TEC EQUIPMENT NEW TRUCK DEALERSHIP
TRAFFIC IMPACT ANALYSIS
COUNTY OF SAN BERNARDINO, CALIFORNIA

FEBRUARY 8, 2016

Prepared for:

TEC Equipment
c/o Thatcher engineering & associates, inc.
1461 Ford Street, Suite 105
Redlands, California 92373

Prepared by:

Scott Sato, P.E.
100 E. San Marcos Boulevard, Suite 400
San Marcos, CA 92069

TRAMES SOLUTIONS INC.

(0255-0001-02)

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

SECTION PAGE

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

THIS PAGE LEFT INTENTIONALLY BLANK

EXECUTIVE SUMMARY

The purpose of this traffic impact analysis (TIA) is to evaluate the traffic impacts of the proposed TEC Equipment New Truck Dealership development. The project is proposed to be developed by 2017 with a new truck dealership which includes approximately 6,000 sf of retail area, 10,000 sf of office, and a 22,420 sf parts/service area. The site is located on the northeast corner of Randall and Cherry Avenue in the County of San Bernardino.

The proposed development does not generate traffic like a typical automobile dealership since the types of vehicles are comprised of large trucks. Therefore, the anticipated operations of the site and the number of employees/customers were used to develop the expected trip generation at the project driveways. Based on these expectations, the site is projected to generate a total of approximately 768 PCE's per day with 50 PCE's per hour during the AM peak hour and 119 PCE's per hour during the PM peak hour.

The traffic study has been conducted in accordance with the San Bernardino County's traffic study guidelines. These guidelines include the following conditions:

- **Existing (2016) Traffic**
- **Existing (2016) Plus Project**
- **Existing (2016) Plus Ambient Traffic**
- **Existing + Ambient + Project (EAP 2017)**.
- **Existing + Ambient + Project + Cumulative (EAPC 2017).**

Based on the analysis conducted for the proposed project, no study area intersections were determined to have a significant impact due to the proposed project. In addition, the I-10/Cherry Avenue interchange was evaluated and no significant impacts were identified.

Project recommendations include:

- Provide stop sign control at the project driveways.
- On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.
- Verify that minimum sight distance is provided at the project driveways.

1.0 INTRODUCTION

A. Purpose of the TIA and Study Objectives

The purpose of this traffic impact analysis (TIA) is to evaluate the traffic impacts of the proposed TEC Equipment New Truck Dealership development. The project is proposed to be developed with a new truck dealership which includes approximately 6,000 sf of retail area, 10,000 sf of office, and a 22,420 sf parts/service area. The site is located on the northeast corner of Randall and Cherry Avenue in the County of San Bernardino.

Study objectives include the following:

Existing (2016) Traffic. Existing traffic will be counted to determine current conditions. This constitutes the environmental setting for a CEQA analysis at the time that the hearing body reviews the project. Traffic count data shall be new or recent. In some cases, data up to one year old may be acceptable with the approval of the County of San Bernardino Engineering Department. Any exception to this must be requested prior to approval of the scoping agreement

Existing (2016) Plus Ambient Traffic. Traffic generated by ambient growth will be added to existing traffic counts to identify and analyze impacts on the circulation system.

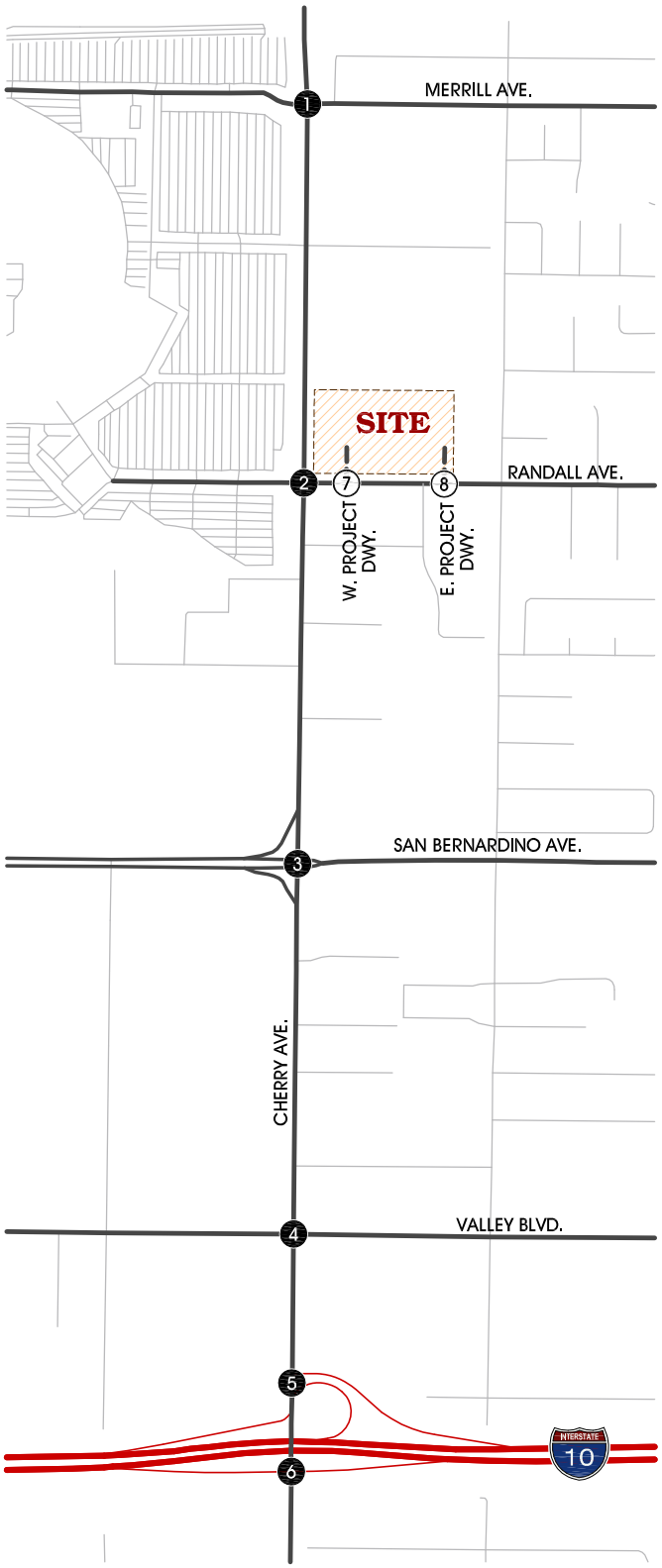
Existing + Ambient + Project (EAP 2017). Traffic conditions prior to the time that the proposed development is completed will be estimated by increasing the existing traffic counts by an appropriate growth rate to be provided by County of San Bernardino Engineering Department staff, projected to the year that the project is estimated to be completed. Traffic generated by the proposed project will then be added, and the impacts on the circulation system will be analyzed. This will be the basis for determining project-specific impacts, mitigation, and conditions of approval.

Existing + Ambient + Project + Cumulative (EAPC 2017). Traffic generated by other approved projects in the study area shall be identified and added to the Project Completion traffic identified in Scenario 3. This may also include projects that are proposed and in the review process, but not yet fully approved.

B. Site Location and Study Area

The site is located on the northeast corner of Randall and Cherry Avenue in the County of San Bernardino. Figure 1-A illustrates the site location and the traffic analysis study area.

FIGURE 1-A
STUDY AREA



LEGEND:

- 6 = EXISTING INTERSECTION ANALYSIS LOCATION
- 2 = FUTURE INTERSECTION ANALYSIS LOCATION
- = FUTURE ROADWAY / PROJECT DRIVEWAY

N

In general, the study area shall include any intersection of Collector or higher classification street with another Collector roadway or higher classification street, at which the proposed project will add 50 or more peak hour trips. Pursuant to the attached scoping agreement (see Appendix "1.1"), the study area includes the following intersections:

STUDY AREA INTERSECTIONS	
1.	Cherry Ave. / Merrill Ave.
2.	Cherry Ave. / Randall Ave.
3.	Cherry Ave. / San Bernardino Ave.
4.	Cherry Ave. / Valley Blvd.
5.	Cherry Ave. / I-10 WB Ramp
6.	Cherry Ave. / I-10 EB Ramp
7.	W. Project Driveway/ Randall Ave. – *Future Intersection*
8.	E. Project Driveway/ Randall Ave. – *Future Intersection*

C. Development Project Identification

1. Project Size and Description

The TEC Equipment New Truck Dealership site is proposed to be developed by 2017. The following uses are proposed as indicated below:

- 6,000 sf of truck sales retail area
- 10,000 sf of office
- 22,420 sf parts/service area

2. Existing Land Use

The project site is currently vacant. Adjacent uses include the following:

- North – Industrial
- South –Industrial
- East –Industrial
- West – Cal Speed Karting Center

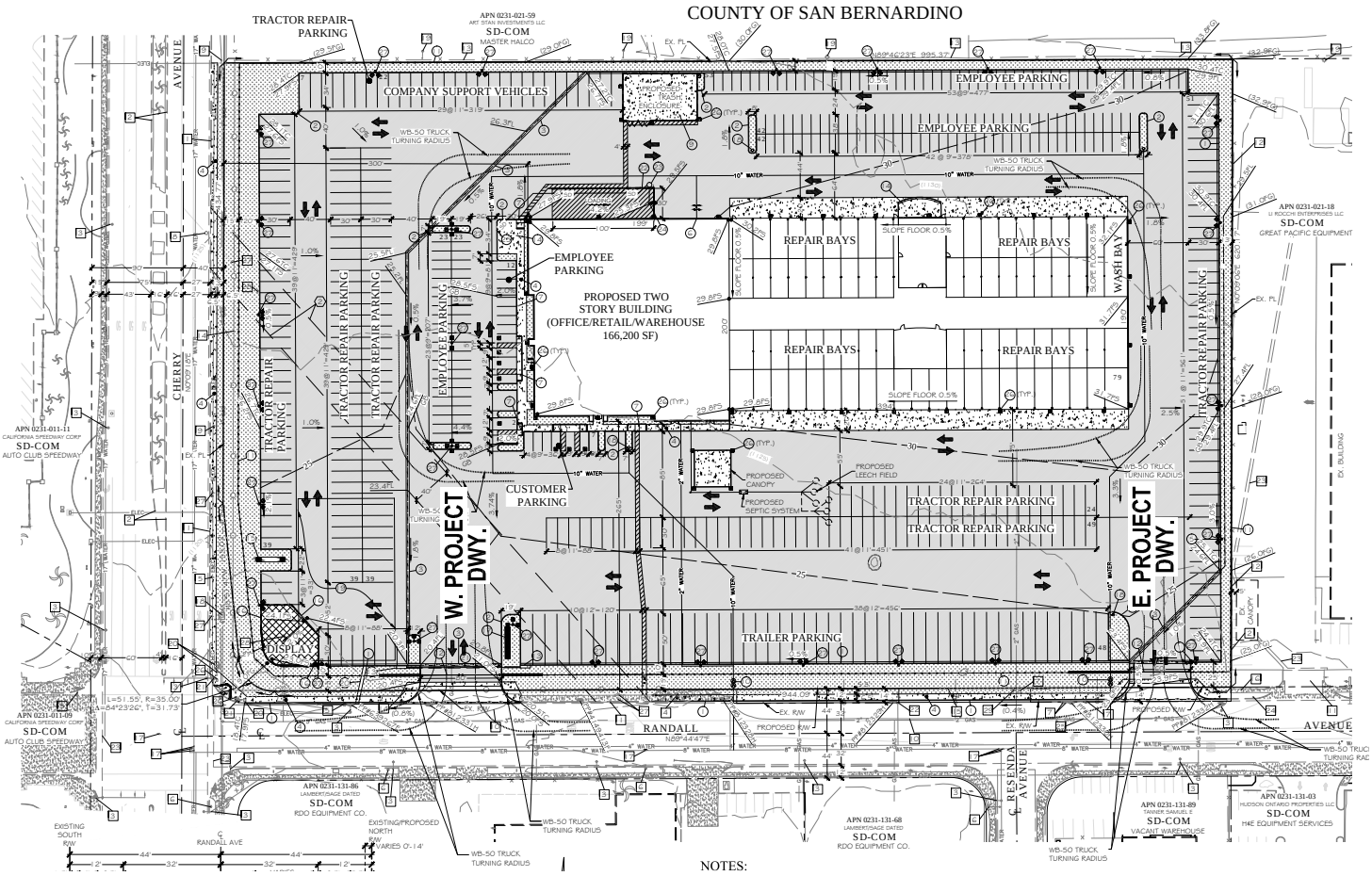
3. Proposed Land Use

Proposed Land Use: Special Development Commercial

4. Site Plan of Proposed Project

Figure 1-B illustrates the conceptual land use plan. As shown in Figure 1-B, the project is proposed to have a two full access driveways along Randall Avenue.

FIGURE 1-B
SITE PLAN



5. Proposed Project Opening Year

The proposed project is anticipated to be completed by 2017. Future traffic analysis has been based on a background (ambient) growth of 2% per year, along with traffic generated by other future developments in the surrounding area.

6. Proposed Project Phasing

The project is expected to be completed in a single phase. Therefore, all traffic recommendations included in this report have been assumed to be completed by 2017.

THIS PAGE LEFT INTENTIONALLY BLANK

2.0 TRAFFIC ANALYSIS METHODOLOGIES

Traffic operations are quantified through the determination of "Level of Service" (LOS). Level of Service is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an infrastructure facility (intersection) representing progressively worsening traffic conditions. This section presents the LOS definition, LOS criteria and methodologies for the Intersection Operations.

A. Level of Service Definition

The definitions of Level of Service for uninterrupted flow (flow unrestrained by the existence of traffic control devices) are:

- LOS "A": Completely free-flow conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway and by driver preferences. Maneuverability within the traffic stream is good. Minor disruptions to flow are easily absorbed without a change in travel speed.

- LOS "B": Free flow conditions, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS "A", but drivers have slightly less freedom to maneuver. Minor disruptions are still easily absorbed, although local deterioration in LOS will be more obvious.

- LOS "C": The influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles. Minor disruptions can cause serious local deterioration in service, and queues will form behind any significant traffic disruption.

- LOS "D": The ability to maneuver is restricted due to traffic congestion. Travel speed is reduced by the increasing volume. Only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.

- LOS "E": Operations at or near capacity, an unstable level. Vehicles are operating with the minimum spacing for maintaining uniform flow.

- LOS "F": Forced or breakdown flow. It occurs either when vehicles arrive at a rate greater than the rate at which they are discharged or when the forecast demand exceeds the computed capacity of a planned facility. Although operations at these points – and on sections immediately downstream – appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

B. County of San Bernardino Level of Service Criteria

The San Bernardino County General Plan has established Level of Service (LOS) "D" as the county-wide target along all County maintained intersections, roads and conventional state highways. Therefore, LOS "E" or "F" is considered unacceptable and requires improvements measures if the project causes significant impacts.

C. Intersection Operations Analysis Methodology

The County of San Bernardino requires the use of the Transportation Research Board - Highway Capacity Manual (HCM), 2010 Update, or most recent release. The HCM defines level of service as a qualitative measure, which describes operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate Level of Service (LOS) conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted. The HCM methodology expresses the level of service at an intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control.

The level of service is typically dependent on the quality of traffic flow at the intersections along a roadway. The HCM methodology expresses the level of service at an intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control. The Levels of Service results in this study are determined using the HCM methodology.

For signalized intersections, average total delay per vehicle for the overall intersection is used to determine level of service.

The study area intersections which are stop sign controlled with stop control on the minor street only have been analyzed using the unsignalized intersection methodology of the HCM. For these intersections, the calculation of level of service is dependent on the occurrence of gaps occurring in the traffic flow of the main street. Using data collected describing the intersection configuration and traffic volumes at the study area locations; the level of service has been calculated. The level of service criteria for this type of intersection analysis is based on average total delay per vehicle for the worst minor street movement(s).

For all way stop (AWS) controlled intersections, the ability of vehicles to enter the intersection is not controlled by the occurrence of gaps in the flow of the main street. The AWS controlled intersections have been evaluated using the HCM methodology for this type of multi-way stop controlled intersection configuration. The level of service criteria for this type of intersection analysis is based on average total delay per vehicle.

The levels of service are defined for the various analysis methodologies as follows:

LEVEL OF SERVICE	AVERAGE TOTAL DELAY PER VEHICLE (SECONDS)	
	SIGNALIZED	UNSIGNALIZED
A	0 to 10.00	0 to 10.00
B	10.01 to 20.00	10.01 to 15.00
C	20.01 to 35.00	15.01 to 25.00
D	35.01 to 55.00	25.01 to 35.00
E	55.01 to 80.00	35.01 to 50.00
F	80.01 and up	50.01 and up

Peak hour factors (PHF), where known from existing traffic counts, have been used to assess intersection operations.

D. Freeway Ramp Analysis Methodology

For the purpose of this report, a Merge/Diverge operations analysis has been used to evaluate freeway on-ramps and off-ramps. The density and level of service at the Cherry Avenue/I-10 on and off-ramps have been evaluated using the HCS2010 Ramps Version 6.60 software. The measure of effectiveness (reported in passenger car/mile/lane) are calculated based on the existing number of travel lanes, number of lanes at the on and off ramps both at the analysis junction and at upstream and downstream locations (if applicable) and acceleration/deceleration lengths at each merge/diverge point.

The merge/diverge area LOS thresholds for each density range utilized in this report is presented as follows:

LEVEL OF SERVICE	DENSITY RANGE (pc/mi/ln)[1]
A	0.0 – 10.0
B	10.1 – 20.0
C	20.1 – 28.0
D	28.1 – 35.0
E	>35.0
F	Demand Exceeds Capacity

[1] pc/mi/ln = passenger cars per mile per lane.

THIS PAGE LEFT INTENTIONALLY BLANK

3.0 AREA CONDITIONS

A. Study Area Intersections

In general, the minimum area to be studied shall include any intersection of "Collector" or higher classification street, with "Collector" or higher classification streets, at which the proposed project could have a significant impact. The County of San Bernardino Engineering Department may require deviation from these requirements based on area conditions. The study area includes the following intersections (shown previously on Figure 1-A):

STUDY AREA INTERSECTIONS	
1.	Cherry Ave. / Merrill Ave.
2.	Cherry Ave. / Randall Ave.
3.	Cherry Ave. / San Bernardino Ave.
4.	Cherry Ave. / Valley Blvd.
5.	Cherry Ave. / I-10 WB Ramp
6.	Cherry Ave. / I-10 EB Ramp
7.	W. Project Driveway/ Randall Ave. – *Future Intersection*
8.	E. Project Driveway/ Randall Ave. – *Future Intersection*

B. Area Roadway System

Figure 3-A identifies the existing roadway conditions for study area roadways. The existing intersection traffic controls and geometrics are identified.

C. Existing (2016) Traffic Volumes

Existing intersection level of service calculations are based upon manual AM and PM peak hour turning movement counts made for Trames Solutions, Inc. in January 2016.

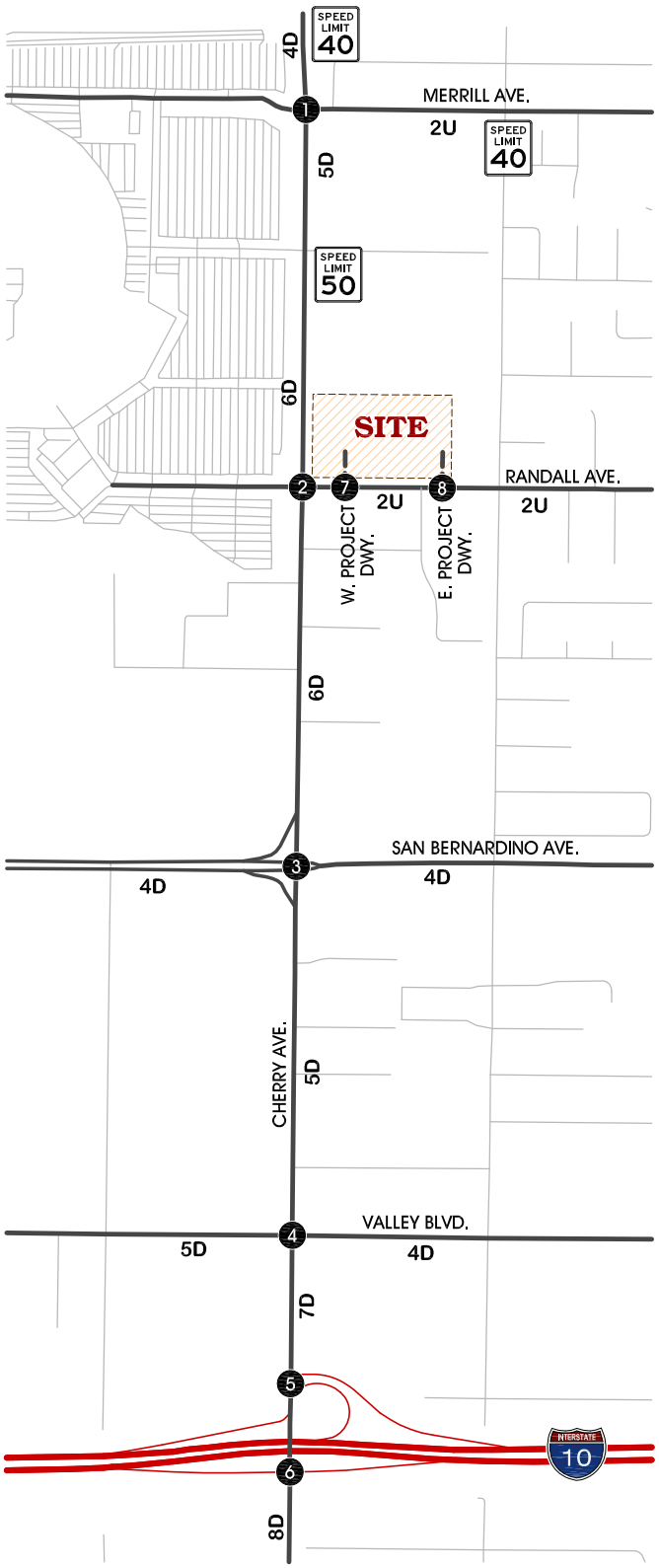
The traffic count worksheets provided in Appendix "3.1" include the following vehicle classifications:

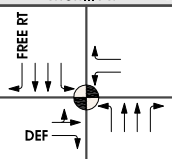
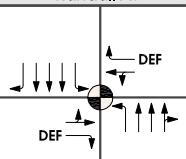
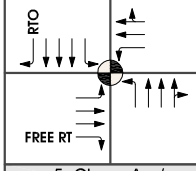
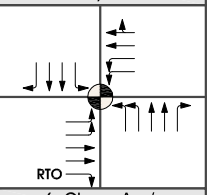
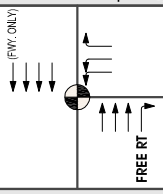
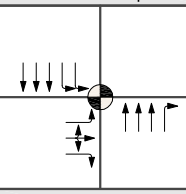
- Passengers Cars
- 2-Axle Trucks
- 3-Axle Trucks
- 4 or more Axle Trucks

It should be noted that all trucks have been converted into passenger car equivalents (PCE) to represent the impact of large trucks, buses and recreational vehicles have on traffic flow. For the purpose of this analysis, a PCE factor of 1.5 has been applied to 2-axle

FIGURE 3-A

EXISTING TRAFFIC CONTROLS AND INTERSECTION GEOMETRICS



1. Cherry Av. / Merrill Av.	2. Cherry Av. / Randall Av.
	
3. Cherry Av. / San Bernardino Av.	4. Cherry Av. / Valley Blvd.
	
5. Cherry Av. / I-10 WB Ramps	6. Cherry Av. / I-10 EB Ramps
	
7. W. Project Dwy. / Randall Avenue	8. E. Project Dwy. / Randall Avenue
Future Intersection	Future Intersection

LEGEND:

8	= INTERSECTION ID
	= TRAFFIC SIGNAL
4	= NUMBER OF LANES
D	= DIVIDED
U	= UNDIVIDED
FREE RT	= FREE RIGHT TURN
RTO	= RIGHT TURN OVERLAP PHASE

N

trucks, 2.0 for 3-axle trucks and 3.0 for 4+-axle trucks to estimate each turning movement. These factors are consistent with the values recommended for use in the CMP.

Existing (2016) AM and PM peak hour intersection turning movement volumes are shown on Figure 3-B.

Existing average daily traffic (ADT) volumes are also shown on Figure 3-B. The following formula is used to estimate the ADT volumes shown on Figure 3-B:

PM Peak Hour Link Volume (Approach + Exit) x 12 = ADT Leg Volume

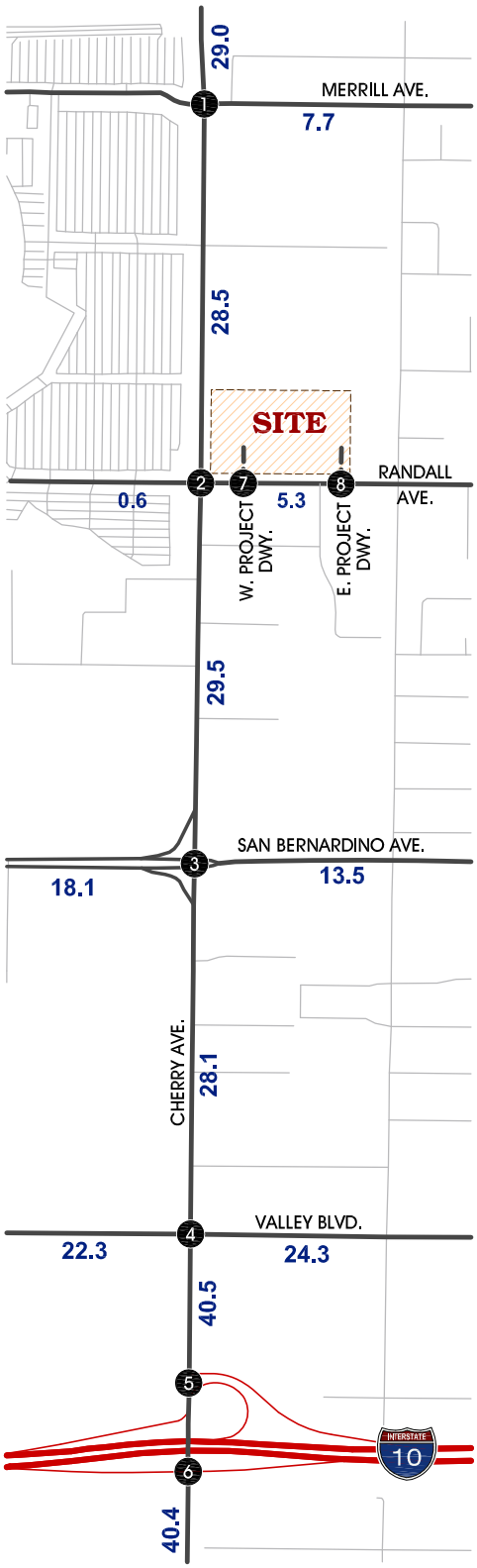
For ramp analysis purposes, the I-10 freeway mainline volume data were obtained from the Caltrans Performance Measurement System (PeMS) website. Freeway mainline peak hour volumes have been obtained between January 12 through 14, 2016 and have been flow conserved with freeway-ramp-to-arterial peak hour count data. The maximum value observed within the three day period is utilized for the AM and PM peak hours. In addition, truck percentage from the Caltrans 2014 Annual Average Daily Truck Traffic on the California State Highway System is utilized which presents 10.29% truck percentage along the I-10 freeway within the study area. The source data and freeway volume summary are also included in Appendix “3.1”.

D. Existing (2016) Delay and Level of Service

The County of San Bernardino has established Level of Service (LOS) “D” as the maximum allowable threshold for the intersection operations. Therefore, LOS “E” or “F” is considered unacceptable and requires improvements measures.

The results of the existing conditions intersection analysis are summarized in Table 3-1. The existing condition operations analysis worksheets are provided in Appendix "3.2". As shown on Table 3-1, the study area intersections are currently operating at acceptable level of service (LOS “D” or better) during the peak hours with the existing geometry and traffic controls.

FIGURE 3-B
EXISTING (2016) PCE TRAFFIC VOLUMES



AM PEAK HOUR

1. Cherry Av. / Merrill Av.		2. Cherry Av. / Randall Av.		3. Cherry Av. / San Bernardino Av.		4. Cherry Av. / Valley Blvd.	
0 ↓ 1118 ↑ 144	← 230 ← 0 ↰ 178	8 ↓ 1116 ↑ 98	← 112 ← 3 ↰ 199	372 ↓ 831 ↑ 74	← 86 ← 337 ↰ 143	88 ↓ 964 ↑ 67	← 59 ← 277 ↰ 413
0 → 0 → 0 ↘	1 ↑ 733 ↑ 107	1 → 0 → 0 ↘	22 ↑ 781 ↑ 86	178 → 69 → 93 ↘	83 ↑ 731 ↑ 87	58 → 128 → 184 ↘	416 ↑ 853 ↑ 332
5. Cherry Av. / I-10 WB Ramps		**6. Cherry Av. / I-10 EB Ramps**		**7. W. Project Dwy. / Randall Avenue**		**8. E. Project Dwy. / Randall Avenue**	
↓ 1568	← 571 ↰ 525	↓ 1229 ↑ 385		Future Intersection		Future Intersection	
	1070 → 513 ↑	343 → 0 → 569 ↘	1240 → 415 ↑				

PM PEAK HOUR

1. Cherry Av. / Merrill Av.		2. Cherry Av. / Randall Av.		3. Cherry Av. / San Bernardino Av.		4. Cherry Av. / Valley Blvd.	
0 ↓ 803 ↑ 209	← 173 ← 0 ↰ 99	4 ↓ 831 ↑ 110	← 89 ← 0 ↰ 90	258 ↓ 775 ↑ 93	← 83 ← 147 ↰ 72	58 ↓ 937 ↑ 130	← 96 ← 263 ↰ 344
0 → 0 → 0 ↘	0 ↑ 1229 ↑ 160	11 → 4 → 23 ↘	9 ↑ 1327 ↑ 151	291 → 601 → 152 ↘	58 ↑ 960 ↑ 125	199 → 710 → 324 ↘	301 ↑ 918 ↑ 484
5. Cherry Av. / I-10 WB Ramps		**6. Cherry Av. / I-10 EB Ramps**		**7. W. Project Dwy. / Randall Avenue**		**8. E. Project Dwy. / Randall Avenue**	
↓ 1619	← 479 ↰ 393	↓ 1067 ↑ 505		Future Intersection		Future Intersection	
	1281 → 399 ↑	423 → 0 → 541 ↘	1257 → 498 ↑				

LEGEND:

8 = INTERSECTION ID

1.0 = VEHICLES PER DAY (1000's)

N

TABLE 3-1

INTERSECTION ANALYSIS FOR EXISTING (2016) CONDITIONS

ID	Intersection	Traffic Control [1]	Intersection Approach Lanes [2]												Delay [3] (secs.)		Level of Service [3]	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Cherry Ave. / Merrill Ave.	TS	1	2	1	1	2	1>>	0.5	0.5	d	1	0	1	15.7	16.9	B	B
2	Cherry Ave. / Randall Ave.	TS	1	3	0	1	3	1	0.5	0.5	d	0.5	0.5	d	9.6	12.0	A	B
3	Cherry Ave. / San Bernardino Ave.	TS	1	3	0	1	3	1>	1	2	1>>	1	2	0	32.4	26.3	C	C
4	Cherry Ave. / Valley Blvd.	TS	2	2	1	1	2	1	2	2	1>	2	2	0	28.5	43.2	C	D
5	Cherry Ave. / I-10 WB Ramps	TS	0	3	1>>	0	4	0	0	0	0	2	0	1	8.8	16.4	A	B
6	Cherry Ave. / I-10 EB Ramps	TS	0	3	1	2	3	0	1	1!	1	0	0	0	21.1	28.2	C	C
7	W. Project Dwy. / Randall Ave.	-	Future Intersection												-	-	-	-
8	E. Project Dwy. / Randall Ave.	-	Future Intersection												-	-	-	-

[1] TS = Traffic Signal

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; 1! = Shared Left-Through-Right Lane; 0.5 = Shared Lane ; d = Defacto right turn lane; > = Right Turn Overlap; >> = Free Right Turn Lane

[3] Delay and level of service calculated using the following analysis software: Synchro 8.0

THIS PAGE LEFT INTENTIONALLY BLANK

4.0 PROJECTED FUTURE TRAFFIC

This section of the report quantifies the number of trips generated by the proposed project and other known developments in the area.

A. Project Traffic

1. Ambient Growth Rate

Some traffic volume increases on roadways can be attributed to vehicles originating outside of the study area. These types of trips either end up within the study area or pass-through onto an outside destination. Therefore, to account for these trips (termed "ambient growth"), a growth rate can be applied to existing traffic volumes.

A 2% ambient growth rate that has been used in this study to account for traffic not attributed to the project or other planned developments within the study area. The County of San Bernardino Transportation Department staff has previously reviewed and approved this rate.

2. Project Trip Generation

Trip generation represents the amount of traffic which is attracted and produced by a development. The trip generation for the project is based upon the specific land use which has been planned for this development. For the purpose of this analysis, the following land use assumption is evaluated:

- 6,000 sf of truck sales retail area
- 10,000 sf of office
- 22,420 sf parts/service area

The trip generation rates are based upon the specific operations of the proposed project. The following description summarizes the anticipated traffic that will occur during the peak hours and throughout the day:

TEC Equipment will generate trip traffic in primarily (5) ways:

1) Employee Traffic
2) Delivery Traffic (Incoming and outgoing shipments)
3) Truck Traffic Relating to Service Operations
4) Truck Traffic Relating to Sales Operation
5) Auto Traffic Related to Sales Operations

1) Employee Traffic

a. Start of the Service Shift: Approximately 80 trips between 5-6am

b. Office/Admin Approximately 30 trips between 7-8am
c. Other morning trips: 24 total between 8 am and 11:30
d. Lunch Traffic: Approximately 20% of office staff-36 trips during lunch hours
e. Other midday trips: 24 total between 1pm-4pm
f. Parts/Service Shift Change. The afternoon shift is about 65% the size of the AM shift. We expect 140 trips
g. Admin/Sales Closes at 4 PM so we expect 30 trips between 4-5
h. Evening shift ends at 12 midnight, we expect 60 trips

2) Delivery Traffic

a. Most deliveries will occur between the hours of 9 AM-12 Noon.
    i. 3rd party deliveries include FedEx, LTL and UPS, which both come and go. Accounting for (6) trips
    ii. Internal Delivery vehicles account for 8 outgoing trips in the same period
b. The remaining of the day will account for:
    i. 8 more 3rd party trips

3) Truck Traffic Related to Service Operations

a. TEC's Average repair is opened and closed in (2.2 days) there will be 74 bays and about 12% of customers don't end up going to the shop.
b. Incoming Trips computed: 74 bays / 2.2 = 33.6 trips + 4 trips un-helped customers
c. Outgoing Trips is identical, for a total trip estimate of 76 trips per day.
d. Service Trips are historically relatively uniform but we have a slight increase of incoming trips between 6-7am (20% or Total) and outgoing trips between 4-5pm (30% of total)

4) Truck Traffic Related to Truck Sales

a. This dealership will be 'New Truck' Sales Only. Used Trucks will not be on this lot. TEC does not account for additional truck sales due to the increased size of the dealership. Most customers purchase Class 8 (Semi) trucks by factory order, much different than Retail Auto Customer that purchase off-the-lot. As such we project sales of about 550 Trucks per year or a conservative average of (2) sales per day.
b. For total trips, we will add in-coming stock trucks for a total of 4 trips per day.

5) Auto Traffic Related to Truck Sales

a. This number is computed relatively similar to that of Truck Traffic related to truck sales, but we will apply a 3x ratio for no-purchase customers, for a total of 12 trips.

b. Potential Customers will be relatively have relatively uniform trips between the hours of 9AM-4PM

Other notes and assumptions:

- Working hours are M-F 6am-12pm for Parts/Service, 8-4 for Admin/Sales
- 12 percent of our Parts/service workforce carpools
- Sales related (both auto and truck) Trips are relatively consistent throughout the day

The daily and peak hour trip generations for the proposed project are shown on Table 4-1. Since some of the traffic to/from the project is anticipated to be comprised of trucks, the trips have been converted to passenger car equivalences (PCE). PCE's are factors that equate large vehicles into a similar number of passenger cars. Small trucks are assumed to have the same impacts of 2 passenger cars. Large trucks are assumed to have the same impacts as 3 passenger cars. The proposed development is projected to generate a total of approximately 768 PCE's per day with 50 PCE's per hour during the AM peak hour and 119 PCE's per hour during the PM peak hour.

3. Project Trip Distribution and Assignment

Trip distribution represents the directional orientation of traffic to and from the project site. The project's trip distribution patterns are based on the proximity of the project to the proposed driveway locations, the surrounding trip attractors, and the regional freeway interchanges. The trip distribution pattern for the project is illustrated on Figure 4-A.

4. Other Trip Generation Factors

It is unlikely that the project trips will be further reduced to/from the site by non-motorized modes of travel due to the lack of; 1) convenient transit opportunities, 2) bike lanes, and 3) pedestrian trails.

