.0	72.5		54.0
Effective Green, g (s)	72.5		54.0	72.5		54.0
Actuated g/C Ratio	0.54		0.40	0.54		0.40
Clearance Time (s)	4.5		4.0	4.5		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2719		1373	1900		1114
v/s Ratio Prot	c0.54		0.27	0.37		c0.43
v/s Ratio Perm						
v/c Ratio	1.00		0.67	0.69		1.09
Uniform Delay, d1	31.2		33.2	23.0		40.5
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	18.1		1.2	2.1		53.5
Delay (s)	49.4		34.4	25.1		94.0
Level of Service	D		C	C		F
Approach Delay (s)	49.4			28.9	94.0	
Approach LOS	D			C	F	
Intersection Summary						
HCM 2000 Control Delay			50.7		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.04			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	8.5
Intersection Capacity Utilization			95.2%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
6: Clawiter Rd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	415	31	17	74	16	29	439	214	10	122	44
Future Volume (veh/h)	214	415	31	17	74	16	29	439	214	10	122	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	246	477	36	20	88	19	38	578	282	11	128	46
Adj No. of Lanes	0	2	0	0	2	1	0	2	0	0	2	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	331	686	53	52	243	130	103	793	378	112	1020	569
Arrive On Green	0.29	0.29	0.29	0.08	0.08	0.08	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1125	2331	181	633	2967	1583	75	2206	1051	82	2839	1583
Grp Volume(v), veh/h	395	0	364	58	50	19	493	0	405	66	73	46
Grp Sat Flow(s),veh/h/ln	1806	0	1831	1831	1770	1583	1822	0	1510	1310	1610	1583
Q Serve(g_s), s	10.1	0.0	8.9	1.5	1.4	0.6	3.5	0.0	12.0	0.2	1.6	1.0
Cycle Q Clear(g_c), s	10.1	0.0	8.9	1.5	1.4	0.6	12.0	0.0	12.0	12.2	1.6	1.0
Prop In Lane	0.62		0.10	0.35		1.00	0.08		0.70	0.17		1.00
Lane Grp Cap(c), veh/h	531	0	538	150	145	130	731	0	542	553	579	569
V/C Ratio(X)	0.74	0.00	0.68	0.39	0.35	0.15	0.67	0.00	0.75	0.12	0.13	0.08
Avail Cap(c_a), veh/h	691	0	700	650	628	562	926	0	708	708	755	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	15.9	22.2	22.1	21.8	14.3	0.0	14.3	11.0	11.0	10.8
Incr Delay (d2), s/veh	3.1	0.0	1.7	1.6	1.4	0.5	1.3	0.0	3.1	0.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	4.7	0.8	0.7	0.3	6.3	0.0	5.4	0.6	0.7	0.4
LnGrp Delay(d),s/veh	19.4	0.0	17.6	23.8	23.5	22.3	15.6	0.0	17.4	11.1	11.1	10.8
LnGrp LOS	B		B	C	C	C	B		B	B	B	B
Approach Vol, veh/h		759			127			898				185
Approach Delay, s/veh		18.5			23.5			16.4				11.0
Approach LOS		B			C			B				B
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.8		19.5		22.8		8.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		23.9		19.5		23.9		18.1				
Max Q Clear Time (g_c+I1), s		14.0		12.1		14.2		3.5				
Green Ext Time (p_c), s		4.3		2.9		0.6		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				17.2								
HCM 2010 LOS				B								





















Intersection	
Intersection Delay, s/veh	14.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	13	63	0	2	32	165	0	2	2	338	0	4
Future Vol, veh/h	13	63	0	2	32	165	0	2	2	338	0	4
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.63	0.63	0.63	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	84	0	2	38	194	0	3	3	371	0	4
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	1
HCM Control Delay	10.2	10.9	9	18
HCM LOS	B	B	A	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	17%	1%	100%	0%	0%
Vol Thru, %	100%	50%	83%	16%	0%	100%	0%
Vol Right, %	0%	50%	0%	83%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	4	76	199	338	0	4
LT Vol	0	0	13	2	338	0	0
Through Vol	0	2	63	32	0	0	0
RT Vol	0	2	0	165	0	0	4
Lane Flow Rate	0	6	101	234	371	0	4
Geometry Grp	8	8	7	7	7	7	7
Degree of Util (X)	0	0.011	0.174	0.349	0.621	0	0.006
Departure Headway (Hd)	6.586	6.23	6.176	5.36	6.017	5.513	4.807
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	0	574	582	674	602	0	746
Service Time	4.327	3.971	3.908	3.06	3.737	3.233	2.527
HCM Lane V/C Ratio	0	0.01	0.174	0.347	0.616	0	0.005
HCM Control Delay	9.3	9	10.2	10.9	18.1	8.2	7.6
HCM Lane LOS	N	A	B	B	C	N	A
HCM 95th-tile Q	0	0	0.6	1.6	4.3	0	0

HCM Signalized Intersection Capacity Analysis
8: Clawiter Rd & Breakwater Ave/SR 92 WB Ramps

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	105	156	132	57	174	41	387	183	205	312	43
Future Volume (vph)	43	105	156	132	57	174	41	387	183	205	312	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00		0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	0.99			1.00	1.00		1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	0.89			1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00	0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)		1836	1583	1770	1635			1854	1583		3470	1539
Flt Permitted		0.81	1.00	0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (perm)		1504	1583	1770	1635			1854	1583		3470	1539
Peak-hour factor, PHF	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83	0.88	0.88	0.88
Adj. Flow (vph)	46	113	168	176	76	232	49	466	220	233	355	49
RTOR Reduction (vph)	0	0	142	0	113	0	0	0	153	0	0	40
Lane Group Flow (vph)	0	159	26	176	195	0	0	515	67	0	588	9
Confl. Peds. (#/hr)							1					
Confl. Bikes (#/hr)												4
Turn Type	custom	NA	custom	Split	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases				4	4		2	2		6	6	
Permitted Phases	8	8	8						2			6
Actuated Green, G (s)		14.2	14.2	14.9	14.9			28.2	28.2		17.8	17.8
Effective Green, g (s)		14.2	14.2	14.9	14.9			28.2	28.2		17.8	17.8
Actuated g/C Ratio		0.15	0.15	0.16	0.16			0.30	0.30		0.19	0.19
Clearance Time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		229	241	283	261			561	479		663	294
v/s Ratio Prot				0.10	c0.12			c0.28			c0.17	
v/s Ratio Perm		c0.11	0.02						0.04			0.01
v/c Ratio		0.69	0.11	0.62	0.75			0.92	0.14		0.89	0.03
Uniform Delay, d1		37.4	34.0	36.5	37.3			31.3	23.6		36.7	30.6
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		8.8	0.2	4.2	11.2			20.0	0.1		13.6	0.0
Delay (s)		46.2	34.2	40.7	48.5			51.3	23.7		50.2	30.7
Level of Service		D	C	D	D			D	C		D	C
Approach Delay (s)		40.0			45.6			43.0			48.7	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			44.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			93.1			Sum of lost time (s)				18.0		
Intersection Capacity Utilization			73.9%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group























Intersection	
Intersection Delay, s/veh	172.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔			↔			↖	↗
Traffic Vol, veh/h	221	13	94	2	198	142	320	295	7	79	162	345
Future Vol, veh/h	221	13	94	2	198	142	320	295	7	79	162	345
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	276	16	118	2	222	160	405	373	9	86	176	375
Number of Lanes	0	1	1	0	1	0	0	2	0	0	2	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	2
HCM Control Delay	65.1	148.4	323.9	69.3
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	68%	0%	94%	0%	1%	59%	0%	0%
Vol Thru, %	32%	95%	6%	0%	58%	41%	100%	0%
Vol Right, %	0%	5%	0%	100%	42%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	468	155	234	94	342	133	108	345
LT Vol	320	0	221	0	2	79	0	0
Through Vol	148	148	13	0	198	54	108	0
RT Vol	0	7	0	94	142	0	0	345
Lane Flow Rate	592	196	292	118	384	145	117	375
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	1.847	0.59	0.95	0.343	1.183	0.443	0.35	1.046
Departure Headway (Hd)	12.19	11.787	13.735	12.481	12.667	13.04	12.723	11.976
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	302	309	266	290	288	278	285	308
Service Time	9.89	9.487	11.435	10.181	10.367	10.74	10.423	9.676
HCM Lane V/C Ratio	1.96	0.634	1.098	0.407	1.333	0.522	0.411	1.218
HCM Control Delay	421	30.1	82.6	21.6	148.4	25.7	22.1	100.8
HCM Lane LOS	F	D	F	C	F	D	C	F
HCM 95th-tile Q	36.8	3.5	8.9	1.5	14.9	2.1	1.5	11.8























HCM 2010 Signalized Intersection Summary
 10: Industrial Blvd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (veh/h)	68	286	321	54	16	21	82	615	164	82	475	16
Future Volume (veh/h)	68	286	321	54	16	21	82	615	164	82	475	16
Number	7	4	14	3	8	18	1	1	16	5	12	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1624	1377	1900	1828	1900	1712	1712	1759	1759	1881	1881
Adj Flow Rate, veh/h	76	321	361	60	18	23	90	90	0	90	0	0
Adj No. of Lanes	1	1	1	0	1	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	25	17	38	2	2	2	11	11	8	8	1	1
Cap, veh/h	540	584	419	241	75	56	122	122	400	125	428	428
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.07	0.07	0.00	0.07	0.00	0.00
Sat Flow, veh/h	1108	1624	1164	319	209	156	1630	1630	1495	1675	1599	1599
Grp Volume(v), veh/h	76	321	361	101	0	0	90	90	0	90	0	0
Grp Sat Flow(s),veh/h/ln	1108	1624	1164	684	0	0	1630	1630	1495	1675	1599	1599
Q Serve(g_s), s	0.0	7.1	13.1	1.5	0.0	0.0	2.5	2.5	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	2.3	7.1	13.1	8.6	0.0	0.0	2.5	2.5	0.0	2.4	0.0	0.0
Prop In Lane	1.00		1.00	0.59		0.23	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	540	584	419	373	0	0	122	122	400	125	428	428
V/C Ratio(X)	0.14	0.55	0.86	0.27	0.00	0.00	0.74	0.74	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	582	645	462	408	0	0	194	194	604	192	638	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.0	11.6	13.5	11.2	0.0	0.0	20.5	20.5	0.0	20.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.8	14.3	0.4	0.0	0.0	8.4	8.4	0.0	7.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.3	5.8	1.1	0.0	0.0	1.4	1.4	0.0	1.4	0.0	0.0
LnGrp Delay(d),s/veh	10.2	12.4	27.8	11.6	0.0	0.0	28.9	28.9	0.0	28.0	0.0	0.0
LnGrp LOS	B	B	C	B			C	C		C		
Approach Vol, veh/h		758			101		766	766		90		
Approach Delay, s/veh		19.5			11.6		18.0	18.0		28.0		
Approach LOS		B			B		B	B		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	16.6		20.8	7.9	16.6		20.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.4	18.1		18.0	5.2	18.3		18.0				
Max Q Clear Time (g_c+I1), s	4.5	0.0		15.1	4.4	10.4		10.6				
Green Ext Time (p_c), s	0.0	0.0		1.2	0.0	1.7		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			18.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 11: Industrial Blvd & SR 92 WB Ramps/Cryer St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	40	196	43	7	15	359	749	106	23	1092	117
Future Volume (veh/h)	170	40	196	43	7	15	359	749	106	23	1092	117
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1826	1792	1900	1868	1900	1727	1814	1900	1900	1624	1776
Adj Flow Rate, veh/h	218	51	0	69	11	24	395	823	116	25	1174	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.78	0.78	0.78	0.62	0.62	0.62	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	6	0	0	0	10	5	5	0	17	7
Cap, veh/h	263	44	318	349	50	337	398	1775	250	101	1232	603
Arrive On Green	0.21	0.21	0.00	0.21	0.21	0.21	0.24	0.59	0.59	0.06	0.40	0.00
Sat Flow, veh/h	913	213	1524	1318	242	1615	1645	3031	427	1810	3085	1509
Grp Volume(v), veh/h	269	0	0	80	0	24	395	468	471	25	1174	0
Grp Sat Flow(s),veh/h/ln	1126	0	1524	1560	0	1615	1645	1723	1735	1810	1543	1509
Q Serve(g_s), s	14.9	0.0	0.0	0.0	0.0	1.1	21.5	13.9	13.9	1.2	33.1	0.0
Cycle Q Clear(g_c), s	18.7	0.0	0.0	3.8	0.0	1.1	21.5	13.9	13.9	1.2	33.1	0.0
Prop In Lane	0.81		1.00	0.86		1.00	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	318	400	0	337	398	1009	1016	101	1232	603
V/C Ratio(X)	0.88	0.00	0.00	0.20	0.00	0.07	0.99	0.46	0.46	0.25	0.95	0.00
Avail Cap(c_a), veh/h	307	0	318	400	0	337	398	1009	1016	109	1241	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.4	0.0	0.0	29.6	0.0	28.5	33.9	10.6	10.6	40.6	26.1	0.0
Incr Delay (d2), s/veh	23.4	0.0	0.0	0.2	0.0	0.1	43.1	0.3	0.3	1.3	15.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	0.0	0.0	1.7	0.0	0.5	14.4	6.6	6.6	0.6	16.7	0.0
LnGrp Delay(d),s/veh	61.7	0.0	0.0	29.8	0.0	28.6	77.1	10.9	10.9	41.8	41.7	0.0
LnGrp LOS	E			C			C	E	B	B	D	D
Approach Vol, veh/h		269			104			1334			1199	
Approach Delay, s/veh		61.7			29.6			30.5			41.7	
Approach LOS		E			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	57.0		23.2	26.2	40.3		23.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.4	52.4		18.7	21.7	36.1		18.7				
Max Q Clear Time (g_c+I1), s	3.2	15.9		20.7	23.5	35.1		5.8				
Green Ext Time (p_c), s	0.0	7.0		0.0	0.0	0.7		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			38.0									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 12: Industrial Blvd & SR 92 EB Ramps/Sleepy Hollow Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	102	968	0	18	56	98	908	21	87	958	277
Future Volume (veh/h)	261	102	968	0	18	56	98	908	21	87	958	277
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1674	1776	1900	1900	1827	1462	1776	1667	1792	1727	1624
Adj Flow Rate, veh/h	269	105	998	0	22	69	109	1009	23	93	1019	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	25	25	7	0	0	4	30	7	14	6	10	17
Cap, veh/h	411	130	703	0	703	574	134	1320	554	119	1197	504
Arrive On Green	0.37	0.37	0.37	0.00	0.37	0.37	0.10	0.39	0.39	0.07	0.36	0.00
Sat Flow, veh/h	900	351	1509	0	1900	1553	1392	3374	1417	1707	3282	1380
Grp Volume(v), veh/h	374	0	998	0	22	69	109	1009	23	93	1019	0
Grp Sat Flow(s),veh/h/ln	1251	0	1509	0	1900	1553	1392	1687	1417	1707	1641	1380
Q Serve(g_s), s	21.1	0.0	29.5	0.0	0.6	2.3	6.1	20.7	0.8	4.3	22.8	0.0
Cycle Q Clear(g_c), s	21.6	0.0	29.5	0.0	0.6	2.3	6.1	20.7	0.8	4.3	22.8	0.0
Prop In Lane	0.72		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	541	0	703	0	703	574	134	1320	554	119	1197	504
V/C Ratio(X)	0.69	0.00	1.42	0.00	0.03	0.12	0.82	0.76	0.04	0.78	0.85	0.00
Avail Cap(c_a), veh/h	541	0	703	0	703	574	597	2293	963	274	1350	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.9	0.0	21.3	0.0	16.0	16.6	35.4	21.1	15.0	36.5	23.3	0.0
Incr Delay (d2), s/veh	3.8	0.0	196.9	0.0	0.0	0.1	11.3	0.9	0.0	10.6	4.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	53.8	0.0	0.3	1.0	2.8	9.7	0.3	2.4	11.2	0.0
LnGrp Delay(d),s/veh	26.7	0.0	218.2	0.0	16.0	16.7	46.7	22.0	15.1	47.1	28.3	0.0
LnGrp LOS	C		F		B	B	D	C	B	D	C	
Approach Vol, veh/h		1372			91			1141			1112	
Approach Delay, s/veh		166.0			16.5			24.3			29.8	
Approach LOS		F			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	35.7		34.0	12.2	33.6		34.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	12.8	54.2		29.5	34.2	32.8		29.5				
Max Q Clear Time (g_c+I1), s	6.3	22.7		31.5	8.1	24.8		4.3				
Green Ext Time (p_c), s	0.1	8.5		0.0	0.3	4.1		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			78.1									
HCM 2010 LOS			E									

HCM Signalized Intersection Capacity Analysis
13: Hesperian Blvd & Depot Rd/Cathy Wy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	116	404	60	45	45	276	1647	155	43	1029	131
Future Volume (vph)	243	116	404	60	45	45	276	1647	155	43	1029	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1762	1463	1770	1711		1787	4993		1805	4934	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1762	1463	1770	1711		1787	4993		1805	4934	
Peak-hour factor, PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	342	163	569	68	51	51	337	2009	189	52	1255	160
RTOR Reduction (vph)	0	0	422	0	40	0	0	10	0	0	16	0
Lane Group Flow (vph)	250	255	147	68	62	0	337	2188	0	52	1399	0
Confl. Peds. (#/hr)			28	28					12			14
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	4%	2%	1%	3%	1%	2%	3%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases			8									
Actuated Green, G (s)	22.1	22.1	22.1	9.4	9.4		21.7	46.4		4.1	28.8	
Effective Green, g (s)	22.1	22.1	22.1	9.4	9.4		21.7	46.4		4.1	28.8	
Actuated g/C Ratio	0.22	0.22	0.22	0.09	0.09		0.22	0.46		0.04	0.29	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	379	389	323	166	160		387	2316		74	1420	
v/s Ratio Prot	c0.15	0.14		c0.04	0.04		0.19	c0.44		0.03	c0.28	
v/s Ratio Perm			0.10									
v/c Ratio	0.66	0.66	0.45	0.41	0.39		0.87	0.94		0.70	0.99	
Uniform Delay, d1	35.5	35.5	33.7	42.7	42.6		37.8	25.6		47.3	35.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.1	3.9	1.0	1.6	1.6		18.8	9.6		26.0	20.7	
Delay (s)	39.6	39.4	34.7	44.3	44.2		56.6	35.2		73.3	56.1	
Level of Service	D	D	C	D	D		E	D		E	E	
Approach Delay (s)		37.0			44.2			38.0			56.7	
Approach LOS		D			D			D			E	
Intersection Summary												
HCM 2000 Control Delay			43.2				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			67.2%				ICU Level of Service			C		
Analysis Period (min)			15									
c	Critical Lane Group											

Intersection	
Intersection Delay, s/veh	28.8
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↔		↵	↕↔		↵	↕	↵	↵	↕	↕
Traffic Vol, veh/h	4	188	30	372	235	207	35	27	21	89	20	2
Future Vol, veh/h	4	188	30	372	235	207	35	27	21	89	20	2
Peak Hour Factor	0.52	0.52	0.52	0.80	0.80	0.80	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	8	362	58	465	294	259	45	35	27	102	23	2
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	17.5	37	12.8	15
HCM LOS	C	E	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	68%	0%	100%	27%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	32%	0%	0%	73%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	27	21	4	125	93	372	157	285	89	20
LT Vol	35	0	0	4	0	0	372	0	0	89	0
Through Vol	0	27	0	0	125	63	0	157	78	0	20
RT Vol	0	0	21	0	0	30	0	0	207	0	0
Lane Flow Rate	45	35	27	8	241	178	465	196	357	102	23
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.119	0.087	0.063	0.018	0.531	0.382	0.964	0.379	0.64	0.269	0.057
Departure Headway (Hd)	9.573	9.073	8.373	8.434	7.934	7.708	7.467	6.967	6.459	9.474	8.974
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	375	395	428	425	456	467	488	517	560	380	399
Service Time	7.329	6.829	6.129	6.177	5.677	5.451	5.202	4.702	4.194	7.228	6.728
HCM Lane V/C Ratio	0.12	0.089	0.063	0.019	0.529	0.381	0.953	0.379	0.637	0.268	0.058
HCM Control Delay	13.6	12.7	11.7	11.3	19.4	15.2	59.7	13.9	20	15.7	12.3
HCM Lane LOS	B	B	B	B	C	C	F	B	C	C	B
HCM 95th-tile Q	0.4	0.3	0.2	0.1	3	1.8	12.1	1.8	4.5	1.1	0.2

HCM Signalized Intersection Capacity Analysis
2: Winton Ave & Corsair Blvd

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑			↘		↘↘		↘
Traffic Volume (vph)	9	547	0	15	1357	293	0	1	5	106	0	9
Future Volume (vph)	9	547	0	15	1357	293	0	1	5	106	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Lane Util. Factor	1.00	0.95			0.95			1.00		0.97		1.00
Frbp, ped/bikes	1.00	1.00			1.00			1.00		1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		1.00
Frt	1.00	1.00			0.97			0.88		1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00		0.95		1.00
Satd. Flow (prot)	1611	3223			3124			1500		3127		1418
Flt Permitted	0.09	1.00			0.95			1.00		0.95		1.00
Satd. Flow (perm)	160	3223			2963			1500		3127		1418
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.42	0.42	0.42	0.84	0.84	0.84
Adj. Flow (vph)	10	615	0	16	1444	312	0	2	12	126	0	11
RTOR Reduction (vph)	0	0	0	0	12	0	0	12	0	0	0	10
Lane Group Flow (vph)	10	615	0	0	1760	0	0	2	0	126	0	1
Confl. Peds. (#/hr)	1		6	6			1					1
Confl. Bikes (#/hr)							2					
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Perm	NA		Perm	NA			NA		Prot		Perm
Protected Phases		2			6			3		4		
Permitted Phases	2			6								4
Actuated Green, G (s)	60.0	60.0			60.0			1.4		5.0		5.0
Effective Green, g (s)	60.0	60.0			60.0			1.4		5.0		5.0
Actuated g/C Ratio	0.75	0.75			0.75			0.02		0.06		0.06
Clearance Time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0		3.0
Lane Grp Cap (vph)	120	2420			2225			26		195		88
v/s Ratio Prot		0.19						c0.00		c0.04		
v/s Ratio Perm	0.06				c0.59							0.00
v/c Ratio	0.08	0.25			0.79			0.09		0.65		0.01
Uniform Delay, d1	2.6	3.1			6.1			38.6		36.6		35.1
Progression Factor	1.00	1.00			1.00			1.00		1.00		1.00
Incremental Delay, d2	0.3	0.1			2.0			1.4		7.2		0.0
Delay (s)	2.9	3.1			8.1			40.0		43.7		35.2
Level of Service	A	A			A			D		D		D
Approach Delay (s)		3.1			8.1			40.0			43.1	
Approach LOS		A			A			D			D	

Intersection Summary

HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
3: Clawiter Rd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	522	220	1169	1421	1	216	0	268	0	0	0
Future Volume (vph)	1	522	220	1169	1421	1	216	0	268	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5			
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95	1.00			
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99			
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Frt	1.00	0.96		1.00	1.00		1.00	1.00	0.85			
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00			
Satd. Flow (prot)	1612	3040		3127	3223		1531	1531	1422			
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00			
Satd. Flow (perm)	1612	3040		3127	3223		1220	1220	1422			
Peak-hour factor, PHF	0.87	0.87	0.87	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	1	600	253	1426	1733	1	237	0	295	0	0	0
RTOR Reduction (vph)	0	37	0	0	0	0	0	0	257	0	0	0
Lane Group Flow (vph)	1	816	0	1426	1734	0	118	119	38	0	0	0
Confl. Peds. (#/hr)			6			2						
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm		
Protected Phases	5	2		1	6			4				8
Permitted Phases							4		4		8	
Actuated Green, G (s)	1.0	36.6		55.1	90.7		15.4	15.4	15.4			
Effective Green, g (s)	1.0	36.6		55.1	90.7		15.4	15.4	15.4			
Actuated g/C Ratio	0.01	0.30		0.46	0.75		0.13	0.13	0.13			
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	13	922		1428	2423		155	155	181			
v/s Ratio Prot	0.00	c0.27		c0.46	0.54							
v/s Ratio Perm							0.10	c0.10	0.03			
v/c Ratio	0.08	0.89		1.00	0.72		0.76	0.77	0.21			
Uniform Delay, d1	59.3	40.0		32.7	8.0		50.8	50.9	47.1			
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.5	10.2		23.3	1.0		19.6	20.1	0.6			
Delay (s)	61.9	50.2		56.0	9.1		70.4	71.0	47.7			
Level of Service	E	D		E	A		E	E	D			
Approach Delay (s)		50.2			30.2			57.9			0.0	
Approach LOS		D			C			E			A	
Intersection Summary												
HCM 2000 Control Delay			37.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			120.6				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			72.2%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 Signalized Intersection Summary
4: Hesperian Blvd & Winton Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	276	493	70	237	1298	196	93	783	174	137	1291	1338
Future Volume (veh/h)	276	493	70	237	1298	196	93	783	174	137	1291	1338
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1696	1900	1696	1696	1900	1696	1696	1696	1696	1696	1696
Adj Flow Rate, veh/h	303	542	77	266	1458	220	106	890	198	161	1519	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	321	1423	199	323	1408	212	117	1538	475	213	1517	472
Arrive On Green	0.10	0.35	0.35	0.10	0.35	0.35	0.07	0.33	0.33	0.07	0.33	0.00
Sat Flow, veh/h	3134	4101	573	3134	4052	611	1616	4631	1432	3134	4631	1442
Grp Volume(v), veh/h	303	406	213	266	1111	567	106	890	198	161	1519	0
Grp Sat Flow(s),veh/h/ln	1567	1544	1587	1567	1544	1575	1616	1544	1432	1567	1544	1442
Q Serve(g_s), s	11.5	11.9	12.2	10.0	41.7	41.7	7.8	19.1	12.9	6.1	39.3	0.0
Cycle Q Clear(g_c), s	11.5	11.9	12.2	10.0	41.7	41.7	7.8	19.1	12.9	6.1	39.3	0.0
Prop In Lane	1.00		0.36	1.00		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	1071	551	323	1073	547	117	1538	475	213	1517	472
V/C Ratio(X)	0.94	0.38	0.39	0.82	1.04	1.04	0.90	0.58	0.42	0.76	1.00	0.00
Avail Cap(c_a), veh/h	321	1071	551	436	1073	547	117	1538	475	293	1517	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.5	29.5	29.6	52.7	39.2	39.2	55.2	33.1	31.1	54.9	40.3	0.0
Incr Delay (d2), s/veh	35.5	0.2	0.4	9.0	36.9	48.3	54.7	1.6	2.7	7.2	23.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	5.1	5.4	4.7	23.2	25.4	5.3	8.4	5.4	2.8	20.0	0.0
LnGrp Delay(d),s/veh	89.0	29.7	30.0	61.8	76.1	87.4	109.9	34.7	33.7	62.2	63.8	0.0
LnGrp LOS	F	C	C	E	F	F	F	C	C	E	F	
Approach Vol, veh/h		922			1944			1194			1680	
Approach Delay, s/veh		49.2			77.4			41.2			63.7	
Approach LOS		D			E			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.7	44.3	16.9	46.1	13.2	43.8	16.8	46.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	11.2	36.8	16.7	37.3	8.7	39.3	12.3	41.7				
Max Q Clear Time (g_c+I1), s	8.1	21.1	12.0	14.2	9.8	41.3	13.5	43.7				
Green Ext Time (p_c), s	0.1	6.4	0.4	4.2	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				61.3								
HCM 2010 LOS				E								



















HCM Signalized Intersection Capacity Analysis
5: Southland Dr & Winton Ave



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵↵	↑↑		↵↵
Traffic Volume (vph)	1183	33	1062	1963	0	377
Future Volume (vph)	1183	33	1062	1963	0	377
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frpb, ped/bikes	1.00		1.00	1.00		0.98
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4612		3127	3223		2490
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4612		3127	3223		2490
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1286	36	1154	2134	0	410
RTOR Reduction (vph)	2	0	0	0	0	74
Lane Group Flow (vph)	1320	0	1154	2134	0	336
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	NA		Prot	NA		Perm
Protected Phases	2		4	6		
Permitted Phases						8
Actuated Green, G (s)	84.5		46.5	84.5		46.5
Effective Green, g (s)	84.5		46.5	84.5		46.5
Actuated g/C Ratio	0.60		0.33	0.60		0.33
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2783		1038	1945		827
v/s Ratio Prot	0.29		c0.37	c0.66		
v/s Ratio Perm						0.13
v/c Ratio	0.47		1.11	1.10		0.41
Uniform Delay, d1	15.4		46.8	27.8		36.1
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1		63.9	52.4		0.3
Delay (s)	15.5		110.6	80.2		36.4
Level of Service	B		F	F		D
Approach Delay (s)	15.5			90.9	36.4	
Approach LOS	B			F	D	
Intersection Summary						
HCM 2000 Control Delay			66.6		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.10			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			69.0%		ICU Level of Service	C
Analysis Period (min)			15			