5. Project Peak Hour Turning Movement Traffic

The assignment of traffic from the site to the adjoining roadway system has been based upon the site's trip generation, trip distribution, proposed arterial highway and local street systems, which would be in place by the time of initial occupancy of the

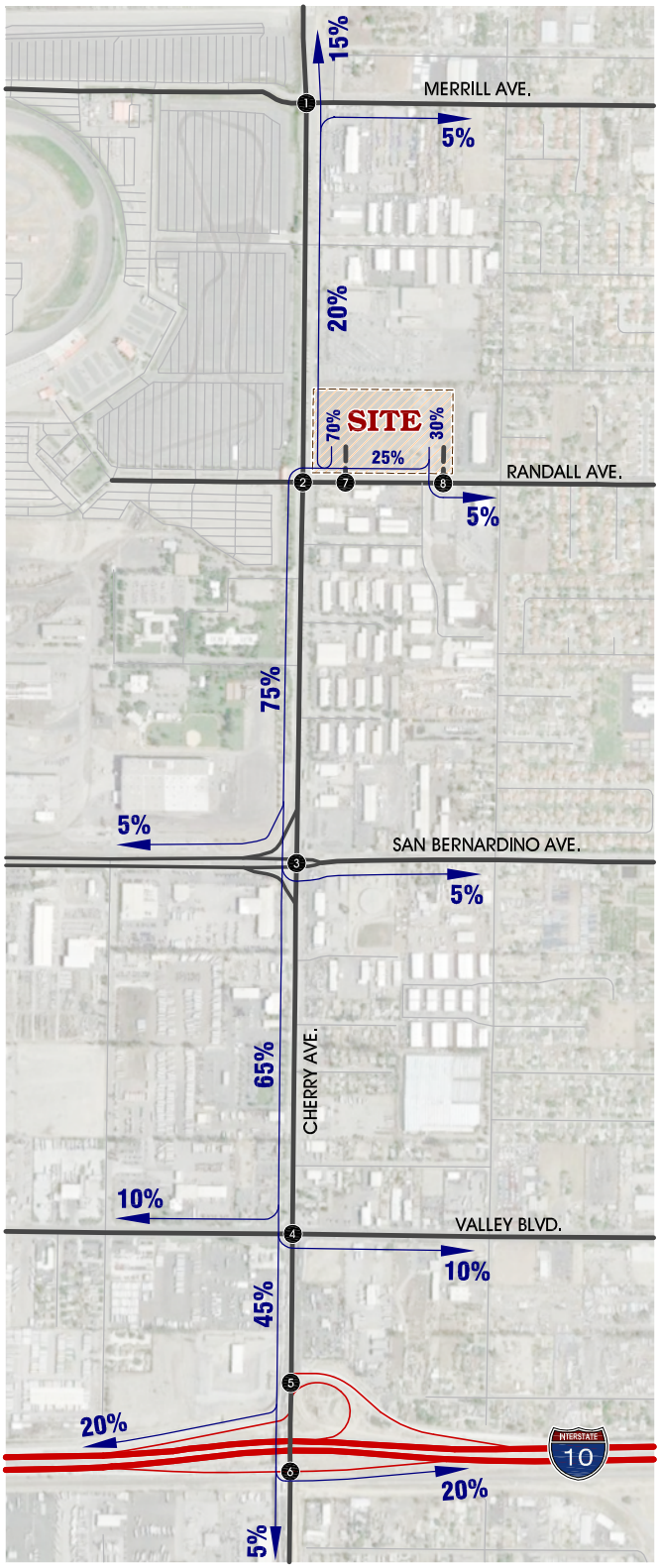
TABLE 4-1

PROJECT TRIP GENERATION SUMMARY

Variable	Peak Hour						Daily
	AM			PM			
	In	Out	Total	In	Out	Total	
Office/Admin Staff Traffic	30	2	31.5	2	30	32	424
Delivery Vehicle Traffic	0	0	0	1	8	9	46
- 2.0 PCE	0	0	0	2	16	18	92
Customer Traffic	0	0	0	0	0	0	12
Large Truck Traffic	5	1	6	1	22	23	80
- 3.0 PCE	15	3	18	3	66	69	240
Total Project Trips	35	3	37.5	4	60	64	562
Total Project Trips (PCE)[1]	45	5	50	7	112	119	768

[1] PCE = Passenger Car Equivalent

FIGURE 4-A
PROJECT TRIP DISTRIBUTION



LEGEND:

8 = INTERSECTION ID

= PROJECT DRIVEWAY

10% = PERCENT TO/FROM PROJECT

N

site. Based on the identified project traffic generation and distribution, Project AM and PM peak hour intersection traffic volumes are shown on Figure 4-B. The project average daily traffic (ADT) volumes utilized are also shown on Figure 4-B.

B. Cumulative Traffic (Background)

1. Method of Projection

To assess existing plus ambient plus cumulative plus project traffic conditions, project traffic is combined with existing traffic, area-wide growth and other future developments which are approved or being processed concurrently in the study area. Developments which are being processed concurrently in the study area have been provided by the County of San Bernardino staff. The City of Fontana has also been contacted regarding other developments in the area. Two projects were provided but were located more than 5 miles from the project site and would be unlikely to add considerable traffic to the study intersections.

2. Other Approved or Proposed Development Projects

A traffic study has been conducted for the cumulative development (High Cube Warehouse) by Kunzman Associates. The anticipated trip generation and trip distribution patterns have been provided by the County. The location of the cumulative project provided by the County is shown on Figure 4-C.

3. Other Approved Projects Trip Generation

Table 4-2 presents the cumulative development land uses and trip generation summary. As presented in Table 4-2 Cumulative developments are projected to generate a total of approximately 474 PCE's per day with 32 PCE's per hour during the AM peak hour and 34 PCE's per hour during the PM peak hour.

4. Other Approved Development Trip Distribution and Assignments

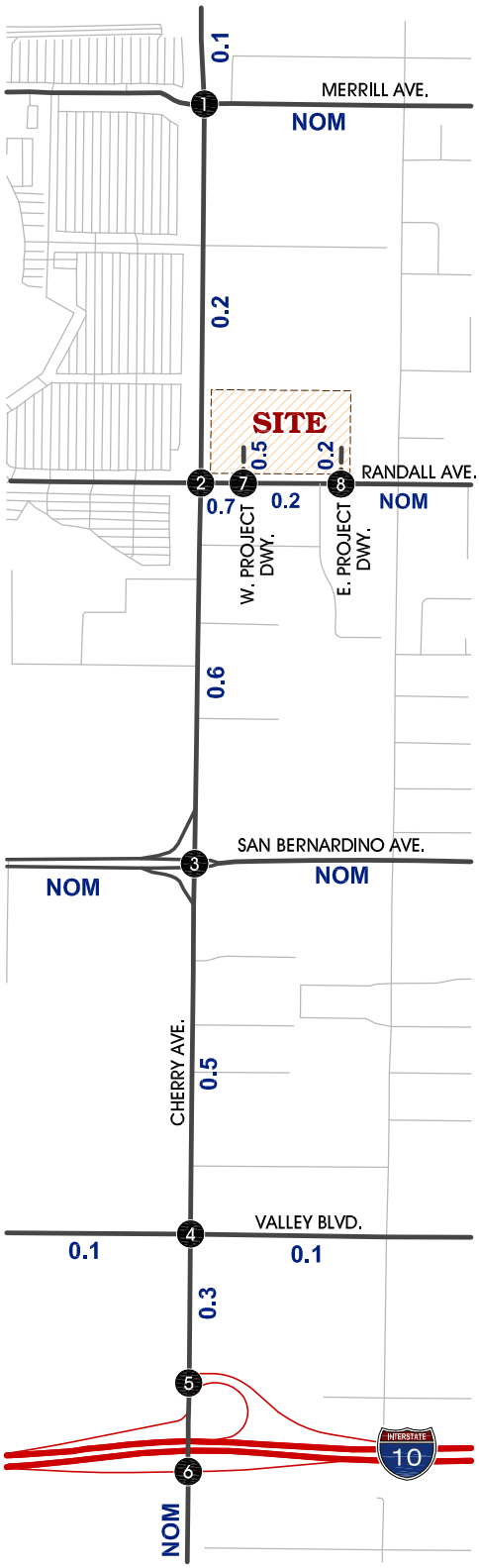
Appendix "4.1" contains the directional distribution and assignment of the cumulative development traffic.

5. Total Background Peak Hour Turning Movement Volumes

Based on the identified trip distribution for the cumulative development on arterial highways throughout the study area, cumulative development AM and PM peak hour intersection turning movement volumes and average daily traffic volumes are shown on Figure 4-D.

Existing plus Project (E+P) AM and PM peak hour intersection turning movement volumes and average daily traffic volumes are shown on Figure 4-E.

FIGURE 4-B
PROJECT ONLY TRAFFIC VOLUMES



AM PEAK HOUR

1. Cherry Av. / Merrill Av.		2. Cherry Av. / Randall Av.		3. Cherry Av. / San Bernardino Av.		4. Cherry Av. / Valley Blvd.	
0 7 0	0 0 2	0 0 9	1 0 4	0 3 0	2 0 0	1 2 1	5 0 0
0 0 0	0 1 0	0 0 0	0 0 34	2 0 0	0 29 0	5 0 0	0 20 0
5. Cherry Av. / I-10 WB Ramps		**6. Cherry Av. / I-10 EB Ramps**		**7. W. Project Dwy. / Randall Avenue**		**8. E. Project Dwy. / Randall Avenue**	
2	9 0	0 1		4 0	0 1	1 0	2 0
	11 0	9 0 0	2 0	32 11		11 0	

PM PEAK HOUR

1. Cherry Av. / Merrill Av.		2. Cherry Av. / Randall Av.		3. Cherry Av. / San Bernardino Av.		4. Cherry Av. / Valley Blvd.	
0 1 0	0 0 0	0 0 1	22 0 84	6 73 6	0 0 0	11 50 11	1 0 0
0 0 0	0 17 6	0 0 0	0 0 5	0 0 0	0 5 0	1 0 0	0 3 0
5. Cherry Av. / I-10 WB Ramps		**6. Cherry Av. / I-10 EB Ramps**		**7. W. Project Dwy. / Randall Avenue**		**8. E. Project Dwy. / Randall Avenue**	
50	1 0	6 22		78 0	0 28	28 6	0 0
	2 0	1 0 0	0 0	5 2		2 0	

LEGEND:

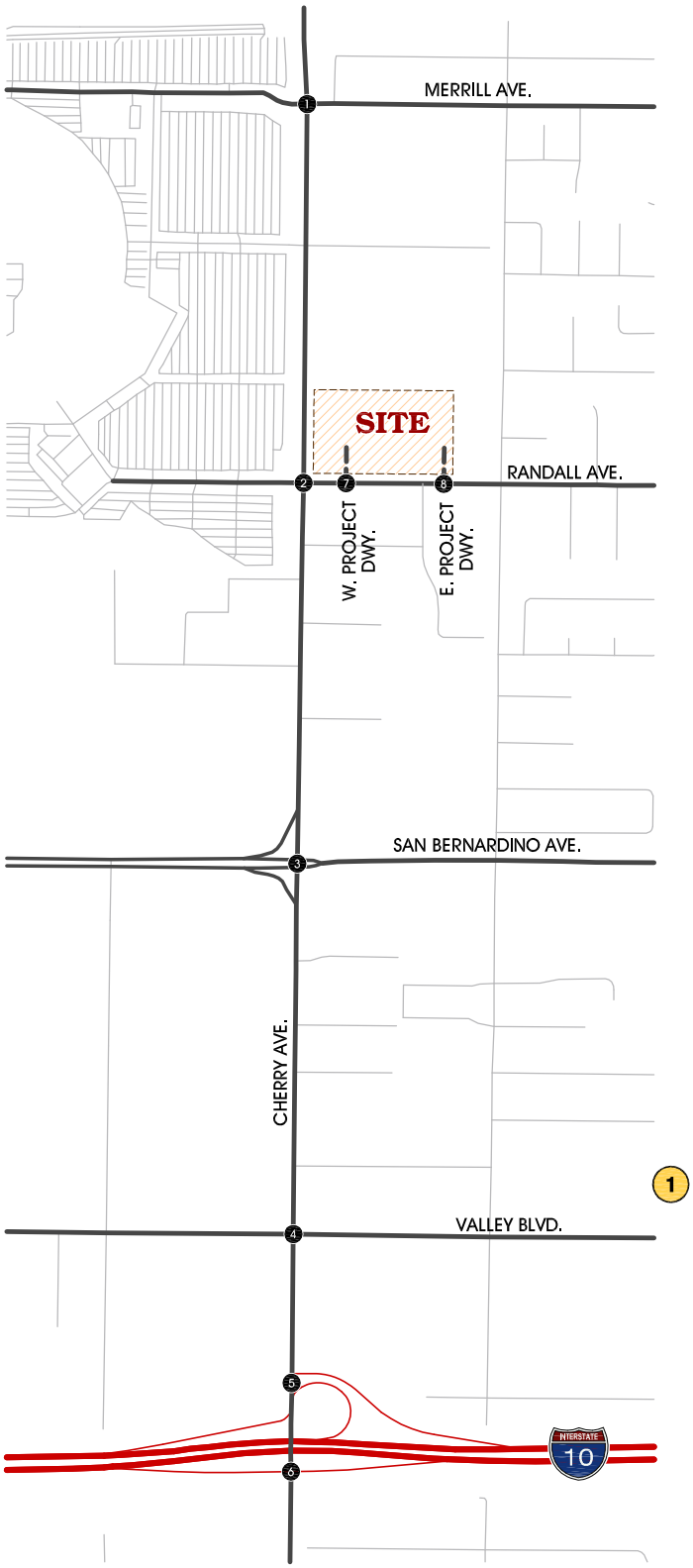
8 = INTERSECTION ID

1.0 = VEHICLES PER DAY (1000's)

NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

N

FIGURE 4-C
CUMULATIVE DEVELOPMENTS LOCATION MAP



LEGEND:

8 = INTERSECTION ID

= FUTURE ROADWAY / PROJECT DRIVEWAY

1 = HIGH CUBE WAREHOUSE

N

TABLE 4-2

CUMULATIVE DEVELOPMENTS TRIP GENERATION SUMMARY[1]

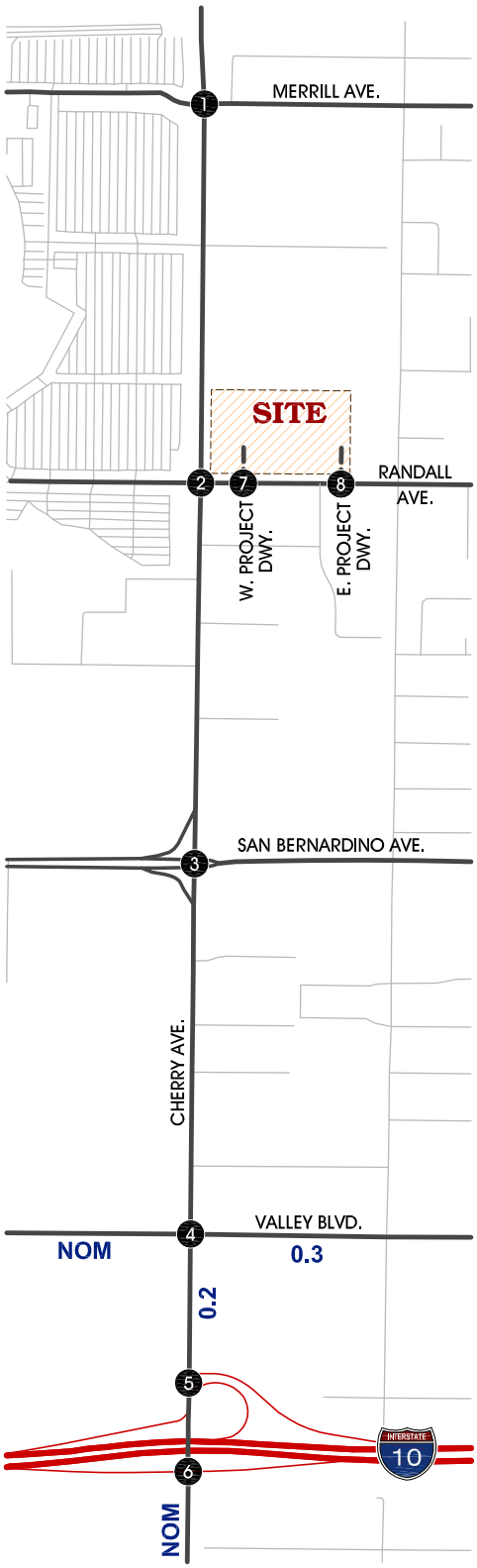
ID	Project Name	Land Use	Quantity[2]	Peak Hour						Daily
				AM			PM			
				In	Out	Total	In	Out	Total	
1	High Cube Warehouse	Warehousing	215 TSF							
	- Passenger Cars			14	5	19	7	14	21	287
	- Trucks (PCE)[3]			10	3	13	3	10	13	187
Total Cumulative Trips				24	8	32	10	24	34	474

1 Source: High Cube Warehouse, Kunzman Associates

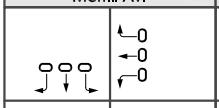
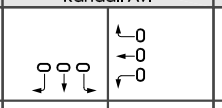
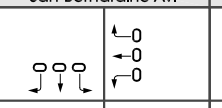
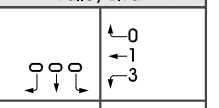
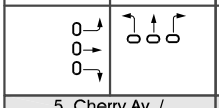
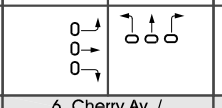
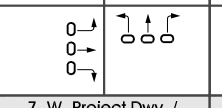
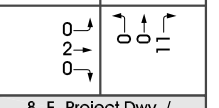
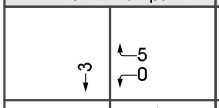
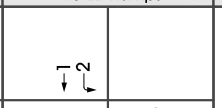
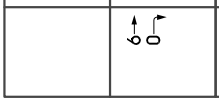
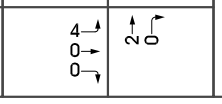
2 TSF = Thousand Square Feet

3 PCE = Passenger Car Equivalent

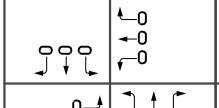
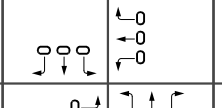
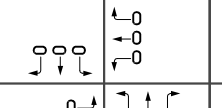
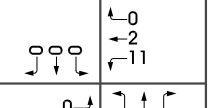
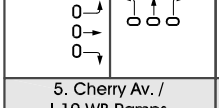
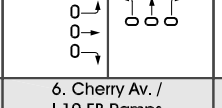
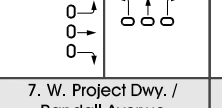
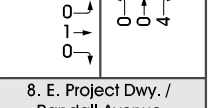
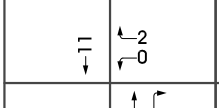
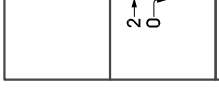
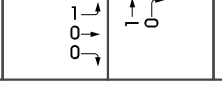
FIGURE 4-D
CUMULATIVE DEVELOPMENT ONLY TRAFFIC VOLUMES



AM PEAK HOUR

1. Cherry Av. / Merrill Av.	2. Cherry Av. / Randall Av.	3. Cherry Av. / San Bernardino Av.	4. Cherry Av. / Valley Blvd.
			
			
5. Cherry Av. / I-10 WB Ramps	**6. Cherry Av. / I-10 EB Ramps**	**7. W. Project Dwy. / Randall Avenue**	**8. E. Project Dwy. / Randall Avenue**
		Future Intersection	Future Intersection
			

PM PEAK HOUR

1. Cherry Av. / Merrill Av.	2. Cherry Av. / Randall Av.	3. Cherry Av. / San Bernardino Av.	4. Cherry Av. / Valley Blvd.
			
			
5. Cherry Av. / I-10 WB Ramps	**6. Cherry Av. / I-10 EB Ramps**	**7. W. Project Dwy. / Randall Avenue**	**8. E. Project Dwy. / Randall Avenue**
		Future Intersection	Future Intersection
			

LEGEND:

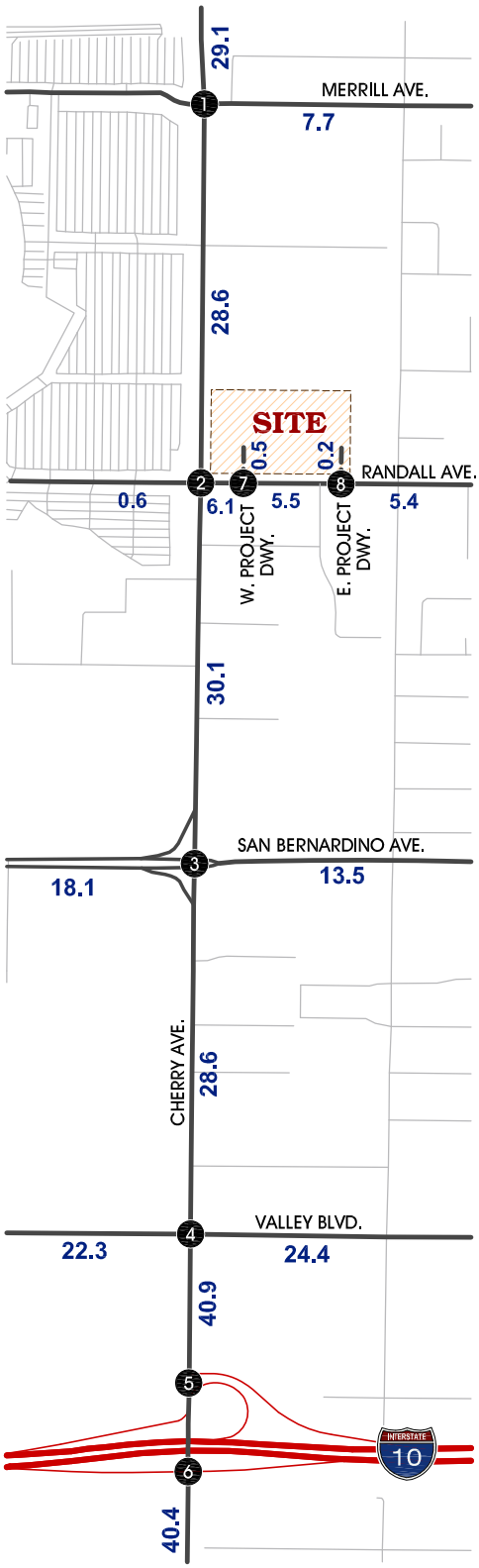
8 = INTERSECTION ID

1.0 = VEHICLES PER DAY (1000's)

NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

N

FIGURE 4-E
EXISTING PLUS PROJECT TRAFFIC VOLUMES



AM PEAK HOUR

1. Cherry Av. / Merrill Av.		2. Cherry Av. / Randall Av.		3. Cherry Av. / San Bernardino Av.		4. Cherry Av. / Valley Blvd.	
0 ↓ 1125 ↑ 144	↳230 ←0 ↰180	8 ↓ 1116 ↑ 107	↳113 ←3 ↰203	372 ↓ 834 ↑ 74	↳88 ←337 ↰143	89 ↓ 966 ↑ 68	↳64 ←277 ↰413
0 → 0 → 0 →	↳1 ↑734 ↑107	1 → 0 → 0 →	↳22 ↑781 ↑120	180 → 69 → 93 →	83 ↑760 ↑87	63 → 128 → 184 →	416 ↑873 ↑332
5. Cherry Av. / I-10 WB Ramps		**6. Cherry Av. / I-10 EB Ramps**		**7. W. Project Dwy. / Randall Avenue**		**8. E. Project Dwy. / Randall Avenue**	
←1570	↳580 ↰525	←1229 ↑386		4 ↓ 0	↳0 ←315	1 ↓ 0	↳2 ←314
	1081 ↑ 513 →	352 → 0 → 569 →	1242 ↑ 415 →	32 → 195 →		11 → 184 →	

PM PEAK HOUR

1. Cherry Av. / Merrill Av.		2. Cherry Av. / Randall Av.		3. Cherry Av. / San Bernardino Av.		4. Cherry Av. / Valley Blvd.	
0 ↓ 804 ↑ 209	↳173 ←0 ↰99	4 ↓ 831 ↑ 111	↳111 ←0 ↰174	264 ↓ 848 ↑ 99	↳83 ←147 ↰72	69 ↓ 987 ↑ 141	↳97 ←263 ↰344
0 → 0 → 0 →	↳0 ↑1246 ↑166	11 → 4 → 23 →	9 ↑1327 ↑156	291 → 601 → 152 →	58 ↑965 ↑125	200 → 710 → 324 →	301 ↑921 ↑484
5. Cherry Av. / I-10 WB Ramps		**6. Cherry Av. / I-10 EB Ramps**		**7. W. Project Dwy. / Randall Avenue**		**8. E. Project Dwy. / Randall Avenue**	
←1669	↳480 ↰393	←1073 ↑527		78 ↓ 0	↳0 ←207	28 ↓ 6	↳0 ←179
	1283 ↑ 399 →	424 → 0 → 541 →	1257 ↑ 498 →	5 → 267 →		2 → 265 →	

LEGEND:

8 = INTERSECTION ID

1.0 = VEHICLES PER DAY (1000's)

NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

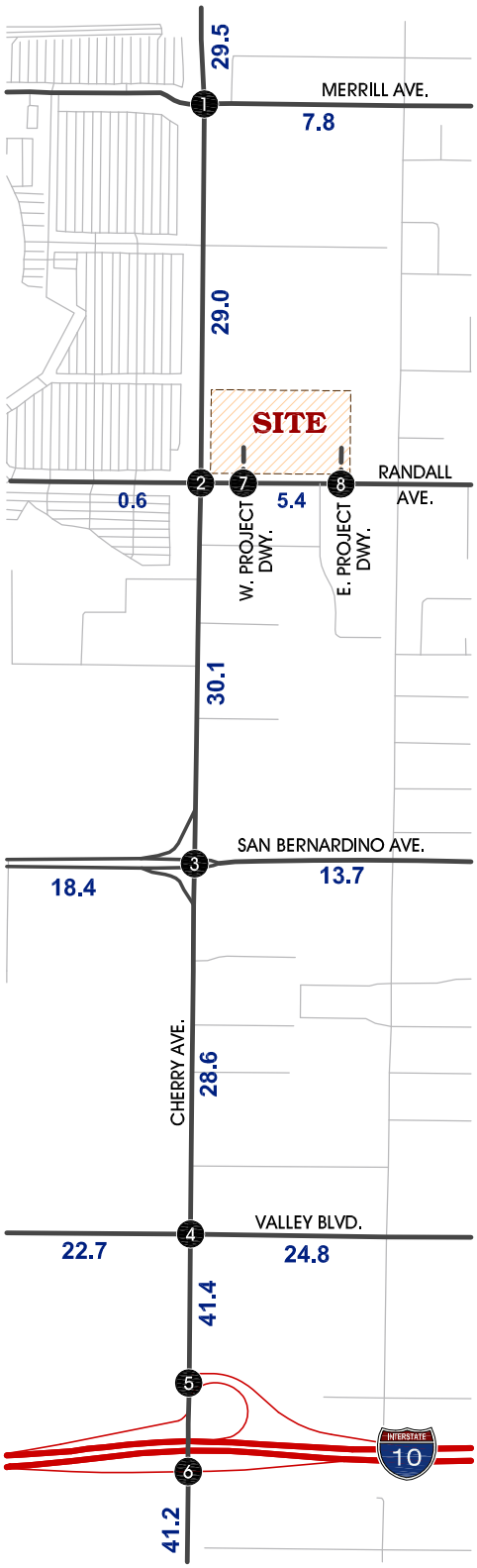
N

Existing plus Ambient (EA 2017) AM and PM peak hour intersection turning movement volumes and average daily traffic volumes are shown on Figure 4-F.

Existing plus Ambient plus Project (EAP 2017) AM and PM peak hour intersection turning movement volumes and average daily traffic volumes are shown on Figure 4-G.

Existing plus Ambient plus Project plus Cumulative (EAPC 2017) AM and PM peak hour intersection turning movement volumes and average daily traffic volumes are shown on Figure 4-H.

FIGURE 4-F
EXISTING PLUS AMBIENT (2017) TRAFFIC VOLUMES



AM PEAK HOUR

1. Cherry Av. / Merrill Av.		2. Cherry Av. / Randall Av.		3. Cherry Av. / San Bernardino Av.		4. Cherry Av. / Valley Blvd.	
0 ↓ 1118 ↑ 144	↳230 ←0 ↰178	8 ↓ 1116 ↑ 98	↳112 ←3 ↰199	372 ↓ 831 ↑ 74	↳86 ←337 ↰143	88 ↓ 964 ↑ 67	↳59 ←277 ↰413
0 → 0 → 0 ↱	1 ↱ 733 ↑ 107	1 → 0 → 0 ↱	22 ↱ 781 ↑ 86	178 → 69 → 93 ↱	83 ↱ 731 ↑ 87	58 → 128 → 184 ↱	416 ↱ 853 ↑ 332
5. Cherry Av. / I-10 WB Ramps		**6. Cherry Av. / I-10 EB Ramps**		**7. W. Project Dwy. / Randall Avenue**		**8. E. Project Dwy. / Randall Avenue**	
1568 ↓	↳571 ↰525	1229 ↓ 385		Future Intersection		Future Intersection	
	1070 ↑ 513 ↱	343 → 0 → 569 ↱	1240 ↑ 415 ↱				

PM PEAK HOUR

1. Cherry Av. / Merrill Av.		2. Cherry Av. / Randall Av.		3. Cherry Av. / San Bernardino Av.		4. Cherry Av. / Valley Blvd.	
0 ↓ 803 ↑ 209	↳173 ←0 ↰99	4 ↓ 831 ↑ 110	↳89 ←0 ↰90	258 ↓ 775 ↑ 93	↳83 ←147 ↰72	58 ↓ 937 ↑ 130	↳96 ←263 ↰344
0 → 0 → 0 ↱	0 ↱ 1229 ↑ 160	11 → 4 → 23 ↱	9 ↱ 1327 ↑ 151	291 → 601 → 152 ↱	58 ↱ 960 ↑ 125	199 → 710 → 324 ↱	301 ↱ 918 ↑ 484
5. Cherry Av. / I-10 WB Ramps		**6. Cherry Av. / I-10 EB Ramps**		**7. W. Project Dwy. / Randall Avenue**		**8. E. Project Dwy. / Randall Avenue**	
1619 ↓	↳479 ↰393	1067 ↓ 505		Future Intersection		Future Intersection	
	1281 ↑ 399 ↱	423 → 0 → 541 ↱	1257 ↑ 498 ↱				

LEGEND:

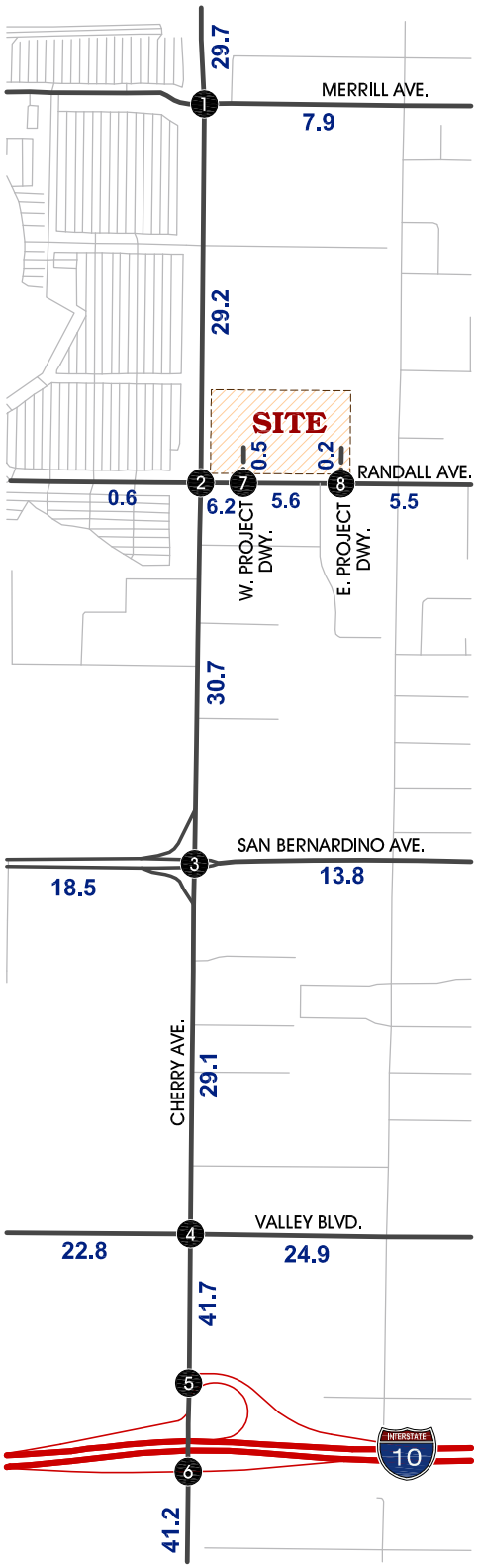
8 = INTERSECTION ID

1.0 = VEHICLES PER DAY (1000's)

NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

N

FIGURE 4-G
EXISTING PLUS AMBIENT PLUS PROJECT (EAP 2017) TRAFFIC VOLUMES



AM PEAK HOUR

1. Cherry Av. / Merrill Av.		2. Cherry Av. / Randall Av.		3. Cherry Av. / San Bernardino Av.		4. Cherry Av. / Valley Blvd.	
0 ↓ 1147 ↓ 147	↳235 ←0 ↰184	8 ↓ 1138 ↓ 109	↳115 ←3 ↰207	379 ↓ 851 ↓ 75	↳90 ←344 ↰146	91 ↓ 985 ↓ 69	↳65 ←283 ↰421
0 → 0 → 0 ↳	↰1 ↑749 ↑109	1 → 0 → 0 ↳	↰22 ↑797 ↑122	184 → 70 → 95 ↳	↰85 ↑775 ↑89	64 → 131 → 188 ↳	↰424 ↑890 ↑339
5. Cherry Av. / I-10 WB Ramps		**6. Cherry Av. / I-10 EB Ramps**		**7. W. Project Dwy. / Randall Avenue**		**8. E. Project Dwy. / Randall Avenue**	
1601 ↓	↳591 ↰536	1254 ↓ 394		4 ↓ 0	↳0 ←321	1 ↓ 0	↳2 ←320
	↰1102 ↑523		↰359 → 0 → 580 ↳ 1267 ↑423		↰32 → 199		↰11 → 188

PM PEAK HOUR

1. Cherry Av. / Merrill Av.		2. Cherry Av. / Randall Av.		3. Cherry Av. / San Bernardino Av.		4. Cherry Av. / Valley Blvd.	
0 ↓ 820 ↓ 213	↳176 ←0 ↰101	4 ↓ 848 ↓ 113	↳113 ←0 ↰176	269 ↓ 864 ↓ 101	↳85 ←150 ↰73	70 ↓ 1006 ↓ 144	↳99 ←268 ↰351
0 → 0 → 0 ↳	↰0 ↑1271 ↑169	11 → 4 → 23 ↳	↰9 ↑1354 ↑159	297 → 613 → 155 ↳	↰59 ↑984 ↑128	204 → 724 → 330 ↳	↰307 ↑939 ↑494
5. Cherry Av. / I-10 WB Ramps		**6. Cherry Av. / I-10 EB Ramps**		**7. W. Project Dwy. / Randall Avenue**		**8. E. Project Dwy. / Randall Avenue**	
1701 ↓	↳490 ↰401	1094 ↓ 537		78 ↓ 0	↳0 ←211	28 ↓ 6	↳0 ←183
	↰1309 ↑407		↰432 → 0 → 552 ↳ 1282 ↑508		↰5 → 272		↰2 → 270

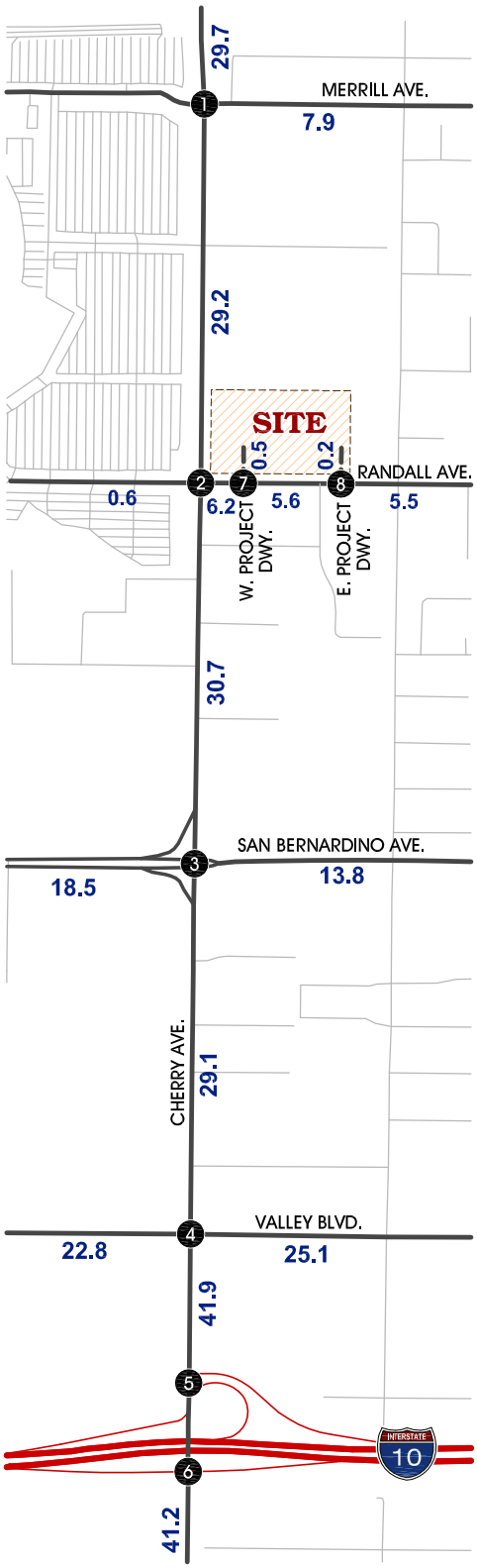
LEGEND:

8 = INTERSECTION ID

1.0 = VEHICLES PER DAY (1000's)

N

FIGURE 4-H
EXISTING PLUS AMBIENT PLUS PROJECT PLUS CUMULATIVE (EAPC 2017) TRAFFIC VOLUMES



AM PEAK HOUR

1. Cherry Av. / Merrill Av.		2. Cherry Av. / Randall Av.		3. Cherry Av. / San Bernardino Av.		4. Cherry Av. / Valley Blvd.	
0 ↓ 1147 ↑ 147	← 235 ← 0 ↰ 184	8 ↓ 1138 ↑ 109	← 115 ← 3 ↰ 207	379 ↓ 851 ↑ 75	← 90 ← 344 ↰ 146	91 ↓ 985 ↑ 69	← 65 ← 284 ↰ 424
0 → 0 → 0 ↘	1 ↑ 749 ↑ 109	1 → 0 → 0 ↘	22 ↑ 797 ↑ 122	184 → 70 → 95 ↘	85 ↑ 775 ↑ 89	64 → 133 → 188 ↘	424 ↑ 890 ↑ 350
5. Cherry Av. / I-10 WB Ramps		**6. Cherry Av. / I-10 EB Ramps**		**7. W. Project Dwy. / Randall Avenue**		**8. E. Project Dwy. / Randall Avenue**	
← 1604	← 596 ↰ 536	← 1255 ↑ 396		↓ 4 ↑ 0	← 0 ↰ 321	↓ 1 ↑ 0	← 2 ↰ 320
	1108 ↑ 523 ↑		363 → 0 → 580 ↘ 1269 ↑ 423 ↑		32 → 199 →		11 → 188 →

PM PEAK HOUR

1. Cherry Av. / Merrill Av.		2. Cherry Av. / Randall Av.		3. Cherry Av. / San Bernardino Av.		4. Cherry Av. / Valley Blvd.	
0 ↓ 820 ↑ 213	← 176 ← 0 ↰ 101	4 ↓ 848 ↑ 113	← 113 ← 0 ↰ 176	269 ↓ 864 ↑ 101	← 85 ← 150 ↰ 73	70 ↓ 1006 ↑ 144	← 99 ← 270 ↰ 362
0 → 0 → 0 ↘	0 ↑ 1271 ↑ 169	11 → 4 → 23 ↘	9 ↑ 1354 ↑ 159	297 → 613 → 155 ↘	59 ↑ 984 ↑ 128	204 → 725 → 330 ↘	307 ↑ 939 ↑ 498
5. Cherry Av. / I-10 WB Ramps		**6. Cherry Av. / I-10 EB Ramps**		**7. W. Project Dwy. / Randall Avenue**		**8. E. Project Dwy. / Randall Avenue**	
← 1712	← 492 ↰ 401	← 1096 ↑ 542		↓ 78 ↑ 0	← 0 ↰ 211	↓ 28 ↑ 6	← 0 ↰ 183
	1311 ↑ 407 ↑		433 → 0 → 552 ↘ 1283 ↑ 508 ↑		5 → 272 →		2 → 270 →

LEGEND:

8 = INTERSECTION ID

1.0 = VEHICLES PER DAY (1000's)

N

THIS PAGE LEFT INTENTIONALLY BLANK

5.0 TRAFFIC ANALYSIS

Peak hour intersection analysis has been performed at the study area intersections for each of the project scenarios and for projected future conditions. Improvements are recommended to satisfy the level of service requirements of the County of San Bernardino and if the following impacts are identified:

1) Any study intersection that is operating at LOS “A”, “B”, “C” or “D” for any study scenario without project traffic in which the addition of project traffic causes the intersection to degrade to a LOS “E” or “F” shall mitigate the impact to bring the intersection back to as least LOS “D” .

2) Any study intersection that is operating at a LOS “E” or “F” for any study scenario without project traffic shall mitigate any impacts so as to bring the intersection back to the overall level of delay established prior to project traffic being added..

A. Existing plus Project (E+P) Conditions

The results of the E+P conditions intersection analysis are summarized in Table 5-1. The E+P conditions operations analysis worksheets are provided in Appendix "5.1". As shown on Table 5-1, the study area intersections are projected to operate at acceptable level of service (LOS “D” or better) with the addition of project traffic during the peak hours with the existing geometry and traffic controls.

It should be noted that the following driveway configurations are recommended for site access purposes.

West Project Driveway / Randall Avenue (#7)

- Provide a stop sign control for the southbound approach
- Provide a shared southbound left/right turn lane.

East Project Driveway / Randall Avenue (#8)

- Provide a stop sign control for the southbound approach
- Provide a shared southbound left/right turn lane.

B. Existing plus Ambient (E+A 2017) Conditions

The results of the E+A conditions intersection analysis are summarized in Table 5-2. The E+A conditions operations analysis worksheets are provided in Appendix "5.2". As shown on Table 5-2, the study area intersections are projected to continue to operate at acceptable level of service (LOS “D” or better) during the peak hours with the existing geometry and traffic controls.

TABLE 5-1

INTERSECTION ANALYSIS FOR EXISTING PLUS PROJECT (E+P) CONDITIONS

ID	Intersection	Traffic Control [1]	Intersection Approach Lanes [2]												Delay [3] (secs.)		Level of Service [3]	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Cherry Ave. / Merrill Ave.	TS	1	2	1	1	2	1>>	0.5	0.5	d	1	0	1	17.3	30.3	B	C
2	Cherry Ave. / Randall Ave.	TS	1	3	0	1	3	1	0.5	0.5	d	0.5	0.5	d	9.7	42.9	A	D
3	Cherry Ave. / San Bernardino Ave.	TS	1	3	0	1	3	1>	1	2	1>>	1	2	0	32.8	26.4	C	C
4	Cherry Ave. / Valley Blvd.	TS	2	2	1	1	2	1	2	2	1>	2	2	0	28.5	44.5	C	D
5	Cherry Ave. / I-10 WB Ramps	TS	0	3	1>>	0	4	0	0	0	0	2	0	1	9.1	16.6	A	B
6	Cherry Ave. / I-10 EB Ramps	TS	0	3	1	2	3	0	1	1!	1	0	0	0	21.7	30.2	C	C
7	W. Project Dwy. / Randall Ave.	CSS	0	0	0	0	1!	0	0.5	0.5	0	0	1	0	10.1	9.9	B	A
8	E. Project Dwy. / Randall Ave.	CSS	0	0	0	0	1!	0	0.5	0.5	0	0	1	0	10.1	9.9	B	A

[1] TS = Traffic Signal; Cross-Street Stop;

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; 1! = Shared Left-Through-Right Lane; 0.5 = Shared Lane ; d = Defacto right turn lane; > = Right Turn Overlap; >> = Free Right Turn Lane; 1 = Improvement

[3] Delay and level of service calculated using the following analysis software: Synchro 8.0

TABLE 5-2

INTERSECTION ANALYSIS FOR
EXISTING PLUS AMBIENT (EA 2017) CONDITIONS

ID	Intersection	Traffic Control [1]	Intersection Approach Lanes [2]												Delay [3] (secs.)		Level of Service [3]	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Cherry Ave. / Merrill Ave.	TS	1	2	1	1	2	1>>	0.5	0.5	d	1	0	1	16.1	17.4	B	B
2	Cherry Ave. / Randall Ave.	TS	1	3	0	1	3	1	0.5	0.5	d	0.5	0.5	d	9.6	12.2	A	B
3	Cherry Ave. / San Bernardino Ave.	TS	1	3	0	1	3	1>	1	2	1>>	1	2	0	33.0	26.8	C	C
4	Cherry Ave. / Valley Blvd.	TS	2	2	1	1	2	1	2	2	1>	2	2	0	29.9	45.2	C	D
5	Cherry Ave. / I-10 WB Ramps	TS	0	3	1>>	0	4	0	0	0	0	2	0	1	9.1	16.6	A	B
6	Cherry Ave. / I-10 EB Ramps	TS	0	3	1	2	3	0	1	1!	1	0	0	0	21.5	29.3	C	C
7	W. Project Dwy. / Randall Ave.	-	Future Intersection												-	-	-	-
8	E. Project Dwy. / Randall Ave.	-	Future Intersection												-	-	-	-

[1] TS = Traffic Signal; Cross-Street Stop;

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; 1! = Shared Left-Through-Right Lane; 0.5 = Shared Lane ; d = Defacto right turn lane;
> = Right Turn Overlap; >> = Free Right Turn Lane

[3] Delay and level of service calculated using the following analysis software: Synchro 8.0

C. Existing plus Ambient plus Project (EAP 2017) Conditions

The results of the EAP conditions intersection analysis are summarized in Table 5-3. The EAP conditions operations analysis worksheets are provided in Appendix "5.3". As shown on Table 5-3, the study area intersections are projected to continue to operate at acceptable level of service (LOS “D” or better) during the peak hours with the existing geometry and traffic controls.

D. Existing plus Ambient plus Project Plus Cumulative (EAPC 2017) Conditions

The results of the EAPC conditions intersection analysis are summarized in Table 5-4. The EAPC conditions operations analysis worksheets are provided in Appendix "5.4". As shown on Table 5-4, the study area intersections are projected to continue to operate at acceptable level of service (LOS “D” or better) during the peak hours with the existing geometry and traffic controls.

The freeway ramp analysis results for EAPC conditions are summarized in Table 5-5. The ramp analysis calculation worksheets for EAPC conditions are included in Appendix “5.5”. As shown on Table 5-5, the study area ramp locations are projected to operate at acceptable level of service (LOS “D” or better) during the peak hours with existing geometry.

TABLE 5-3

INTERSECTION ANALYSIS FOR
EXISTING PLUS AMBIENT PLUS PROJECT (EAP 2017) CONDITIONS

ID	Intersection	Traffic Control [1]	Intersection Approach Lanes [2]												Delay [3] (secs.)		Level of Service[3]	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Cherry Ave. / Merrill Ave.	TS	1	2	1	1	2	1>>	0.5	0.5	d	1	0	1	17.6	31.5	B	C
2	Cherry Ave. / Randall Ave.	TS	1	3	0	1	3	1	0.5	0.5	d	0.5	0.5	d	9.7	43.2	A	D
3	Cherry Ave. / San Bernardino Ave.	TS	1	3	0	1	3	1>	1	2	1>>	1	2	0	33.1	26.9	C	C
4	Cherry Ave. / Valley Blvd.	TS	2	2	1	1	2	1	2	2	1>	2	2	0	29.9	46.7	C	D
5	Cherry Ave. / I-10 WB Ramps	TS	0	3	1>>	0	4	0	0	0	0	2	0	1	9.4	16.9	A	B
6	Cherry Ave. / I-10 EB Ramps	TS	0	3	1	2	3	0	1	1!	1	0	0	0	22.2	31.5	C	C
7	W. Project Dwy. / Randall Ave.	CSS	0	0	0	0	1!	0	0.5	0.5	0	0	1	0	10.1	9.9	B	A
8	E. Project Dwy. / Randall Ave.	CSS	0	0	0	0	1!	0	0.5	0.5	0	0	1	0	10.1	9.9	B	A

[1] TS = Traffic Signal; Cross-Street Stop;

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; 1! = Shared Left-Through-Right Lane; 0.5 = Shared Lane ; d = Defacto right turn lane;
> = Right Turn Overlap; >> = Free Right Turn Lane; 1 = Improvement

[3] Delay and level of service calculated using the following analysis software: Synchro 8.0

TABLE 5-4

INTERSECTION ANALYSIS FOR
EXISTING PLUS AMBIENT PLUS PROJECT PLUS CUMULATIVE (EAPC 2017) CONDITIONS

ID	Intersection	Traffic Control [1]	Intersection Approach Lanes [2]												Delay [3] (secs.)		Level of Service [3]	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Cherry Ave. / Merrill Ave.	TS	1	2	1	1	2	1>>	0.5	0.5	d	1	0	1	17.6	31.5	B	C
2	Cherry Ave. / Randall Ave.	TS	1	3	0	1	3	1	0.5	0.5	d	0.5	0.5	d	9.7	43.2	A	D
3	Cherry Ave. / San Bernardino Ave.	TS	1	3	0	1	3	1>	1	2	1>>	1	2	0	33.1	26.9	C	C
4	Cherry Ave. / Valley Blvd.	TS	2	2	1	1	2	1	2	2	1>	2	2	0	30.0	47.6	C	D
5	Cherry Ave. / I-10 WB Ramps	TS	0	3	1>>	0	4	0	0	0	0	2	0	1	9.5	16.9	A	B
6	Cherry Ave. / I-10 EB Ramps	TS	0	3	1	2	3	0	1	1!	1	0	0	0	22.2	31.5	C	C
7	W. Project Dwy. / Randall Ave.	CSS	0	0	0	0	1!	0	0.5	0.5	0	0	1	0	10.1	9.9	B	A
8	E. Project Dwy. / Randall Ave.	CSS	0	0	0	0	1!	0	0.5	0.5	0	0	1	0	10.1	9.9	B	A

[1] TS = Traffic Signal; Cross-Street Stop;

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; 1! = Shared Left-Through-Right Lane; 0.5 = Shared Lane ; d = Defacto right turn lane;
> = Right Turn Overlap; >> = Free Right Turn Lane; 1 = Improvement

[3] Delay and level of service calculated using the following analysis software: Synchro 8.0

TABLE 5-5

FREEWAY RAMP ANALYSIS FOR
EXISTING PLUS AMBIENT PLUS PROJECT PLUS CUMULATIVE (EAPC 2017) CONDITIONS

Freeway	Ramp Location	Lanes on Freeway	Lanes on Ramp	Ramp Volumes		Density[2]		Level of Service[3]	
				AM	PM	AM	PM	AM	PM
I-10 Westbound	WB Off-Ramp at Cherry Avenue	4	2	1,132	893	14.0	9.9	B	A
	WB Loop On-Ramp at Cherry Avenue	4	1	523	407	22.7	19.2	C	B
	WB Slip On-Ramp at Cherry Avenue	4	1	491	475	19.9	16.8	B	B
I-10 Eastbound	EB Off-Ramp at Cherry Avenue	4	2	943	985	5.9	0.7	A	A
	EB On-Ramp at Cherry Avenue	4	1	819	1,050	24.4	19.8	C	B

[1] Number of lanes: 1 = Existing

[2] Density is measured by passenger cars per lane (pc/mi/ln)

[3] Density and and level of service calculated using the following analysis software: HCS2010, Version 6.6

THIS PAGE LEFT INTENTIONALLY BLANK

6.0 FINDINGS AND RECOMMENDATIONS

A. Traffic Impacts and Level of Service Analysis

For Existing (2016) and future traffic conditions (E+P, E+A, EAP, and EAPC), the study area intersections are anticipated to operate at acceptable level of service (LOS "D" or better) during the peak hours with existing geometry.

In addition, the EAPC (2017) freeway ramp analysis results indicate that the study area ramp analysis locations are found to operate at acceptable level of service (LOS "D" or better) during the peak hours with existing geometry.

B. Circulation Recommendations

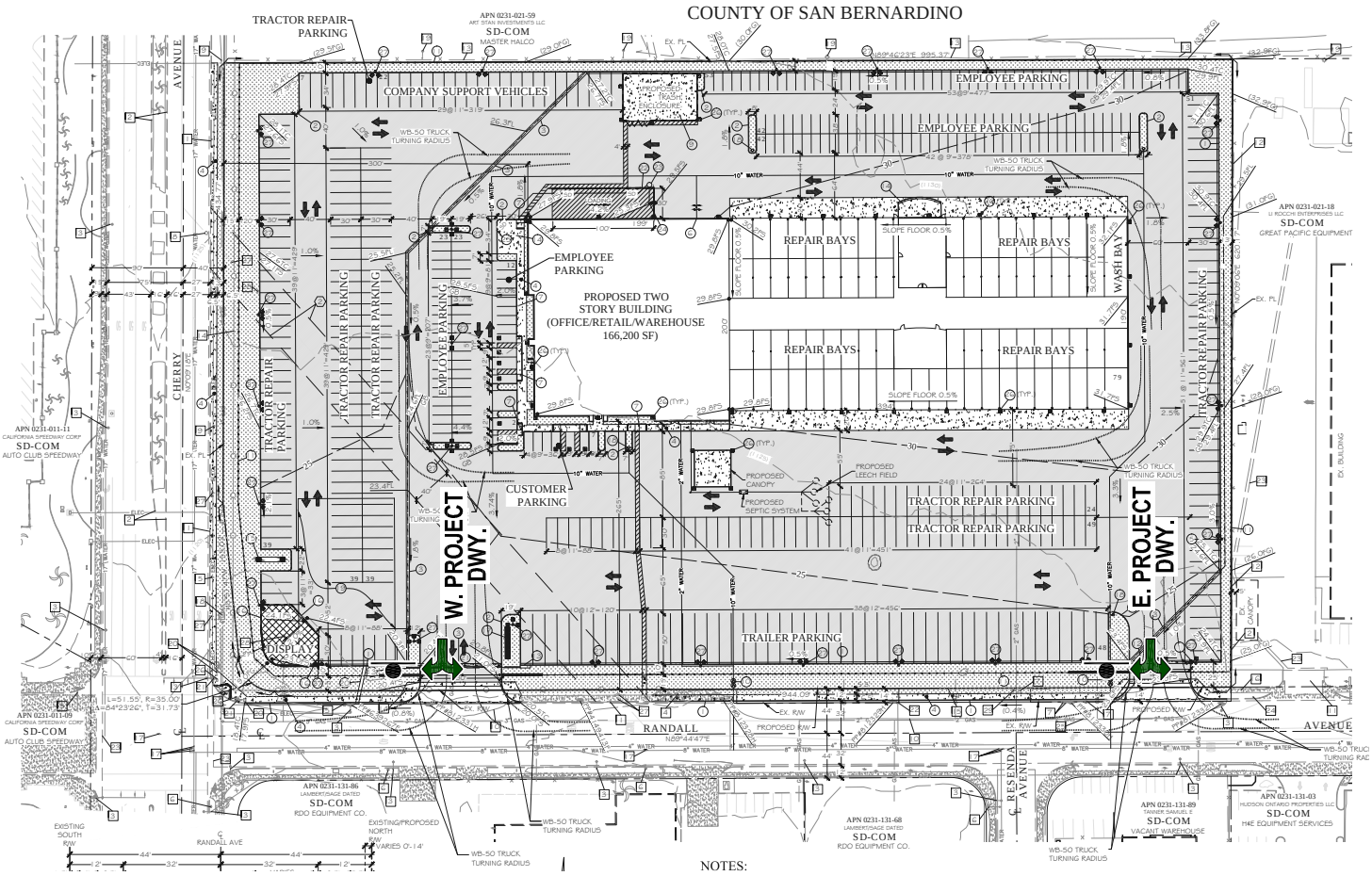
1. On-Site

Figure 6-A illustrates the on-site recommended roadway and intersection lane improvements. Construction of on-site improvements shall occur in conjunction with adjacent project development activity or as needed for project access purposes.

The recommended on-site roadway improvements are described below.

- Provide stop sign control at the project driveways.
- On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.
- Verify that minimum sight distance is provided at the project driveways.

FIGURE 6-A
ON-SITE CIRCULATION RECOMMENDATIONS



PROVIDE STOP SIGN CONTROL AT THE PROJECT DRIVEWAYS.

ON-SITE TRAFFIC SIGNING AND STRIPING SHOULD BE IMPLEMENTED IN CONJUNCTION WITH DETAILED CONSTRUCTION PLANS FOR THE PROJECT.

VERIFY THAT MINIMUM SIGHT DISTANCE IS PROVIDED AT THE PROJECT ACCESS POINT.

LEGEND:

= STOP SIGN

N

APPENDIX 1.1

SCOPING AGREEMENT

SCOPE FOR TRAFFIC STUDY

Project Name:	TEC Equipment

This Scope for Traffic Study acknowledges San Bernardino County Department of Public Works, Traffic Division requirements of traffic impact analysis for the project and is subject to change:

Project Address:	Northeast corner of Randall Ave. and Cherry Ave.		
Project Description:	New Truck Dealership		
City:	County of San Bernardino		
Project Buildout Year:	2017	**Ambient Growth Rate per Year:**	2%
Closest Intersection (Xtn) to the Project			
Xtn N/S Street Name:	Cherry Ave.		
Xtn E/W Street Name:	Randall Ave.		
Thomas Guide Pg+Grid:		**County Supervisorial District:**	

	Engineer	Developer
Company:	Trames Solutions	TEC Equipment c/o Thatcher Engineering
Name:	Scott Sato	Vicky Valenzuela
Address:	100 E. San Marcos Blvd., Ste 400	1461 Ford St., Ste 105
City, State, Zip Code:	San Marcos, CA 92069	Redlands, CA 92373
Phone #:	(949) 244-2436	(909) 748-7777
Fax #:		(909) 748-7776
Email:	scott@tramessolutions.com	vickyv@thatcherengineering.com

By: Scott Sato

Print Name: SCOTT SATO **12/17/15**

Consultant/Developer's Representative **Date**

Reviewed By:

Print Name:

Traffic Division Representative **Date**

SCOPE FOR TRAFFIC STUDY

Project Name:	TEC Equipment

1. Traffic Distribution: Please insert or attach Figure(s) illustrating project trip distribution in percentages and volumes at the study intersections analyzed.

2. Trip Credit: Exact amount of credit subject to approval by Traffic Division.

Transportation Demand Management (TDM)	Yes/no	No
Existing Active Land Use	Yes/no	No
Previous Land Use	Yes/no	No
Internal Trip Reduction	Yes/no	No
Pass-by Trip Reduction	Yes/no	No

3. Related Projects: Consultant should check with Planning in the San Bernardino County Department of Land Use Services and planning departments of adjoining Cities. Documentation of the consultation from these agencies shall be included in the traffic study. Related projects list shall be submitted to Traffic Division for our review and approval before being incorporated in the study.

4. Freeway Analysis: The potential traffic impact on the following Freeway(s) must be considered.

The applicant shall consult with the State of California Department of Transportation (Caltrans) to determine the California Environmental Quality Act levels of significance with regard to traffic impacts on Caltrans' freeway facilities. This consultation shall also include a determination of Caltrans requirements for the study of traffic impacts to its facilities and the mitigation of any such impacts. This analysis must follow the most current Caltrans' Guide for the Preparation of Traffic Impact Studies (December 2002) and can be obtained from http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tiguide.pdf. If Caltrans finds that the project has a significant impact on the freeway, Caltrans shall be requested to include the basis for this finding in their response. If fees are proposed to mitigate the freeway impact, Caltrans shall be requested to identify the specific project to which the fees will apply. These written comments from Caltrans shall be included with the traffic study and submitted to Public Works for review and approval. If a documented good faith effort is made to consult with Caltrans and written comments cannot be obtained from within a reasonable amount of time, an analysis of the freeway impact shall be made using HCM procedures. Appendix A of the SANBAG CMP outlines allowable modifications to these procedures. The SANBAG CMP can be viewed online at:
http://www.sanbag.ca.gov/planning/subr_congestion.html

SCOPE FOR TRAFFIC STUDY

Project Name:	TEC Equipment

5. Trip Generation

Trip Generation Rate(s) Source: ITE Trip Generation	I – Institute of Transportation Engineers; S – San Diego Traffic Generators; C – County; O – Other:	Edition:	8th

Land Use Code	Land Use	Rate Based on	Qty	*AVTE vs	ADT	Weekday a.m. peak		Weekday p.m. peak		Weekend peak hour	
						In	Out	In	Out	In	Out
O	New Truck Sales	Proposed Operation			768	45	5	7	112		

* - Average Vehicle Trip Ends.
For ITE Land Uses provide number and name of Land Use. e.g. LU 814 - Variety Store

SCOPE FOR TRAFFIC STUDY

Project Name:	TEC Equipment

6. Study Intersections: At minimum, the study shall include the following intersections. The list is subject to change after related projects, trip generation and distribution are determined. Consultant should check with adjoining Cities regarding their requirements in addition to the following County/City intersections. Documentation of the consultation from these agencies shall be included in the traffic study.

Xtn #	% County	Thomas Guide Page+Grid	N⁄S/E⁄W Street Name	City	Signalized	CMP
1			Cherry Ave./Merrill Ave.		Yes	Yes/no
2			Cherry Ave./Randall Ave.		Yes	Yes/no
3			Cherry Ave./San Bernardino Ave.		Yes	Yes/no
4			Cherry Ave./Valley Blvd.		Yes	Yes/no
5			Cherry Ave./I-10 WB Ramp		Yes	Yes/no
6			Cherry Ave./I-10 EB Ramp		Yes	Yes/no
7					Yes/no	Yes/no
8					Yes/no	Yes/no
9					Yes/no	Yes/no
10					Yes/no	Yes/no

Cites to be consulted: Fontana

SCOPE FOR TRAFFIC STUDY

Project Name:	TEC Equipment

7. Other:

Traffic counts may be conducted immediately per the following:
• Must be taken on Tuesdays, Wednesdays or Thursdays.
• Must exclude holidays, and the first weekdays before and after the holiday.
• Must be taken on days when local schools or colleges are in session.
• Must be taken on days of good weather, and avoid atypical conditions (e.g., road construction, detours, or major traffic incidents).
• Traffic counts used for other traffic studies in the area shall **NOT** be reused again, unless 25% of the counts conducted for that particular traffic study are validated with new counts. The difference in volumes between the old and new counts at each corresponding movement should not be more than 10%.
• New traffic counts shall be checked to ensure the difference in volumes at corresponding approaches, if applicable, between two adjacent intersections is no more than 10% unless the difference can be justified.
• For all proposed mitigation measures, a conceptual plan for the improvements shall be submitted to our Traffic Studies section for review and approval prior to the approval of the Traffic Impact Analysis. All proposed improvements shall be within the right-of-way.
• For all cumulative mitigation measures, a cost estimate for the improvement shall be submitted.

This analysis must follow the most current Traffic Impact Study Guidelines for the County as stated in the County's Road Planning and Design Standards.

8. Fees

The County charges on an actual cost basis for review of traffic studies. An initial deposit of $3400 is required at the time that a land use application is filed with the Department of Land Use Services If the review costs exceed the initial deposit, the applicant will be expected to provide additional funds and the review will be suspended until the additional funds are deposited.

Project Name:	TEC Equipment

9. Contact Information:

Please submit a signed copy of this scope for approval by the Traffic Division. Draft scopes may be sent electronically. Final scope with signature should be submitted in person or by US Mail to:

County of San Bernardino
Dept. of Public Works, Traffic Division
825 E. 3rd Street, Rm 115
San Bernardino, CA 92415-0835

Phone: 909-387-8186
Fax: 909-387-7809
Email: epetre@dpw.sbcounty.gov (Ed Petre)

FIGURE A
SITE PLAN

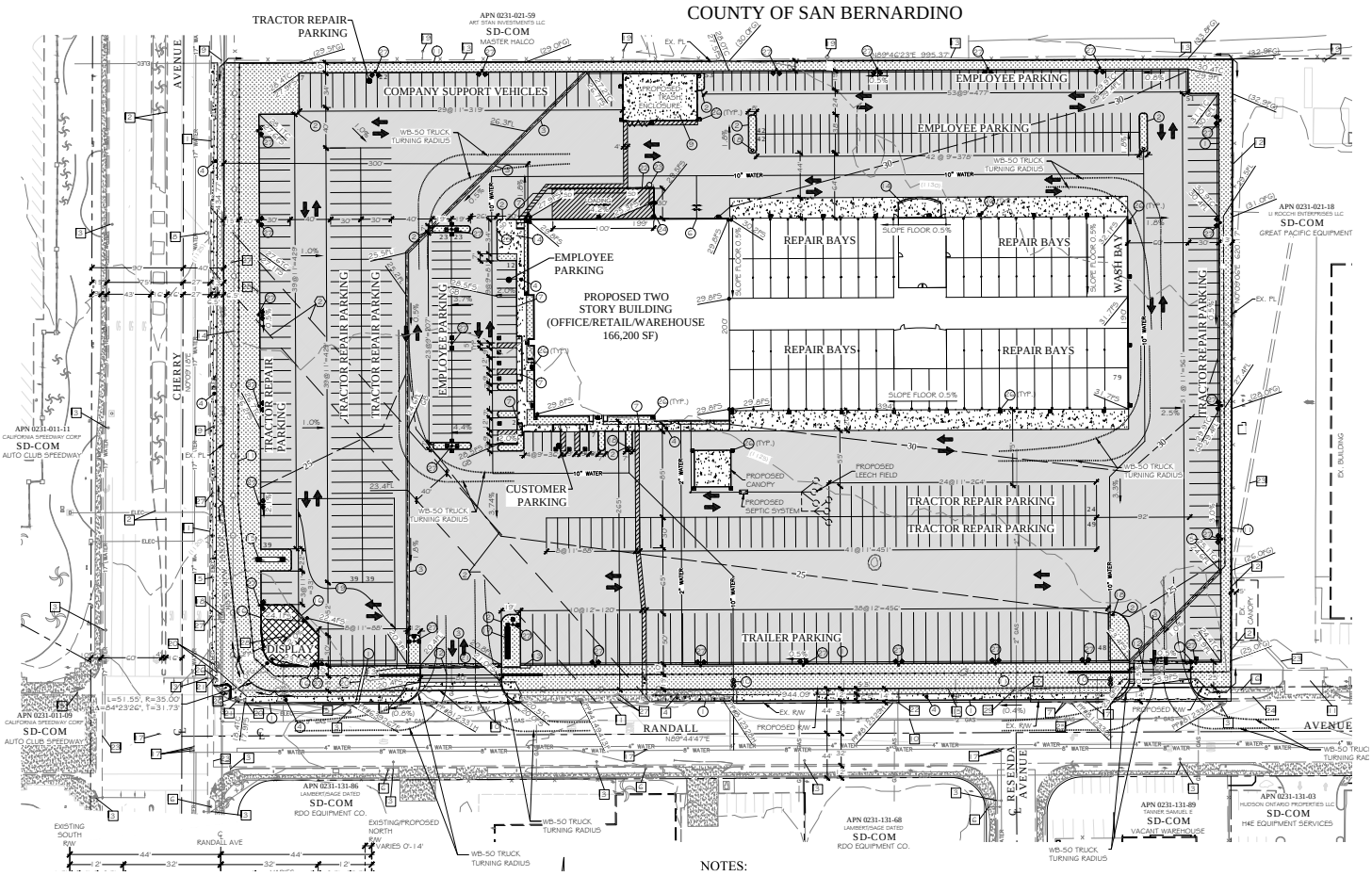
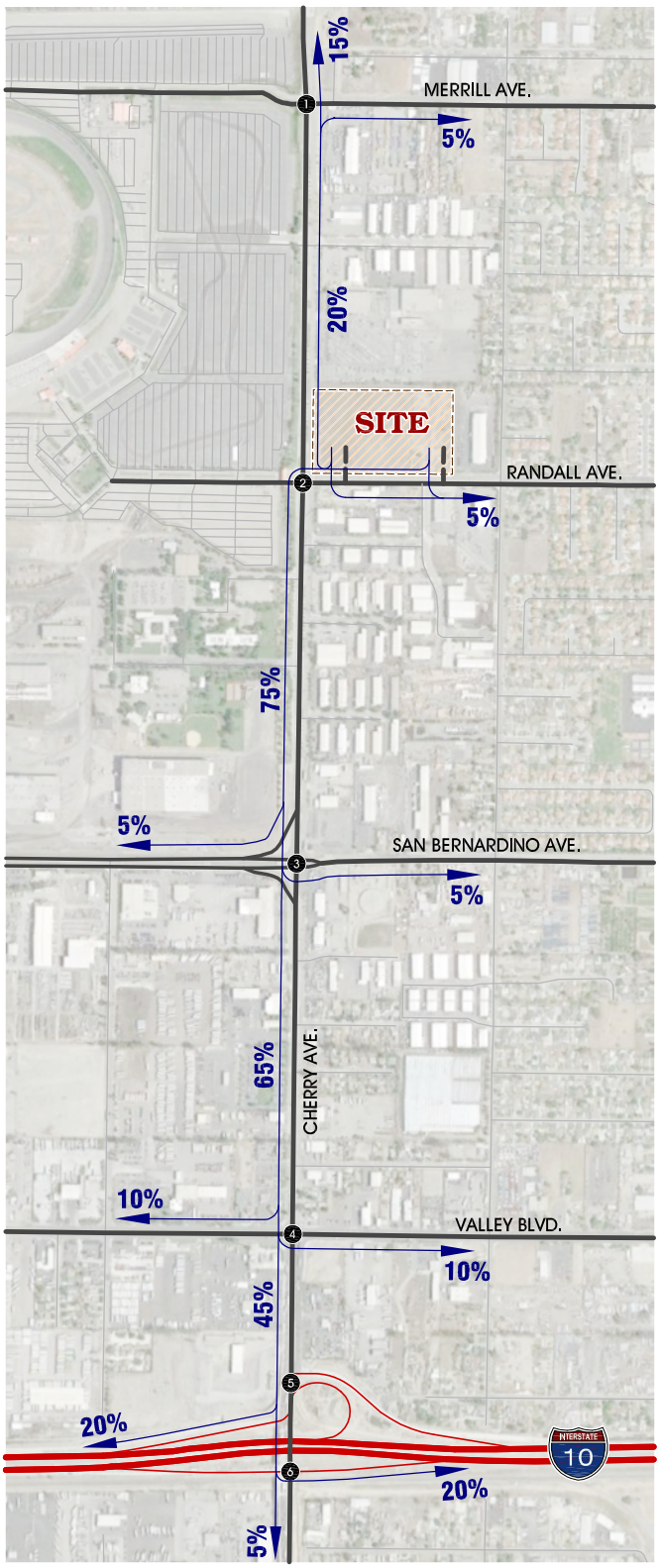


FIGURE B
PROJECT TRIP DISTRIBUTION



LEGEND:

6 = INTERSECTION ID

= PROJECT DRIVEWAY

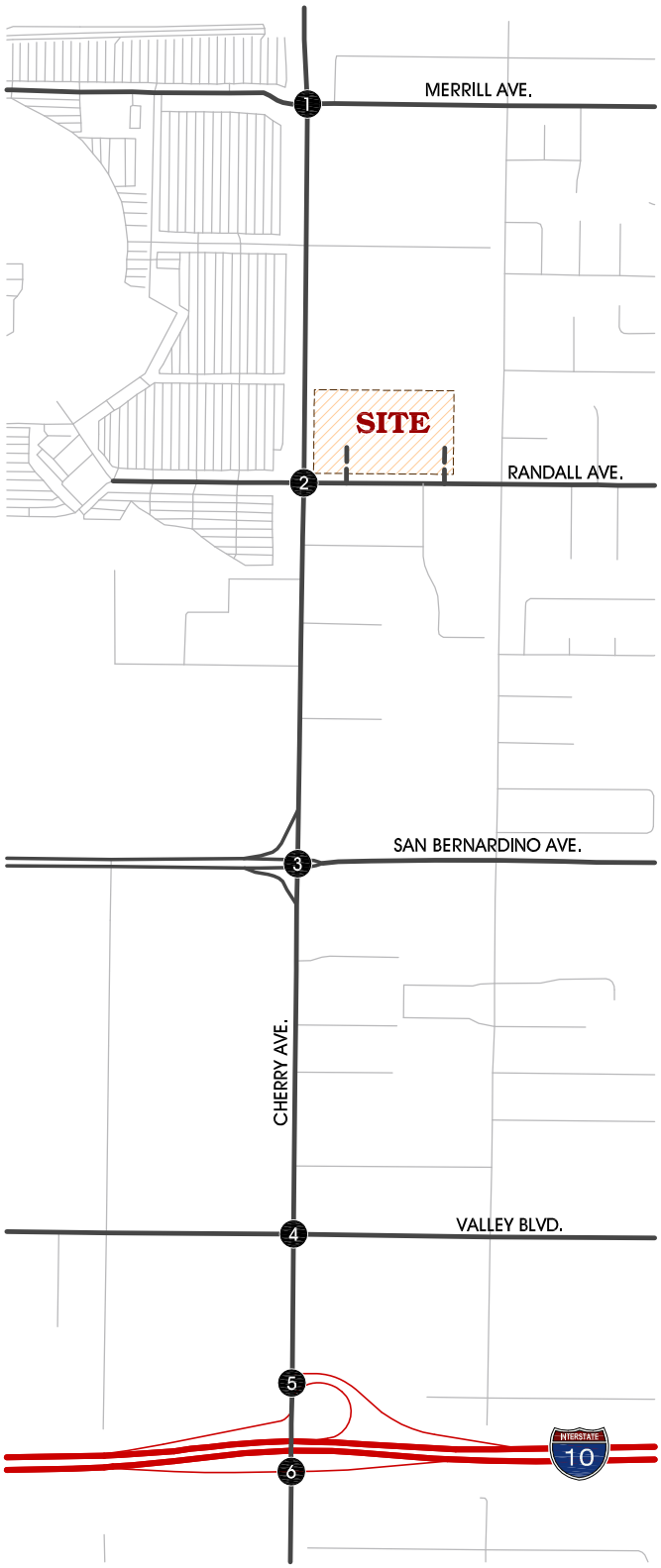
10% = PERCENT TO/FROM PROJECT

N

TEC Traffic Impact Analysis
San Bernardino, CA (0255-0001:scope.dwg)

TRAMES SOLUTIONS INC.

FIGURE C
STUDY AREA



LEGEND:

6 = EXISTING INTERSECTION ANALYSIS LOCATION

= PROJECT DRIVEWAY

N

TEC Traffic Impact Analysis
San Bernardino, CA (0255-0001:scope.dwg)

TRAMES SOLUTIONS INC.