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
6: Clawiter Rd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	134	37	107	313	27	29	93	40	21	719	270
Future Volume (veh/h)	57	134	37	107	313	27	29	93	40	21	719	270
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	66	154	43	127	373	32	38	122	53	22	757	284
Adj No. of Lanes	0	2	0	0	2	1	0	2	0	0	2	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	289	84	198	620	361	167	488	231	98	1140	529
Arrive On Green	0.14	0.14	0.14	0.23	0.23	0.23	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	865	2102	608	869	2720	1583	161	1460	690	41	3410	1583
Grp Volume(v), veh/h	139	0	124	266	234	32	92	0	121	417	362	284
Grp Sat Flow(s),veh/h/ln	1819	0	1755	1819	1770	1583	738	0	1573	1840	1610	1583
Q Serve(g_s), s	3.2	0.0	3.0	5.9	5.3	0.7	0.7	0.0	2.5	0.0	8.7	6.5
Cycle Q Clear(g_c), s	3.2	0.0	3.0	5.9	5.3	0.7	9.3	0.0	2.5	8.6	8.7	6.5
Prop In Lane	0.48		0.35	0.48		1.00	0.41		0.44	0.05		1.00
Lane Grp Cap(c), veh/h	250	0	241	415	404	361	360	0	526	699	538	529
V/C Ratio(X)	0.56	0.00	0.51	0.64	0.58	0.09	0.26	0.00	0.23	0.60	0.67	0.54
Avail Cap(c_a), veh/h	728	0	703	728	708	634	472	0	717	920	734	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	0.0	18.0	15.7	15.4	13.7	10.9	0.0	10.8	12.8	12.9	12.1
Incr Delay (d2), s/veh	1.9	0.0	1.7	1.7	1.3	0.1	0.4	0.0	0.2	0.8	1.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	1.5	3.1	2.7	0.3	0.8	0.0	1.1	4.6	4.0	3.0
LnGrp Delay(d),s/veh	20.0	0.0	19.7	17.3	16.8	13.8	11.3	0.0	11.0	13.7	14.3	13.0
LnGrp LOS	C		B	B	B	B	B		B	B	B	B
Approach Vol, veh/h		263			532			213			1063	
Approach Delay, s/veh		19.9			16.9			11.1			13.7	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.5		10.7		19.5		14.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.5		18.0		20.5		18.0				
Max Q Clear Time (g_c+I1), s		11.3		5.2		10.7		7.9				
Green Ext Time (p_c), s		0.9		1.2		4.3		2.3				
Intersection Summary												
HCM 2010 Ctrl Delay			15.0									
HCM 2010 LOS			B									





















Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	5	13	0	2	31	304	1	0	5	165	0	15
Future Vol, veh/h	5	13	0	2	31	304	1	0	5	165	0	15
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.63	0.63	0.63	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	17	0	2	36	358	2	0	8	181	0	16
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	1
HCM Control Delay	8.6	11.8	8.5	11.2
HCM LOS	A	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	28%	1%	100%	0%	0%
Vol Thru, %	0%	0%	72%	9%	0%	100%	0%
Vol Right, %	0%	100%	0%	90%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	5	18	337	165	0	15
LT Vol	1	0	5	2	165	0	0
Through Vol	0	0	13	31	0	0	0
RT Vol	0	5	0	304	0	0	15
Lane Flow Rate	2	8	24	396	181	0	16
Geometry Grp	8	8	7	7	7	7	7
Degree of Util (X)	0.003	0.012	0.038	0.501	0.304	0	0.022
Departure Headway (Hd)	6.617	5.401	5.657	4.545	6.043	5.538	4.831
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	536	655	630	793	591	0	735
Service Time	4.413	3.196	3.414	2.275	3.811	3.305	2.598
HCM Lane V/C Ratio	0.004	0.012	0.038	0.499	0.306	0	0.022
HCM Control Delay	9.4	8.3	8.6	11.8	11.5	8.3	7.7
HCM Lane LOS	A	A	A	B	B	N	A
HCM 95th-tile Q	0	0	0.1	2.8	1.3	0	0.1

HCM Signalized Intersection Capacity Analysis
8: Clawiter Rd & Breakwater Ave/SR 92 WB Ramps

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	18	90	87	283	146	161	129	275	121	409	261	84	
Future Volume (vph)	18	90	87	283	146	161	129	275	121	409	261	84	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00		0.95	1.00	
Frbp, ped/bikes		1.00	1.00	1.00	0.99			1.00	1.00		1.00	0.97	
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.92			1.00	0.85		1.00	0.85	
Flt Protected		0.99	1.00	0.95	1.00			0.98	1.00		0.97	1.00	
Satd. Flow (prot)		1848	1583	1770	1704			1834	1583		3434	1541	
Flt Permitted		0.88	1.00	0.95	1.00			0.98	1.00		0.97	1.00	
Satd. Flow (perm)		1631	1583	1770	1704			1834	1583		3434	1541	
Peak-hour factor, PHF	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83	0.88	0.88	0.88	
Adj. Flow (vph)	19	97	94	377	195	215	155	331	146	465	297	95	
RTOR Reduction (vph)	0	0	84	0	30	0	0	0	92	0	0	68	
Lane Group Flow (vph)	0	116	10	377	380	0	0	486	54	0	762	27	
Confl. Peds. (#/hr)							1						
Confl. Bikes (#/hr)												4	
Turn Type	custom	NA	custom	Split	NA		Split	NA	Perm	Split	NA	Perm	
Protected Phases				4	4		2	2		6	6		
Permitted Phases	8	8	8						2			6	
Actuated Green, G (s)		13.6	13.6	28.6	28.6			35.4	35.4		28.6	28.6	
Effective Green, g (s)		13.6	13.6	28.6	28.6			35.4	35.4		28.6	28.6	
Actuated g/C Ratio		0.11	0.11	0.23	0.23			0.29	0.29		0.23	0.23	
Clearance Time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		178	173	407	392			522	451		790	354	
v/s Ratio Prot				0.21	c0.22			c0.27			c0.22		
v/s Ratio Perm		c0.07	0.01						0.03			0.02	
v/c Ratio		0.65	0.06	0.93	0.97			0.93	0.12		1.14dl	0.08	
Uniform Delay, d1		53.0	49.6	46.8	47.4			43.2	32.9		47.3	37.5	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		8.3	0.1	26.8	36.9			23.5	0.1		23.5	0.1	
Delay (s)		61.3	49.7	73.6	84.3			66.7	33.0		70.8	37.6	
Level of Service		E	D	E	F			E	C		E	D	
Approach Delay (s)		56.1			79.2			58.9			67.1		
Approach LOS		E			E			E			E		
Intersection Summary													
HCM 2000 Control Delay			67.9									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.91										
Actuated Cycle Length (s)			124.2									Sum of lost time (s)	18.0
Intersection Capacity Utilization			77.9%									ICU Level of Service	D
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													























Intersection	
Intersection Delay, s/veh	45.1
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔			↖↗			↖↗	↗
Traffic Vol, veh/h	240	60	151	6	77	43	94	156	9	194	392	159
Future Vol, veh/h	240	60	151	6	77	43	94	156	9	194	392	159
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	300	75	189	7	87	48	119	197	11	211	426	173
Number of Lanes	0	1	1	0	1	0	0	2	0	0	2	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	2
HCM Control Delay	68	21.7	26.3	40.8
HCM LOS	F	C	D	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	55%	0%	80%	0%	5%	60%	0%	0%
Vol Thru, %	45%	90%	20%	0%	61%	40%	100%	0%
Vol Right, %	0%	10%	0%	100%	34%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	172	87	300	151	126	325	261	159
LT Vol	94	0	240	0	6	194	0	0
Through Vol	78	78	60	0	77	131	261	0
RT Vol	0	9	0	151	43	0	0	159
Lane Flow Rate	218	110	375	189	142	353	284	173
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.634	0.313	1.046	0.467	0.424	0.919	0.715	0.4
Departure Headway (Hd)	10.875	10.51	10.043	8.908	11.067	9.588	9.277	8.549
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	335	345	364	408	327	381	392	423
Service Time	8.575	8.21	7.733	6.598	8.767	7.288	6.977	6.249
HCM Lane V/C Ratio	0.651	0.319	1.03	0.463	0.434	0.927	0.724	0.409
HCM Control Delay	30.6	17.9	92.6	19.2	21.7	59.6	32.1	16.8
HCM Lane LOS	D	C	F	C	C	F	D	C
HCM 95th-tile Q	4.1	1.3	12.9	2.4	2	9.6	5.4	1.9























HCM 2010 Signalized Intersection Summary
 10: Industrial Blvd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (veh/h)	15	28	162	131	105	76	359	456	113	48	622	32
Future Volume (veh/h)	15	28	162	131	105	76	359	456	113	48	622	32
Number	7	4	14	3	8	18	1	1	16	5	12	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1624	1377	1900	1841	1900	1712	1712	1759	1759	1881	1881
Adj Flow Rate, veh/h	17	31	182	146	117	84	395	395	0	53	0	0
Adj No. of Lanes	1	1	1	0	1	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	25	17	38	2	2	2	11	11	8	8	1	1
Cap, veh/h	507	511	366	303	194	112	491	491	364	96	5	5
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.30	0.30	0.00	0.06	0.00	0.00
Sat Flow, veh/h	958	1624	1163	500	616	356	1630	1630	1495	1675	1599	1599
Grp Volume(v), veh/h	17	31	182	347	0	0	395	395	0	53	0	0
Grp Sat Flow(s),veh/h/ln	958	1624	1163	1472	0	0	1630	1630	1495	1675	1599	1599
Q Serve(g_s), s	0.0	0.5	4.5	5.5	0.0	0.0	7.9	7.9	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.5	4.5	7.2	0.0	0.0	7.9	7.9	0.0	1.1	0.0	0.0
Prop In Lane	1.00		1.00	0.42		0.24	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	507	511	366	609	0	0	491	491	364	96	5	5
V/C Ratio(X)	0.03	0.06	0.50	0.57	0.00	0.00	0.80	0.80	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	710	855	612	909	0	0	951	951	1541	324	1024	1024
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	8.4	9.8	10.6	0.0	0.0	11.3	11.3	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	0.8	0.0	0.0	3.2	3.2	0.0	4.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	1.5	3.1	0.0	0.0	3.9	3.9	0.0	0.6	0.0	0.0
LnGrp Delay(d),s/veh	8.4	8.5	10.8	11.4	0.0	0.0	14.5	14.5	0.0	20.9	0.0	0.0
LnGrp LOS	A	A	B	B			B	B		C		
Approach Vol, veh/h		230			347		896	896		53		
Approach Delay, s/veh		10.3			11.4		13.4	13.4		20.9		
Approach LOS		B			B		B	B		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.1	4.5		15.6	6.5	13.0		15.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.5	22.5		18.5	6.8	36.2		18.5				
Max Q Clear Time (g_c+I1), s	9.9	0.0		6.5	3.1	6.7		9.2				
Green Ext Time (p_c), s	1.0	0.0		0.7	0.0	1.8		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			12.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 11: Industrial Blvd & SR 92 WB Ramps/Cryer St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	7	196	161	44	23	552	1037	117	13	756	196
Future Volume (veh/h)	256	7	196	161	44	23	552	1037	117	13	756	196
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1812	1792	1900	1871	1900	1727	1813	1900	1900	1624	1776
Adj Flow Rate, veh/h	328	9	0	260	71	37	607	1140	129	14	813	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.78	0.78	0.78	0.62	0.62	0.62	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	6	0	0	0	10	5	5	0	17	7
Cap, veh/h	352	8	578	590	146	612	446	1455	164	75	733	358
Arrive On Green	0.38	0.38	0.00	0.38	0.38	0.38	0.54	0.93	0.93	0.04	0.24	0.00
Sat Flow, veh/h	771	21	1524	1414	386	1615	1645	3118	352	1810	3085	1509
Grp Volume(v), veh/h	337	0	0	331	0	37	607	629	640	14	813	0
Grp Sat Flow(s),veh/h/ln	792	0	1524	1800	0	1615	1645	1722	1748	1810	1543	1509
Q Serve(g_s), s	28.7	0.0	0.0	0.0	0.0	1.7	32.5	10.8	11.0	0.9	28.5	0.0
Cycle Q Clear(g_c), s	45.5	0.0	0.0	16.8	0.0	1.7	32.5	10.8	11.0	0.9	28.5	0.0
Prop In Lane	0.97		1.00	0.79		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	360	0	578	736	0	612	446	804	816	75	733	358
V/C Ratio(X)	0.94	0.00	0.00	0.45	0.00	0.06	1.36	0.78	0.78	0.19	1.11	0.00
Avail Cap(c_a), veh/h	360	0	578	736	0	612	446	804	816	75	733	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.67	0.67	0.67	0.54	0.54	0.00
Uniform Delay (d), s/veh	47.2	0.0	0.0	28.3	0.0	23.7	27.5	2.5	2.5	55.5	45.8	0.0
Incr Delay (d2), s/veh	31.7	0.0	0.0	0.4	0.0	0.0	172.7	5.1	5.1	0.6	60.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	0.0	0.0	8.5	0.0	0.8	35.7	5.3	5.4	0.5	18.2	0.0
LnGrp Delay(d),s/veh	78.9	0.0	0.0	28.8	0.0	23.7	200.2	7.6	7.6	56.2	106.0	0.0
LnGrp LOS	E			C			C	F	A	A	E	F
Approach Vol, veh/h		337			368			1876			827	
Approach Delay, s/veh		78.9			28.3			70.0			105.2	
Approach LOS		E			C			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	60.5		50.0	37.0	33.0		50.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	56.0		45.5	32.5	28.5		45.5				
Max Q Clear Time (g_c+I1), s	2.9	13.0		47.5	34.5	30.5		18.8				
Green Ext Time (p_c), s	0.0	11.4		0.0	0.0	0.0		2.3				
Intersection Summary												
HCM 2010 Ctrl Delay				74.9								
HCM 2010 LOS				E								