THIS PAGE LEFT INTENTIONALLY BLANK

APPENDIX 3.1

TRAFFIC COUNT WORKSHEETS

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

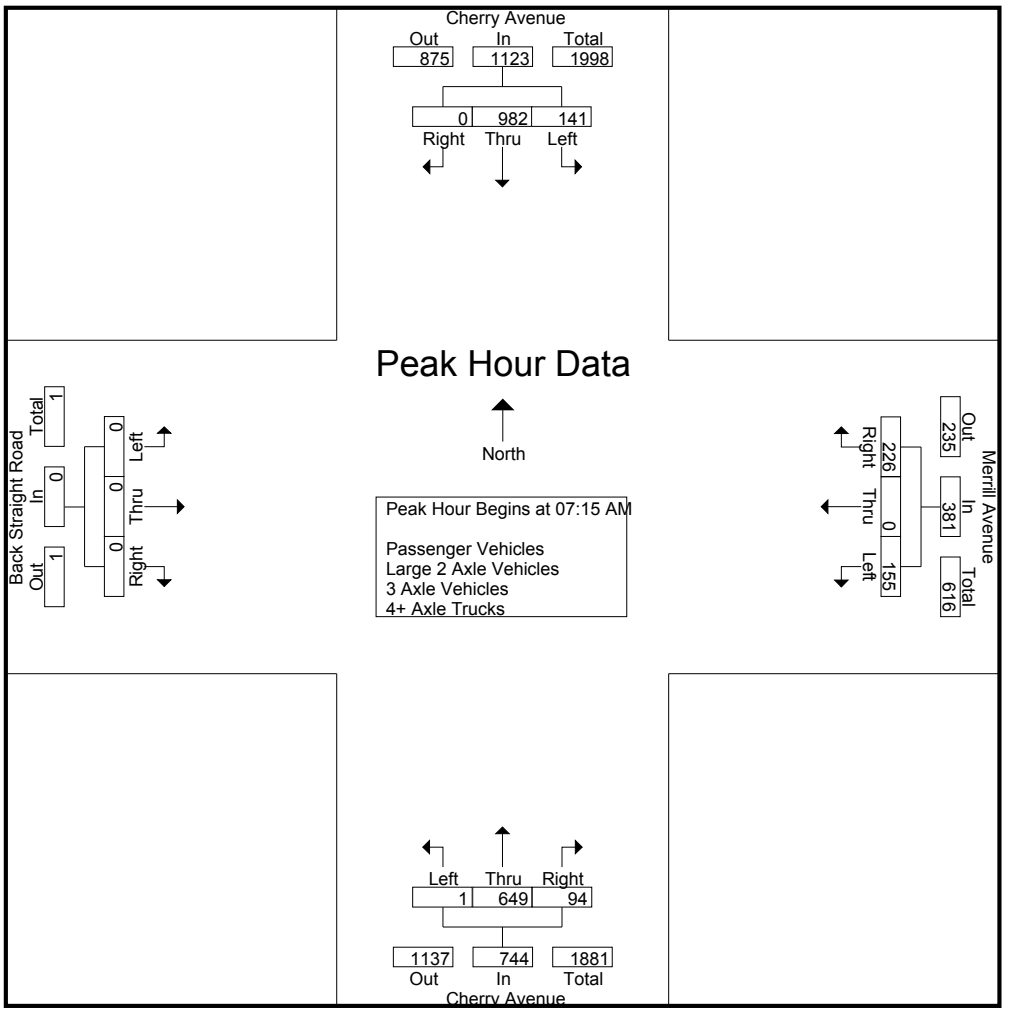
	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	30	215	0	245	40	0	51	91	1	154	24	179	0	0	0	0	515
07:15 AM	32	240	0	272	44	0	72	116	0	161	29	190	0	0	0	0	578
07:30 AM	32	222	0	254	48	0	63	111	0	162	35	197	0	0	0	0	562
07:45 AM	32	258	0	290	35	0	60	95	1	167	18	186	0	0	0	0	571
Total	126	935	0	1061	167	0	246	413	2	644	106	752	0	0	0	0	2226
08:00 AM	45	262	0	307	28	0	31	59	0	159	12	171	0	0	0	0	537
08:15 AM	27	178	0	205	18	0	40	58	0	149	16	165	0	0	0	0	428
08:30 AM	25	177	0	202	19	0	82	101	0	121	19	140	0	0	0	0	443
08:45 AM	25	158	0	183	11	0	57	68	0	104	17	121	0	0	0	0	372
Total	122	775	0	897	76	0	210	286	0	533	64	597	0	0	0	0	1780
Grand Total	248	1710	0	1958	243	0	456	699	2	1177	170	1349	0	0	0	0	4006
Apprch %	12.7	87.3	0		34.8	0	65.2		0.1	87.2	12.6		0	0	0		
Total %	6.2	42.7	0	48.9	6.1	0	11.4	17.4	0	29.4	4.2	33.7	0	0	0	0	
Passenger Vehicles	242	1538	0	1780	219	0	449	668	2	1048	151	1201	0	0	0	0	3649
% Passenger Vehicles	97.6	89.9	0	90.9	90.1	0	98.5	95.6	100	89	88.8	89	0	0	0	0	91.1
Large 2 Axle Vehicles	3	52	0	55	8	0	1	9	0	34	6	40	0	0	0	0	104
% Large 2 Axle Vehicles	1.2	3	0	2.8	3.3	0	0.2	1.3	0	2.9	3.5	3	0	0	0	0	2.6
3 Axle Vehicles	2	33	0	35	4	0	2	6	0	31	0	31	0	0	0	0	72
% 3 Axle Vehicles	0.8	1.9	0	1.8	1.6	0	0.4	0.9	0	2.6	0	2.3	0	0	0	0	1.8
4+ Axle Trucks	1	87	0	88	12	0	4	16	0	64	13	77	0	0	0	0	181
% 4+ Axle Trucks	0.4	5.1	0	4.5	4.9	0	0.9	2.3	0	5.4	7.6	5.7	0	0	0	0	4.5

	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	32	240	0	272	44	0	**72**	**116**	0	161	29	190	0	0	0	0	**578**
07:30 AM	32	222	0	254	**48**	0	63	111	0	162	**35**	**197**	0	0	0	0	562
07:45 AM	32	258	0	290	35	0	60	95	**1**	**167**	18	186	0	0	0	0	571
08:00 AM	**45**	**262**	0	**307**	28	0	31	59	0	159	12	171	0	0	0	0	537
Total Volume	141	982	0	1123	155	0	226	381	1	649	94	744	0	0	0	0	2248
% App. Total	12.6	87.4	0		40.7	0	59.3		0.1	87.2	12.6		0	0	0		
PHF	.783	.937	.000	.914	.807	.000	.785	.821	.250	.972	.671	.944	.000	.000	.000	.000	.972

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	32	240	0	272	40	0	51	91	**1**	154	24	179	0	0	0	0
+15 mins.	32	222	0	254	44	0	**72**	**116**	0	161	29	190	0	0	0	0
+30 mins.	32	258	0	290	**48**	0	63	111	0	162	**35**	**197**	0	0	0	0
+45 mins.	**45**	**262**	0	**307**	35	0	60	95	1	**167**	18	186	0	0	0	0
Total Volume	141	982	0	1123	167	0	246	413	2	644	106	752	0	0	0	0
% App. Total	12.6	87.4	0		40.4	0	59.6		0.3	85.6	14.1		0	0	0	
PHF	.783	.937	.000	.914	.870	.000	.854	.890	.500	.964	.757	.954	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles

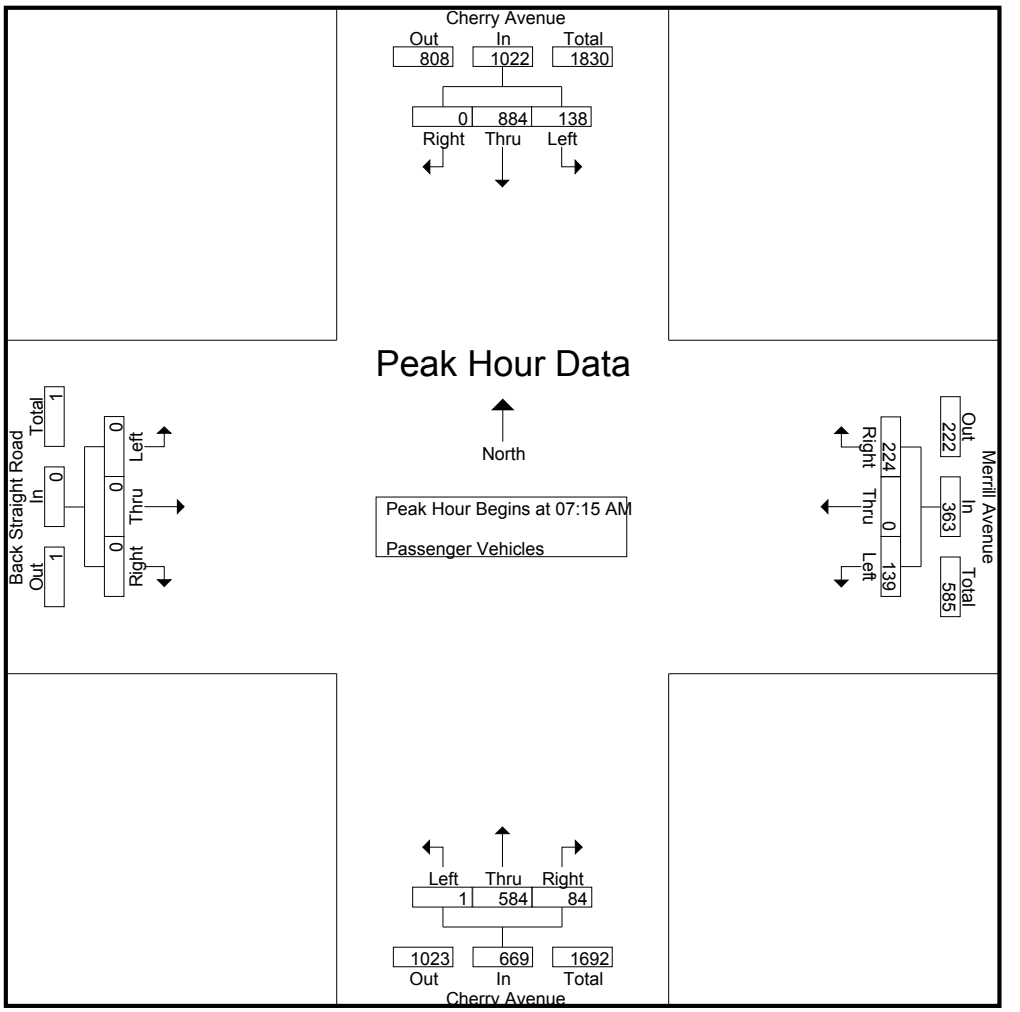
	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	29	207	0	236	39	0	51	90	1	140	23	164	0	0	0	0	490
07:15 AM	29	219	0	248	41	0	71	112	0	145	25	170	0	0	0	0	530
07:30 AM	32	197	0	229	42	0	62	104	0	144	30	174	0	0	0	0	507
07:45 AM	32	234	0	266	32	0	60	92	1	151	17	169	0	0	0	0	527
Total	122	857	0	979	154	0	244	398	2	580	95	677	0	0	0	0	2054
08:00 AM	45	234	0	279	24	0	31	55	0	144	12	156	0	0	0	0	490
08:15 AM	27	158	0	185	15	0	38	53	0	133	14	147	0	0	0	0	385
08:30 AM	24	154	0	178	16	0	79	95	0	101	18	119	0	0	0	0	392
08:45 AM	24	135	0	159	10	0	57	67	0	90	12	102	0	0	0	0	328
Total	120	681	0	801	65	0	205	270	0	468	56	524	0	0	0	0	1595
Grand Total	242	1538	0	1780	219	0	449	668	2	1048	151	1201	0	0	0	0	3649
Apprch %	13.6	86.4	0		32.8	0	67.2		0.2	87.3	12.6		0	0	0		
Total %	6.6	42.1	0	48.8	6	0	12.3	18.3	0.1	28.7	4.1	32.9	0	0	0	0	

	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	29	219	0	248	41	0	**71**	**112**	0	145	25	170	0	0	0	0	**530**
07:30 AM	32	197	0	229	**42**	0	62	104	0	144	**30**	**174**	0	0	0	0	507
07:45 AM	32	**234**	0	266	32	0	60	92	**1**	**151**	17	169	0	0	0	0	527
08:00 AM	**45**	234	0	**279**	24	0	31	55	0	144	12	156	0	0	0	0	490
Total Volume	138	884	0	1022	139	0	224	363	1	584	84	669	0	0	0	0	2054
% App. Total	13.5	86.5	0		38.3	0	61.7		0.1	87.3	12.6		0	0	0		
PHF	.767	.944	.000	.916	.827	.000	.789	.810	.250	.967	.700	.961	.000	.000	.000	.000	.969

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	29	219	0	248	41	0	**71**	**112**	0	145	25	170	0	0	0	0
+15 mins.	32	197	0	229	**42**	0	62	104	0	144	**30**	**174**	0	0	0	0
+30 mins.	32	**234**	0	266	32	0	60	92	**1**	**151**	17	169	0	0	0	0
+45 mins.	**45**	234	0	**279**	24	0	31	55	0	144	12	156	0	0	0	0
Total Volume	138	884	0	1022	139	0	224	363	1	584	84	669	0	0	0	0
% App. Total	13.5	86.5	0		38.3	0	61.7		0.1	87.3	12.6		0	0	0	
PHF	.767	.944	.000	.916	.827	.000	.789	.810	.250	.967	.700	.961	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

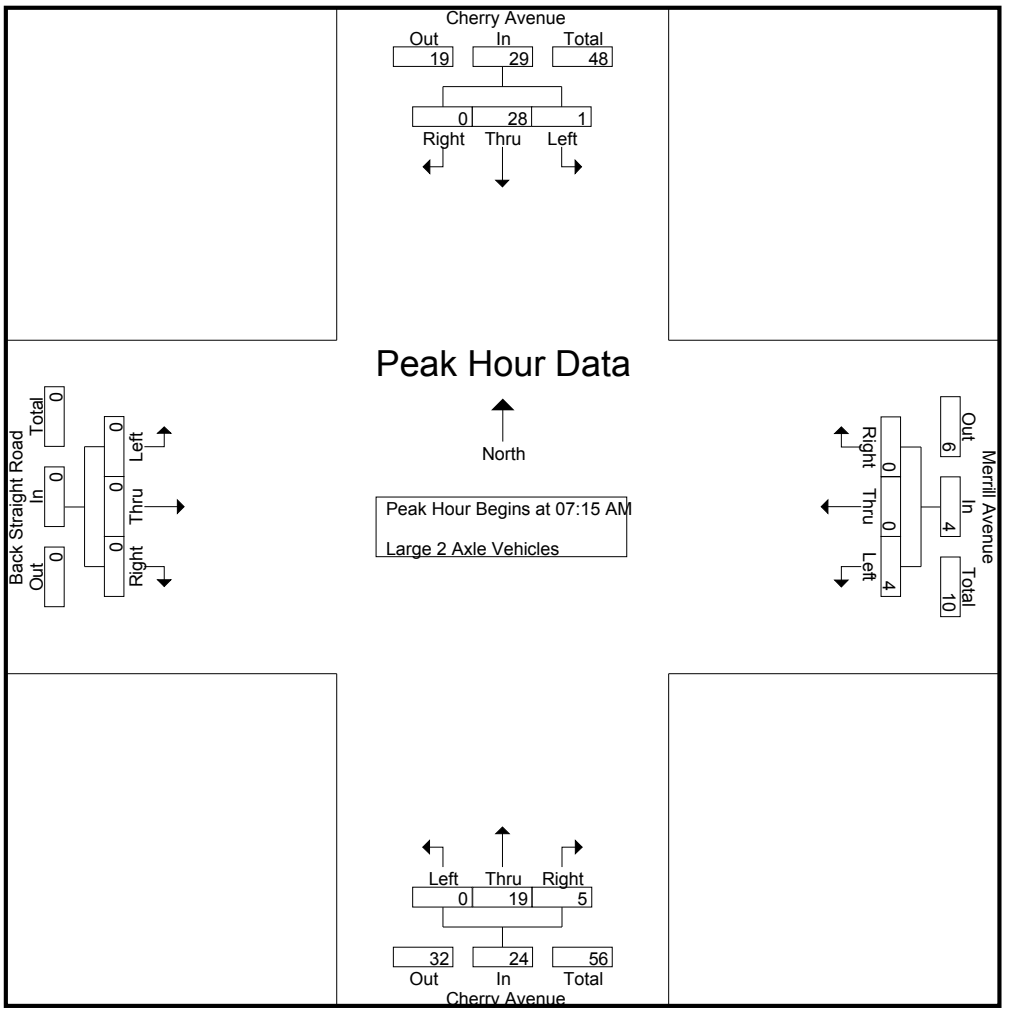
	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	2	0	3	0	0	0	0	0	3	0	3	0	0	0	0	6
07:15 AM	1	3	0	4	1	0	0	1	0	6	2	8	0	0	0	0	13
07:30 AM	0	10	0	10	0	0	0	0	0	3	2	5	0	0	0	0	15
07:45 AM	0	8	0	8	1	0	0	1	0	4	1	5	0	0	0	0	14
Total	2	23	0	25	2	0	0	2	0	16	5	21	0	0	0	0	48
08:00 AM	0	7	0	7	2	0	0	2	0	6	0	6	0	0	0	0	15
08:15 AM	0	8	0	8	2	0	1	3	0	3	1	4	0	0	0	0	15
08:30 AM	0	7	0	7	1	0	0	1	0	6	0	6	0	0	0	0	14
08:45 AM	1	7	0	8	1	0	0	1	0	3	0	3	0	0	0	0	12
Total	1	29	0	30	6	0	1	7	0	18	1	19	0	0	0	0	56
Grand Total	3	52	0	55	8	0	1	9	0	34	6	40	0	0	0	0	104
Apprch %	5.5	94.5	0		88.9	0	11.1		0	85	15		0	0	0		
Total %	2.9	50	0	52.9	7.7	0	1	8.7	0	32.7	5.8	38.5	0	0	0	0	

	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**1**	3	0	4	1	0	0	1	0	**6**	**2**	**8**	0	0	0	0	13
07:30 AM	0	**10**	0	**10**	0	0	0	0	0	3	2	5	0	0	0	0	**15**
07:45 AM	0	8	0	8	1	0	0	1	0	4	1	5	0	0	0	0	14
08:00 AM	0	7	0	7	**2**	0	0	**2**	0	6	0	6	0	0	0	0	15
Total Volume	1	28	0	29	4	0	0	4	0	19	5	24	0	0	0	0	57
% App. Total	3.4	96.6	0		100	0	0		0	79.2	20.8		0	0	0		
PHF	.250	.700	.000	.725	.500	.000	.000	.500	.000	.792	.625	.750	.000	.000	.000	.000	.950

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	**1**	3	0	4	1	0	0	1	0	**6**	**2**	**8**	0	0	0	0
+15 mins.	0	**10**	0	**10**	0	0	0	0	0	3	2	5	0	0	0	0
+30 mins.	0	8	0	8	1	0	0	1	0	4	1	5	0	0	0	0
+45 mins.	0	7	0	7	**2**	0	0	**2**	0	6	0	6	0	0	0	0
Total Volume	1	28	0	29	4	0	0	4	0	19	5	24	0	0	0	0
% App. Total	3.4	96.6	0		100	0	0		0	79.2	20.8		0	0	0	
PHF	.250	.700	.000	.725	.500	.000	.000	.500	.000	.792	.625	.750	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

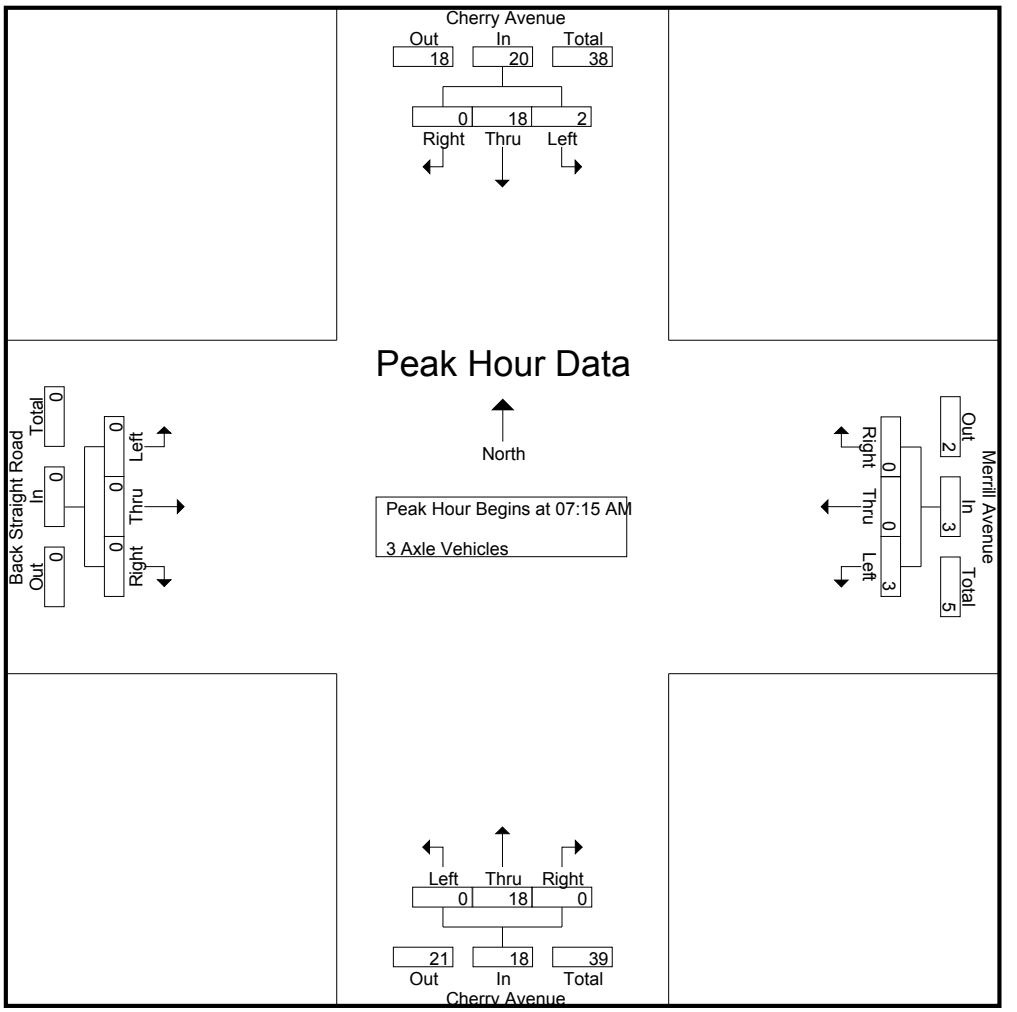
	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
07:15 AM	2	5	0	7	1	0	0	1	0	2	0	2	0	0	0	0	10
07:30 AM	0	4	0	4	1	0	0	1	0	5	0	5	0	0	0	0	10
07:45 AM	0	4	0	4	1	0	0	1	0	5	0	5	0	0	0	0	10
Total	2	14	0	16	3	0	0	3	0	14	0	14	0	0	0	0	33
08:00 AM	0	5	0	5	0	0	0	0	0	6	0	6	0	0	0	0	11
08:15 AM	0	3	0	3	1	0	0	1	0	5	0	5	0	0	0	0	9
08:30 AM	0	6	0	6	0	0	2	2	0	4	0	4	0	0	0	0	12
08:45 AM	0	5	0	5	0	0	0	0	0	2	0	2	0	0	0	0	7
Total	0	19	0	19	1	0	2	3	0	17	0	17	0	0	0	0	39
Grand Total	2	33	0	35	4	0	2	6	0	31	0	31	0	0	0	0	72
Apprch %	5.7	94.3	0		66.7	0	33.3		0	100	0		0	0	0		
Total %	2.8	45.8	0	48.6	5.6	0	2.8	8.3	0	43.1	0	43.1	0	0	0	0	

	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**2**	**5**	0	**7**	**1**	0	0	**1**	0	2	0	2	0	0	0	0	10
07:30 AM	0	4	0	4	1	0	0	1	0	5	0	5	0	0	0	0	10
07:45 AM	0	4	0	4	1	0	0	1	0	5	0	5	0	0	0	0	10
08:00 AM	0	5	0	5	0	0	0	0	0	**6**	0	**6**	0	0	0	0	**11**
Total Volume	2	18	0	20	3	0	0	3	0	18	0	18	0	0	0	0	41
% App. Total	10	90	0		100	0	0		0	100	0		0	0	0		
PHF	.250	.900	.000	.714	.750	.000	.000	.750	.000	.750	.000	.750	.000	.000	.000	.000	.932

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	**2**	**5**	0	**7**	**1**	0	0	**1**	0	2	0	2	0	0	0	0
+15 mins.	0	4	0	4	1	0	0	1	0	5	0	5	0	0	0	0
+30 mins.	0	4	0	4	1	0	0	1	0	5	0	5	0	0	0	0
+45 mins.	0	5	0	5	0	0	0	0	0	**6**	0	**6**	0	0	0	0
Total Volume	2	18	0	20	3	0	0	3	0	18	0	18	0	0	0	0
% App. Total	10	90	0		100	0	0		0	100	0		0	0	0	
PHF	.250	.900	.000	.714	.750	.000	.000	.750	.000	.750	.000	.750	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

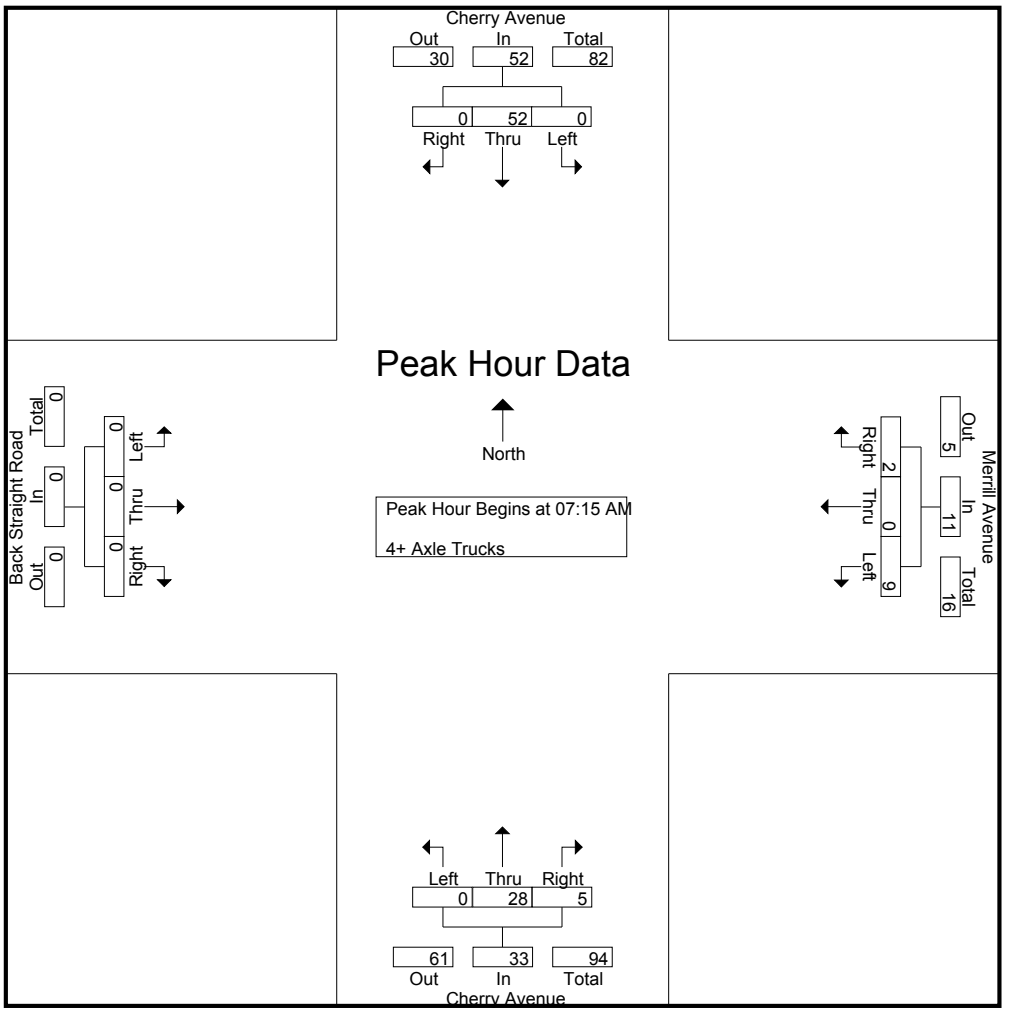
	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	5	0	5	1	0	0	1	0	9	1	10	0	0	0	0	16
07:15 AM	0	13	0	13	1	0	1	2	0	8	2	10	0	0	0	0	25
07:30 AM	0	11	0	11	5	0	1	6	0	10	3	13	0	0	0	0	30
07:45 AM	0	12	0	12	1	0	0	1	0	7	0	7	0	0	0	0	20
Total	0	41	0	41	8	0	2	10	0	34	6	40	0	0	0	0	91
08:00 AM	0	16	0	16	2	0	0	2	0	3	0	3	0	0	0	0	21
08:15 AM	0	9	0	9	0	0	1	1	0	8	1	9	0	0	0	0	19
08:30 AM	1	10	0	11	2	0	1	3	0	10	1	11	0	0	0	0	25
08:45 AM	0	11	0	11	0	0	0	0	0	9	5	14	0	0	0	0	25
Total	1	46	0	47	4	0	2	6	0	30	7	37	0	0	0	0	90
Grand Total	1	87	0	88	12	0	4	16	0	64	13	77	0	0	0	0	181
Apprch %	1.1	98.9	0		75	0	25		0	83.1	16.9		0	0	0		
Total %	0.6	48.1	0	48.6	6.6	0	2.2	8.8	0	35.4	7.2	42.5	0	0	0	0	

	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	13	0	13	1	0	**1**	2	0	8	2	10	0	0	0	0	25
07:30 AM	0	11	0	11	**5**	0	1	**6**	0	**10**	**3**	**13**	0	0	0	0	**30**
07:45 AM	0	12	0	12	1	0	0	1	0	7	0	7	0	0	0	0	20
08:00 AM	0	**16**	0	**16**	2	0	0	2	0	3	0	3	0	0	0	0	21
Total Volume	0	52	0	52	9	0	2	11	0	28	5	33	0	0	0	0	96
% App. Total	0	100	0		81.8	0	18.2		0	84.8	15.2		0	0	0		
PHF	.000	.813	.000	.813	.450	.000	.500	.458	.000	.700	.417	.635	.000	.000	.000	.000	.800

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	13	0	13	1	0	**1**	2	0	8	2	10	0	0	0	0
+15 mins.	0	11	0	11	**5**	0	1	**6**	0	**10**	**3**	**13**	0	0	0	0
+30 mins.	0	12	0	12	1	0	0	1	0	7	0	7	0	0	0	0
+45 mins.	0	**16**	0	**16**	2	0	0	2	0	3	0	3	0	0	0	0
Total Volume	0	52	0	52	9	0	2	11	0	28	5	33	0	0	0	0
% App. Total	0	100	0		81.8	0	18.2		0	84.8	15.2		0	0	0	
PHF	.000	.813	.000	.813	.450	.000	.500	.458	.000	.700	.417	.635	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

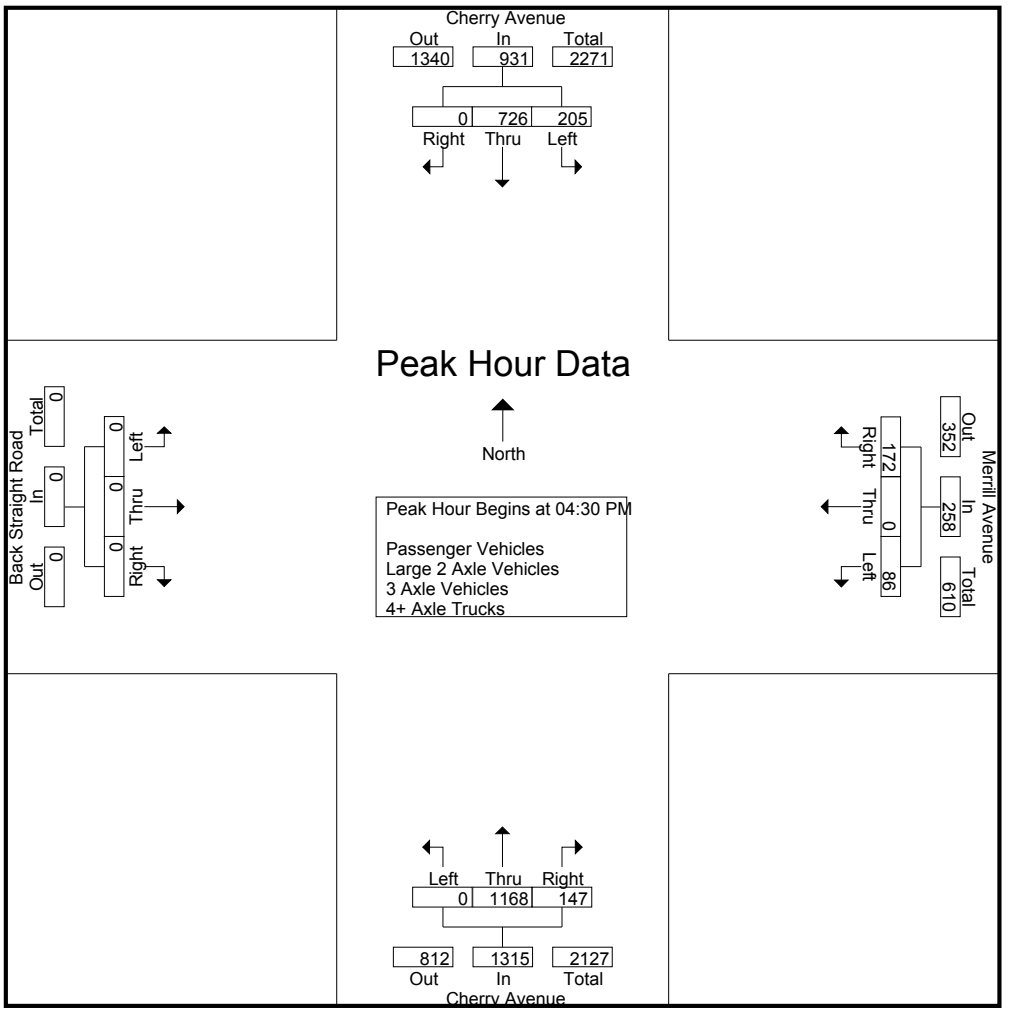
	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	48	191	0	239	20	0	45	65	0	274	46	320	0	0	0	0	624
04:15 PM	47	173	0	220	22	0	41	63	0	263	34	297	0	0	0	0	580
04:30 PM	48	206	0	254	24	0	51	75	0	261	33	294	0	0	0	0	623
04:45 PM	50	161	0	211	17	0	40	57	0	287	38	325	0	0	0	0	593
Total	193	731	0	924	83	0	177	260	0	1085	151	1236	0	0	0	0	2420
05:00 PM	53	190	0	243	28	0	43	71	0	309	41	350	0	0	0	0	664
05:15 PM	54	169	0	223	17	0	38	55	0	311	35	346	0	0	0	0	624
05:30 PM	53	130	1	184	21	0	44	65	0	284	49	333	0	0	0	0	582
05:45 PM	48	131	0	179	10	0	46	56	0	236	37	273	0	0	0	0	508
Total	208	620	1	829	76	0	171	247	0	1140	162	1302	0	0	0	0	2378
Grand Total	401	1351	1	1753	159	0	348	507	0	2225	313	2538	0	0	0	0	4798
Apprch %	22.9	77.1	0.1		31.4	0	68.6		0	87.7	12.3		0	0	0		
Total %	8.4	28.2	0	36.5	3.3	0	7.3	10.6	0	46.4	6.5	52.9	0	0	0	0	
Passenger Vehicles	398	1230	1	1629	143	0	345	488	0	2118	293	2411	0	0	0	0	4528
% Passenger Vehicles	99.3	91	100	92.9	89.9	0	99.1	96.3	0	95.2	93.6	95	0	0	0	0	94.4
Large 2 Axle Vehicles	1	32	0	33	4	0	2	6	0	23	6	29	0	0	0	0	68
% Large 2 Axle Vehicles	0.2	2.4	0	1.9	2.5	0	0.6	1.2	0	1	1.9	1.1	0	0	0	0	1.4
3 Axle Vehicles	1	42	0	43	6	0	1	7	0	31	5	36	0	0	0	0	86
% 3 Axle Vehicles	0.2	3.1	0	2.5	3.8	0	0.3	1.4	0	1.4	1.6	1.4	0	0	0	0	1.8
4+ Axle Trucks	1	47	0	48	6	0	0	6	0	53	9	62	0	0	0	0	116
% 4+ Axle Trucks	0.2	3.5	0	2.7	3.8	0	0	1.2	0	2.4	2.9	2.4	0	0	0	0	2.4

	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	48	**206**	0	**254**	24	0	**51**	**75**	0	261	33	294	0	0	0	0	623
04:45 PM	50	161	0	211	17	0	40	57	0	287	38	325	0	0	0	0	593
05:00 PM	53	190	0	243	**28**	0	43	71	0	309	**41**	**350**	0	0	0	0	**664**
05:15 PM	**54**	169	0	223	17	0	38	55	0	**311**	35	346	0	0	0	0	624
Total Volume	205	726	0	931	86	0	172	258	0	1168	147	1315	0	0	0	0	2504
% App. Total	22	78	0		33.3	0	66.7		0	88.8	11.2		0	0	0		
PHF	.949	.881	.000	.916	.768	.000	.843	.860	.000	.939	.896	.939	.000	.000	.000	.000	.943

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:15 PM				04:45 PM				04:00 PM			
+0 mins.	48	**206**	0	**254**	22	0	41	63	0	287	38	325	0	0	0	0
+15 mins.	50	161	0	211	24	0	**51**	**75**	0	309	41	**350**	0	0	0	0
+30 mins.	53	190	0	243	17	0	40	57	0	**311**	35	346	0	0	0	0
+45 mins.	**54**	169	0	223	**28**	0	43	71	0	284	**49**	333	0	0	0	0
Total Volume	205	726	0	931	91	0	175	266	0	1191	163	1354	0	0	0	0
% App. Total	22	78	0		34.2	0	65.8		0	88	12		0	0	0	
PHF	.949	.881	.000	.916	.813	.000	.858	.887	.000	.957	.832	.967	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles

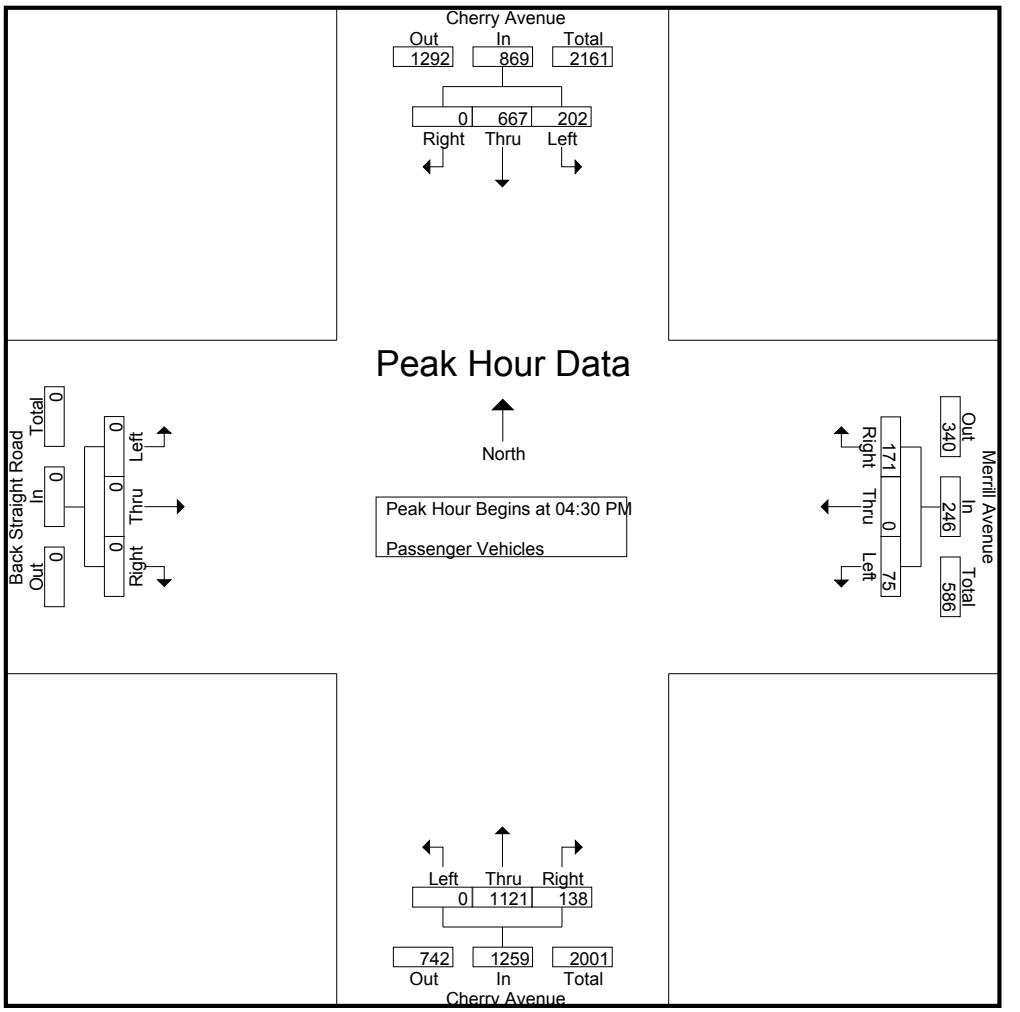
	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	48	168	0	216	20	0	45	65	0	255	43	298	0	0	0	0	579
04:15 PM	47	153	0	200	19	0	40	59	0	244	30	274	0	0	0	0	533
04:30 PM	46	184	0	230	23	0	51	74	0	249	30	279	0	0	0	0	583
04:45 PM	49	150	0	199	14	0	39	53	0	276	35	311	0	0	0	0	563
Total	190	655	0	845	76	0	175	251	0	1024	138	1162	0	0	0	0	2258
05:00 PM	53	176	0	229	25	0	43	68	0	299	39	338	0	0	0	0	635
05:15 PM	54	157	0	211	13	0	38	51	0	297	34	331	0	0	0	0	593
05:30 PM	53	122	1	176	21	0	44	65	0	272	46	318	0	0	0	0	559
05:45 PM	48	120	0	168	8	0	45	53	0	226	36	262	0	0	0	0	483
Total	208	575	1	784	67	0	170	237	0	1094	155	1249	0	0	0	0	2270
Grand Total	398	1230	1	1629	143	0	345	488	0	2118	293	2411	0	0	0	0	4528
Apprch %	24.4	75.5	0.1		29.3	0	70.7		0	87.8	12.2		0	0	0		
Total %	8.8	27.2	0	36	3.2	0	7.6	10.8	0	46.8	6.5	53.2	0	0	0	0	

	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	46	**184**	0	**230**	23	0	**51**	**74**	0	249	30	279	0	0	0	0	583
04:45 PM	49	150	0	199	14	0	39	53	0	276	35	311	0	0	0	0	563
05:00 PM	53	176	0	229	**25**	0	43	68	0	**299**	**39**	**338**	0	0	0	0	**635**
05:15 PM	**54**	157	0	211	13	0	38	51	0	297	34	331	0	0	0	0	593
Total Volume	202	667	0	869	75	0	171	246	0	1121	138	1259	0	0	0	0	2374
% App. Total	23.2	76.8	0		30.5	0	69.5		0	89	11		0	0	0		
PHF	.935	.906	.000	.945	.750	.000	.838	.831	.000	.937	.885	.931	.000	.000	.000	.000	.935

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	46	**184**	0	**230**	23	0	**51**	**74**	0	249	30	279	0	0	0	0
+15 mins.	49	150	0	199	14	0	39	53	0	276	35	311	0	0	0	0
+30 mins.	53	176	0	229	**25**	0	43	68	0	**299**	**39**	**338**	0	0	0	0
+45 mins.	**54**	157	0	211	13	0	38	51	0	297	34	331	0	0	0	0
Total Volume	202	667	0	869	75	0	171	246	0	1121	138	1259	0	0	0	0
% App. Total	23.2	76.8	0		30.5	0	69.5		0	89	11		0	0	0	
PHF	.935	.906	.000	.945	.750	.000	.838	.831	.000	.937	.885	.931	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

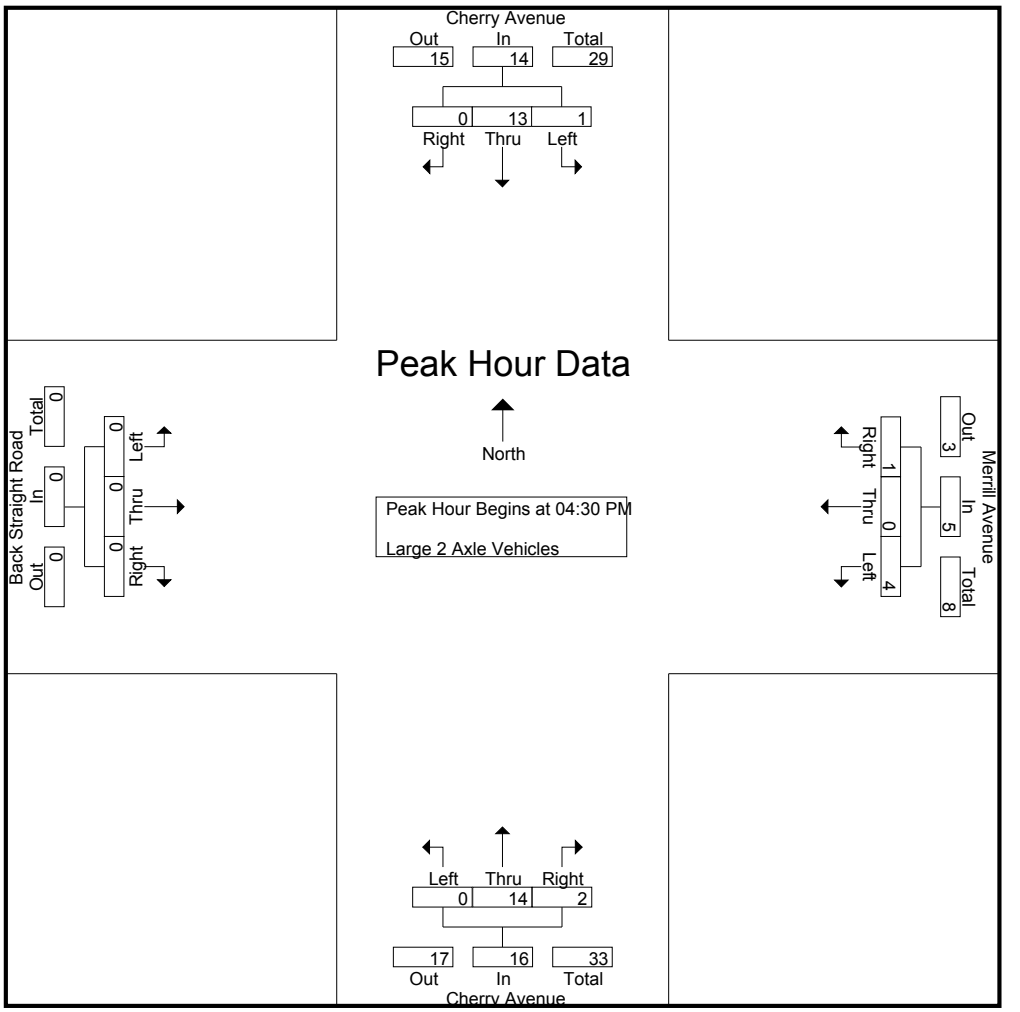
	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	9	0	9	0	0	0	0	0	3	2	5	0	0	0	0	14
04:15 PM	0	5	0	5	0	0	1	1	0	3	2	5	0	0	0	0	11
04:30 PM	0	6	0	6	1	0	0	1	0	3	0	3	0	0	0	0	10
04:45 PM	1	3	0	4	0	0	1	1	0	2	1	3	0	0	0	0	8
Total	1	23	0	24	1	0	2	3	0	11	5	16	0	0	0	0	43
05:00 PM	0	4	0	4	2	0	0	2	0	4	1	5	0	0	0	0	11
05:15 PM	0	0	0	0	1	0	0	1	0	5	0	5	0	0	0	0	6
05:30 PM	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
05:45 PM	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	9	0	9	3	0	0	3	0	12	1	13	0	0	0	0	25
Grand Total	1	32	0	33	4	0	2	6	0	23	6	29	0	0	0	0	68
Apprch %	3	97	0		66.7	0	33.3		0	79.3	20.7		0	0	0		
Total %	1.5	47.1	0	48.5	5.9	0	2.9	8.8	0	33.8	8.8	42.6	0	0	0	0	

	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	**6**	0	**6**	1	0	0	1	0	3	0	3	0	0	0	0	10
04:45 PM	**1**	3	0	4	0	0	**1**	1	0	2	**1**	3	0	0	0	0	8
05:00 PM	0	4	0	4	**2**	0	0	**2**	0	4	1	**5**	0	0	0	0	**11**
05:15 PM	0	0	0	0	1	0	0	1	0	**5**	0	5	0	0	0	0	6
Total Volume	1	13	0	14	4	0	1	5	0	14	2	16	0	0	0	0	35
% App. Total	7.1	92.9	0		80	0	20		0	87.5	12.5		0	0	0		
PHF	.250	.542	.000	.583	.500	.000	.250	.625	.000	.700	.500	.800	.000	.000	.000	.000	.795

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	**6**	0	**6**	1	0	0	1	0	3	0	3	0	0	0	0
+15 mins.	**1**	3	0	4	0	0	**1**	1	0	2	**1**	3	0	0	0	0
+30 mins.	0	4	0	4	**2**	0	0	**2**	0	4	1	**5**	0	0	0	0
+45 mins.	0	0	0	0	1	0	0	1	0	**5**	0	5	0	0	0	0
Total Volume	1	13	0	14	4	0	1	5	0	14	2	16	0	0	0	0
% App. Total	7.1	92.9	0		80	0	20		0	87.5	12.5		0	0	0	
PHF	.250	.542	.000	.583	.500	.000	.250	.625	.000	.700	.500	.800	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

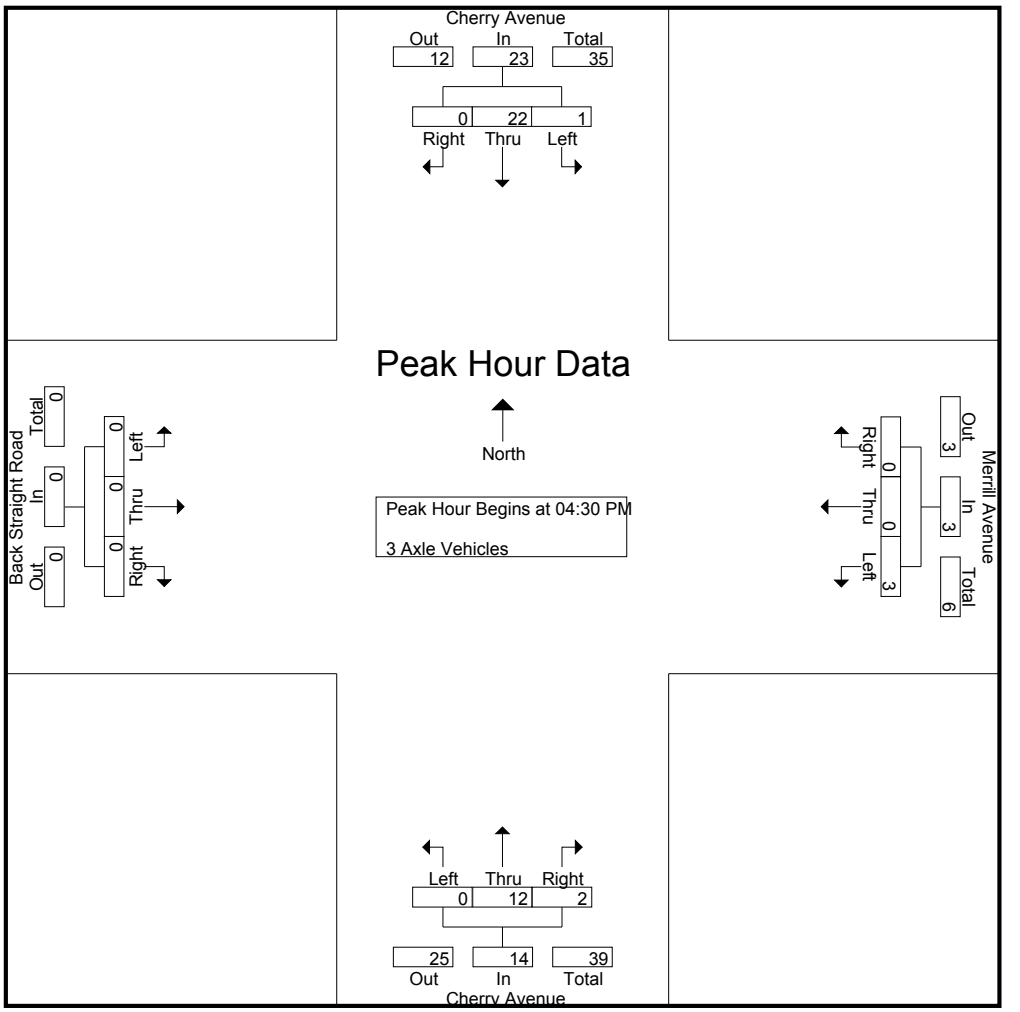
	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	7	0	7	0	0	0	0	0	7	0	7	0	0	0	0	14
04:15 PM	0	8	0	8	2	0	0	2	0	5	1	6	0	0	0	0	16
04:30 PM	1	7	0	8	0	0	0	0	0	1	0	1	0	0	0	0	9
04:45 PM	0	4	0	4	2	0	0	2	0	3	1	4	0	0	0	0	10
Total	1	26	0	27	4	0	0	4	0	16	2	18	0	0	0	0	49
05:00 PM	0	6	0	6	0	0	0	0	0	3	1	4	0	0	0	0	10
05:15 PM	0	5	0	5	1	0	0	1	0	5	0	5	0	0	0	0	11
05:30 PM	0	2	0	2	0	0	0	0	0	4	2	6	0	0	0	0	8
05:45 PM	0	3	0	3	1	0	1	2	0	3	0	3	0	0	0	0	8
Total	0	16	0	16	2	0	1	3	0	15	3	18	0	0	0	0	37
Grand Total	1	42	0	43	6	0	1	7	0	31	5	36	0	0	0	0	86
Apprch %	2.3	97.7	0		85.7	0	14.3		0	86.1	13.9		0	0	0		
Total %	1.2	48.8	0	50	7	0	1.2	8.1	0	36	5.8	41.9	0	0	0	0	

	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**1**	**7**	0	**8**	0	0	0	0	0	1	0	1	0	0	0	0	9
04:45 PM	0	4	0	4	**2**	0	0	**2**	0	3	**1**	4	0	0	0	0	10
05:00 PM	0	6	0	6	0	0	0	0	0	3	1	4	0	0	0	0	10
05:15 PM	0	5	0	5	1	0	0	1	0	**5**	0	**5**	0	0	0	0	**11**
Total Volume	1	22	0	23	3	0	0	3	0	12	2	14	0	0	0	0	40
% App. Total	4.3	95.7	0		100	0	0		0	85.7	14.3		0	0	0		
PHF	.250	.786	.000	.719	.375	.000	.000	.375	.000	.600	.500	.700	.000	.000	.000	.000	.909

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	**1**	**7**	0	**8**	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	4	0	4	**2**	0	0	**2**	0	3	**1**	4	0	0	0	0
+30 mins.	0	6	0	6	0	0	0	0	0	3	1	4	0	0	0	0
+45 mins.	0	5	0	5	1	0	0	1	0	**5**	0	**5**	0	0	0	0
Total Volume	1	22	0	23	3	0	0	3	0	12	2	14	0	0	0	0
% App. Total	4.3	95.7	0		100	0	0		0	85.7	14.3		0	0	0	
PHF	.250	.786	.000	.719	.375	.000	.000	.375	.000	.600	.500	.700	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

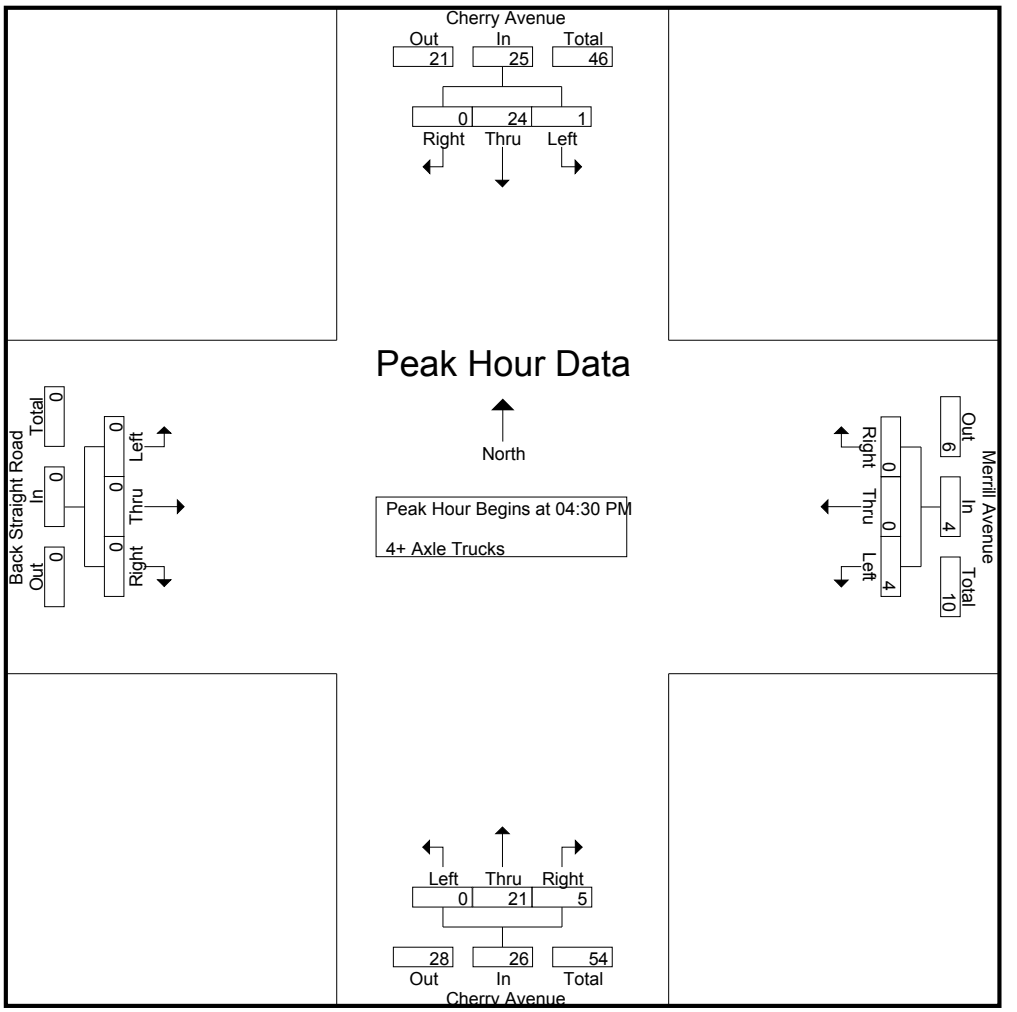
	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	7	0	7	0	0	0	0	0	9	1	10	0	0	0	0	17
04:15 PM	0	7	0	7	1	0	0	1	0	11	1	12	0	0	0	0	20
04:30 PM	1	9	0	10	0	0	0	0	0	8	3	11	0	0	0	0	21
04:45 PM	0	4	0	4	1	0	0	1	0	6	1	7	0	0	0	0	12
Total	1	27	0	28	2	0	0	2	0	34	6	40	0	0	0	0	70
05:00 PM	0	4	0	4	1	0	0	1	0	3	0	3	0	0	0	0	8
05:15 PM	0	7	0	7	2	0	0	2	0	4	1	5	0	0	0	0	14
05:30 PM	0	5	0	5	0	0	0	0	0	5	1	6	0	0	0	0	11
05:45 PM	0	4	0	4	1	0	0	1	0	7	1	8	0	0	0	0	13
Total	0	20	0	20	4	0	0	4	0	19	3	22	0	0	0	0	46
Grand Total	1	47	0	48	6	0	0	6	0	53	9	62	0	0	0	0	116
Apprch %	2.1	97.9	0		100	0	0		0	85.5	14.5		0	0	0		
Total %	0.9	40.5	0	41.4	5.2	0	0	5.2	0	45.7	7.8	53.4	0	0	0	0	

	Cherry Avenue Southbound				Merrill Avenue Westbound				Cherry Avenue Northbound				Back Straight Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**1**	**9**	0	**10**	0	0	0	0	0	**8**	**3**	**11**	0	0	0	0	**21**
04:45 PM	0	4	0	4	1	0	0	1	0	6	1	7	0	0	0	0	12
05:00 PM	0	4	0	4	1	0	0	1	0	3	0	3	0	0	0	0	8
05:15 PM	0	7	0	7	**2**	0	0	**2**	0	4	1	5	0	0	0	0	14
Total Volume	1	24	0	25	4	0	0	4	0	21	5	26	0	0	0	0	55
% App. Total	4	96	0		100	0	0		0	80.8	19.2		0	0	0		
PHF	.250	.667	.000	.625	.500	.000	.000	.500	.000	.656	.417	.591	.000	.000	.000	.000	.655

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue
Weather: Clear

File Name : FONCHMEPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	**1**	**9**	0	**10**	0	0	0	0	0	**8**	**3**	**11**	0	0	0	0
+15 mins.	0	4	0	4	1	0	0	1	0	6	1	7	0	0	0	0
+30 mins.	0	4	0	4	1	0	0	1	0	3	0	3	0	0	0	0
+45 mins.	0	7	0	7	**2**	0	0	**2**	0	4	1	5	0	0	0	0
Total Volume	1	24	0	25	4	0	0	4	0	21	5	26	0	0	0	0
% App. Total	4	96	0		100	0	0		0	80.8	19.2		0	0	0	
PHF	.250	.667	.000	.625	.500	.000	.000	.500	.000	.656	.417	.591	.000	.000	.000	.000

Location: Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue

Site Code: 201-16023
Date: 1/12/2016
Weather: Clear

PEDESTRIANS

	North Leg Cherry Avenue	East Leg Merrill Avenue	South Leg Cherry Avenue	West Leg Back Straight Road	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg Cherry Avenue	East Leg Merrill Avenue	South Leg Cherry Avenue	West Leg Back Straight Road	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	1	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	1	0	0	1
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	2	0	0	2

Location: Fontana
N/S: Cherry Avenue
E/W: Merrill Avenue

Site Code: 201-16023
Date: 1/12/2016
Weather: Clear

BICYCLES

	North Leg Cherry Avenue	East Leg Merrill Avenue	South Leg Cherry Avenue	West Leg Back Straight Road	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg Cherry Avenue	East Leg Merrill Avenue	South Leg Cherry Avenue	West Leg Back Straight Road	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

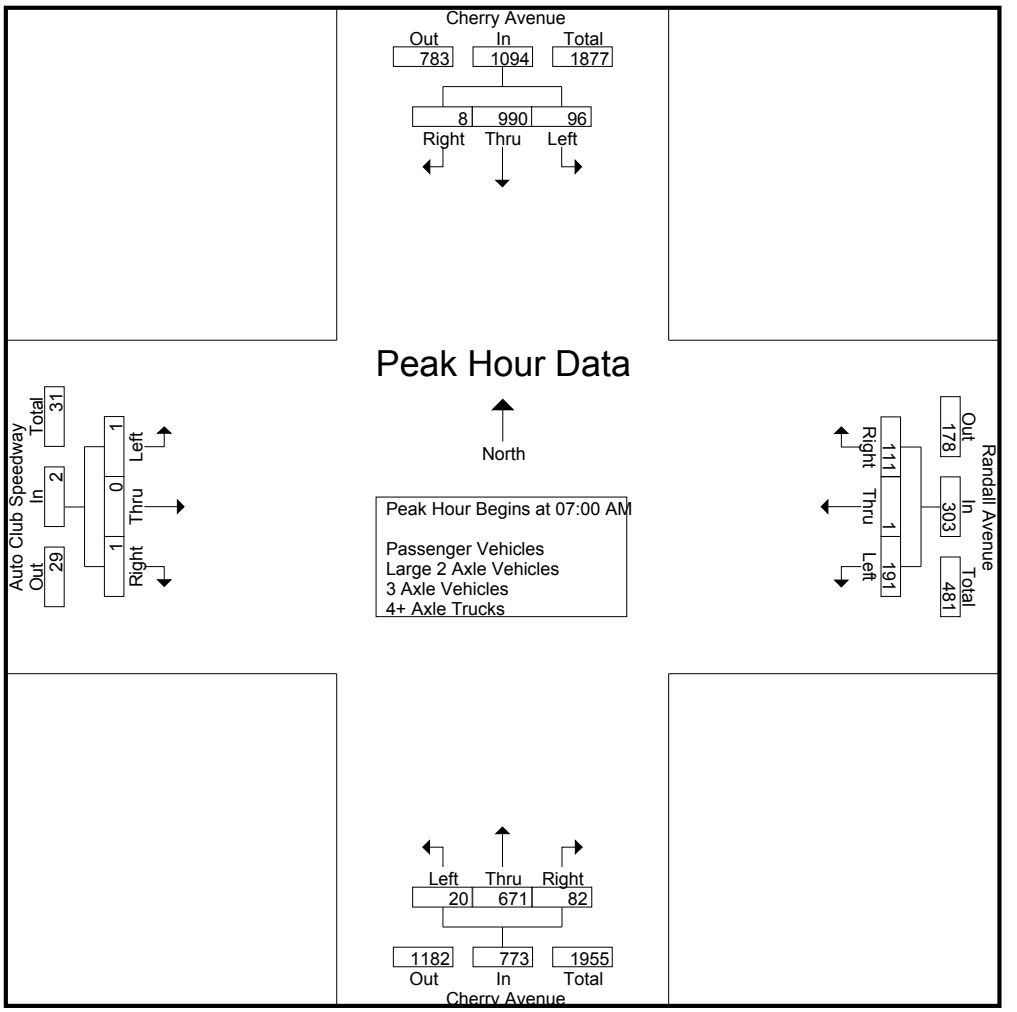
	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	35	212	1	248	61	0	24	85	3	164	18	185	1	0	0	1	519
07:15 AM	35	244	1	280	64	1	27	92	2	164	23	189	0	0	1	1	562
07:30 AM	14	260	1	275	35	0	32	67	4	167	30	201	0	0	0	0	543
07:45 AM	12	274	5	291	31	0	28	59	11	176	11	198	0	0	0	0	548
Total	96	990	8	1094	191	1	111	303	20	671	82	773	1	0	1	2	2172
08:00 AM	19	265	5	289	25	0	20	45	14	150	10	174	1	0	2	3	511
08:15 AM	24	185	1	210	24	0	15	39	9	159	19	187	0	0	5	5	441
08:30 AM	16	189	1	206	19	0	8	27	7	142	15	164	1	0	0	1	398
08:45 AM	14	156	1	171	13	0	14	27	5	128	12	145	0	1	1	2	345
Total	73	795	8	876	81	0	57	138	35	579	56	670	2	1	8	11	1695
Grand Total	169	1785	16	1970	272	1	168	441	55	1250	138	1443	3	1	9	13	3867
Apprch %	8.6	90.6	0.8		61.7	0.2	38.1		3.8	86.6	9.6		23.1	7.7	69.2		
Total %	4.4	46.2	0.4	50.9	7	0	4.3	11.4	1.4	32.3	3.6	37.3	0.1	0	0.2	0.3	
Passenger Vehicles	161	1561	16	1738	259	0	162	421	49	1077	124	1250	3	1	6	10	3419
% Passenger Vehicles	95.3	87.5	100	88.2	95.2	0	96.4	95.5	89.1	86.2	89.9	86.6	100	100	66.7	76.9	88.4
Large 2 Axle Vehicles	7	90	0	97	8	0	6	14	3	65	10	78	0	0	1	1	190
% Large 2 Axle Vehicles	4.1	5	0	4.9	2.9	0	3.6	3.2	5.5	5.2	7.2	5.4	0	0	11.1	7.7	4.9
3 Axle Vehicles	1	35	0	36	4	0	0	4	2	31	2	35	0	0	0	0	75
% 3 Axle Vehicles	0.6	2	0	1.8	1.5	0	0	0.9	3.6	2.5	1.4	2.4	0	0	0	0	1.9
4+ Axle Trucks	0	99	0	99	1	1	0	2	1	77	2	80	0	0	2	2	183
% 4+ Axle Trucks	0	5.5	0	5	0.4	100	0	0.5	1.8	6.2	1.4	5.5	0	0	22.2	15.4	4.7

	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**35**	212	1	248	61	0	24	85	3	164	18	185	**1**	0	0	**1**	519
07:15 AM	35	244	1	280	**64**	**1**	27	**92**	2	164	23	189	0	0	**1**	1	**562**
07:30 AM	14	260	1	275	35	0	**32**	67	4	167	**30**	**201**	0	0	0	0	543
07:45 AM	12	**274**	**5**	**291**	31	0	28	59	**11**	**176**	11	198	0	0	0	0	548
Total Volume	96	990	8	1094	191	1	111	303	20	671	82	773	1	0	1	2	2172
% App. Total	8.8	90.5	0.7		63	0.3	36.6		2.6	86.8	10.6		50	0	50		
PHF	.686	.903	.400	.940	.746	.250	.867	.823	.455	.953	.683	.961	.250	.000	.250	.500	.966

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:00 AM				08:00 AM			
+0 mins.	**35**	244	1	280	61	0	24	85	3	164	18	185	**1**	0	2	3
+15 mins.	14	260	1	275	**64**	**1**	27	**92**	2	164	23	189	0	0	**5**	**5**
+30 mins.	12	**274**	**5**	**291**	35	0	**32**	67	4	167	**30**	**201**	1	0	0	1
+45 mins.	19	265	5	289	31	0	28	59	**11**	**176**	11	198	0	**1**	1	2
Total Volume	80	1043	12	1135	191	1	111	303	20	671	82	773	2	1	8	11
% App. Total	7	91.9	1.1		63	0.3	36.6		2.6	86.8	10.6		18.2	9.1	72.7	
PHF	.571	.952	.600	.975	.746	.250	.867	.823	.455	.953	.683	.961	.500	.250	.400	.550

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles

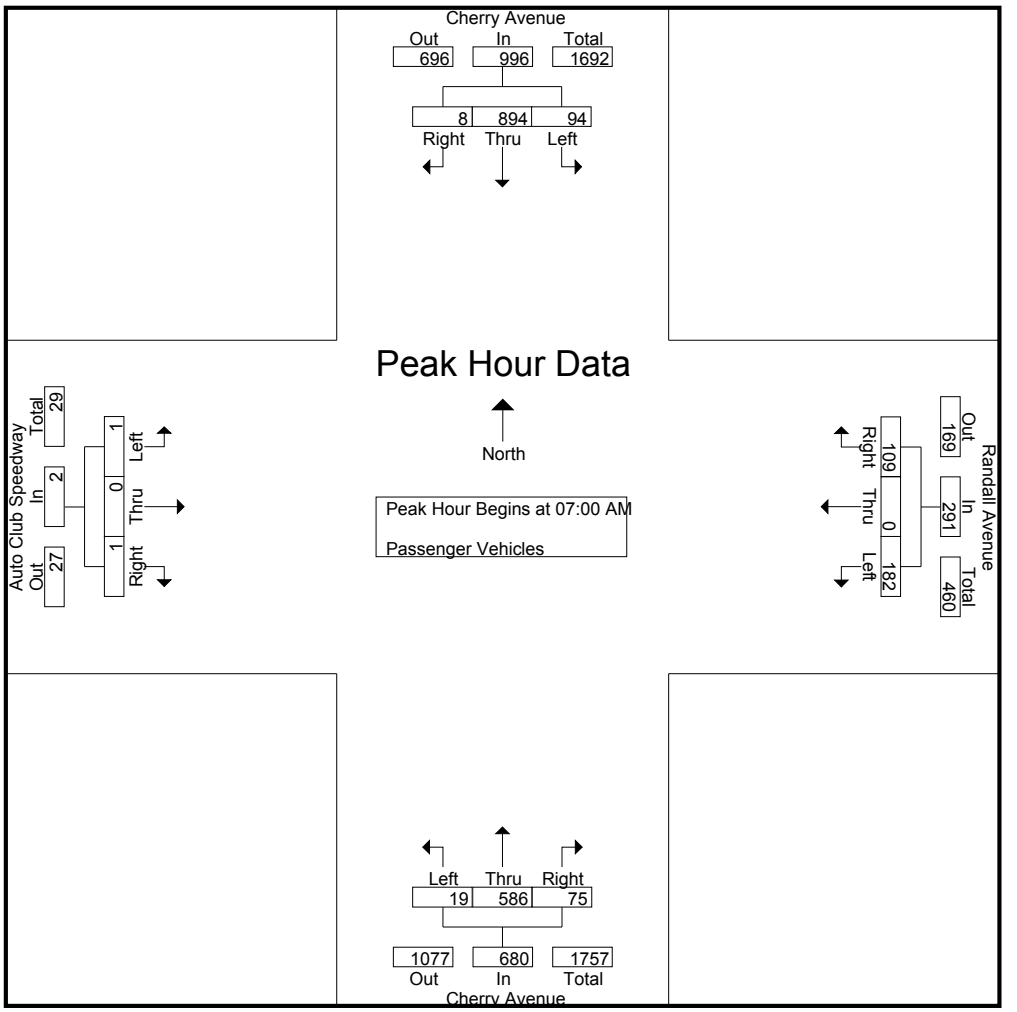
	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	35	198	1	234	60	0	24	84	3	141	16	160	1	0	0	1	479
07:15 AM	33	222	1	256	63	0	27	90	2	141	22	165	0	0	1	1	512
07:30 AM	14	229	1	244	30	0	31	61	4	145	26	175	0	0	0	0	480
07:45 AM	12	245	5	262	29	0	27	56	10	159	11	180	0	0	0	0	498
Total	94	894	8	996	182	0	109	291	19	586	75	680	1	0	1	2	1969
08:00 AM	17	228	5	250	24	0	18	42	14	135	9	158	1	0	0	1	451
08:15 AM	22	152	1	175	23	0	14	37	6	138	16	160	0	0	4	4	376
08:30 AM	15	158	1	174	17	0	7	24	5	114	13	132	1	0	0	1	331
08:45 AM	13	129	1	143	13	0	14	27	5	104	11	120	0	1	1	2	292
Total	67	667	8	742	77	0	53	130	30	491	49	570	2	1	5	8	1450
Grand Total	161	1561	16	1738	259	0	162	421	49	1077	124	1250	3	1	6	10	3419
Apprch %	9.3	89.8	0.9		61.5	0	38.5		3.9	86.2	9.9		30	10	60		
Total %	4.7	45.7	0.5	50.8	7.6	0	4.7	12.3	1.4	31.5	3.6	36.6	0.1	0	0.2	0.3	

	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**35**	198	1	234	60	0	24	84	3	141	16	160	**1**	0	0	**1**	479
07:15 AM	33	222	1	256	**63**	0	27	**90**	2	141	22	165	0	0	**1**	1	**512**
07:30 AM	14	229	1	244	30	0	**31**	61	4	145	**26**	175	0	0	0	0	480
07:45 AM	12	**245**	**5**	**262**	29	0	27	56	**10**	**159**	11	**180**	0	0	0	0	498
Total Volume	94	894	8	996	182	0	109	291	19	586	75	680	1	0	1	2	1969
% App. Total	9.4	89.8	0.8		62.5	0	37.5		2.8	86.2	11		50	0	50		
PHF	.671	.912	.400	.950	.722	.000	.879	.808	.475	.921	.721	.944	.250	.000	.250	.500	.961

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	**35**	198	1	234	60	0	24	84	3	141	16	160	**1**	0	0	**1**
+15 mins.	33	222	1	256	**63**	0	27	**90**	2	141	22	165	0	0	**1**	1
+30 mins.	14	229	1	244	30	0	**31**	61	4	145	**26**	175	0	0	0	0
+45 mins.	12	**245**	**5**	**262**	29	0	27	56	**10**	**159**	11	**180**	0	0	0	0
Total Volume	94	894	8	996	182	0	109	291	19	586	75	680	1	0	1	2
% App. Total	9.4	89.8	0.8		62.5	0	37.5		2.8	86.2	11		50	0	50	
PHF	.671	.912	.400	.950	.722	.000	.879	.808	.475	.921	.721	.944	.250	.000	.250	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