HCM 2010 Signalized Intersection Summary
 12: Industrial Blvd & SR 92 EB Ramps/Sleepy Hollow Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	5	475	20	62	182	196	1386	9	63	825	239
Future Volume (veh/h)	143	5	475	20	62	182	196	1386	9	63	825	239
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1735	1776	1900	1900	1827	1462	1776	1667	1792	1727	1624
Adj Flow Rate, veh/h	147	5	490	25	77	225	218	1540	10	67	878	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	25	25	7	0	0	4	30	7	14	6	10	17
Cap, veh/h	59	0	890	37	95	356	502	1743	732	242	978	411
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.36	0.52	0.52	0.28	0.60	0.00
Sat Flow, veh/h	0	0	1509	0	417	1553	1392	3374	1417	1707	3282	1380
Grp Volume(v), veh/h	152	0	490	102	0	225	218	1540	10	67	878	0
Grp Sat Flow(s),veh/h/ln	0	0	1509	417	0	1553	1392	1687	1417	1707	1641	1380
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	15.7	14.3	48.7	0.4	3.7	27.9	0.0
Cycle Q Clear(g_c), s	27.5	0.0	0.0	27.5	0.0	15.7	14.3	48.7	0.4	3.7	27.9	0.0
Prop In Lane	0.97		1.00	0.25		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	0	890	133	0	356	502	1743	732	242	978	411
V/C Ratio(X)	2.58	0.00	0.55	0.77	0.00	0.63	0.43	0.88	0.01	0.28	0.90	0.00
Avail Cap(c_a), veh/h	59	0	890	133	0	356	502	1954	820	242	1318	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.34	0.34	0.00
Uniform Delay (d), s/veh	60.0	0.0	15.0	39.6	0.0	41.7	29.1	25.8	14.1	38.2	22.7	0.0
Incr Delay (d2), s/veh	755.8	0.0	0.7	23.3	0.0	3.6	0.6	6.9	0.0	0.2	5.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	0.0	10.0	3.6	0.0	7.1	5.5	24.4	0.2	1.7	13.1	0.0
LnGrp Delay(d),s/veh	815.8	0.0	15.7	62.9	0.0	45.3	29.7	32.7	14.2	38.4	27.6	0.0
LnGrp LOS	F		B	E		D	C	C	B	D	C	
Approach Vol, veh/h		642			327			1768			945	
Approach Delay, s/veh		205.1			50.8			32.3			28.4	
Approach LOS		F			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.5	66.5		32.0	47.7	40.3		32.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	69.5		27.5	30.8	48.2		27.5				
Max Q Clear Time (g_c+I1), s	5.7	50.7		29.5	16.3	29.9		29.5				
Green Ext Time (p_c), s	0.0	11.3		0.0	0.5	5.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			63.1									
HCM 2010 LOS			E									

HCM Signalized Intersection Capacity Analysis
13: Hesperian Blvd & Depot Rd/Cathy Wy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (vph)	193	92	472	185	177	38	555	1020	96	39	1388	155
Future Volume (vph)	193	92	472	185	177	38	555	1020	96	39	1388	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.98	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1762	1428	1770	1821		1787	4986		1805	4936	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1762	1428	1770	1821		1787	4986		1805	4936	
Peak-hour factor, PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	272	130	665	210	201	43	677	1244	117	48	1693	189
RTOR Reduction (vph)	0	0	408	0	5	0	0	7	0	0	9	0
Lane Group Flow (vph)	199	203	257	210	239	0	677	1354	0	48	1873	0
Confl. Peds. (#/hr)			28	28					12			14
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	4%	2%	1%	3%	1%	2%	3%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases			8									
Actuated Green, G (s)	21.5	21.5	21.5	18.0	18.0		44.5	84.9		7.6	48.0	
Effective Green, g (s)	21.5	21.5	21.5	18.0	18.0		44.5	84.9		7.6	48.0	
Actuated g/C Ratio	0.14	0.14	0.14	0.12	0.12		0.30	0.57		0.05	0.32	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	245	252	204	212	218		530	2822		91	1579	
v/s Ratio Prot	0.12	0.12		0.12	c0.13		c0.38	0.27		0.03	c0.38	
v/s Ratio Perm			c0.18									
v/c Ratio	0.81	0.81	1.26	0.99	1.10		1.28	0.48		0.53	1.19	
Uniform Delay, d1	62.3	62.2	64.2	65.9	66.0		52.8	19.4		69.4	51.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.2	16.9	150.6	58.9	88.7		138.9	0.6		5.4	90.6	
Delay (s)	80.5	79.1	214.9	124.9	154.7		191.6	20.0		74.9	141.6	
Level of Service	F	E	F	F	F		F	B		E	F	
Approach Delay (s)		164.0			140.9			77.0			139.9	
Approach LOS		F			F			E			F	
Intersection Summary												
HCM 2000 Control Delay			121.3				HCM 2000 Level of Service				F	
HCM 2000 Volume to Capacity ratio			1.22									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			99.9%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection	
Intersection Delay, s/veh	108.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↔		↵	↕↔		↵	↕	↵	↵	↕	↵
Traffic Vol, veh/h	2	465	53	66	397	62	39	24	121	196	33	6
Future Vol, veh/h	2	465	53	66	397	62	39	24	121	196	33	6
Peak Hour Factor	0.52	0.52	0.52	0.80	0.80	0.80	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	4	894	102	83	496	78	50	31	155	225	38	7
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	194.1	40	19.6	33.8
HCM LOS	F	E	C	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	75%	0%	100%	68%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	25%	0%	0%	32%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	39	24	121	2	310	208	66	265	194	196	33
LT Vol	39	0	0	2	0	0	66	0	0	196	0
Through Vol	0	24	0	0	310	155	0	265	132	0	33
RT Vol	0	0	121	0	0	53	0	0	62	0	0
Lane Flow Rate	50	31	155	4	596	400	82	331	243	225	38
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.159	0.094	0.443	0.01	1.524	1.013	0.232	0.886	0.636	0.701	0.113
Departure Headway (Hd)	11.787	11.287	10.587	9.703	9.203	9.12	10.422	9.922	9.698	11.593	11.093
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	306	319	343	367	393	400	346	367	374	313	325
Service Time	9.487	8.987	8.287	7.498	6.998	6.82	8.122	7.622	7.398	9.293	8.793
HCM Lane V/C Ratio	0.163	0.097	0.452	0.011	1.517	1	0.237	0.902	0.65	0.719	0.117
HCM Control Delay	16.7	15.2	21.4	12.6	272.3	79.3	16.2	54.9	27.9	37.5	15.2
HCM Lane LOS	C	C	C	B	F	F	C	F	D	E	C
HCM 95th-tile Q	0.6	0.3	2.2	0	32.2	12.6	0.9	8.7	4.2	4.9	0.4

HCM Signalized Intersection Capacity Analysis
2: Winton Ave & Corsair Blvd

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑↑			↑↑			↑		↙↘		↗
Traffic Volume (vph)	6	1543	1	2	713	67	1	0	17	312	0	4
Future Volume (vph)	6	1543	1	2	713	67	1	0	17	312	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Lane Util. Factor	1.00	0.95			0.95			1.00		0.97		1.00
Frbp, ped/bikes	1.00	1.00			1.00			1.00		1.00		0.99
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00		1.00
Frt	1.00	1.00			0.99			0.87		1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00		0.95		1.00
Satd. Flow (prot)	1611	3223			3175			1475		3127		1422
Flt Permitted	0.31	1.00			0.95			1.00		0.95		1.00
Satd. Flow (perm)	521	3223			3023			1475		3127		1422
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.42	0.42	0.42	0.84	0.84	0.84
Adj. Flow (vph)	7	1734	1	2	759	71	2	0	40	371	0	5
RTOR Reduction (vph)	0	0	0	0	6	0	0	40	0	0	0	4
Lane Group Flow (vph)	7	1735	0	0	826	0	0	2	0	371	0	1
Confl. Peds. (#/hr)	1		6	6			1					1
Confl. Bikes (#/hr)							2					
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot		Perm
Protected Phases		2			6			3		4		
Permitted Phases	2			6			3					4
Actuated Green, G (s)	48.1	48.1			48.1			3.3		10.9		10.9
Effective Green, g (s)	48.1	48.1			48.1			3.3		10.9		10.9
Actuated g/C Ratio	0.63	0.63			0.63			0.04		0.14		0.14
Clearance Time (s)	4.5	4.5			4.5			4.5		4.5		4.5
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0		3.0
Lane Grp Cap (vph)	330	2045			1918			64		449		204
v/s Ratio Prot		c0.54								c0.12		
v/s Ratio Perm	0.01				0.27			0.00				0.00
v/c Ratio	0.02	0.85			0.43			0.03		0.83		0.00
Uniform Delay, d1	5.1	11.0			7.0			34.7		31.5		27.8
Progression Factor	1.00	1.00			1.00			1.00		1.00		1.00
Incremental Delay, d2	0.0	3.5			0.2			0.2		11.8		0.0
Delay (s)	5.2	14.5			7.1			34.9		43.3		27.8
Level of Service	A	B			A			C		D		C
Approach Delay (s)		14.4			7.1			34.9			43.1	
Approach LOS		B			A			C			D	

Intersection Summary

HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	75.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
3: Clawiter Rd & Winton Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1506	267	321	610	0	187	0	741	4	2	0
Future Volume (vph)	1	1506	267	321	610	0	187	0	741	4	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1612	3131		3127	3223		1531	1531	1423	1612	1696	
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00	0.63	1.00	
Satd. Flow (perm)	1612	3131		3127	3223		1219	1219	1423	1074	1696	
Peak-hour factor, PHF	0.87	0.87	0.87	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	1	1731	307	391	744	0	205	0	814	4	2	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	642	0	0	0
Lane Group Flow (vph)	1	2031	0	391	744	0	102	103	172	4	2	0
Confl. Peds. (#/hr)			6			2						
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4		8	
Actuated Green, G (s)	1.0	59.0		19.6	77.6		17.9	17.9	17.9	17.9	17.9	
Effective Green, g (s)	1.0	59.0		19.6	77.6		17.9	17.9	17.9	17.9	17.9	
Actuated g/C Ratio	0.01	0.54		0.18	0.71		0.16	0.16	0.16	0.16	0.16	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	14	1679		557	2273		198	198	231	174	275	
v/s Ratio Prot	0.00	c0.65		c0.13	0.23							0.00
v/s Ratio Perm							0.08	0.08	c0.12	0.00		
v/c Ratio	0.07	1.21		0.70	0.33		0.52	0.52	0.74	0.02	0.01	
Uniform Delay, d1	54.0	25.5		42.5	6.2		42.1	42.1	43.9	38.7	38.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	100.1		4.0	0.4		2.3	2.5	12.2	0.1	0.0	
Delay (s)	56.2	125.6		46.4	6.6		44.3	44.6	56.1	38.8	38.6	
Level of Service	E	F		D	A		D	D	E	D	D	
Approach Delay (s)		125.5			20.3			53.7			38.7	
Approach LOS		F			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			79.5				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.02									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			111.5%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 Signalized Intersection Summary
4: Hesperian Blvd & Winton Ave



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	947	1432	121	364	520	275	110	1459	223	216	920	302
Future Volume (veh/h)	947	1432	121	364	520	275	110	1459	223	216	920	302
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1041	1574	133	409	584	309	125	1658	253	254	1082	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1005	1562	132	427	540	246	150	1672	517	262	1628	507
Arrive On Green	0.29	0.33	0.33	0.12	0.16	0.16	0.08	0.33	0.33	0.08	0.32	0.00
Sat Flow, veh/h	3442	4773	403	3442	3390	1542	1774	5085	1572	3442	5085	1583
Grp Volume(v), veh/h	1041	1118	589	409	584	309	125	1658	253	254	1082	0
Grp Sat Flow(s),veh/h/ln	1721	1695	1785	1721	1695	1542	1774	1695	1572	1721	1695	1583
Q Serve(g_s), s	36.5	40.9	40.9	14.8	19.9	19.9	8.7	40.6	16.1	9.2	23.0	0.0
Cycle Q Clear(g_c), s	36.5	40.9	40.9	14.8	19.9	19.9	8.7	40.6	16.1	9.2	23.0	0.0
Prop In Lane	1.00		0.23	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1005	1109	584	427	540	246	150	1672	517	262	1628	507
V/C Ratio(X)	1.04	1.01	1.01	0.96	1.08	1.26	0.83	0.99	0.49	0.97	0.66	0.00
Avail Cap(c_a), veh/h	1005	1109	584	427	540	246	175	1672	517	262	1628	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.55	0.55	0.55	0.26	0.26	0.26	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.3	42.0	42.1	54.4	52.5	52.6	56.3	41.8	33.6	57.6	36.7	0.0
Incr Delay (d2), s/veh	19.9	10.0	13.4	22.6	53.6	133.4	7.9	9.5	0.9	47.5	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.1	20.6	22.3	8.4	13.3	17.6	4.6	20.5	7.1	6.1	11.0	0.0
LnGrp Delay(d),s/veh	64.2	52.1	55.4	77.0	106.1	185.9	64.3	51.3	34.4	105.1	38.9	0.0
LnGrp LOS	F	F	F	E	F	F	E	D	C	F	D	
Approach Vol, veh/h		2748			1302			2036			1336	
Approach Delay, s/veh		57.4			115.9			50.0			51.4	
Approach LOS		E			F			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	45.6	20.0	45.4	15.1	44.5	41.0	24.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.5	41.1	15.5	40.9	12.3	38.3	36.5	19.9				
Max Q Clear Time (g_c+I1), s	11.2	42.6	16.8	42.9	10.7	25.0	38.5	21.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	6.3	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				64.6								
HCM 2010 LOS				E								

HCM Signalized Intersection Capacity Analysis
5: Southland Dr & Winton Ave



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖↗	↑↑		↖↗
Traffic Volume (vph)	2578	74	844	1345	0	1114
Future Volume (vph)	2578	74	844	1345	0	1114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.0	4.5		4.0
Lane Util. Factor	0.91		0.97	0.95		0.88
Frbp, ped/bikes	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5064		3433	3539		2787
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5064		3433	3539		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2802	80	917	1462	0	1211
RTOR Reduction (vph)	2	0	0	0	0	1
Lane Group Flow (vph)	2880	0	917	1462	0	1210
Confl. Peds. (#/hr)						3
Turn Type	NA		Prot	NA		Over
Protected Phases	2		4	6		4
Permitted Phases						
Actuated Green, G (s)	72.5		54.0	72.5		54.0
Effective Green, g (s)	72.5		54.0	72.5		54.0
Actuated g/C Ratio	0.54		0.40	0.54		0.40
Clearance Time (s)	4.5		4.0	4.5		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2719		1373	1900		1114
v/s Ratio Prot	c0.57		0.27	0.41		c0.43
v/s Ratio Perm						
v/c Ratio	1.06		0.67	0.77		1.09
Uniform Delay, d1	31.2		33.2	24.7		40.5
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	35.5		1.2	3.1		53.7
Delay (s)	66.7		34.4	27.7		94.2
Level of Service	E		C	C		F
Approach Delay (s)	66.7			30.3	94.2	
Approach LOS	E			C	F	
Intersection Summary						
HCM 2000 Control Delay			58.5		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.07			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	8.5
Intersection Capacity Utilization			97.8%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 Signalized Intersection Summary
6: Clawiter Rd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	445	31	17	91	43	29	478	214	24	160	44
Future Volume (veh/h)	214	445	31	17	91	43	29	478	214	24	160	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	246	511	36	20	108	51	38	629	282	25	168	46
Adj No. of Lanes	0	2	0	0	2	1	0	2	0	0	2	1
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	708	51	45	258	133	96	856	375	139	809	597
Arrive On Green	0.30	0.30	0.30	0.08	0.08	0.08	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1078	2389	173	536	3069	1583	72	2271	996	135	2147	1583
Grp Volume(v), veh/h	413	0	380	68	60	51	519	0	430	68	125	46
Grp Sat Flow(s),veh/h/ln	1809	0	1832	1836	1770	1583	1820	0	1519	673	1610	1583
Q Serve(g_s), s	11.6	0.0	10.3	2.0	1.8	1.7	4.1	0.0	13.7	0.7	2.9	1.0
Cycle Q Clear(g_c), s	11.6	0.0	10.3	2.0	1.8	1.7	13.6	0.0	13.7	14.4	2.9	1.0
Prop In Lane	0.60		0.09	0.29		1.00	0.07		0.66	0.37		1.00
Lane Grp Cap(c), veh/h	536	0	543	155	149	133	755	0	573	342	607	597
V/C Ratio(X)	0.77	0.00	0.70	0.44	0.40	0.38	0.69	0.00	0.75	0.20	0.21	0.08
Avail Cap(c_a), veh/h	666	0	675	594	572	512	981	0	765	476	810	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	0.0	17.4	24.2	24.1	24.1	15.0	0.0	15.1	12.2	11.7	11.1
Incr Delay (d2), s/veh	4.4	0.0	2.4	2.0	1.7	1.8	1.4	0.0	2.9	0.3	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	5.5	1.1	0.9	0.8	7.1	0.0	6.2	0.7	1.3	0.5
LnGrp Delay(d),s/veh	22.2	0.0	19.8	26.2	25.9	25.9	16.4	0.0	18.0	12.5	11.9	11.2
LnGrp LOS	C		B	C	C	C	B		B	B	B	B
Approach Vol, veh/h		793			179			949			239	
Approach Delay, s/veh		21.0			26.0			17.1			11.9	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		25.5		21.0		25.5		9.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		28.0		20.5		28.0		18.0				
Max Q Clear Time (g_c+I1), s		15.7		13.6		16.4		4.0				
Green Ext Time (p_c), s		5.3		2.9		1.0		0.7				
Intersection Summary												
HCM 2010 Ctrl Delay			18.7									
HCM 2010 LOS			B									





















Intersection	
Intersection Delay, s/veh	16.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	13	63	0	2	32	182	0	2	2	368	0	4
Future Vol, veh/h	13	63	0	2	32	182	0	2	2	368	0	4
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.63	0.63	0.63	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	84	0	2	38	214	0	3	3	404	0	4
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	1
HCM Control Delay	10.5	11.6	9.2	20.9
HCM LOS	B	B	A	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	17%	1%	100%	0%	0%
Vol Thru, %	100%	50%	83%	15%	0%	100%	0%
Vol Right, %	0%	50%	0%	84%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	4	76	216	368	0	4
LT Vol	0	0	13	2	368	0	0
Through Vol	0	2	63	32	0	0	0
RT Vol	0	2	0	182	0	0	4
Lane Flow Rate	0	6	101	254	404	0	4
Geometry Grp	8	8	7	7	7	7	7
Degree of Util (X)	0	0.011	0.179	0.387	0.684	0	0.006
Departure Headway (Hd)	6.77	6.414	6.348	5.485	6.093	5.588	4.882
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	0	557	565	661	594	0	734
Service Time	4.519	4.162	4.087	3.185	3.817	3.312	2.605
HCM Lane V/C Ratio	0	0.011	0.179	0.384	0.68	0	0.005
HCM Control Delay	9.5	9.2	10.5	11.6	21	8.3	7.6
HCM Lane LOS	N	A	B	B	C	N	A
HCM 95th-tile Q	0	0	0.6	1.8	5.3	0	0

HCM Signalized Intersection Capacity Analysis
8: Clawiter Rd & Breakwater Ave/SR 92 WB Ramps

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	43	105	156	132	57	174	41	426	183	243	312	43	
Future Volume (vph)	43	105	156	132	57	174	41	426	183	243	312	43	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00		0.95	1.00	
Frbp, ped/bikes		1.00	1.00	1.00	0.99			1.00	1.00		1.00	0.97	
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.89			1.00	0.85		1.00	0.85	
Flt Protected		0.99	1.00	0.95	1.00			1.00	1.00		0.98	1.00	
Satd. Flow (prot)		1836	1583	1770	1635			1855	1583		3463	1540	
Flt Permitted		0.81	1.00	0.95	1.00			1.00	1.00		0.98	1.00	
Satd. Flow (perm)		1504	1583	1770	1635			1855	1583		3463	1540	
Peak-hour factor, PHF	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83	0.88	0.88	0.88	
Adj. Flow (vph)	46	113	168	176	76	232	49	513	220	276	355	49	
RTOR Reduction (vph)	0	0	142	0	113	0	0	0	150	0	0	40	
Lane Group Flow (vph)	0	159	26	176	195	0	0	562	70	0	631	9	
Confl. Peds. (#/hr)							1						
Confl. Bikes (#/hr)												4	
Turn Type	custom	NA	custom	Split	NA		Split	NA	Perm	Split	NA	Perm	
Protected Phases				4	4		2	2		6	6		
Permitted Phases	8	8	8						2			6	
Actuated Green, G (s)		14.2	14.2	14.9	14.9			28.2	28.2		18.1	18.1	
Effective Green, g (s)		14.2	14.2	14.9	14.9			28.2	28.2		18.1	18.1	
Actuated g/C Ratio		0.15	0.15	0.16	0.16			0.30	0.30		0.19	0.19	
Clearance Time (s)		4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		228	240	282	260			560	477		671	298	
v/s Ratio Prot				0.10	c0.12			c0.30			c0.18		
v/s Ratio Perm		c0.11	0.02						0.04			0.01	
v/c Ratio		0.70	0.11	0.62	0.75			1.00	0.15		0.94	0.03	
Uniform Delay, d1		37.6	34.1	36.6	37.5			32.6	23.8		37.1	30.5	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		8.9	0.2	4.3	11.6			38.9	0.1		21.3	0.0	
Delay (s)		46.5	34.3	40.9	49.1			71.5	24.0		58.4	30.6	
Level of Service		D	C	D	D			E	C		E	C	
Approach Delay (s)		40.2			46.1			58.1			56.4		
Approach LOS		D			D			E			E		
Intersection Summary													
HCM 2000 Control Delay			52.5									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.88										
Actuated Cycle Length (s)			93.4									Sum of lost time (s)	18.0
Intersection Capacity Utilization			77.1%									ICU Level of Service	D
Analysis Period (min)			15										

c Critical Lane Group























Intersection	
Intersection Delay, s/veh	183
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕			↕			↕	↕
Traffic Vol, veh/h	260	13	94	2	198	142	320	295	7	79	162	345
Future Vol, veh/h	260	13	94	2	198	142	320	295	7	79	162	345
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	325	16	118	2	222	160	405	373	9	86	176	375
Number of Lanes	0	1	1	0	1	0	0	2	0	0	2	1






















Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	1	2
HCM Control Delay	101.1	156.2	332.9	73
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	68%	0%	95%	0%	1%	59%	0%	0%
Vol Thru, %	32%	95%	5%	0%	58%	41%	100%	0%
Vol Right, %	0%	5%	0%	100%	42%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	468	155	273	94	342	133	108	345
LT Vol	320	0	260	0	2	79	0	0
Through Vol	148	148	13	0	198	54	108	0
RT Vol	0	7	0	94	142	0	0	345
Lane Flow Rate	592	196	341	118	384	145	117	375
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	1.871	0.598	1.111	0.344	1.201	0.449	0.355	1.06
Departure Headway (Hd)	12.553	12.149	13.839	12.58	13.019	13.437	13.119	12.37
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	296	299	266	288	281	270	276	296
Service Time	10.253	9.849	11.539	10.28	10.719	11.137	10.819	10.07
HCM Lane V/C Ratio	2	0.656	1.282	0.41	1.367	0.537	0.424	1.267
HCM Control Delay	432.5	31.4	128.4	21.7	156.2	26.6	22.9	106.6
HCM Lane LOS	F	D	F	C	F	D	C	F
HCM 95th-tile Q	36.7	3.6	12.4	1.5	15.2	2.2	1.5	11.9























HCM 2010 Signalized Intersection Summary
 10: Industrial Blvd & Depot Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (veh/h)	68	286	365	54	16	21	126	615	164	82	475	16
Future Volume (veh/h)	68	286	365	54	16	21	126	615	164	82	475	16
Number	7	4	14	3	8	18	1	1	16	5	12	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1624	1377	1900	1828	1900	1712	1712	1759	1759	1881	1881
Adj Flow Rate, veh/h	76	321	410	60	18	23	138	138	0	90	0	0
Adj No. of Lanes	1	1	1	0	1	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	25	17	38	2	2	2	11	11	8	8	1	1
Cap, veh/h	551	618	443	244	76	59	173	173	400	122	375	375
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.11	0.00	0.07	0.00	0.00
Sat Flow, veh/h	1108	1624	1164	328	199	155	1630	1630	1495	1675	1599	1599
Grp Volume(v), veh/h	76	321	410	101	0	0	138	138	0	90	0	0
Grp Sat Flow(s),veh/h/ln	1108	1624	1164	683	0	0	1630	1630	1495	1675	1599	1599
Q Serve(g_s), s	0.0	7.4	16.3	1.7	0.0	0.0	4.0	4.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	2.4	7.4	16.3	9.0	0.0	0.0	4.0	4.0	0.0	2.5	0.0	0.0
Prop In Lane	1.00		1.00	0.59		0.23	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	551	618	443	378	0	0	173	173	400	122	375	375
V/C Ratio(X)	0.14	0.52	0.93	0.27	0.00	0.00	0.80	0.80	0.00	0.74	0.00	0.00
Avail Cap(c_a), veh/h	554	622	446	381	0	0	287	287	665	225	645	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.0	11.6	14.3	11.4	0.0	0.0	21.1	21.1	0.0	22.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.8	25.3	0.4	0.0	0.0	8.2	8.2	0.0	8.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.4	8.2	1.1	0.0	0.0	2.2	2.2	0.0	1.5	0.0	0.0
LnGrp Delay(d),s/veh	10.2	12.3	39.6	11.7	0.0	0.0	29.3	29.3	0.0	30.5	0.0	0.0
LnGrp LOS	B	B	D	B			C	C		C		
Approach Vol, veh/h		807			101		814	814		90		
Approach Delay, s/veh		26.0			11.7		19.5	19.5		30.5		
Approach LOS		C			B		B	B		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	15.8		22.9	8.0	17.4		22.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	8.5	19.5		18.5	6.5	21.5		18.5				
Max Q Clear Time (g_c+I1), s	6.0	0.0		18.3	4.5	10.9		11.0				
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	1.9		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			22.5									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 11: Industrial Blvd & SR 92 WB Ramps/Cryer St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	40	196	43	7	15	359	766	106	23	1136	117
Future Volume (veh/h)	197	40	196	43	7	15	359	766	106	23	1136	117
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1824	1792	1900	1868	1900	1727	1814	1900	1900	1624	1776
Adj Flow Rate, veh/h	253	51	0	69	11	24	395	842	116	25	1222	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.78	0.78	0.78	0.62	0.62	0.62	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	6	0	0	0	10	5	5	0	17	7
Cap, veh/h	278	45	352	370	55	374	405	1868	257	76	1264	618
Arrive On Green	0.23	0.23	0.00	0.23	0.23	0.23	0.25	0.61	0.61	0.04	0.41	0.00
Sat Flow, veh/h	964	194	1524	1357	238	1615	1645	3041	419	1810	3085	1509
Grp Volume(v), veh/h	304	0	0	80	0	24	395	477	481	25	1222	0
Grp Sat Flow(s),veh/h/ln	1158	0	1524	1594	0	1615	1645	1723	1737	1810	1543	1509
Q Serve(g_s), s	22.9	0.0	0.0	0.0	0.0	1.4	28.5	17.7	17.7	1.6	46.4	0.0
Cycle Q Clear(g_c), s	27.7	0.0	0.0	4.8	0.0	1.4	28.5	17.7	17.7	1.6	46.4	0.0
Prop In Lane	0.83		1.00	0.86		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	323	0	352	425	0	374	405	1058	1067	76	1264	618
V/C Ratio(X)	0.94	0.00	0.00	0.19	0.00	0.06	0.97	0.45	0.45	0.33	0.97	0.00
Avail Cap(c_a), veh/h	323	0	352	425	0	374	405	1058	1067	89	1270	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.8	0.0	0.0	37.2	0.0	35.9	44.8	12.3	12.3	55.8	34.6	0.0
Incr Delay (d2), s/veh	34.9	0.0	0.0	0.2	0.0	0.1	38.0	0.3	0.3	2.5	17.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	0.0	0.0	2.2	0.0	0.6	17.2	8.4	8.5	0.9	22.8	0.0
LnGrp Delay(d),s/veh	84.7	0.0	0.0	37.4	0.0	36.0	82.7	12.6	12.6	58.3	52.3	0.0
LnGrp LOS	F			D		D	F	B	B	E	D	
Approach Vol, veh/h		304			104			1353			1247	
Approach Delay, s/veh		84.7			37.1			33.1			52.5	
Approach LOS		F			D			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	78.1		32.2	34.0	53.6		32.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.9	72.9		27.7	29.5	49.3		27.7				
Max Q Clear Time (g_c+I1), s	3.6	19.7		29.7	30.5	48.4		6.8				
Green Ext Time (p_c), s	0.0	7.5		0.0	0.0	0.7		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			46.5									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 12: Industrial Blvd & SR 92 EB Ramps/Sleepy Hollow Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	102	968	0	18	56	98	925	21	87	975	304
Future Volume (veh/h)	261	102	968	0	18	56	98	925	21	87	975	304
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1674	1776	1900	1900	1827	1462	1776	1667	1792	1727	1624
Adj Flow Rate, veh/h	269	105	998	0	22	69	109	1028	23	93	1037	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	25	25	7	0	0	4	30	7	14	6	10	17
Cap, veh/h	406	128	696	0	694	567	134	1340	563	119	1217	512
Arrive On Green	0.37	0.37	0.37	0.00	0.37	0.37	0.10	0.40	0.40	0.07	0.37	0.00
Sat Flow, veh/h	900	351	1509	0	1900	1553	1392	3374	1417	1707	3282	1380
Grp Volume(v), veh/h	374	0	998	0	22	69	109	1028	23	93	1037	0
Grp Sat Flow(s),veh/h/ln	1251	0	1509	0	1900	1553	1392	1687	1417	1707	1641	1380
Q Serve(g_s), s	21.4	0.0	29.3	0.0	0.6	2.4	6.2	21.2	0.8	4.3	23.3	0.0
Cycle Q Clear(g_c), s	22.0	0.0	29.3	0.0	0.6	2.4	6.2	21.2	0.8	4.3	23.3	0.0
Prop In Lane	0.72		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	534	0	696	0	694	567	134	1340	563	119	1217	512
V/C Ratio(X)	0.70	0.00	1.43	0.00	0.03	0.12	0.82	0.77	0.04	0.78	0.85	0.00
Avail Cap(c_a), veh/h	534	0	696	0	694	567	593	2287	960	272	1349	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.4	0.0	21.6	0.0	16.4	16.9	35.6	21.0	14.8	36.7	23.2	0.0
Incr Delay (d2), s/veh	4.1	0.0	203.6	0.0	0.0	0.1	11.4	0.9	0.0	10.6	5.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	0.0	54.7	0.0	0.3	1.0	2.8	10.0	0.3	2.4	11.4	0.0
LnGrp Delay(d),s/veh	27.5	0.0	225.2	0.0	16.4	17.0	46.9	21.9	14.9	47.3	28.3	0.0
LnGrp LOS	C		F		B	B	D	C	B	D	C	
Approach Vol, veh/h		1372			91			1160			1130	
Approach Delay, s/veh		171.3			16.9			24.1			29.8	
Approach LOS		F			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	36.4		33.8	12.2	34.3		33.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	12.8	54.4		29.3	34.2	33.0		29.3				
Max Q Clear Time (g_c+I1), s	6.3	23.2		31.3	8.2	25.3		4.4				
Green Ext Time (p_c), s	0.1	8.7		0.0	0.3	4.1		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			79.5									
HCM 2010 LOS			E									