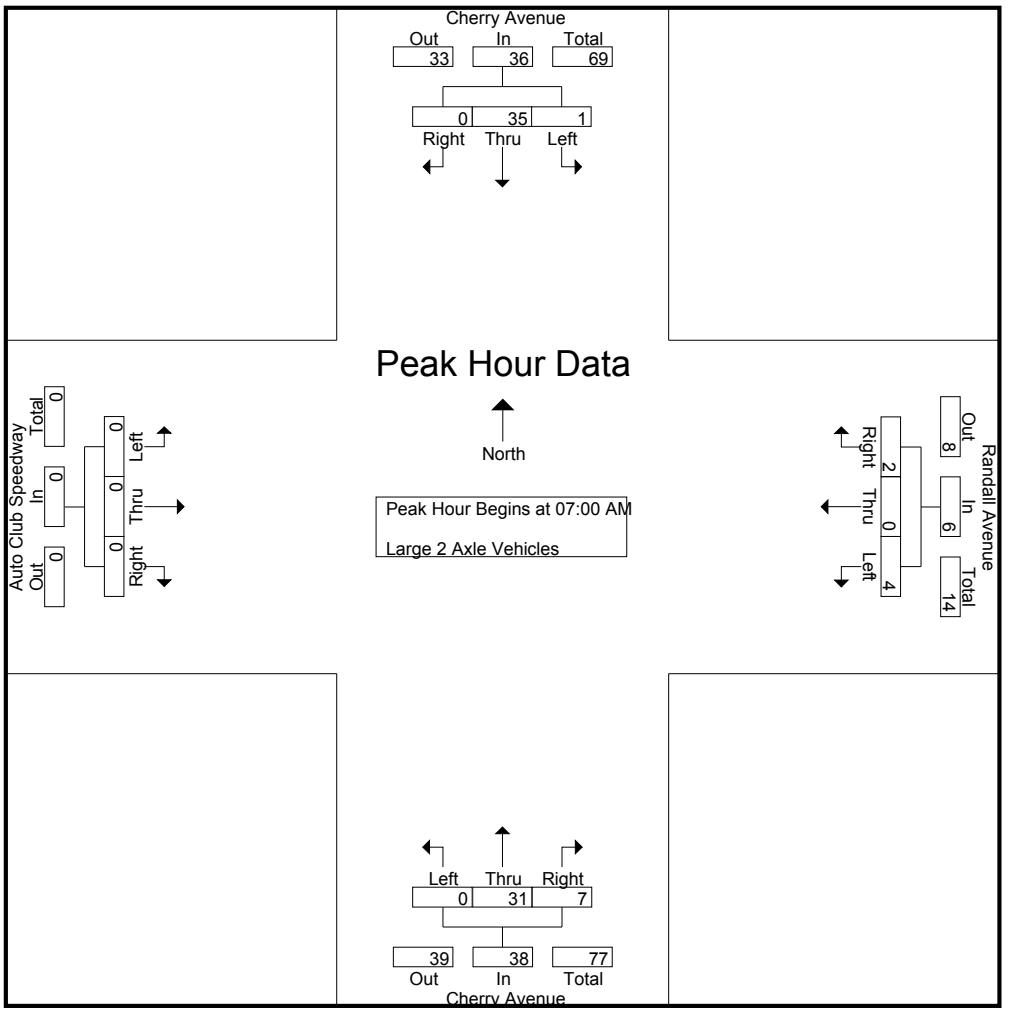
	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	5	0	5	0	0	0	0	0	9	2	11	0	0	0	0	16
07:15 AM	1	6	0	7	1	0	0	1	0	10	1	11	0	0	0	0	19
07:30 AM	0	10	0	10	2	0	1	3	0	7	4	11	0	0	0	0	24
07:45 AM	0	14	0	14	1	0	1	2	0	5	0	5	0	0	0	0	21
Total	1	35	0	36	4	0	2	6	0	31	7	38	0	0	0	0	80
08:00 AM	2	12	0	14	1	0	2	3	0	5	1	6	0	0	0	0	23
08:15 AM	2	18	0	20	1	0	1	2	2	6	0	8	0	0	1	1	31
08:30 AM	1	13	0	14	2	0	1	3	1	13	1	15	0	0	0	0	32
08:45 AM	1	12	0	13	0	0	0	0	0	10	1	11	0	0	0	0	24
Total	6	55	0	61	4	0	4	8	3	34	3	40	0	0	1	1	110
Grand Total	7	90	0	97	8	0	6	14	3	65	10	78	0	0	1	1	190
Apprch %	7.2	92.8	0		57.1	0	42.9		3.8	83.3	12.8		0	0	100		
Total %	3.7	47.4	0	51.1	4.2	0	3.2	7.4	1.6	34.2	5.3	41.1	0	0	0.5	0.5	

	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	5	0	5	0	0	0	0	0	9	2	**11**	0	0	0	0	16
07:15 AM	**1**	6	0	7	1	0	0	1	0	**10**	1	11	0	0	0	0	19
07:30 AM	0	10	0	10	**2**	0	**1**	**3**	0	7	**4**	11	0	0	0	0	**24**
07:45 AM	0	**14**	0	**14**	1	0	1	2	0	5	0	5	0	0	0	0	21
Total Volume	1	35	0	36	4	0	2	6	0	31	7	38	0	0	0	0	80
% App. Total	2.8	97.2	0		66.7	0	33.3		0	81.6	18.4		0	0	0		
PHF	.250	.625	.000	.643	.500	.000	.500	.500	.000	.775	.438	.864	.000	.000	.000	.000	.833

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	5	0	5	0	0	0	0	0	9	2	**11**	0	0	0	0
+15 mins.	**1**	6	0	7	1	0	0	1	0	**10**	1	11	0	0	0	0
+30 mins.	0	10	0	10	**2**	0	**1**	**3**	0	7	**4**	11	0	0	0	0
+45 mins.	0	**14**	0	**14**	1	0	1	2	0	5	0	5	0	0	0	0
Total Volume	1	35	0	36	4	0	2	6	0	31	7	38	0	0	0	0
% App. Total	2.8	97.2	0		66.7	0	33.3		0	81.6	18.4		0	0	0	
PHF	.250	.625	.000	.643	.500	.000	.500	.500	.000	.775	.438	.864	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

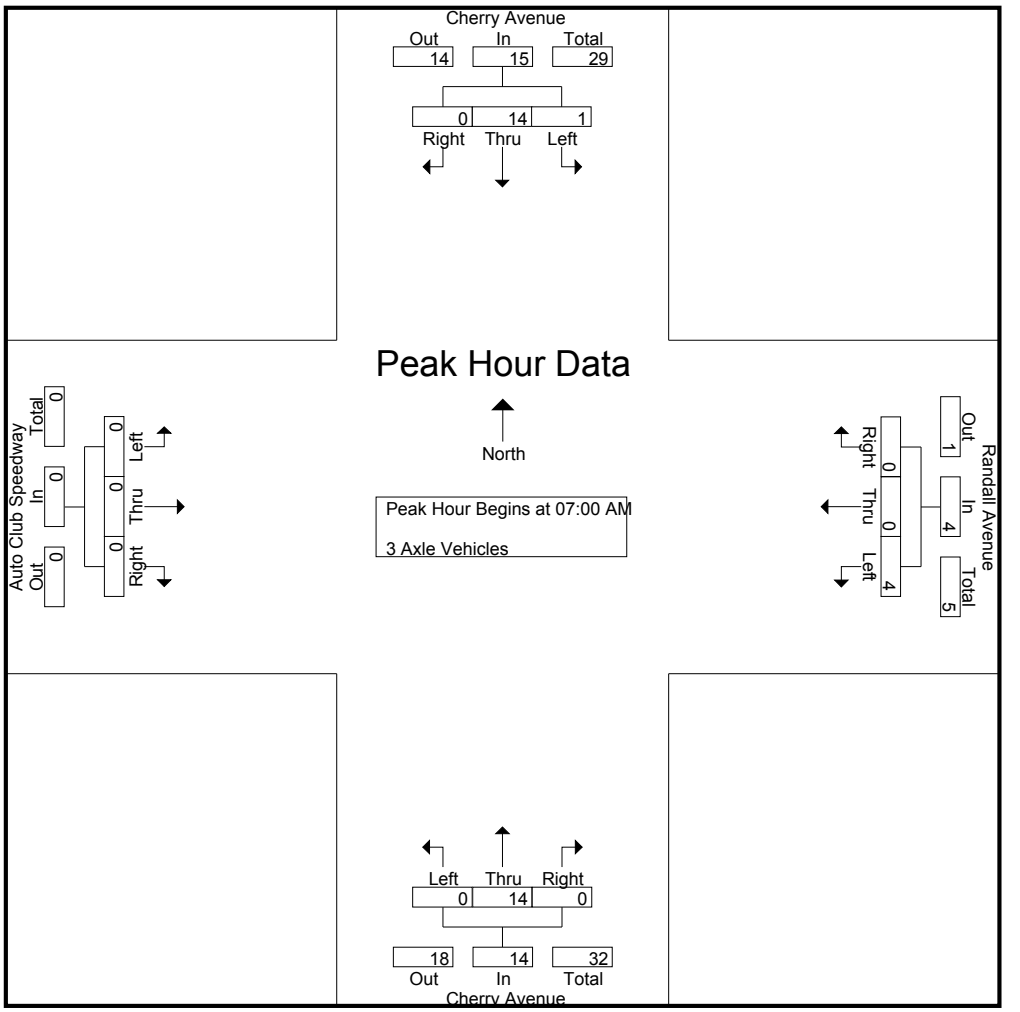
	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	1	0	0	1	0	2	0	2	0	0	0	0	4
07:15 AM	1	4	0	5	0	0	0	0	0	4	0	4	0	0	0	0	9
07:30 AM	0	5	0	5	2	0	0	2	0	3	0	3	0	0	0	0	10
07:45 AM	0	4	0	4	1	0	0	1	0	5	0	5	0	0	0	0	10
Total	1	14	0	15	4	0	0	4	0	14	0	14	0	0	0	0	33
08:00 AM	0	5	0	5	0	0	0	0	0	5	0	5	0	0	0	0	10
08:15 AM	0	5	0	5	0	0	0	0	1	4	2	7	0	0	0	0	12
08:30 AM	0	7	0	7	0	0	0	0	1	7	0	8	0	0	0	0	15
08:45 AM	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0	5
Total	0	21	0	21	0	0	0	0	2	17	2	21	0	0	0	0	42
Grand Total	1	35	0	36	4	0	0	4	2	31	2	35	0	0	0	0	75
Apprch %	2.8	97.2	0		100	0	0		5.7	88.6	5.7		0	0	0		
Total %	1.3	46.7	0	48	5.3	0	0	5.3	2.7	41.3	2.7	46.7	0	0	0	0	

	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	1	0	1	1	0	0	1	0	2	0	2	0	0	0	0	4
07:15 AM	**1**	4	0	**5**	0	0	0	0	0	4	0	4	0	0	0	0	9
07:30 AM	0	**5**	0	5	**2**	0	0	**2**	0	3	0	3	0	0	0	0	**10**
07:45 AM	0	4	0	4	1	0	0	1	0	**5**	0	**5**	0	0	0	0	10
Total Volume	1	14	0	15	4	0	0	4	0	14	0	14	0	0	0	0	33
% App. Total	6.7	93.3	0		100	0	0		0	100	0		0	0	0		
PHF	.250	.700	.000	.750	.500	.000	.000	.500	.000	.700	.000	.700	.000	.000	.000	.000	.825

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	1	0	1	1	0	0	1	0	2	0	2	0	0	0	0
+15 mins.	**1**	4	0	**5**	0	0	0	0	0	4	0	4	0	0	0	0
+30 mins.	0	**5**	0	5	**2**	0	0	**2**	0	3	0	3	0	0	0	0
+45 mins.	0	4	0	4	1	0	0	1	0	**5**	0	**5**	0	0	0	0
Total Volume	1	14	0	15	4	0	0	4	0	14	0	14	0	0	0	0
% App. Total	6.7	93.3	0		100	0	0		0	100	0		0	0	0	
PHF	.250	.700	.000	.750	.500	.000	.000	.500	.000	.700	.000	.700	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

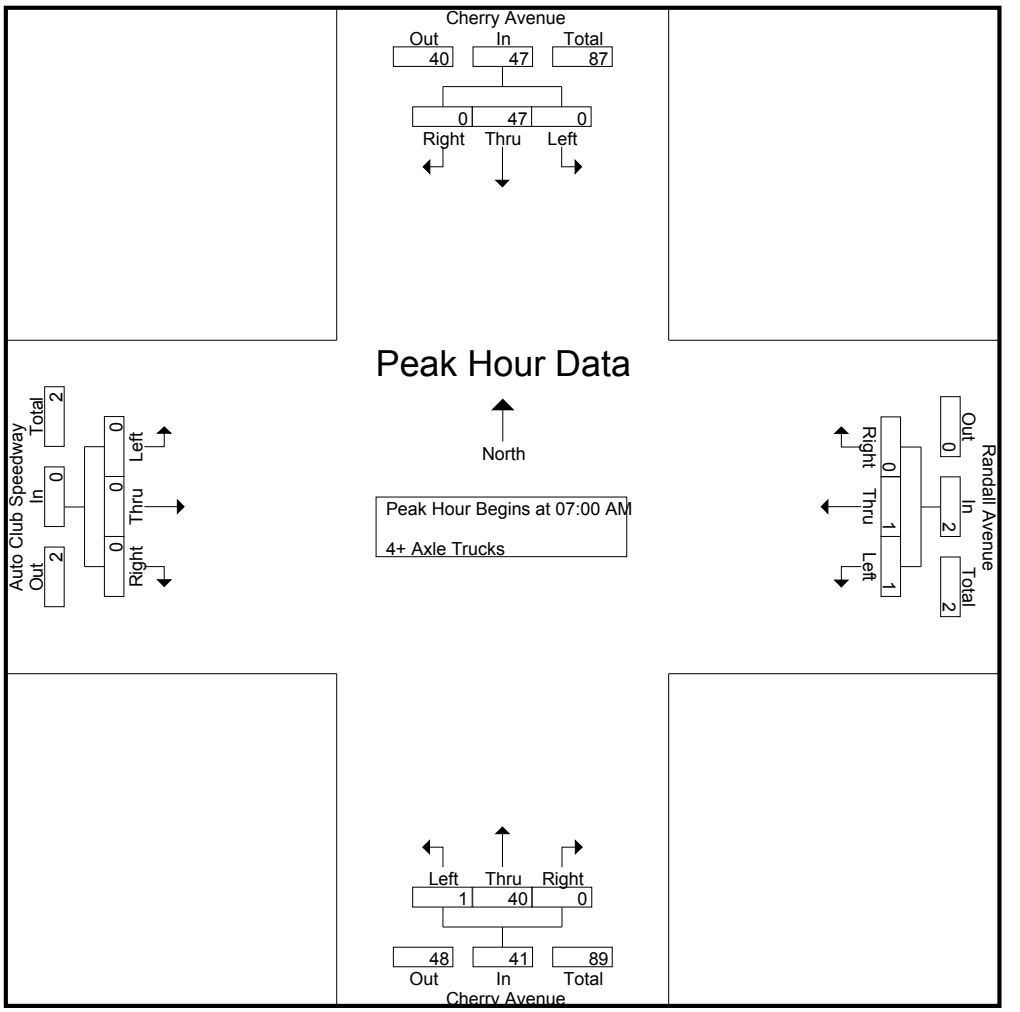
	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	8	0	8	0	0	0	0	0	12	0	12	0	0	0	0	20
07:15 AM	0	12	0	12	0	1	0	1	0	9	0	9	0	0	0	0	22
07:30 AM	0	16	0	16	1	0	0	1	0	12	0	12	0	0	0	0	29
07:45 AM	0	11	0	11	0	0	0	0	1	7	0	8	0	0	0	0	19
Total	0	47	0	47	1	1	0	2	1	40	0	41	0	0	0	0	90
08:00 AM	0	20	0	20	0	0	0	0	0	5	0	5	0	0	2	2	27
08:15 AM	0	10	0	10	0	0	0	0	0	11	1	12	0	0	0	0	22
08:30 AM	0	11	0	11	0	0	0	0	0	8	1	9	0	0	0	0	20
08:45 AM	0	11	0	11	0	0	0	0	0	13	0	13	0	0	0	0	24
Total	0	52	0	52	0	0	0	0	0	37	2	39	0	0	2	2	93
Grand Total	0	99	0	99	1	1	0	2	1	77	2	80	0	0	2	2	183
Apprch %	0	100	0		50	50	0		1.2	96.2	2.5		0	0	100		
Total %	0	54.1	0	54.1	0.5	0.5	0	1.1	0.5	42.1	1.1	43.7	0	0	1.1	1.1	

	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	8	0	8	0	0	0	0	0	**12**	0	**12**	0	0	0	0	20
07:15 AM	0	12	0	12	0	**1**	0	**1**	0	9	0	9	0	0	0	0	22
07:30 AM	0	**16**	0	**16**	**1**	0	0	1	0	12	0	12	0	0	0	0	**29**
07:45 AM	0	11	0	11	0	0	0	0	**1**	7	0	8	0	0	0	0	19
Total Volume	0	47	0	47	1	1	0	2	1	40	0	41	0	0	0	0	90
% App. Total	0	100	0		50	50	0		2.4	97.6	0		0	0	0		
PHF	.000	.734	.000	.734	.250	.250	.000	.500	.250	.833	.000	.854	.000	.000	.000	.000	.776

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	8	0	8	0	0	0	0	0	**12**	0	**12**	0	0	0	0
+15 mins.	0	12	0	12	0	**1**	0	**1**	0	9	0	9	0	0	0	0
+30 mins.	0	**16**	0	**16**	**1**	0	0	1	0	12	0	12	0	0	0	0
+45 mins.	0	11	0	11	0	0	0	0	**1**	7	0	8	0	0	0	0
Total Volume	0	47	0	47	1	1	0	2	1	40	0	41	0	0	0	0
% App. Total	0	100	0		50	50	0		2.4	97.6	0		0	0	0	
PHF	.000	.734	.000	.734	.250	.250	.000	.500	.250	.833	.000	.854	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

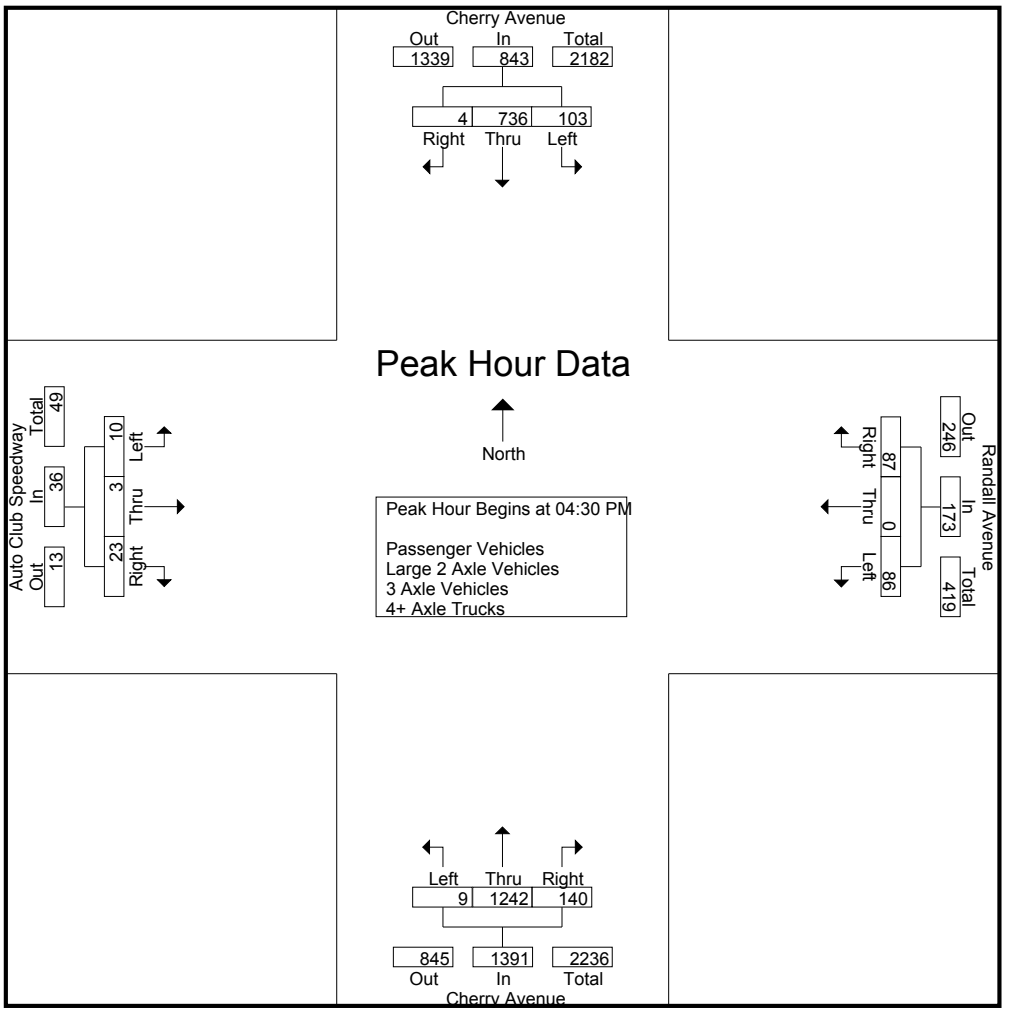
	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	22	216	0	238	24	1	18	43	4	274	38	316	2	0	2	4	601
04:15 PM	22	182	0	204	26	0	21	47	5	274	26	305	1	0	2	3	559
04:30 PM	33	223	0	256	27	0	18	45	4	262	22	288	1	0	3	4	593
04:45 PM	23	161	2	186	21	0	16	37	4	319	28	351	1	0	4	5	579
Total	100	782	2	884	98	1	73	172	17	1129	114	1260	5	0	11	16	2332
05:00 PM	23	195	1	219	20	0	33	53	0	338	42	380	4	0	12	16	668
05:15 PM	24	157	1	182	18	0	20	38	1	323	48	372	4	3	4	11	603
05:30 PM	17	143	0	160	18	0	15	33	0	325	30	355	3	0	1	4	552
05:45 PM	28	124	0	152	17	0	19	36	1	238	34	273	1	0	3	4	465
Total	92	619	2	713	73	0	87	160	2	1224	154	1380	12	3	20	35	2288
Grand Total	192	1401	4	1597	171	1	160	332	19	2353	268	2640	17	3	31	51	4620
Apprch %	12	87.7	0.3		51.5	0.3	48.2		0.7	89.1	10.2		33.3	5.9	60.8		
Total %	4.2	30.3	0.1	34.6	3.7	0	3.5	7.2	0.4	50.9	5.8	57.1	0.4	0.1	0.7	1.1	
Passenger Vehicles	184	1246	4	1434	160	1	154	315	19	2203	256	2478	15	2	31	48	4275
% Passenger Vehicles	95.8	88.9	100	89.8	93.6	100	96.2	94.9	100	93.6	95.5	93.9	88.2	66.7	100	94.1	92.5
Large 2 Axle Vehicles	2	60	0	62	4	0	5	9	0	49	6	55	2	1	0	3	129
% Large 2 Axle Vehicles	1	4.3	0	3.9	2.3	0	3.1	2.7	0	2.1	2.2	2.1	11.8	33.3	0	5.9	2.8
3 Axle Vehicles	1	44	0	45	4	0	0	4	0	40	0	40	0	0	0	0	89
% 3 Axle Vehicles	0.5	3.1	0	2.8	2.3	0	0	1.2	0	1.7	0	1.5	0	0	0	0	1.9
4+ Axle Trucks	5	51	0	56	3	0	1	4	0	61	6	67	0	0	0	0	127
% 4+ Axle Trucks	2.6	3.6	0	3.5	1.8	0	0.6	1.2	0	2.6	2.2	2.5	0	0	0	0	2.7

	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**33**	**223**	0	**256**	**27**	0	18	45	**4**	262	22	288	1	0	3	4	593
04:45 PM	23	161	**2**	186	21	0	16	37	4	319	28	351	1	0	4	5	579
05:00 PM	23	195	1	219	20	0	**33**	**53**	0	**338**	42	**380**	**4**	0	**12**	**16**	**668**
05:15 PM	24	157	1	182	18	0	20	38	1	323	**48**	372	4	**3**	4	11	603
Total Volume	103	736	4	843	86	0	87	173	9	1242	140	1391	10	3	23	36	2443
% App. Total	12.2	87.3	0.5		49.7	0	50.3		0.6	89.3	10.1		27.8	8.3	63.9		
PHF	.780	.825	.500	.823	.796	.000	.659	.816	.563	.919	.729	.915	.625	.250	.479	.563	.914

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 PM				04:45 PM				04:30 PM			
+0 mins.	22	216	0	238	26	0	21	47	**4**	319	28	351	1	0	3	4
+15 mins.	22	182	0	204	**27**	0	18	45	0	**338**	42	**380**	1	0	4	5
+30 mins.	**33**	**223**	0	**256**	21	0	16	37	1	323	**48**	372	**4**	0	**12**	**16**
+45 mins.	23	161	**2**	186	20	0	**33**	**53**	0	325	30	355	4	**3**	4	11
Total Volume	100	782	2	884	94	0	88	182	5	1305	148	1458	10	3	23	36
% App. Total	11.3	88.5	0.2		51.6	0	48.4		0.3	89.5	10.2		27.8	8.3	63.9	
PHF	.758	.877	.250	.863	.870	.000	.667	.858	.313	.965	.771	.959	.625	.250	.479	.563

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles

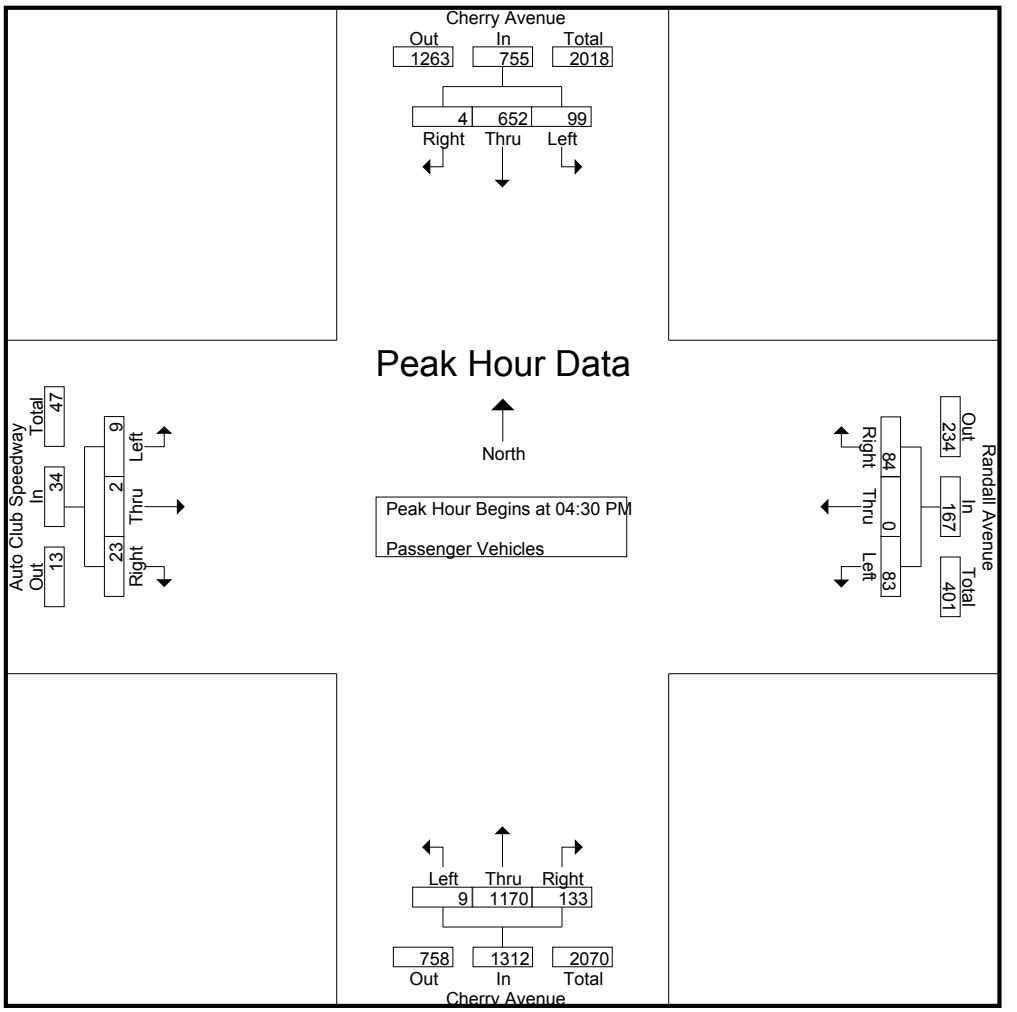
	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	21	191	0	212	18	1	18	37	4	250	37	291	2	0	2	4	544
04:15 PM	20	158	0	178	24	0	20	44	5	247	25	277	1	0	2	3	502
04:30 PM	31	192	0	223	27	0	17	44	4	240	19	263	1	0	3	4	534
04:45 PM	21	144	2	167	21	0	16	37	4	301	25	330	1	0	4	5	539
Total	93	685	2	780	90	1	71	162	17	1038	106	1161	5	0	11	16	2119
05:00 PM	23	174	1	198	18	0	31	49	0	317	41	358	4	0	12	16	621
05:15 PM	24	142	1	167	17	0	20	37	1	312	48	361	3	2	4	9	574
05:30 PM	17	132	0	149	18	0	15	33	0	310	28	338	3	0	1	4	524
05:45 PM	27	113	0	140	17	0	17	34	1	226	33	260	0	0	3	3	437
Total	91	561	2	654	70	0	83	153	2	1165	150	1317	10	2	20	32	2156
Grand Total	184	1246	4	1434	160	1	154	315	19	2203	256	2478	15	2	31	48	4275
Apprch %	12.8	86.9	0.3		50.8	0.3	48.9		0.8	88.9	10.3		31.2	4.2	64.6		
Total %	4.3	29.1	0.1	33.5	3.7	0	3.6	7.4	0.4	51.5	6	58	0.4	0	0.7	1.1	

	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**31**	**192**	0	**223**	**27**	0	17	44	**4**	240	19	263	1	0	3	4	534
04:45 PM	21	144	**2**	167	21	0	16	37	4	301	25	330	1	0	4	5	539
05:00 PM	23	174	1	198	18	0	**31**	**49**	0	**317**	41	358	**4**	0	**12**	**16**	**621**
05:15 PM	24	142	1	167	17	0	20	37	1	312	**48**	**361**	3	**2**	4	9	574
Total Volume	99	652	4	755	83	0	84	167	9	1170	133	1312	9	2	23	34	2268
% App. Total	13.1	86.4	0.5		49.7	0	50.3		0.7	89.2	10.1		26.5	5.9	67.6		
PHF	.798	.849	.500	.846	.769	.000	.677	.852	.563	.923	.693	.909	.563	.250	.479	.531	.913

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	**31**	**192**	0	**223**	**27**	0	17	44	**4**	240	19	263	1	0	3	4
+15 mins.	21	144	**2**	167	21	0	16	37	4	301	25	330	1	0	4	5
+30 mins.	23	174	1	198	18	0	**31**	**49**	0	**317**	41	358	**4**	0	**12**	**16**
+45 mins.	24	142	1	167	17	0	20	37	1	312	**48**	**361**	3	**2**	4	9
Total Volume	99	652	4	755	83	0	84	167	9	1170	133	1312	9	2	23	34
% App. Total	13.1	86.4	0.5		49.7	0	50.3		0.7	89.2	10.1		26.5	5.9	67.6	
PHF	.798	.849	.500	.846	.769	.000	.677	.852	.563	.923	.693	.909	.563	.250	.479	.531

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

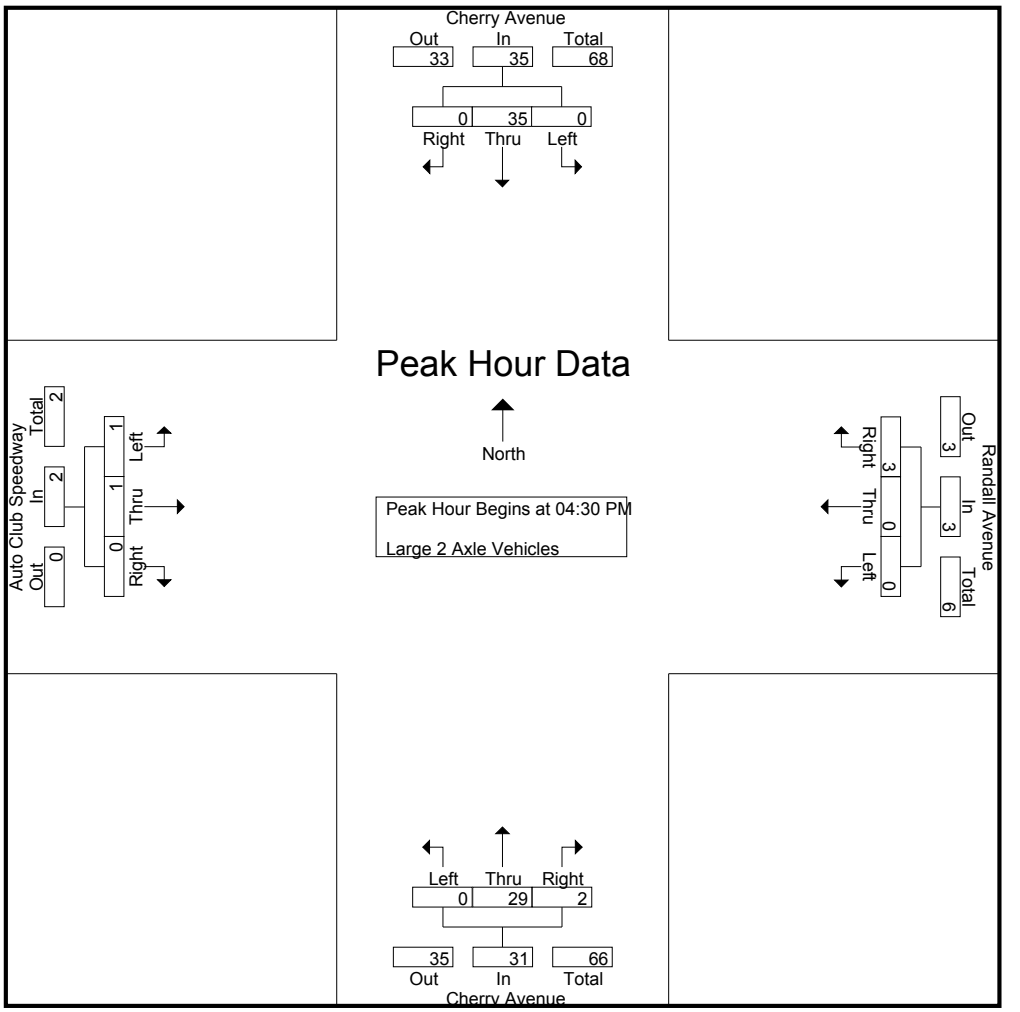
	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	12	0	12	4	0	0	4	0	8	1	9	0	0	0	0	25
04:15 PM	1	9	0	10	0	0	1	1	0	8	0	8	0	0	0	0	19
04:30 PM	0	16	0	16	0	0	1	1	0	8	1	9	0	0	0	0	26
04:45 PM	0	7	0	7	0	0	0	0	0	8	1	9	0	0	0	0	16
Total	1	44	0	45	4	0	2	6	0	32	3	35	0	0	0	0	86
05:00 PM	0	10	0	10	0	0	2	2	0	10	0	10	0	0	0	0	22
05:15 PM	0	2	0	2	0	0	0	0	0	3	0	3	1	1	0	2	7
05:30 PM	0	2	0	2	0	0	0	0	0	3	2	5	0	0	0	0	7
05:45 PM	1	2	0	3	0	0	1	1	0	1	1	2	1	0	0	1	7
Total	1	16	0	17	0	0	3	3	0	17	3	20	2	1	0	3	43
Grand Total	2	60	0	62	4	0	5	9	0	49	6	55	2	1	0	3	129
Apprch %	3.2	96.8	0		44.4	0	55.6		0	89.1	10.9		66.7	33.3	0		
Total %	1.6	46.5	0	48.1	3.1	0	3.9	7	0	38	4.7	42.6	1.6	0.8	0	2.3	

	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	**16**	0	**16**	0	0	1	1	0	8	**1**	9	0	0	0	0	**26**
04:45 PM	0	7	0	7	0	0	0	0	0	8	1	9	0	0	0	0	16
05:00 PM	0	10	0	10	0	0	**2**	**2**	0	**10**	0	**10**	0	0	0	0	22
05:15 PM	0	2	0	2	0	0	0	0	0	3	0	3	**1**	**1**	0	**2**	7
Total Volume	0	35	0	35	0	0	3	3	0	29	2	31	1	1	0	2	71
% App. Total	0	100	0		0	0	100		0	93.5	6.5		50	50	0		
PHF	.000	.547	.000	.547	.000	.000	.375	.375	.000	.725	.500	.775	.250	.250	.000	.250	.683

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	**16**	0	**16**	0	0	1	1	0	8	**1**	9	0	0	0	0
+15 mins.	0	7	0	7	0	0	0	0	0	8	1	9	0	0	0	0
+30 mins.	0	10	0	10	0	0	**2**	**2**	0	**10**	0	**10**	0	0	0	0
+45 mins.	0	2	0	2	0	0	0	0	0	3	0	3	**1**	**1**	0	**2**
Total Volume	0	35	0	35	0	0	3	3	0	29	2	31	1	1	0	2
% App. Total	0	100	0		0	0	100		0	93.5	6.5		50	50	0	
PHF	.000	.547	.000	.547	.000	.000	.375	.375	.000	.725	.500	.775	.250	.250	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

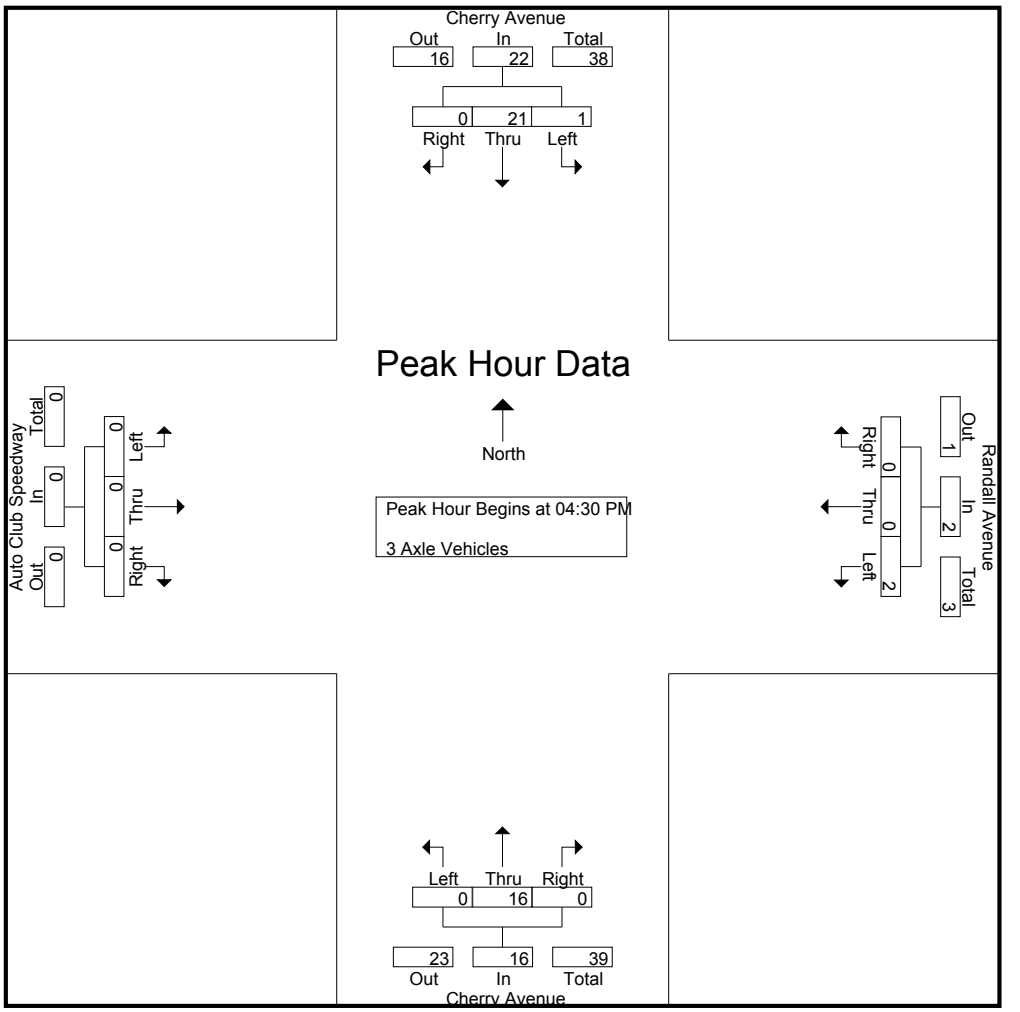
	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	7	0	7	1	0	0	1	0	5	0	5	0	0	0	0	13
04:15 PM	0	9	0	9	1	0	0	1	0	8	0	8	0	0	0	0	18
04:30 PM	1	6	0	7	0	0	0	0	0	3	0	3	0	0	0	0	10
04:45 PM	0	5	0	5	0	0	0	0	0	4	0	4	0	0	0	0	9
Total	1	27	0	28	2	0	0	2	0	20	0	20	0	0	0	0	50
05:00 PM	0	7	0	7	1	0	0	1	0	6	0	6	0	0	0	0	14
05:15 PM	0	3	0	3	1	0	0	1	0	3	0	3	0	0	0	0	7
05:30 PM	0	3	0	3	0	0	0	0	0	7	0	7	0	0	0	0	10
05:45 PM	0	4	0	4	0	0	0	0	0	4	0	4	0	0	0	0	8
Total	0	17	0	17	2	0	0	2	0	20	0	20	0	0	0	0	39
Grand Total	1	44	0	45	4	0	0	4	0	40	0	40	0	0	0	0	89
Apprch %	2.2	97.8	0		100	0	0		0	100	0		0	0	0		
Total %	1.1	49.4	0	50.6	4.5	0	0	4.5	0	44.9	0	44.9	0	0	0	0	

	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**1**	6	0	**7**	0	0	0	0	0	3	0	3	0	0	0	0	10
04:45 PM	0	5	0	5	0	0	0	0	0	4	0	4	0	0	0	0	9
05:00 PM	0	**7**	0	7	**1**	0	0	**1**	0	**6**	0	**6**	0	0	0	0	**14**
05:15 PM	0	3	0	3	1	0	0	1	0	3	0	3	0	0	0	0	7
Total Volume	1	21	0	22	2	0	0	2	0	16	0	16	0	0	0	0	40
% App. Total	4.5	95.5	0		100	0	0		0	100	0		0	0	0		
PHF	.250	.750	.000	.786	.500	.000	.000	.500	.000	.667	.000	.667	.000	.000	.000	.000	.714

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	**1**	6	0	**7**	0	0	0	0	0	3	0	3	0	0	0	0
+15 mins.	0	5	0	5	0	0	0	0	0	4	0	4	0	0	0	0
+30 mins.	0	**7**	0	7	**1**	0	0	**1**	0	**6**	0	**6**	0	0	0	0
+45 mins.	0	3	0	3	1	0	0	1	0	3	0	3	0	0	0	0
Total Volume	1	21	0	22	2	0	0	2	0	16	0	16	0	0	0	0
% App. Total	4.5	95.5	0		100	0	0		0	100	0		0	0	0	
PHF	.250	.750	.000	.786	.500	.000	.000	.500	.000	.667	.000	.667	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

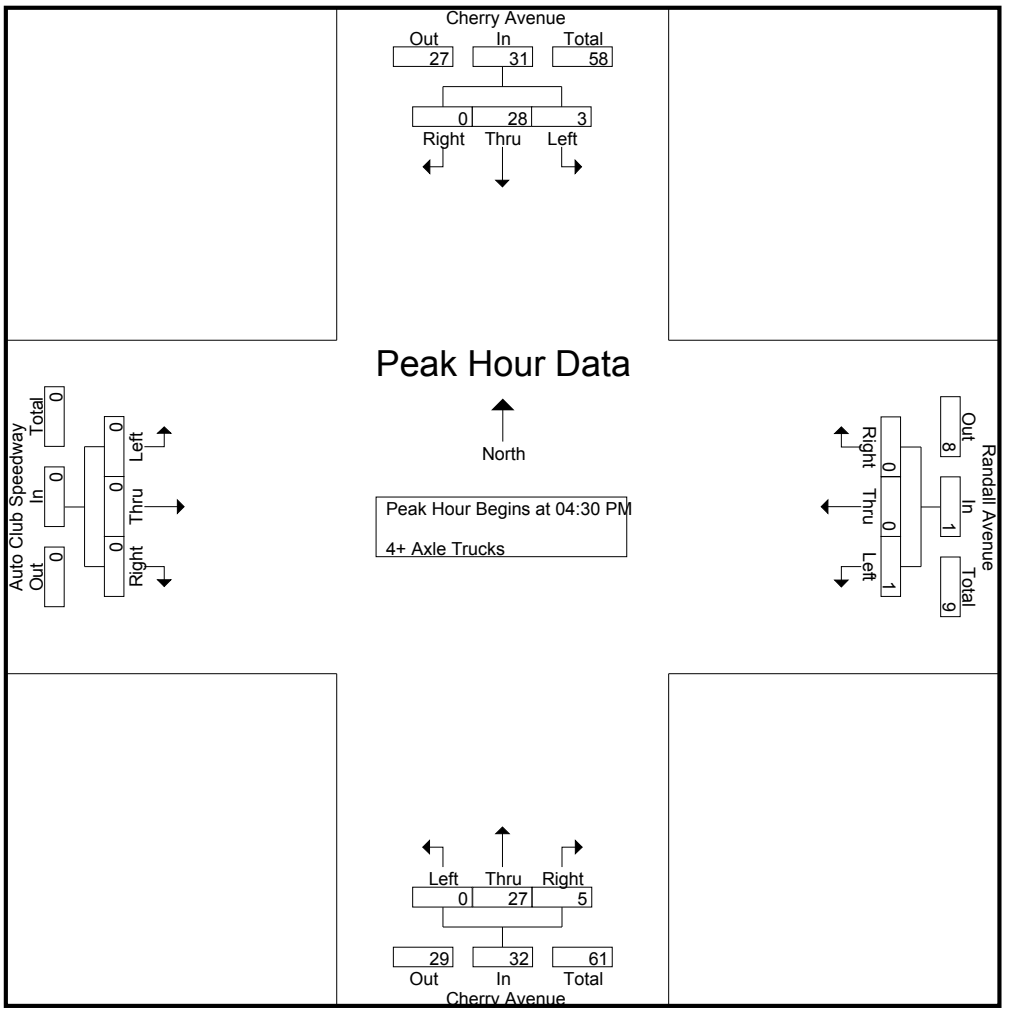
	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	6	0	7	1	0	0	1	0	11	0	11	0	0	0	0	19
04:15 PM	1	6	0	7	1	0	0	1	0	11	1	12	0	0	0	0	20
04:30 PM	1	9	0	10	0	0	0	0	0	11	2	13	0	0	0	0	23
04:45 PM	2	5	0	7	0	0	0	0	0	6	2	8	0	0	0	0	15
Total	5	26	0	31	2	0	0	2	0	39	5	44	0	0	0	0	77
05:00 PM	0	4	0	4	1	0	0	1	0	5	1	6	0	0	0	0	11
05:15 PM	0	10	0	10	0	0	0	0	0	5	0	5	0	0	0	0	15
05:30 PM	0	6	0	6	0	0	0	0	0	5	0	5	0	0	0	0	11
05:45 PM	0	5	0	5	0	0	1	1	0	7	0	7	0	0	0	0	13
Total	0	25	0	25	1	0	1	2	0	22	1	23	0	0	0	0	50
Grand Total	5	51	0	56	3	0	1	4	0	61	6	67	0	0	0	0	127
Apprch %	8.9	91.1	0		75	0	25		0	91	9		0	0	0		
Total %	3.9	40.2	0	44.1	2.4	0	0.8	3.1	0	48	4.7	52.8	0	0	0	0	

	Cherry Avenue Southbound				Randall Avenue Westbound				Cherry Avenue Northbound				Auto Club Speedway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	1	9	0	**10**	0	0	0	0	0	**11**	**2**	**13**	0	0	0	0	**23**
04:45 PM	**2**	5	0	7	0	0	0	0	0	6	2	8	0	0	0	0	15
05:00 PM	0	4	0	4	**1**	0	0	**1**	0	5	1	6	0	0	0	0	11
05:15 PM	0	**10**	0	10	0	0	0	0	0	5	0	5	0	0	0	0	15
Total Volume	3	28	0	31	1	0	0	1	0	27	5	32	0	0	0	0	64
% App. Total	9.7	90.3	0		100	0	0		0	84.4	15.6		0	0	0		
PHF	.375	.700	.000	.775	.250	.000	.000	.250	.000	.614	.625	.615	.000	.000	.000	.000	.696

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Randall Avenue
Weather: Clear

File Name : FONCHRAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	1	9	0	**10**	0	0	0	0	0	**11**	**2**	**13**	0	0	0	0
+15 mins.	**2**	5	0	7	0	0	0	0	0	6	2	8	0	0	0	0
+30 mins.	0	4	0	4	**1**	0	0	**1**	0	5	1	6	0	0	0	0
+45 mins.	0	**10**	0	10	0	0	0	0	0	5	0	5	0	0	0	0
Total Volume	3	28	0	31	1	0	0	1	0	27	5	32	0	0	0	0
% App. Total	9.7	90.3	0		100	0	0		0	84.4	15.6		0	0	0	
PHF	.375	.700	.000	.775	.250	.000	.000	.250	.000	.614	.625	.615	.000	.000	.000	.000

Location: Fontana
N/S: Cherry Avenue
E/W: Randall Avenue

Site Code: 201-16023
Date: 1/12/2016
Weather: Clear

PEDESTRIANS

	North Leg Cherry Avenue	East Leg Randall Avenue	South Leg Cherry Avenue	West Leg Entry Road	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	1	0	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	1

	North Leg Cherry Avenue	East Leg Randall Avenue	South Leg Cherry Avenue	West Leg Entry Road	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	1	0	0	1
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	1	0	0	1
5:15 PM	0	0	0	1	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	2	0	1	3

Location: Fontana
N/S: Cherry Avenue
E/W: Randall Avenue

Site Code: 201-16023
Date: 1/12/2016
Weather: Clear

BICYCLES

	North Leg Cherry Avenue	East Leg Randall Avenue	South Leg Cherry Avenue	West Leg Entry Road	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg Cherry Avenue	East Leg Randall Avenue	South Leg Cherry Avenue	West Leg Entry Road	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	1	1
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	1	1

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

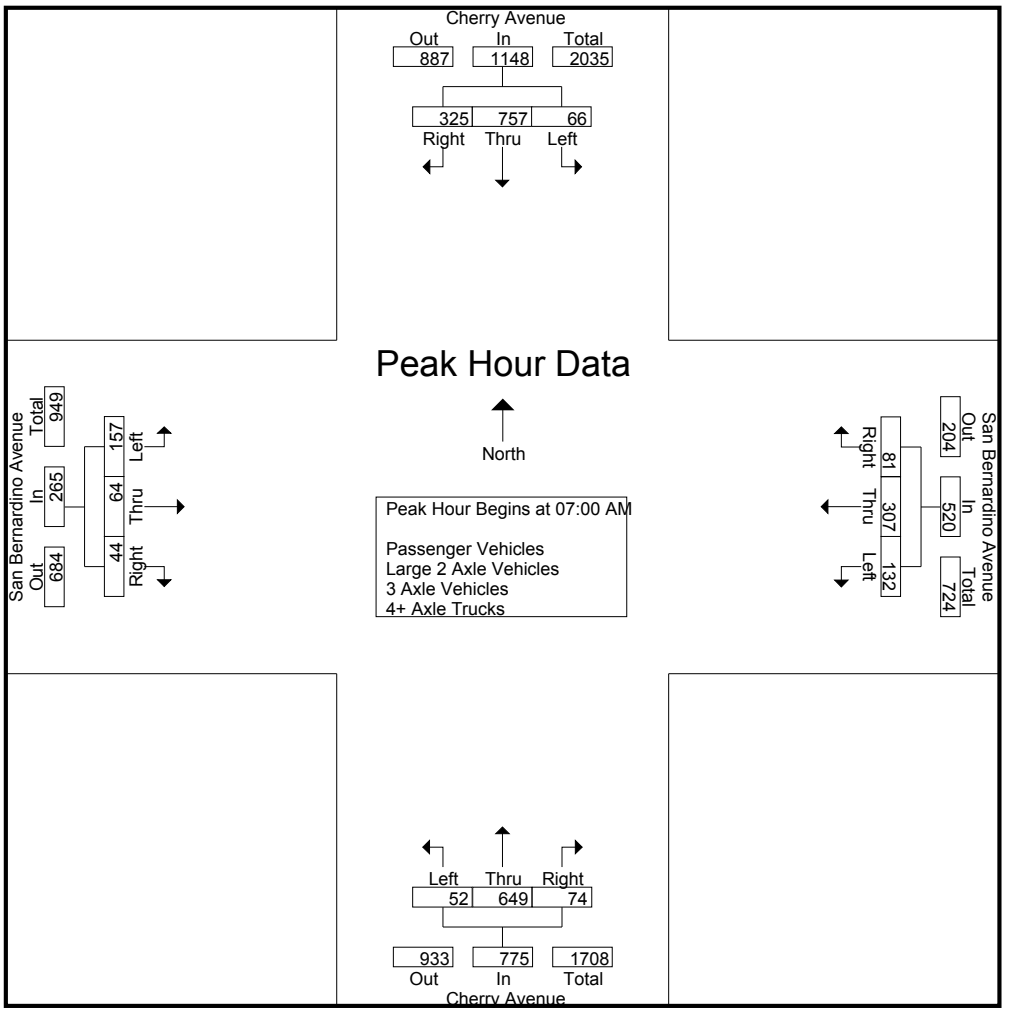
	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	14	192	59	265	46	58	24	128	12	152	20	184	42	10	6	58	635
07:15 AM	19	211	73	303	41	71	29	141	7	158	23	188	33	18	12	63	695
07:30 AM	16	167	103	286	35	94	13	142	12	176	19	207	34	17	15	66	701
07:45 AM	17	187	90	294	10	84	15	109	21	163	12	196	48	19	11	78	677
Total	66	757	325	1148	132	307	81	520	52	649	74	775	157	64	44	265	2708
08:00 AM	15	205	70	290	19	54	9	82	13	154	10	177	43	23	14	80	629
08:15 AM	13	156	45	214	19	51	18	88	11	127	13	151	35	24	6	65	518
08:30 AM	15	148	53	216	21	47	16	84	9	119	13	141	31	28	12	71	512
08:45 AM	17	141	39	197	14	41	9	64	18	112	11	141	29	6	10	45	447
Total	60	650	207	917	73	193	52	318	51	512	47	610	138	81	42	261	2106
Grand Total	126	1407	532	2065	205	500	133	838	103	1161	121	1385	295	145	86	526	4814
Apprch %	6.1	68.1	25.8		24.5	59.7	15.9		7.4	83.8	8.7		56.1	27.6	16.3		
Total %	2.6	29.2	11.1	42.9	4.3	10.4	2.8	17.4	2.1	24.1	2.5	28.8	6.1	3	1.8	10.9	
Passenger Vehicles	114	1265	469	1848	184	462	127	773	64	1043	107	1214	259	128	35	422	4257
% Passenger Vehicles	90.5	89.9	88.2	89.5	89.8	92.4	95.5	92.2	62.1	89.8	88.4	87.7	87.8	88.3	40.7	80.2	88.4
Large 2 Axle Vehicles	5	44	20	69	8	9	1	18	2	32	3	37	8	11	5	24	148
% Large 2 Axle Vehicles	4	3.1	3.8	3.3	3.9	1.8	0.8	2.1	1.9	2.8	2.5	2.7	2.7	7.6	5.8	4.6	3.1
3 Axle Vehicles	2	37	7	46	5	9	3	17	9	23	3	35	9	1	8	18	116
% 3 Axle Vehicles	1.6	2.6	1.3	2.2	2.4	1.8	2.3	2	8.7	2	2.5	2.5	3.1	0.7	9.3	3.4	2.4
4+ Axle Trucks	5	61	36	102	8	20	2	30	28	63	8	99	19	5	38	62	293
% 4+ Axle Trucks	4	4.3	6.8	4.9	3.9	4	1.5	3.6	27.2	5.4	6.6	7.1	6.4	3.4	44.2	11.8	6.1

	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	14	192	59	265	**46**	58	24	128	12	152	20	184	42	10	6	58	635
07:15 AM	**19**	**211**	73	**303**	41	71	**29**	141	7	158	**23**	188	33	18	12	63	695
07:30 AM	16	167	**103**	286	35	**94**	13	**142**	12	**176**	19	**207**	34	17	**15**	66	**701**
07:45 AM	17	187	90	294	10	84	15	109	**21**	163	12	196	**48**	**19**	11	**78**	677
Total Volume	66	757	325	1148	132	307	81	520	52	649	74	775	157	64	44	265	2708
% App. Total	5.7	65.9	28.3		25.4	59	15.6		6.7	83.7	9.5		59.2	24.2	16.6		
PHF	.868	.897	.789	.947	.717	.816	.698	.915	.619	.922	.804	.936	.818	.842	.733	.849	.966

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:00 AM				07:45 AM			
+0 mins.	**19**	**211**	73	**303**	**46**	58	24	128	12	152	20	184	**48**	19	11	78
+15 mins.	16	167	**103**	286	41	71	**29**	141	7	158	**23**	188	43	23	**14**	**80**
+30 mins.	17	187	90	294	35	**94**	13	**142**	12	**176**	19	**207**	35	24	6	65
+45 mins.	15	205	70	290	10	84	15	109	**21**	163	12	196	31	**28**	12	71
Total Volume	67	770	336	1173	132	307	81	520	52	649	74	775	157	94	43	294
% App. Total	5.7	65.6	28.6		25.4	59	15.6		6.7	83.7	9.5		53.4	32	14.6	
PHF	.882	.912	.816	.968	.717	.816	.698	.915	.619	.922	.804	.936	.818	.839	.768	.919

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles

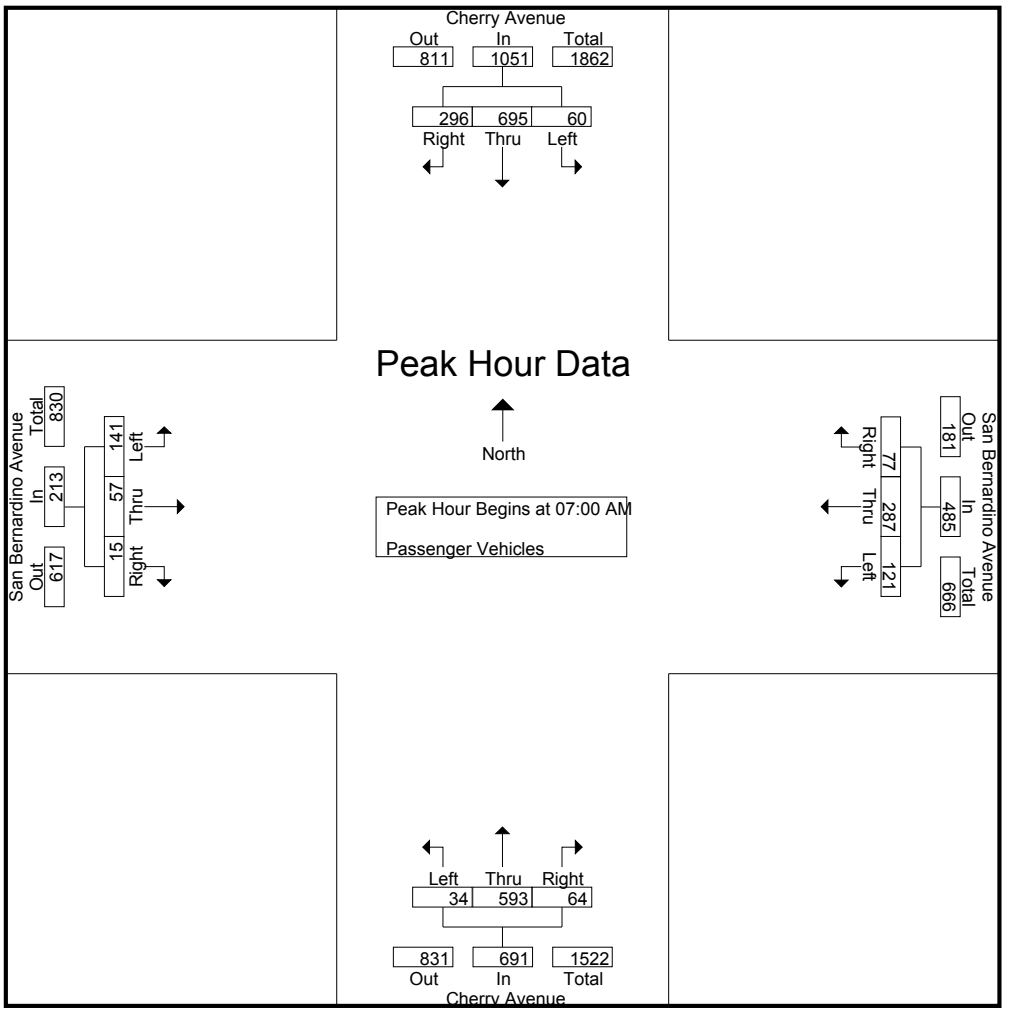
	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	13	182	55	250	43	54	22	119	7	143	19	169	38	8	1	47	585
07:15 AM	18	199	64	281	37	68	29	134	2	141	19	162	30	17	4	51	628
07:30 AM	14	144	94	252	31	89	12	132	7	157	18	182	29	14	6	49	615
07:45 AM	15	170	83	268	10	76	14	100	18	152	8	178	44	18	4	66	612
Total	60	695	296	1051	121	287	77	485	34	593	64	691	141	57	15	213	2440
08:00 AM	14	179	59	252	16	50	9	75	8	143	10	161	37	20	10	67	555
08:15 AM	10	138	37	185	16	48	17	81	6	112	11	129	32	20	2	54	449
08:30 AM	13	130	45	188	21	41	15	77	6	101	12	119	24	26	4	54	438
08:45 AM	17	123	32	172	10	36	9	55	10	94	10	114	25	5	4	34	375
Total	54	570	173	797	63	175	50	288	30	450	43	523	118	71	20	209	1817
Grand Total	114	1265	469	1848	184	462	127	773	64	1043	107	1214	259	128	35	422	4257
Apprch %	6.2	68.5	25.4		23.8	59.8	16.4		5.3	85.9	8.8		61.4	30.3	8.3		
Total %	2.7	29.7	11	43.4	4.3	10.9	3	18.2	1.5	24.5	2.5	28.5	6.1	3	0.8	9.9	

	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	13	182	55	250	**43**	54	22	119	7	143	**19**	169	38	8	1	47	585
07:15 AM	**18**	**199**	64	**281**	37	68	**29**	**134**	2	141	19	162	30	17	4	51	**628**
07:30 AM	14	144	**94**	252	31	**89**	12	132	7	**157**	18	**182**	29	14	**6**	49	615
07:45 AM	15	170	83	268	10	76	14	100	**18**	152	8	178	**44**	**18**	4	**66**	612
Total Volume	60	695	296	1051	121	287	77	485	34	593	64	691	141	57	15	213	2440
% App. Total	5.7	66.1	28.2		24.9	59.2	15.9		4.9	85.8	9.3		66.2	26.8	7		
PHF	.833	.873	.787	.935	.703	.806	.664	.905	.472	.944	.842	.949	.801	.792	.625	.807	.971

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	13	182	55	250	**43**	54	22	119	7	143	**19**	169	38	8	1	47
+15 mins.	**18**	**199**	64	**281**	37	68	**29**	**134**	2	141	19	162	30	17	4	51
+30 mins.	14	144	**94**	252	31	**89**	12	132	7	**157**	18	**182**	29	14	**6**	49
+45 mins.	15	170	83	268	10	76	14	100	**18**	152	8	178	**44**	**18**	4	**66**
Total Volume	60	695	296	1051	121	287	77	485	34	593	64	691	141	57	15	213
% App. Total	5.7	66.1	28.2		24.9	59.2	15.9		4.9	85.8	9.3		66.2	26.8	7	
PHF	.833	.873	.787	.935	.703	.806	.664	.905	.472	.944	.842	.949	.801	.792	.625	.807

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

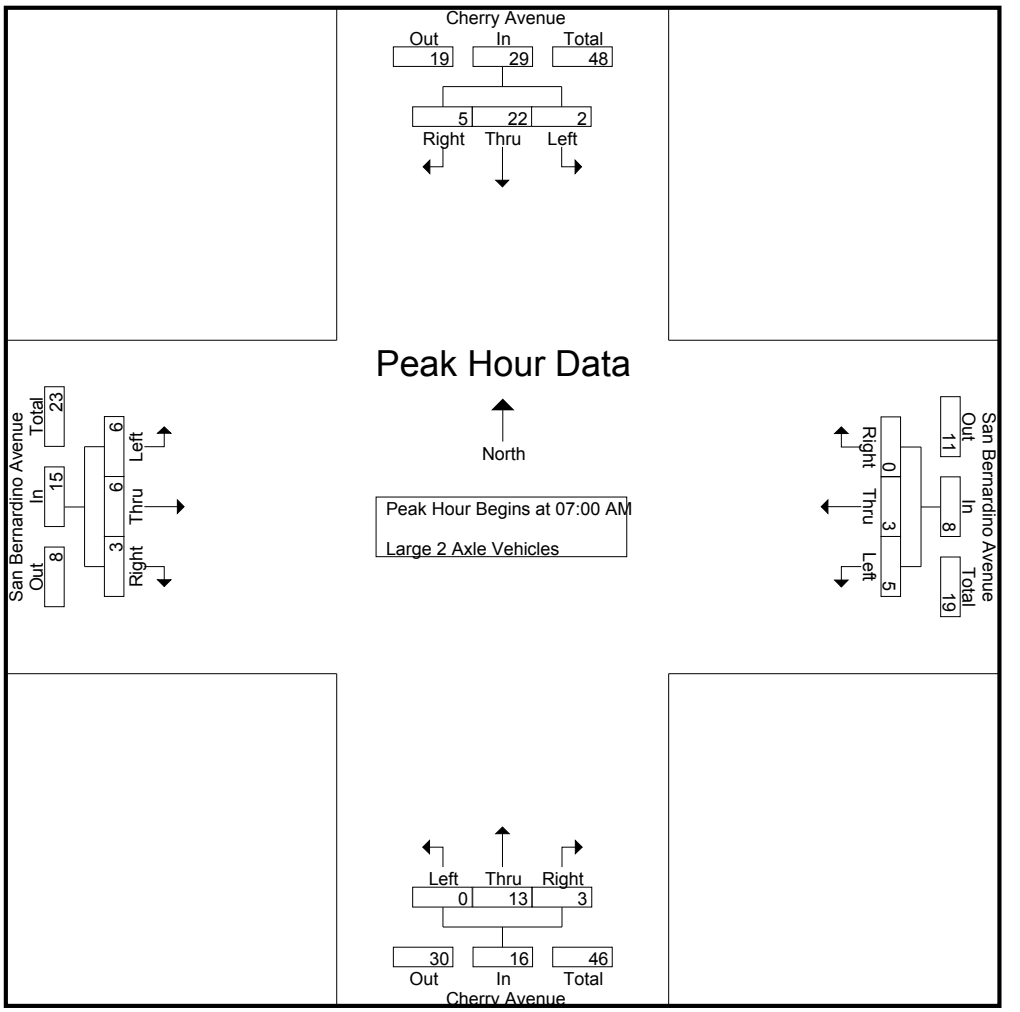
	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	5	1	7	2	1	0	3	0	0	0	0	0	2	0	2	12
07:15 AM	0	3	3	6	2	0	0	2	0	5	0	5	2	1	2	5	18
07:30 AM	0	7	0	7	1	1	0	2	0	7	1	8	1	2	0	3	20
07:45 AM	1	7	1	9	0	1	0	1	0	1	2	3	3	1	1	5	18
Total	2	22	5	29	5	3	0	8	0	13	3	16	6	6	3	15	68
08:00 AM	0	5	5	10	1	1	0	2	0	3	0	3	0	1	0	1	16
08:15 AM	3	8	3	14	0	1	1	2	1	3	0	4	0	3	0	3	23
08:30 AM	0	5	4	9	0	3	0	3	1	4	0	5	2	1	0	3	20
08:45 AM	0	4	3	7	2	1	0	3	0	9	0	9	0	0	2	2	21
Total	3	22	15	40	3	6	1	10	2	19	0	21	2	5	2	9	80
Grand Total	5	44	20	69	8	9	1	18	2	32	3	37	8	11	5	24	148
Apprch %	7.2	63.8	29		44.4	50	5.6		5.4	86.5	8.1		33.3	45.8	20.8		
Total %	3.4	29.7	13.5	46.6	5.4	6.1	0.7	12.2	1.4	21.6	2	25	5.4	7.4	3.4	16.2	

	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**1**	5	1	7	**2**	**1**	0	**3**	0	0	0	0	0	**2**	0	2	12
07:15 AM	0	3	**3**	6	2	0	0	2	0	5	0	5	2	1	**2**	**5**	18
07:30 AM	0	**7**	0	7	1	1	0	2	0	**7**	1	**8**	1	2	0	3	**20**
07:45 AM	1	7	1	**9**	0	1	0	1	0	1	**2**	3	**3**	1	1	5	18
Total Volume	2	22	5	29	5	3	0	8	0	13	3	16	6	6	3	15	68
% App. Total	6.9	75.9	17.2		62.5	37.5	0		0	81.2	18.8		40	40	20		
PHF	.500	.786	.417	.806	.625	.750	.000	.667	.000	.464	.375	.500	.500	.750	.375	.750	.850

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	**1**	5	1	7	**2**	**1**	0	**3**	0	0	0	0	0	**2**	0	2
+15 mins.	0	3	**3**	6	2	0	0	2	0	5	0	5	2	1	**2**	**5**
+30 mins.	0	**7**	0	7	1	1	0	2	0	**7**	1	**8**	1	2	0	3
+45 mins.	1	7	1	**9**	0	1	0	1	0	1	**2**	3	**3**	1	1	5
Total Volume	2	22	5	29	5	3	0	8	0	13	3	16	6	6	3	15
% App. Total	6.9	75.9	17.2		62.5	37.5	0		0	81.2	18.8		40	40	20	
PHF	.500	.786	.417	.806	.625	.750	.000	.667	.000	.464	.375	.500	.500	.750	.375	.750

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

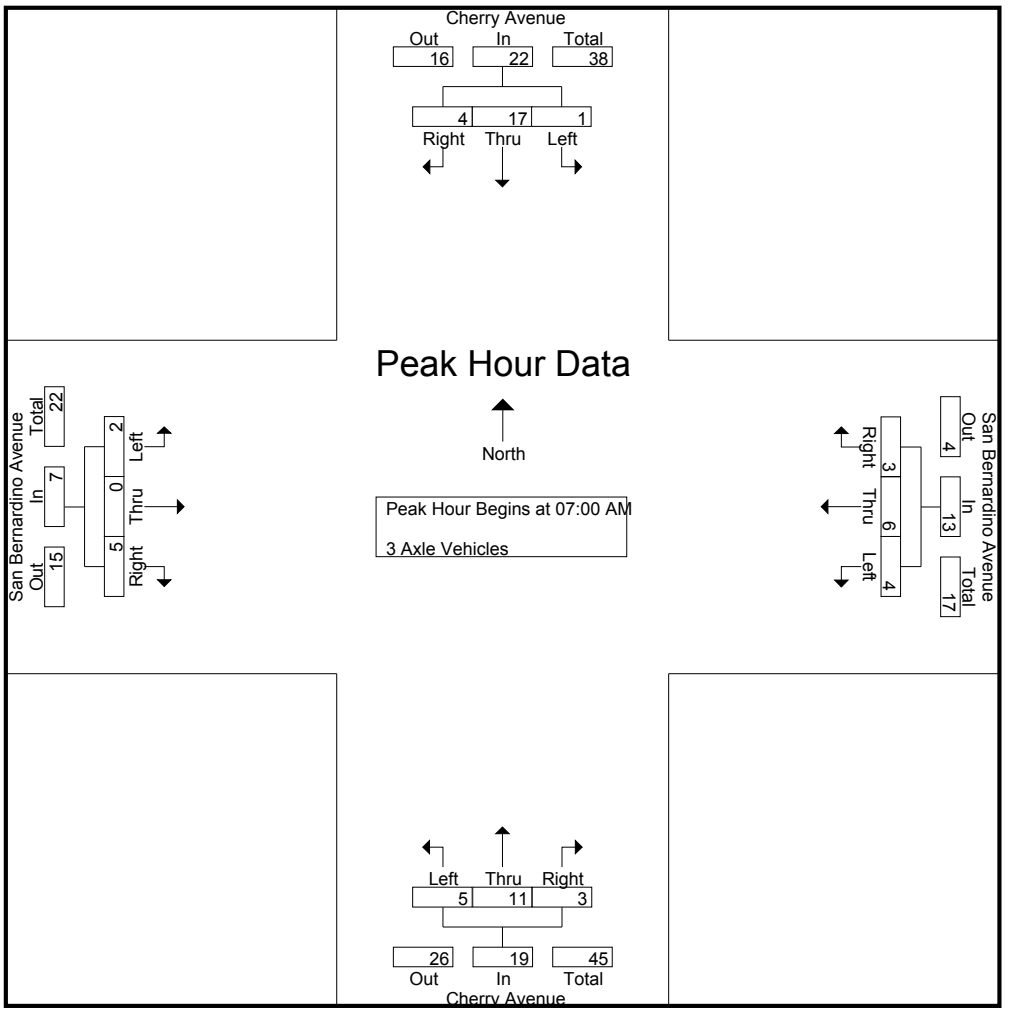
	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	2	2	4	0	1	1	2	1	2	0	3	0	0	0	0	9
07:15 AM	0	4	0	4	2	1	0	3	2	4	1	7	0	0	2	2	16
07:30 AM	1	7	1	9	2	2	1	5	2	1	0	3	1	0	2	3	20
07:45 AM	0	4	1	5	0	2	1	3	0	4	2	6	1	0	1	2	16
Total	1	17	4	22	4	6	3	13	5	11	3	19	2	0	5	7	61
08:00 AM	0	3	1	4	0	0	0	0	1	3	0	4	4	0	2	6	14
08:15 AM	0	5	0	5	1	0	0	1	0	4	0	4	1	0	1	2	12
08:30 AM	1	6	2	9	0	2	0	2	1	5	0	6	1	1	0	2	19
08:45 AM	0	6	0	6	0	1	0	1	2	0	0	2	1	0	0	1	10
Total	1	20	3	24	1	3	0	4	4	12	0	16	7	1	3	11	55
Grand Total	2	37	7	46	5	9	3	17	9	23	3	35	9	1	8	18	116
Apprch %	4.3	80.4	15.2		29.4	52.9	17.6		25.7	65.7	8.6		50	5.6	44.4		
Total %	1.7	31.9	6	39.7	4.3	7.8	2.6	14.7	7.8	19.8	2.6	30.2	7.8	0.9	6.9	15.5	