HCM Signalized Intersection Capacity Analysis
 13: Hesperian Blvd & Depot Rd/Cathy Wy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	116	404	60	45	45	276	1703	155	43	1084	131
Future Volume (vph)	243	116	404	60	45	45	276	1703	155	43	1084	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1762	1463	1770	1711		1787	4996		1805	4939	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1762	1463	1770	1711		1787	4996		1805	4939	
Peak-hour factor, PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	342	163	569	68	51	51	337	2077	189	52	1322	160
RTOR Reduction (vph)	0	0	409	0	40	0	0	10	0	0	15	0
Lane Group Flow (vph)	250	255	160	68	62	0	337	2256	0	52	1467	0
Confl. Peds. (#/hr)			28	28					12			14
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	4%	2%	1%	3%	1%	2%	3%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases			8									
Actuated Green, G (s)	22.1	22.1	22.1	9.4	9.4		21.5	46.5		4.0	29.0	
Effective Green, g (s)	22.1	22.1	22.1	9.4	9.4		21.5	46.5		4.0	29.0	
Actuated g/C Ratio	0.22	0.22	0.22	0.09	0.09		0.22	0.46		0.04	0.29	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	379	389	323	166	160		384	2323		72	1432	
v/s Ratio Prot	c0.15	0.14		c0.04	0.04		0.19	c0.45		0.03	c0.30	
v/s Ratio Perm			0.11									
v/c Ratio	0.66	0.66	0.50	0.41	0.39		0.88	0.97		0.72	1.02	
Uniform Delay, d1	35.5	35.5	34.1	42.7	42.6		38.0	26.1		47.5	35.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.1	3.9	1.2	1.6	1.6		19.6	13.0		29.8	30.2	
Delay (s)	39.6	39.4	35.3	44.3	44.2		57.6	39.1		77.3	65.7	
Level of Service	D	D	D	D	D		E	D		E	E	
Approach Delay (s)		37.3			44.2			41.5			66.1	
Approach LOS		D			D			D			E	
Intersection Summary												
HCM 2000 Control Delay			47.8				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			68.3%				ICU Level of Service			C		
Analysis Period (min)			15									
c	Critical Lane Group											

Appendix D
Signal Warrant Sheets

Cabot Boulevard and Depot Road

TRAFFIC SIGNAL WARRANTS WORKSHEET

Major Street: Depot Road
 Minor Street: Cabot Boulevard

Analyst: JW date: 7/2/20
 Critical Approach Speed* (mph) 35
 Critical Approach Speed* (mph) 35
 *Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)..... }
 In built up area of isolated community of < 10,000 population..... } **Rural (R)**
 Urban (U)

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj		
Minor Street Approach Direction w/ Highest Delay	SB	SB	SB	SB	SB	SB		
Highest Minor Street Average Delay (sec/veh)	10.0	10.3	10.2	10.4	10.9	11.2		
Corresponding Minor Street Approach Volume (veh/hr)	139	149	146	156	170	180		
Minor Street Total Delay (veh-hrs)	0.4	0.4	0.4	0.5	0.5	0.6		
Total Entering Volume (veh/hr)	429	446	450	467	524	541		
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; <u>AND</u>	No	No	No	No	No	No		
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; <u>AND</u>	No	No	No	Yes	Yes	Yes		
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	No	No	No	No	No	No		
Signal Warranted based on Part A?	No	No	No	No	No	No		

PART B

	Approach Lanes	2 or More	AM PEAK PERIOD							
			Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj		
Major Street - Both Approaches	Depot Road	X	285	292	299	306	348	355		
Minor Street - Highest Approach	Cabot Boulevard	X	139	149	146	156	170	180		
Signal Warranted based on Part B?			No	No	No	No	No	No		

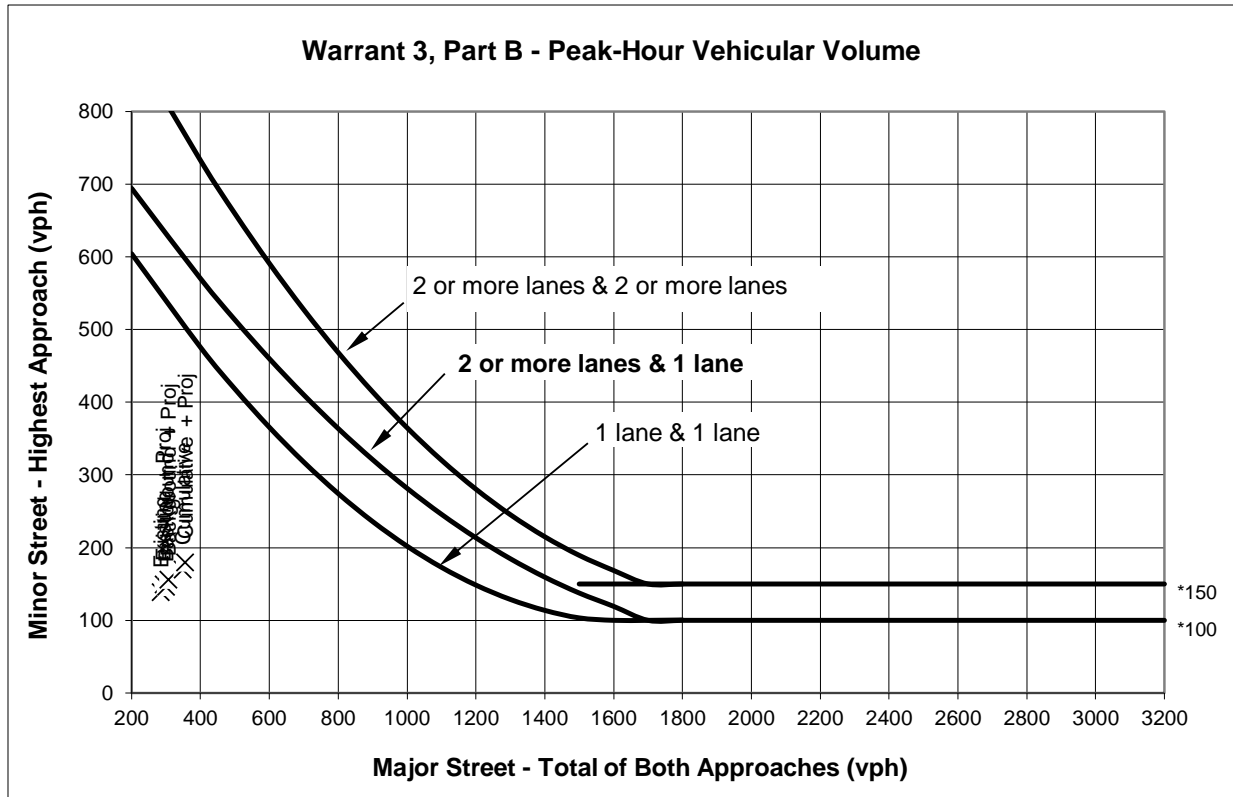
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)

Cabot Boulevard and Depot Road

Cabot Boulevard and Depot Road

AM PEAK PERIOD



Source: Figure 4C-3 California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		AM PEAK PERIOD									
		Approach Lanes		Existing	Existing + Proj	Background	Background + Proj			Cumulative	Cumulative + Proj
		2 or One	More								
Major Street - Both Approaches	Depot Road	X		285	292	299	306	348	355		
Minor Street - Highest Approach	Cabot Boulevard		X	139	149	146	156	170	180		
Signal Warranted Based on Part B - Peak-Hour Volumes?				No	No	No	No	No	No		

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Note 1: Right turn volume was removed from the minor WB approach.

Cabot Boulevard and Depot Road

TRAFFIC SIGNAL WARRANTS WORKSHEET

Major Street: Depot Road
 Minor Street: Cabot Boulevard

Analyst: JW date: 7/2/20
 Critical Approach Speed* (mph) 35
 Critical Approach Speed* (mph) 35
 *Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)..... }
 In built up area of isolated community of < 10,000 population..... } **Rural (R)**
 Urban (U)

PM PEAK HOUR

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR							
	Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj		
Minor Street Approach Direction w/ Highest Delay	SB	SB	SB	SB	SB	SB		
Highest Minor Street Average Delay (sec/veh)	13.8	15.3	14.5	16.2	18.0	20.9		
Corresponding Minor Street Approach Volume (veh/hr)	280	310	294	324	342	372		
Minor Street Total Delay (veh-hrs)	1.1	1.3	1.2	1.5	1.7	2.2		
Total Entering Volume (veh/hr)	510	557	536	583	621	668		
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; <u>AND</u>	No	No	No	No	No	No		
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; <u>AND</u>	Yes	Yes	Yes	Yes	Yes	Yes		
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	No	No	No	No	No	No		
Signal Warranted based on Part A?	No	No	No	No	No	No		

PART B

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj		
Major Street - Both Approaches	Depot Road	X		226	243	238	255	275	292		
Minor Street - Highest Approach	Cabot Boulevard		X	280	310	294	324	342	372		
Signal Warranted based on Part B?		No	No	No	No	No	No	No	No		

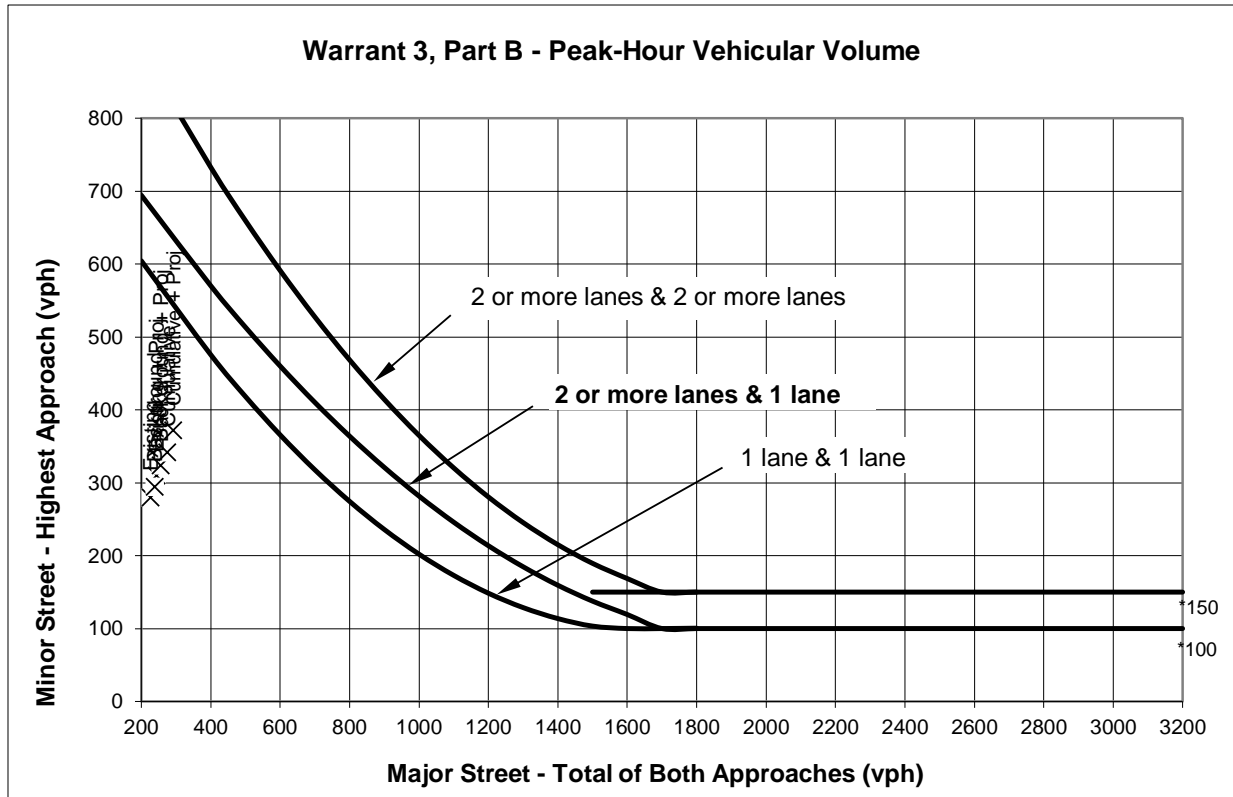
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)

Cabot Boulevard and Depot Road

Cabot Boulevard and Depot Road

PM PEAK HOUR



Source: Figure 4C-3 California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

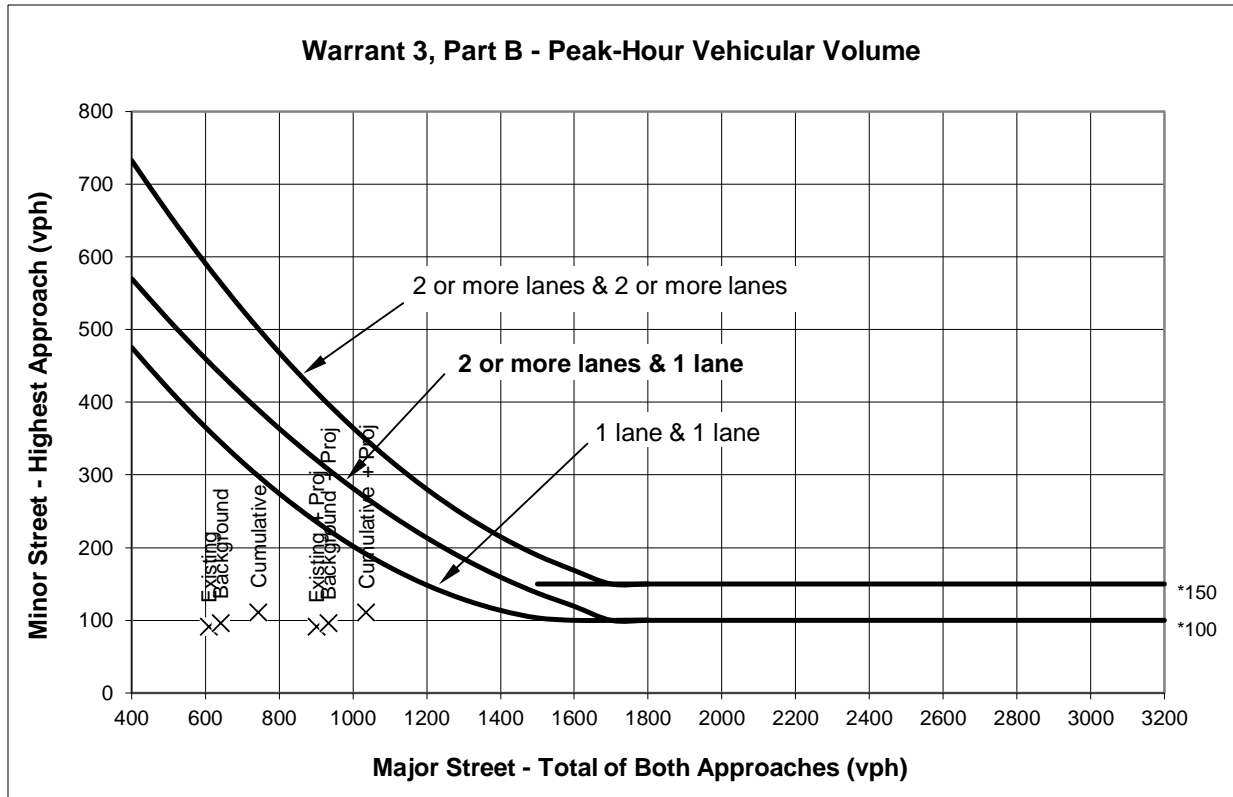
		Approach Lanes		PM PEAK HOUR							
		2 or	One	Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj		
		More	More								
Major Street - Both Approaches	Depot Road	X		226	243	238	255	275	292		
Minor Street - Highest Approach	Cabot Boulevard		X	280	310	294	324	342	372		
Signal Warranted Based on Part B - Peak-Hour Volumes?				No	No	No	No	No	No		

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.
Note 1: Right turn volume was removed from the minor WB approach.

Cabot Boulevard and West Winton Avenue

Cabot Boulevard and West Winton Avenue

AM PEAK PERIOD



Source: Figure 4C-3 California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		AM PEAK PERIOD									
		Approach Lanes		Existing	Existing + Proj	Background	Background + Proj			Cumulative	Cumulative + Proj
		2 or One	More								
Major Street - Both Approaches	West Winton Avenue		X	609	901	641	933	744	1036		
Minor Street - Highest Approach	Cabot Boulevard		X	91	91	96	96	111	111		
Signal Warranted Based on Part B - Peak-Hour Volumes?				No	No	No	No	No	No		

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Note 1: Right turn volume was removed from the minor WB approach.

Cabot Boulevard and West Winton Avenue

TRAFFIC SIGNAL WARRANTS WORKSHEET

Major Street: West Winton Avenue
 Minor Street: Cabot Boulevard

Analyst: JW date: 7/2/20
 Critical Approach Speed* (mph) 35
 Critical Approach Speed* (mph) 35
 *Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)..... }
 In built up area of isolated community of < 10,000 population..... } **Rural (R)**
 Urban (U)

PM PEAK HOUR

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR							
	Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj		
Minor Street Approach Direction w/ Highest Delay	SB	SB	SB	SB	SB	SB		
Highest Minor Street Average Delay (sec/veh)	13.2	23.1	13.7	24.8	16.0	33.8		
Corresponding Minor Street Approach Volume (veh/hr)	193	193	202	202	235	235		
Minor Street Total Delay (veh-hrs)	0.7	1.2	0.8	1.4	1.0	2.2		
Total Entering Volume (veh/hr)	631	1326	663	1358	769	1464		
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; <u>AND</u>	No	No	No	No	No	No		
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; <u>AND</u>	Yes	Yes	Yes	Yes	Yes	Yes		
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	No	Yes	No	Yes	No	Yes		
Signal Warranted based on Part A?	No	No	No	No	No	No		

PART B

	Approach Lanes	PM PEAK HOUR									
		Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj				
										One	Two or More
Major Street - Both Approaches	West Winton Avenue		X	301	979	317	995	367	1045		
Minor Street - Highest Approach	Cabot Boulevard		X	193	193	202	202	235	235		
Signal Warranted based on Part B?		No	No	No	No	No	No	No	No		

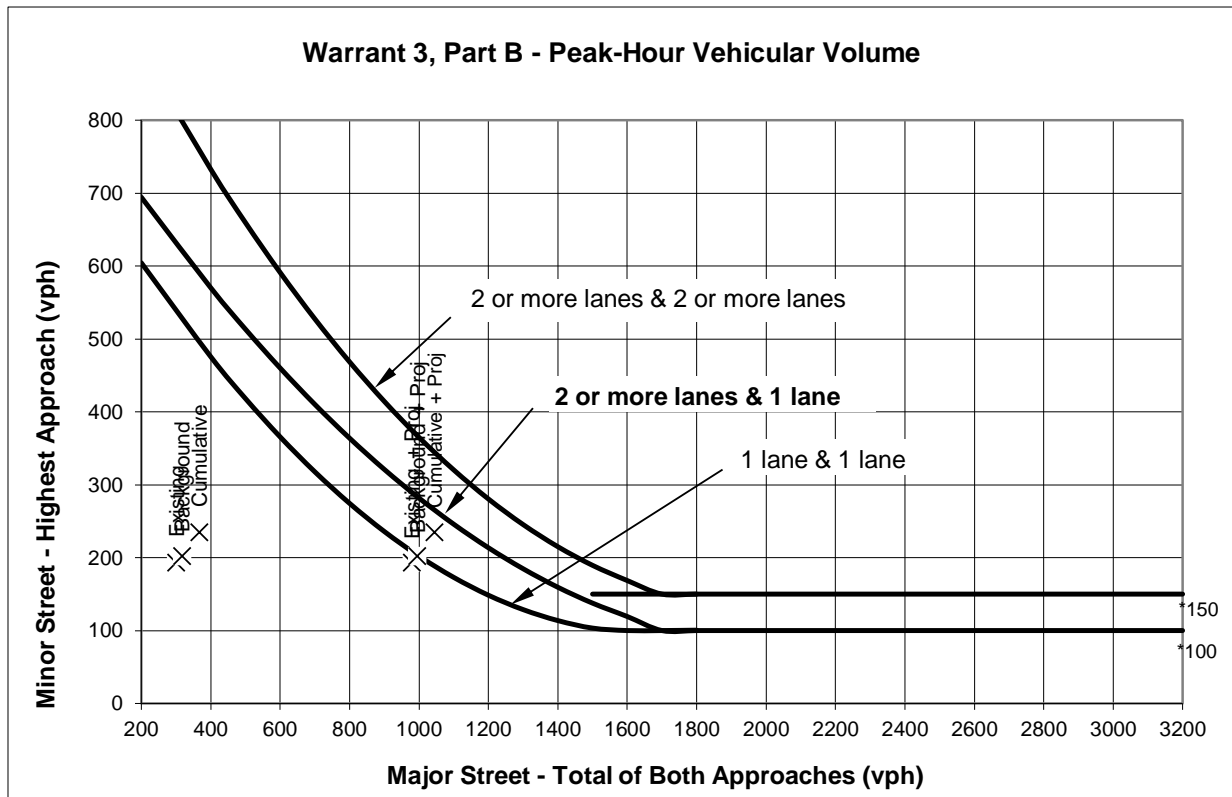
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)

Cabot Boulevard and West Winton Avenue

Cabot Boulevard and West Winton Avenue

PM PEAK HOUR



Source: Figure 4C-3 California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		PM PEAK HOUR							
		Approach Lanes		Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj
		2 or	One More						
Major Street - Both Approaches	West Winton Avenue		X	301	979	317	995	367	1045
Minor Street - Highest Approach	Cabot Boulevard		X	193	193	202	202	235	235
Signal Warranted Based on Part B - Peak-Hour Volumes?				No	No	No	No	No	No

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Note 1: Right turn volume was removed from the minor WB approach.

Cabot Boulevard and West Winton Avenue

TRAFFIC SIGNAL WARRANTS WORKSHEET

Major Street: West Winton Avenue
 Minor Street: Cabot Boulevard

Analyst: JW date: 7/2/20
 Critical Approach Speed* (mph) 35
 Critical Approach Speed* (mph) 35
 *Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)..... }
 In built up area of isolated community of < 10,000 population..... } **Rural (R)**
 Urban (U)

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj		
Minor Street Approach Direction w/ Highest Delay	SB	SB	SB	SB	SB	SB		
Highest Minor Street Average Delay (sec/veh)	11.4	13.4	11.7	13.7	12.6	15.0		
Corresponding Minor Street Approach Volume (veh/hr)	91	91	96	96	111	111		
Minor Street Total Delay (veh-hrs)	0.3	0.3	0.3	0.4	0.4	0.5		
Total Entering Volume (veh/hr)	762	1061	802	1101	931	1230		
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; <u>AND</u>	No	No	No	No	No	No		
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; <u>AND</u>	No	No	No	No	No	No		
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	No	Yes	Yes	Yes	Yes	Yes		
Signal Warranted based on Part A?	No	No	No	No	No	No		

PART B

	Approach Lanes	2 or More	AM PEAK PERIOD							
			Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj		
Major Street - Both Approaches	West Winton Avenue	X	609	901	641	933	744	1036		
Minor Street - Highest Approach	Cabot Boulevard	X	91	91	96	96	111	111		
Signal Warranted based on Part B?			No	No	No	No	No	No		

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)

Clawiter Road and SR 92 Eastbound Ramps/Eden Landing Road

TRAFFIC SIGNAL WARRANTS WORKSHEET

Major Street: Clawiter Road
Minor Street: Eden Landing Road/ SR 92 Eastbound Ramps

Analyst: JW date: 7/2/20
Critical Approach Speed* (mph) 25
Critical Approach Speed* (mph) 25
*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)..... }
In built up area of isolated community of < 10,000 population..... } **Rural (R)**
 Urban (U)

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj		
Minor Street Approach Direction w/ Highest Delay	EB	EB	EB	EB	EB	EB		
Highest Minor Street Average Delay (sec/veh)	23.9	23.7	27.6	32.7	56.3	68.0		
Corresponding Minor Street Approach Volume (veh/hr)	354	373	371	390	432	451		
Minor Street Total Delay (veh-hrs)	2.4	2.5	2.8	3.5	6.8	8.5		
Total Entering Volume (veh/hr)	1279	1298	1343	1362	1562	1581		
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; <u>AND</u>	No	No	No	No	Yes	Yes		
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; <u>AND</u>	Yes	Yes	Yes	Yes	Yes	Yes		
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes	Yes	Yes	Yes	Yes		
Signal Warranted based on Part A?	No	No	No	No	Yes	Yes		

PART B

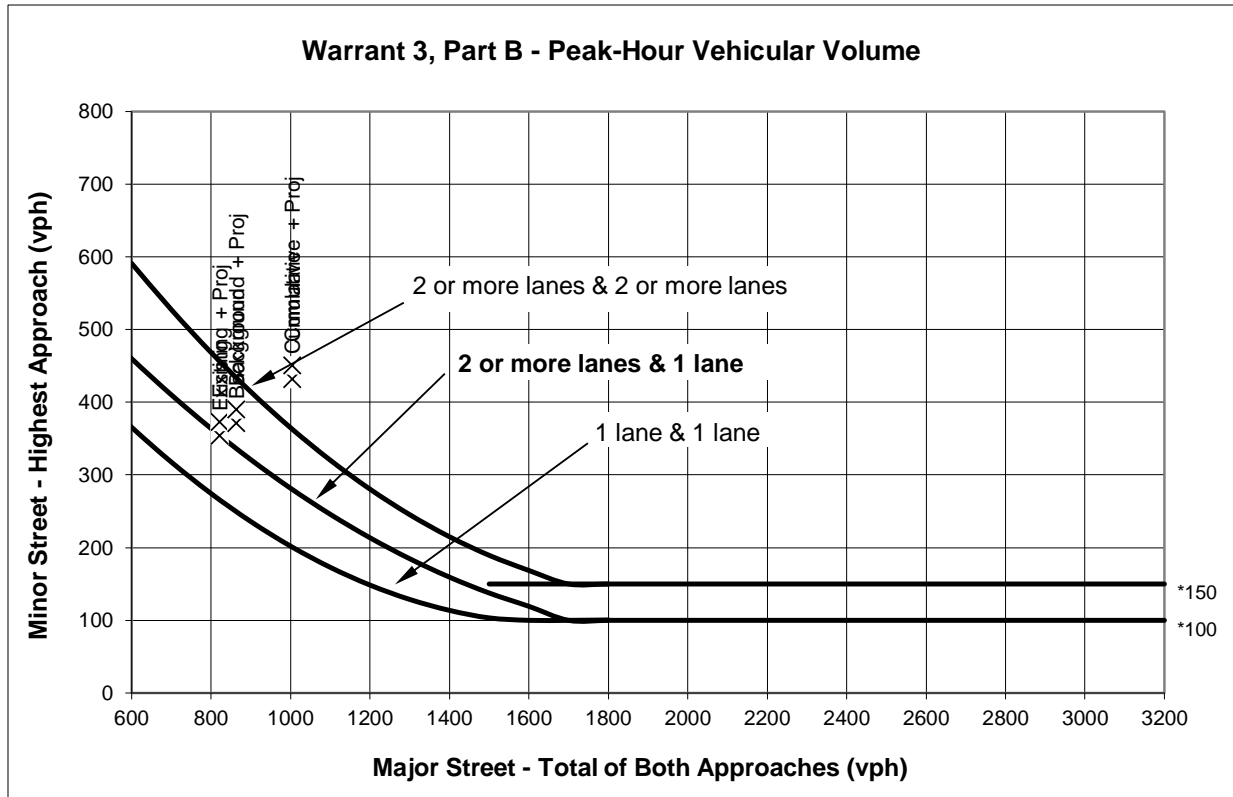
	Approach Lanes 2 or More	One	AM PEAK PERIOD								
			Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj			
Major Street - Both Approaches	Clawiter Road		X	822	822	864	864	1004	1004		
Minor Street - Highest Approach	Eden Landing Road/ SR 92 Eastbound Ramps	X		354	373	371	390	432	451		
Signal Warranted based on Part B?				Yes	Yes	Yes	Yes	Yes	Yes		

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)

Clawiter Road and SR 92 Eastbound Ramps/Eden Landing Road

Clawiter Road and SR 92 Eastbound Ramps/Eden Landing Road **AM PEAK PERIOD**



Source: Figure 4C-3 California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		AM PEAK PERIOD									
		Approach Lanes		Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj		
		2 or One	More								
Major Street - Both Approaches	Clawiter Road		X	822	822	864	864	1004	1004		
Minor Street - Highest Approach	Eden Landing Road/ SR 92 Eastbound Ramps	X		354	373	371	390	432	451		
Signal Warranted Based on Part B - Peak-Hour Volumes?				Yes	Yes	Yes	Yes	Yes	Yes		

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Note 1: Right turn volume was removed from the minor WB approach.

Clawiter Road and SR 92 Eastbound Ramps/Eden Landing Road

TRAFFIC SIGNAL WARRANTS WORKSHEET

Major Street: Clawiter Road
 Minor Street: Eden Landing Road/ SR 92 Eastbound Ramps

Analyst: JW date: 7/2/20
 Critical Approach Speed* (mph) 25
 Critical Approach Speed* (mph) 25
 *Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)..... }
 In built up area of isolated community of < 10,000 population..... } **Rural (R)**
 Urban (U)

PM PEAK HOUR

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR							
	Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj		
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB	WB	WB		
Highest Minor Street Average Delay (sec/veh)	56.8	64.0	72.9	82.4	148.4	156.2		
Corresponding Minor Street Approach Volume (veh/hr)	280	280	294	294	342	342		
Minor Street Total Delay (veh-hrs)	4.4	5.0	6.0	6.7	14.1	14.8		
Total Entering Volume (veh/hr)	1540	1579	1617	1656	1878	1917		
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; <u>AND</u>	Yes	Yes	Yes	Yes	Yes	Yes		
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; <u>AND</u>	Yes	Yes	Yes	Yes	Yes	Yes		
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes	Yes	Yes	Yes	Yes		
Signal Warranted based on Part A?	Yes	Yes	Yes	Yes	Yes	Yes		

PART B

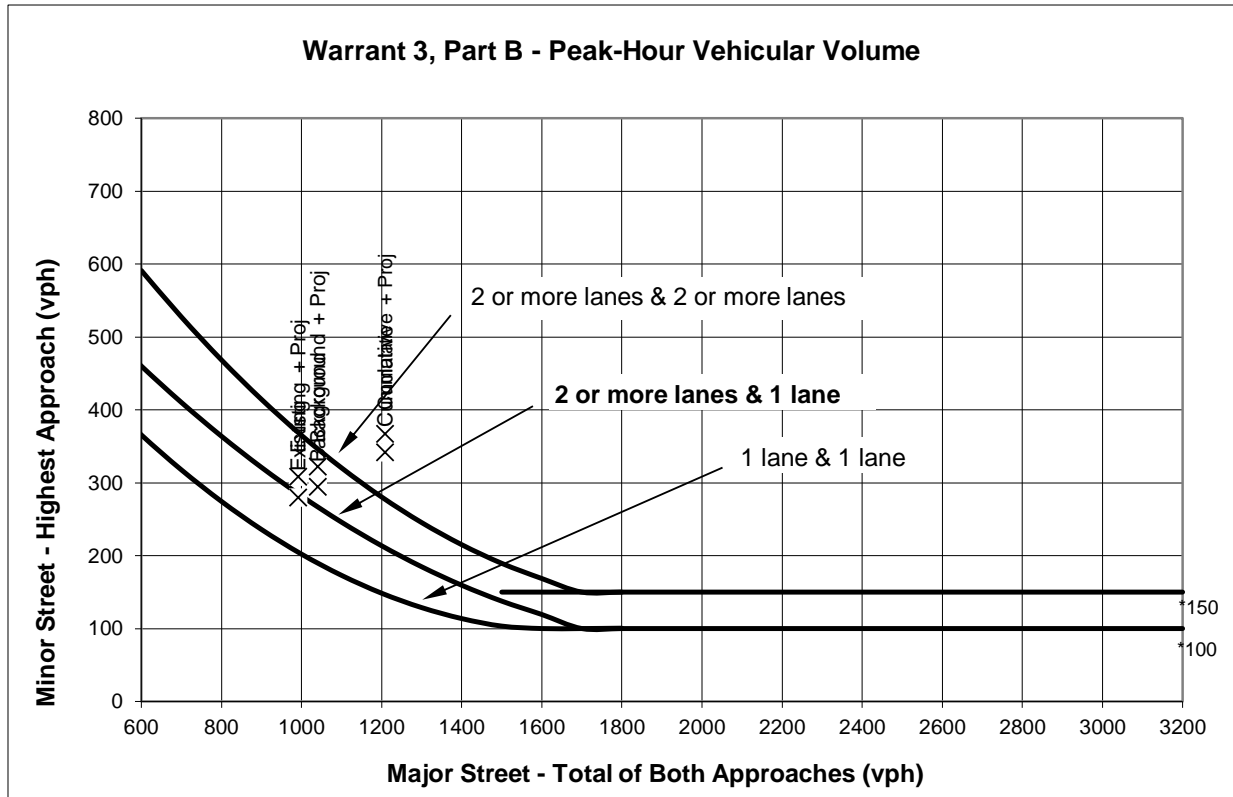
		PM PEAK HOUR									
		Approach Lanes		Existing	Existing + Proj	Background	Background + Proj			Cumulative	Cumulative + Proj
		One	2 or More								
Major Street - Both Approaches	Clawiter Road		X	991	991	1040	1040	1208	1208		
Minor Street - Highest Approach	Eden Landing Road/ SR 92 Eastbound Ramps	X		280	308	294	322	342	367		
Signal Warranted based on Part B?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)

Clawiter Road and SR 92 Eastbound Ramps/Eden Landing Road

Clawiter Road and SR 92 Eastbound Ramps/Eden Landing Road **PM PEAK HOUR**



Source: Figure 4C-3 California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		PM PEAK HOUR							
		Approach Lanes		Existing	Existing + Proj	Background	Background + Proj	Cumulative	Cumulative + Proj
		2 or More	One						
Major Street - Both Approaches	Clawiter Road		X	991	991	1040	1040	1208	1208
Minor Street - Highest Approach	Eden Landing Road/ SR 92 Eastbound Ramps	X		280	308	294	322	342	367
Signal Warranted Based on Part B - Peak-Hour Volumes?				Yes	Yes	Yes	Yes	Yes	Yes

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.
Note 1: Right turn volume was removed from the minor WB approach.

Appendix E

Line Haul Trucks and Delivery Van Counts

**Amazon Delivery Station
24 Hour Trip Counts**

**Line Haul Trucks
Associate and Manager Shifts
Flex Drivers
Personal Vehicles of Van Drivers & Customers
Delivery Van Managers
Delivery Vans**

**2701 Winton Street, Hayward
(as of May 26, 2020)**

Trip Hour	Line Haul Trucks		Associate/Mgr. Shifts 1 & 2		Flex Drivers		Personal Vehicle - Van Drivers		Personal Vehicle - Delivery Van Managers		Delivery Vans		Total Trips	
	1	2	3		4		5		6		7		8	
	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>
12 am-1 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
1 am-2 am	1	1	80	-	-	-	-	-	-	-	-	-	81	1
2 am-3 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
3 am-4 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
4 am-5 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
5 am-6 am	1	1	24	-	-	-	-	-	-	-	-	-	25	1
6 am-7 am	1	1	-	-	-	-	-	-	15	-	-	-	16	1
7 am-8 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
8 am-9 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
9 am-10 am	1	1	-	-	-	-	51	1	-	-	-	-	52	2
10 am-11 am	-	-	-	80	-	-	101	1	-	-	-	50	101	131
11 am-12 pm	-	-	-	-	-	-	36	1	-	-	-	100	36	101
12 pm-1 pm	-	-	-	-	-	-	-	-	-	-	-	35	-	35

Trip Hour	Line Haul Trucks		Associate/Mgr. Shifts 1 & 2		Flex Drivers		Personal Vehicle - Van Drivers		Personal Vehicle - Delivery Van Managers		Delivery Vans		Total Trips	
	1	2	3		4		5		6		7		8	
	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>
1 pm-2 pm	-	-	49	24	-	-	-	-	-	-	-	-	49	24
2 pm-3 pm	-	-	-	-	-	-	-	-	15	15	-	-	15	15
3 pm-4 pm	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 pm-5 pm	1	1	-	-	51	51	1	1	-	-	-	-	53	53
5 pm-6 pm	1	1	-	-	-	-	1	1	-	-	25	-	27	2
6 pm-7 pm	1	1	-	-	-	-	1	51	-	-	50	-	52	52
7 pm-8 pm	1	1	-	-	10	10	-	50	-	-	50	-	61	61
8 pm-9 pm	1	1	-	-	-	-	-	50	-	-	50	-	51	51
9 pm-10 pm	1	1	-	49	-	-	-	35	-	-	10	-	11	85
10 pm-11 pm	1	1	-	-	-	-	-	-	-	15	-	-	1	16
11 pm-12 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
T O T A L	18	18	153	153	61	61	191	191	30	30	185	185	638	638

- a. Assumes no carpooling or public transit; actual numbers may be lower in columns 3, 5, and 6.
- b. Associates work 7-8 hour shifts with a 30-minute meal break generally taken onsite.
- c. Delivery vans depart in groups of 50, 50, 50, and 35 between 10:30 a.m. - 12:30 p.m.
- d. Delivery vans return between 7-9 hours after departure between 5:30 p.m. and 9:30 p.m.
- e. Assumes approximately 10 flex drivers will return with packages that could not be delivered; the actual return rate may be lower.
- f. Assumes 3 customers pick up packages in the morning hours and 3 in the evening hours.

**Amazon Delivery Station
24 Hour Trip Counts - Seasonal Trips**

(Seasonal Trips Occur Black Friday - December 31st and 2 Prime Days in Mid-July)

**Line Haul Trucks
Associate and Manager Shifts
Flex Drivers
Personal Vehicles of Van Drivers & Customers
Delivery Van Managers
Delivery Vans**

**2701 Winton Street, Hayward
(as of May 26, 2020)**

Trip Hour	Line Haul Trucks		Associate/Mgr. Shifts 1 & 2		Flex Drivers		Personal Vehicle - Van Drivers & Customers		Personal Vehicle - Delivery Van Managers		Delivery Vans		Total Trips	
	1	2	3		4		5		6		7		8	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
12 am-1 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
1 am-2 am	1	1	-	140	-	-	-	-	-	-	-	-	1	141
2 am-3 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
3 am-4 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
4 am-5 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
5 am-6 am	1	1	24	-	-	-	-	-	-	-	-	-	25	1
6 am-7 am	1	1	-	-	-	-	50	-	15	-	-	50	66	51
7 am-8 am	1	1	-	-	-	-	103	-	-	-	-	103	104	104
8 am- 9 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
9 am-10 am	1	1	-	-	-	-	51	1	-	-	-	-	52	2
10 am-11 am	1	1	-	-	-	-	101	1	-	-	-	100	102	102
11 am-12 pm	1	1	-	-	-	-	101	1	-	-	-	100	102	102
12 pm-1 pm	1	1	-	-	-	-	87	-	-	-	-	100	88	101

Trip Hour	Line Haul Trucks		Associate/Mgr. Shifts 1 & 2		Flex Drivers		Personal Vehicle - Van Drivers & Customers		Personal Vehicle - Delivery Van Managers		Delivery Vans		Total Trips	
	1	2	3		4		5		6		7		8	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
1 pm-2 pm	1	1	50	24	-	-	-	-	-	-	25	37	76	62
2 pm-3 pm	1	1	-	-	-	-	-	25	15	15	50	-	66	41
3 pm-4 pm	1	1	-	-	-	-	1	51	-	-	50	-	52	52
4 pm-5 pm	1	1	-	-	51	51	1	51	-	-	28	-	81	103
5 pm-6 pm	6	6	140	-	-	-	1	29	-	-	50	-	197	35
6 pm-7 pm	6	6	-	-	-	-	-	50	-	-	50	-	56	56
7 pm-8 pm	6	6	-	-	10	10	-	50	-	-	100	-	116	66
8 pm-9 pm	1	1	-	-	-	-	-	100	-	-	100	-	101	101
9 pm-10 pm	1	1	-	50	-	-	-	100	-	-	37	-	38	151
10 pm-11 pm	1	1	-	-	-	-	-	37	-	15	-	-	1	53
11 pm-12 am	1	1	-	-	-	-	-	-	-	-	-	-	1	1
T O T A L	39	39	214	214	61	61	496	496	30	30	490	490	1330	1330

- a. Assumes no carpooling or public transit; actual numbers may be lower in columns 3, 5, and 6.
- b. Associates work 7-8 hour shifts with a 30-minute meal break generally taken onsite.
- c. Delivery vans depart in groups of 50, 50, 50, and 37 between 6:00 a.m. - 1:00 p.m., with no vans between 8:00 a.m. - 10:00 a.m.
- d. Delivery vans return between 7-9 hours after departure, between 1:00 p.m. and 9:30 p.m.
- e. Assumes approximately 10 flex drivers will return with packages that could not be delivered; the actual return rate may be lower.
- f. Assumes 3 customers pick up packages in the morning hours and 3 in the evening hours.