	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	2	**2**	4	0	1	**1**	2	1	2	0	3	0	0	0	0	9
07:15 AM	0	4	0	4	**2**	1	0	3	**2**	**4**	1	**7**	0	0	**2**	2	16
07:30 AM	**1**	**7**	1	**9**	2	**2**	1	**5**	2	1	0	3	**1**	0	2	**3**	**20**
07:45 AM	0	4	1	5	0	2	1	3	0	4	**2**	6	1	0	1	2	16
Total Volume	1	17	4	22	4	6	3	13	5	11	3	19	2	0	5	7	61
% App. Total	4.5	77.3	18.2		30.8	46.2	23.1		26.3	57.9	15.8		28.6	0	71.4		
PHF	.250	.607	.500	.611	.500	.750	.750	.650	.625	.688	.375	.679	.500	.000	.625	.583	.763

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	2	**2**	4	0	1	**1**	2	1	2	0	3	0	0	0	0
+15 mins.	0	4	0	4	**2**	1	0	3	**2**	**4**	1	**7**	0	0	**2**	2
+30 mins.	**1**	**7**	1	**9**	2	**2**	1	**5**	2	1	0	3	**1**	0	2	**3**
+45 mins.	0	4	1	5	0	2	1	3	0	4	**2**	6	1	0	1	2
Total Volume	1	17	4	22	4	6	3	13	5	11	3	19	2	0	5	7
% App. Total	4.5	77.3	18.2		30.8	46.2	23.1		26.3	57.9	15.8		28.6	0	71.4	
PHF	.250	.607	.500	.611	.500	.750	.750	.650	.625	.688	.375	.679	.500	.000	.625	.583

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

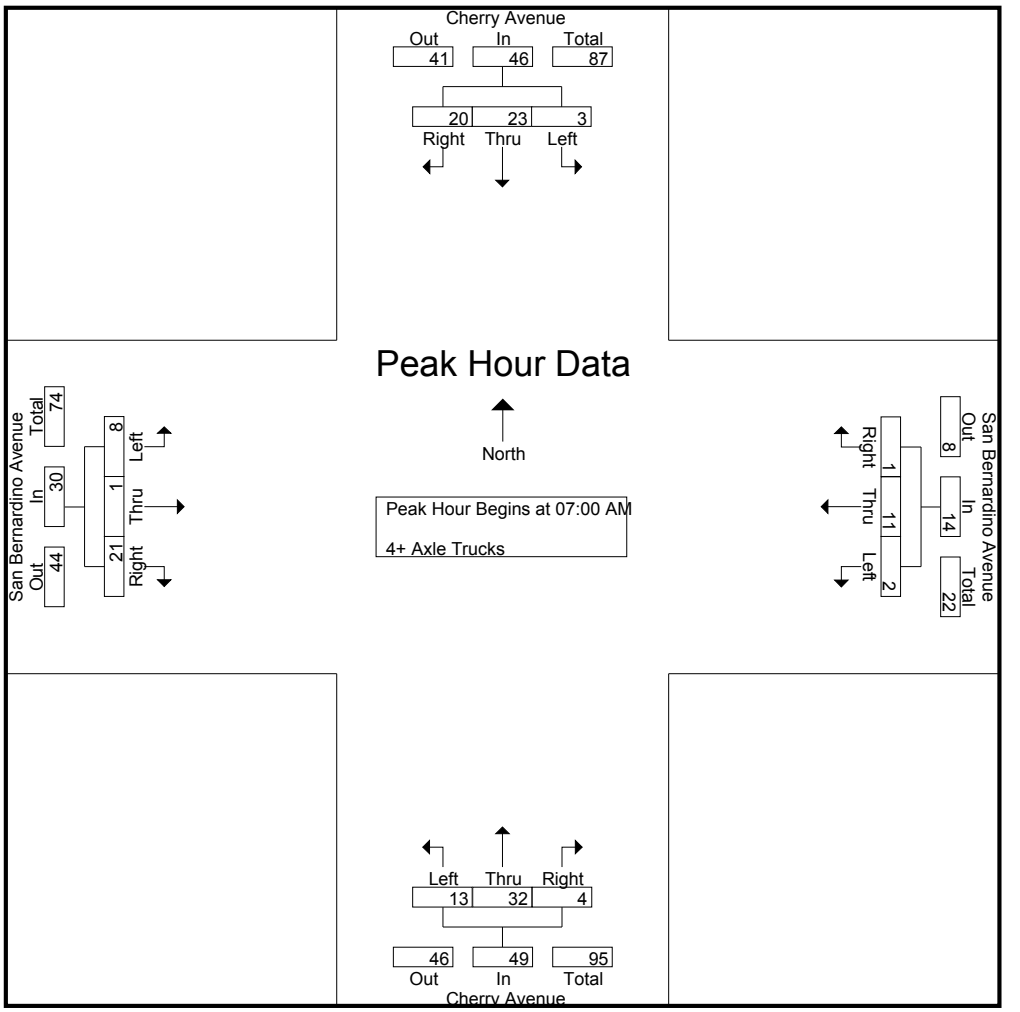
	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	3	1	4	1	2	1	4	4	7	1	12	4	0	5	9	29
07:15 AM	1	5	6	12	0	2	0	2	3	8	3	14	1	0	4	5	33
07:30 AM	1	9	8	18	1	2	0	3	3	11	0	14	3	1	7	11	46
07:45 AM	1	6	5	12	0	5	0	5	3	6	0	9	0	0	5	5	31
Total	3	23	20	46	2	11	1	14	13	32	4	49	8	1	21	30	139
08:00 AM	1	18	5	24	2	3	0	5	4	5	0	9	2	2	2	6	44
08:15 AM	0	5	5	10	2	2	0	4	4	8	2	14	2	1	3	6	34
08:30 AM	1	7	2	10	0	1	1	2	1	9	1	11	4	0	8	12	35
08:45 AM	0	8	4	12	2	3	0	5	6	9	1	16	3	1	4	8	41
Total	2	38	16	56	6	9	1	16	15	31	4	50	11	4	17	32	154
Grand Total	5	61	36	102	8	20	2	30	28	63	8	99	19	5	38	62	293
Apprch %	4.9	59.8	35.3		26.7	66.7	6.7		28.3	63.6	8.1		30.6	8.1	61.3		
Total %	1.7	20.8	12.3	34.8	2.7	6.8	0.7	10.2	9.6	21.5	2.7	33.8	6.5	1.7	13	21.2	

	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	3	1	4	**1**	2	**1**	4	**4**	7	1	12	**4**	0	5	9	29
07:15 AM	**1**	5	6	12	0	2	0	2	3	8	**3**	**14**	1	0	4	5	33
07:30 AM	1	**9**	**8**	**18**	1	2	0	3	3	**11**	0	14	3	**1**	**7**	**11**	**46**
07:45 AM	1	6	5	12	0	**5**	0	**5**	3	6	0	9	0	0	5	5	31
Total Volume	3	23	20	46	2	11	1	14	13	32	4	49	8	1	21	30	139
% App. Total	6.5	50	43.5		14.3	78.6	7.1		26.5	65.3	8.2		26.7	3.3	70		
PHF	.750	.639	.625	.639	.500	.550	.250	.700	.813	.727	.333	.875	.500	.250	.750	.682	.755

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	3	1	4	**1**	2	**1**	4	**4**	7	1	12	**4**	0	5	9
+15 mins.	**1**	5	6	12	0	2	0	2	3	8	**3**	**14**	1	0	4	5
+30 mins.	1	**9**	**8**	**18**	1	2	0	3	3	**11**	0	14	3	**1**	**7**	**11**
+45 mins.	1	6	5	12	0	**5**	0	**5**	3	6	0	9	0	0	5	5
Total Volume	3	23	20	46	2	11	1	14	13	32	4	49	8	1	21	30
% App. Total	6.5	50	43.5		14.3	78.6	7.1		26.5	65.3	8.2		26.7	3.3	70	
PHF	.750	.639	.625	.639	.500	.550	.250	.700	.813	.727	.333	.875	.500	.250	.750	.682

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAPM
Site Code : 20116023
Start Date : 1/12/2016

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

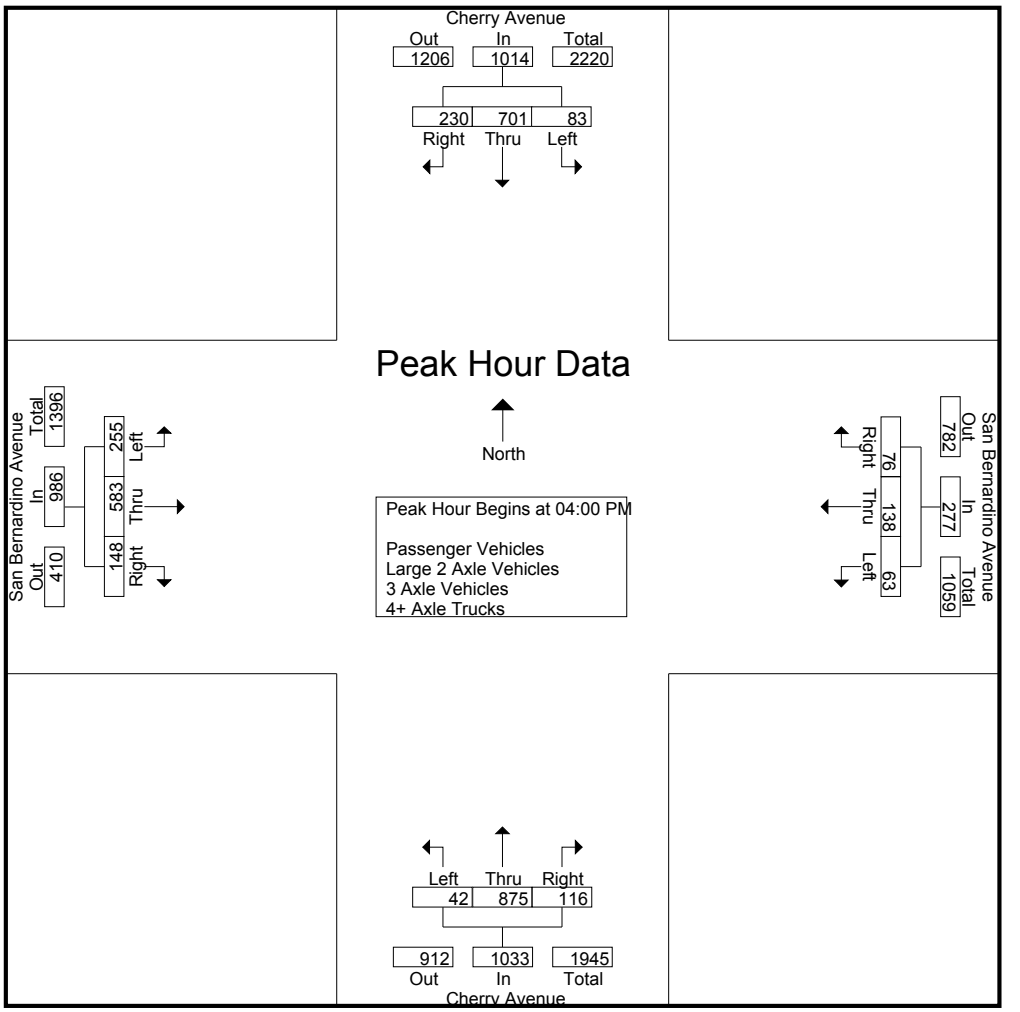
	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	24	187	76	287	23	42	27	92	13	225	30	268	54	160	44	258	905
04:15 PM	24	152	58	234	19	30	21	70	9	199	27	235	63	123	27	213	752
04:30 PM	19	215	46	280	12	24	11	47	9	186	23	218	55	151	31	237	782
04:45 PM	16	147	50	213	9	42	17	68	11	265	36	312	83	149	46	278	871
Total	83	701	230	1014	63	138	76	277	42	875	116	1033	255	583	148	986	3310
05:00 PM	13	183	55	251	5	44	10	59	15	225	31	271	86	112	40	238	819
05:15 PM	17	142	32	191	21	29	10	60	13	218	38	269	95	128	42	265	785
05:30 PM	8	135	36	179	18	33	7	58	12	270	33	315	71	124	36	231	783
05:45 PM	14	104	28	146	19	22	7	48	9	192	19	220	67	117	22	206	620
Total	52	564	151	767	63	128	34	225	49	905	121	1075	319	481	140	940	3007
Grand Total	135	1265	381	1781	126	266	110	502	91	1780	237	2108	574	1064	288	1926	6317
Apprch %	7.6	71	21.4		25.1	53	21.9		4.3	84.4	11.2		29.8	55.2	15		
Total %	2.1	20	6	28.2	2	4.2	1.7	7.9	1.4	28.2	3.8	33.4	9.1	16.8	4.6	30.5	
Passenger Vehicles	126	1154	350	1630	110	244	105	459	70	1692	223	1985	530	1037	284	1851	5925
% Passenger Vehicles	93.3	91.2	91.9	91.5	87.3	91.7	95.5	91.4	76.9	95.1	94.1	94.2	92.3	97.5	98.6	96.1	93.8
Large 2 Axle Vehicles	2	30	12	44	3	11	2	16	2	21	1	24	12	13	0	25	109
% Large 2 Axle Vehicles	1.5	2.4	3.1	2.5	2.4	4.1	1.8	3.2	2.2	1.2	0.4	1.1	2.1	1.2	0	1.3	1.7
3 Axle Vehicles	3	41	5	49	7	3	0	10	7	25	2	34	12	2	3	17	110
% 3 Axle Vehicles	2.2	3.2	1.3	2.8	5.6	1.1	0	2	7.7	1.4	0.8	1.6	2.1	0.2	1	0.9	1.7
4+ Axle Trucks	4	40	14	58	6	8	3	17	12	42	11	65	20	12	1	33	173
% 4+ Axle Trucks	3	3.2	3.7	3.3	4.8	3	2.7	3.4	13.2	2.4	4.6	3.1	3.5	1.1	0.3	1.7	2.7

	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**24**	187	**76**	**287**	**23**	**42**	**27**	**92**	**13**	225	30	268	54	**160**	44	258	**905**
04:15 PM	24	152	58	234	19	30	21	70	9	199	27	235	63	123	27	213	752
04:30 PM	19	**215**	46	280	12	24	11	47	9	186	23	218	55	151	31	237	782
04:45 PM	16	147	50	213	9	42	17	68	11	**265**	**36**	**312**	**83**	149	**46**	**278**	871
Total Volume	83	701	230	1014	63	138	76	277	42	875	116	1033	255	583	148	986	3310
% App. Total	8.2	69.1	22.7		22.7	49.8	27.4		4.1	84.7	11.2		25.9	59.1	15		
PHF	.865	.815	.757	.883	.685	.821	.704	.753	.808	.825	.806	.828	.768	.911	.804	.887	.914

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:45 PM				04:30 PM			
+0 mins.	**24**	187	**76**	**287**	**23**	**42**	**27**	**92**	11	265	36	312	55	**151**	31	237
+15 mins.	24	152	58	234	19	30	21	70	**15**	225	31	271	83	149	**46**	**278**
+30 mins.	19	**215**	46	280	12	24	11	47	13	218	**38**	269	86	112	40	238
+45 mins.	16	147	50	213	9	42	17	68	12	**270**	33	**315**	**95**	128	42	265
Total Volume	83	701	230	1014	63	138	76	277	51	978	138	1167	319	540	159	1018
% App. Total	8.2	69.1	22.7		22.7	49.8	27.4		4.4	83.8	11.8		31.3	53	15.6	
PHF	.865	.815	.757	.883	.685	.821	.704	.753	.850	.906	.908	.926	.839	.894	.864	.915

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles

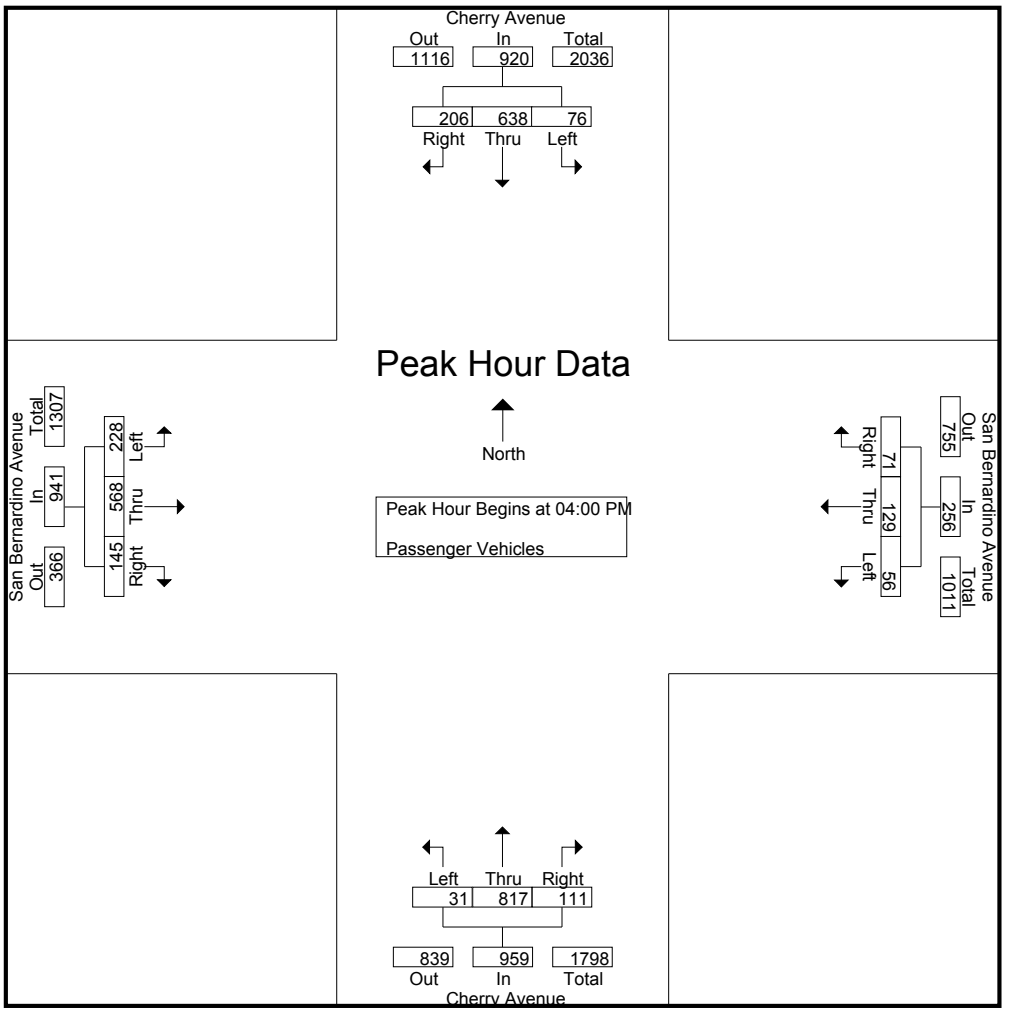
	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	23	172	64	259	21	40	25	86	8	208	28	244	49	156	41	246	835
04:15 PM	20	137	52	209	16	29	20	65	8	185	25	218	57	120	27	204	696
04:30 PM	17	195	42	254	11	22	11	44	6	171	23	200	44	147	31	222	720
04:45 PM	16	134	48	198	8	38	15	61	9	253	35	297	78	145	46	269	825
Total	76	638	206	920	56	129	71	256	31	817	111	959	228	568	145	941	3076
05:00 PM	13	167	55	235	4	40	10	54	14	219	29	262	78	109	40	227	778
05:15 PM	16	128	30	174	21	25	10	56	10	213	36	259	92	126	41	259	748
05:30 PM	7	124	33	164	13	29	7	49	10	258	29	297	68	121	36	225	735
05:45 PM	14	97	26	137	16	21	7	44	5	185	18	208	64	113	22	199	588
Total	50	516	144	710	54	115	34	203	39	875	112	1026	302	469	139	910	2849
Grand Total	126	1154	350	1630	110	244	105	459	70	1692	223	1985	530	1037	284	1851	5925
Apprch %	7.7	70.8	21.5		24	53.2	22.9		3.5	85.2	11.2		28.6	56	15.3		
Total %	2.1	19.5	5.9	27.5	1.9	4.1	1.8	7.7	1.2	28.6	3.8	33.5	8.9	17.5	4.8	31.2	

	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**23**	172	**64**	**259**	**21**	**40**	**25**	**86**	8	208	28	244	49	**156**	41	246	**835**
04:15 PM	20	137	52	209	16	29	20	65	8	185	25	218	57	120	27	204	696
04:30 PM	17	**195**	42	254	11	22	11	44	6	171	23	200	44	147	31	222	720
04:45 PM	16	134	48	198	8	38	15	61	**9**	**253**	**35**	**297**	**78**	145	**46**	**269**	825
Total Volume	76	638	206	920	56	129	71	256	31	817	111	959	228	568	145	941	3076
% App. Total	8.3	69.3	22.4		21.9	50.4	27.7		3.2	85.2	11.6		24.2	60.4	15.4		
PHF	.826	.818	.805	.888	.667	.806	.710	.744	.861	.807	.793	.807	.731	.910	.788	.875	.921

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**23**	172	**64**	**259**	**21**	**40**	**25**	**86**	8	208	28	244	49	**156**	41	246
+15 mins.	20	137	52	209	16	29	20	65	8	185	25	218	57	120	27	204
+30 mins.	17	**195**	42	254	11	22	11	44	6	171	23	200	44	147	31	222
+45 mins.	16	134	48	198	8	38	15	61	**9**	**253**	**35**	**297**	**78**	145	**46**	**269**
Total Volume	76	638	206	920	56	129	71	256	31	817	111	959	228	568	145	941
% App. Total	8.3	69.3	22.4		21.9	50.4	27.7		3.2	85.2	11.6		24.2	60.4	15.4	
PHF	.826	.818	.805	.888	.667	.806	.710	.744	.861	.807	.793	.807	.731	.910	.788	.875

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

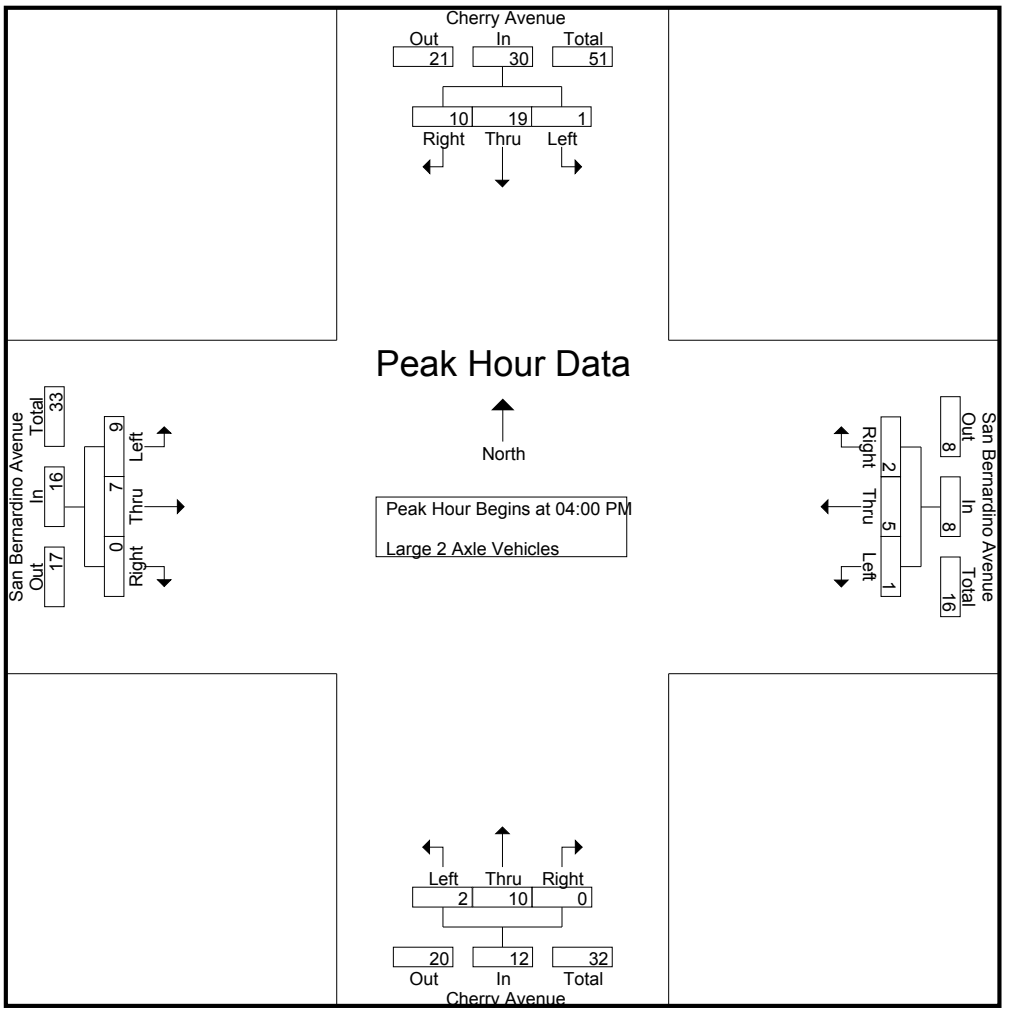
	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	4	7	12	1	1	1	3	0	1	0	1	1	1	0	2	18
04:15 PM	0	3	3	6	0	0	0	0	0	4	0	4	1	2	0	3	13
04:30 PM	0	5	0	5	0	2	0	2	1	3	0	4	4	2	0	6	17
04:45 PM	0	7	0	7	0	2	1	3	1	2	0	3	3	2	0	5	18
Total	1	19	10	30	1	5	2	8	2	10	0	12	9	7	0	16	66
05:00 PM	0	3	0	3	0	1	0	1	0	6	0	6	2	2	0	4	14
05:15 PM	1	5	1	7	0	2	0	2	0	2	0	2	0	2	0	2	13
05:30 PM	0	1	1	2	2	2	0	4	0	2	0	2	1	1	0	2	10
05:45 PM	0	2	0	2	0	1	0	1	0	1	1	2	0	1	0	1	6
Total	1	11	2	14	2	6	0	8	0	11	1	12	3	6	0	9	43
Grand Total	2	30	12	44	3	11	2	16	2	21	1	24	12	13	0	25	109
Apprch %	4.5	68.2	27.3		18.8	68.8	12.5		8.3	87.5	4.2		48	52	0		
Total %	1.8	27.5	11	40.4	2.8	10.1	1.8	14.7	1.8	19.3	0.9	22	11	11.9	0	22.9	

	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**1**	4	**7**	**12**	**1**	1	**1**	**3**	0	1	0	1	1	1	0	2	**18**
04:15 PM	0	3	3	6	0	0	0	0	0	**4**	0	**4**	1	**2**	0	3	13
04:30 PM	0	5	0	5	0	**2**	0	2	**1**	3	0	4	**4**	2	0	**6**	17
04:45 PM	0	**7**	0	7	0	2	1	3	1	2	0	3	3	2	0	5	18
Total Volume	1	19	10	30	1	5	2	8	2	10	0	12	9	7	0	16	66
% App. Total	3.3	63.3	33.3		12.5	62.5	25		16.7	83.3	0		56.2	43.8	0		
PHF	.250	.679	.357	.625	.250	.625	.500	.667	.500	.625	.000	.750	.563	.875	.000	.667	.917

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**1**	4	**7**	**12**	**1**	1	**1**	**3**	0	1	0	1	1	1	0	2
+15 mins.	0	3	3	6	0	0	0	0	0	**4**	0	**4**	1	**2**	0	3
+30 mins.	0	5	0	5	0	**2**	0	2	**1**	3	0	4	**4**	2	0	**6**
+45 mins.	0	**7**	0	7	0	2	1	3	1	2	0	3	3	2	0	5
Total Volume	1	19	10	30	1	5	2	8	2	10	0	12	9	7	0	16
% App. Total	3.3	63.3	33.3		12.5	62.5	25		16.7	83.3	0		56.2	43.8	0	
PHF	.250	.679	.357	.625	.250	.625	.500	.667	.500	.625	.000	.750	.563	.875	.000	.667

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

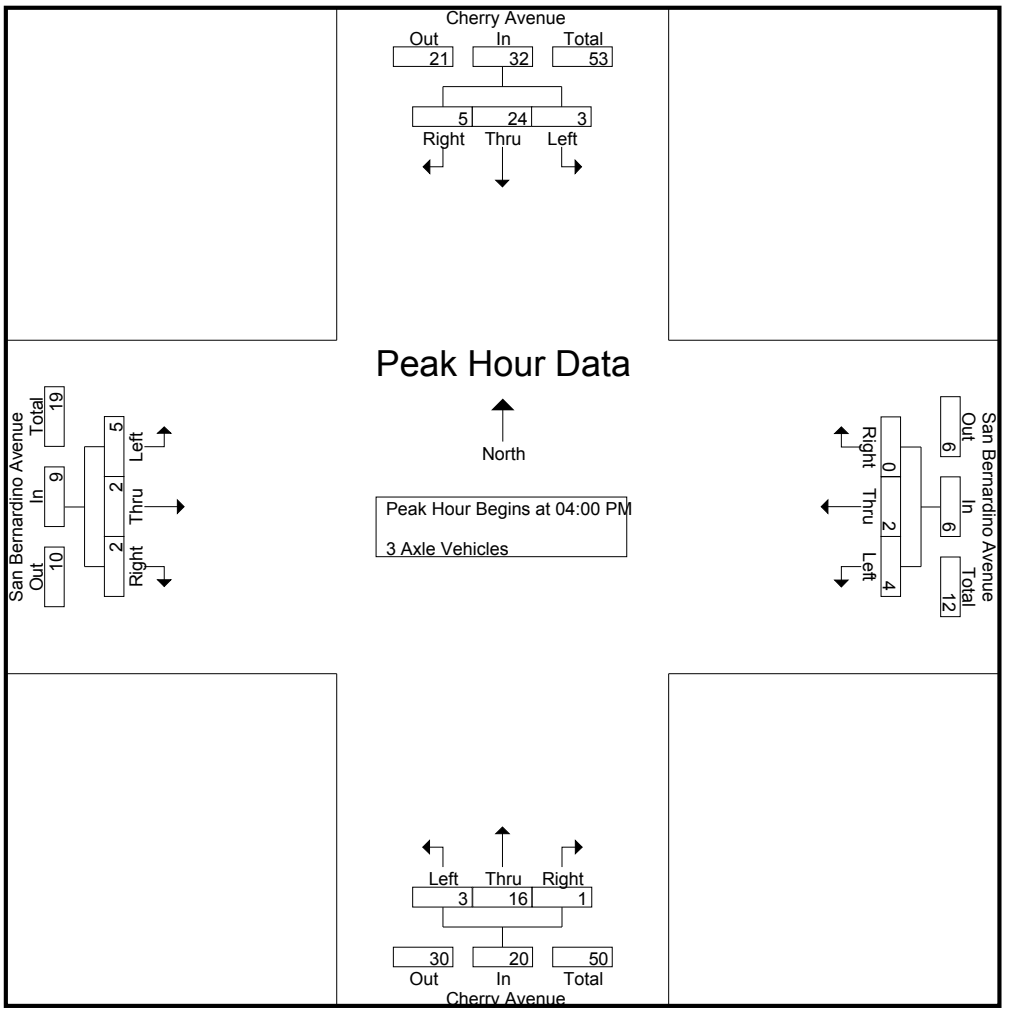
	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	4	3	7	1	0	0	1	1	5	1	7	1	0	2	3	18
04:15 PM	2	8	2	12	3	1	0	4	1	4	0	5	2	1	0	3	24
04:30 PM	1	8	0	9	0	0	0	0	1	3	0	4	2	0	0	2	15
04:45 PM	0	4	0	4	0	1	0	1	0	4	0	4	0	1	0	1	10
Total	3	24	5	32	4	2	0	6	3	16	1	20	5	2	2	9	67
05:00 PM	0	6	0	6	0	1	0	1	0	0	0	0	2	0	0	2	9
05:15 PM	0	5	0	5	0	0	0	0	1	2	1	4	2	0	1	3	12
05:30 PM	0	4	0	4	2	0	0	2	2	6	0	8	1	0	0	1	15
05:45 PM	0	2	0	2	1	0	0	1	1	1	0	2	2	0	0	2	7
Total	0	17	0	17	3	1	0	4	4	9	1	14	7	0	1	8	43
Grand Total	3	41	5	49	7	3	0	10	7	25	2	34	12	2	3	17	110
Apprch %	6.1	83.7	10.2		70	30	0		20.6	73.5	5.9		70.6	11.8	17.6		
Total %	2.7	37.3	4.5	44.5	6.4	2.7	0	9.1	6.4	22.7	1.8	30.9	10.9	1.8	2.7	15.5	

	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	4	**3**	7	1	0	0	1	**1**	**5**	**1**	**7**	1	0	**2**	**3**	18
04:15 PM	**2**	**8**	2	**12**	**3**	**1**	0	**4**	1	4	0	5	**2**	**1**	0	3	**24**
04:30 PM	1	8	0	9	0	0	0	0	1	3	0	4	2	0	0	2	15
04:45 PM	0	4	0	4	0	1	0	1	0	4	0	4	0	1	0	1	10
Total Volume	3	24	5	32	4	2	0	6	3	16	1	20	5	2	2	9	67
% App. Total	9.4	75	15.6		66.7	33.3	0		15	80	5		55.6	22.2	22.2		
PHF	.375	.750	.417	.667	.333	.500	.000	.375	.750	.800	.250	.714	.625	.500	.250	.750	.698

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	4	**3**	7	1	0	0	1	**1**	**5**	**1**	**7**	1	0	**2**	**3**
+15 mins.	**2**	**8**	2	**12**	**3**	**1**	0	**4**	1	4	0	5	**2**	**1**	0	3
+30 mins.	1	8	0	9	0	0	0	0	1	3	0	4	2	0	0	2
+45 mins.	0	4	0	4	0	1	0	1	0	4	0	4	0	1	0	1
Total Volume	3	24	5	32	4	2	0	6	3	16	1	20	5	2	2	9
% App. Total	9.4	75	15.6		66.7	33.3	0		15	80	5		55.6	22.2	22.2	
PHF	.375	.750	.417	.667	.333	.500	.000	.375	.750	.800	.250	.714	.625	.500	.250	.750

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

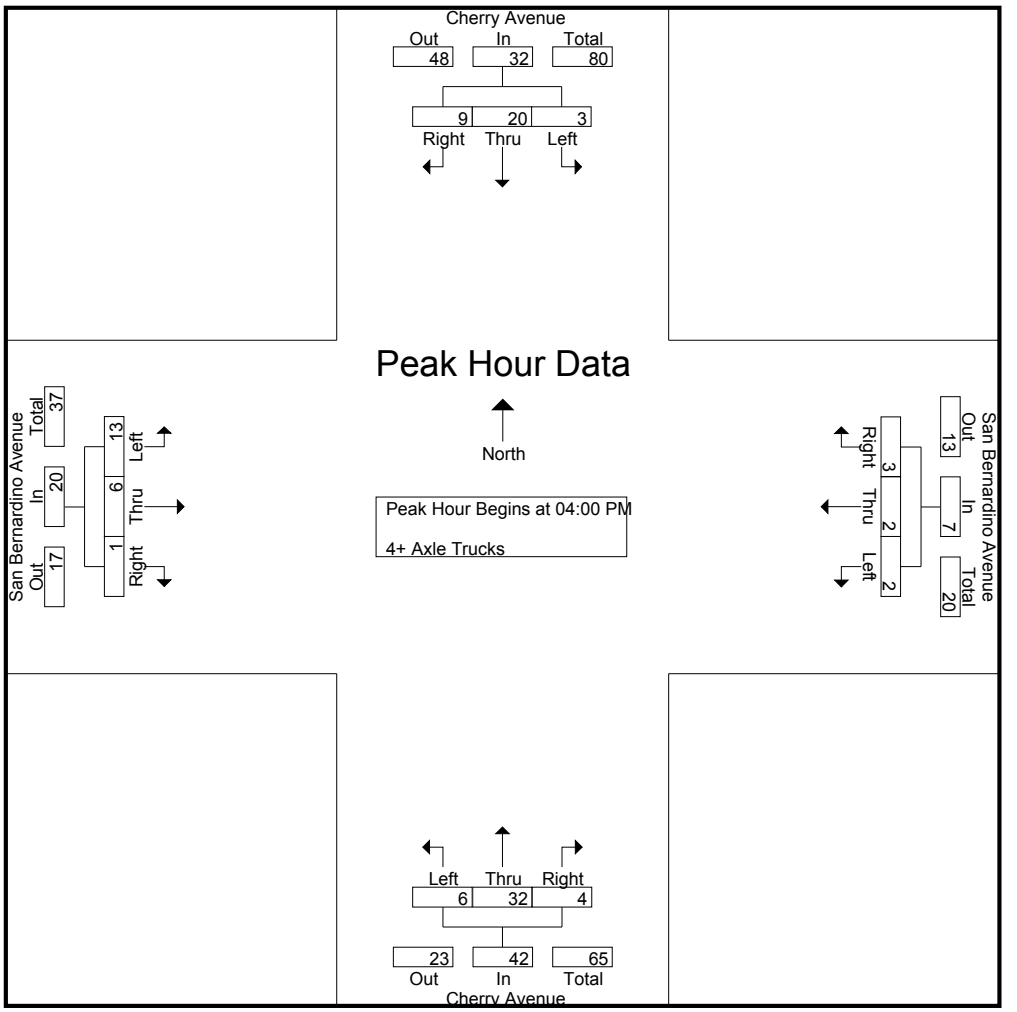
	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	7	2	9	0	1	1	2	4	11	1	16	3	3	1	7	34
04:15 PM	2	4	1	7	0	0	1	1	0	6	2	8	3	0	0	3	19
04:30 PM	1	7	4	12	1	0	0	1	1	9	0	10	5	2	0	7	30
04:45 PM	0	2	2	4	1	1	1	3	1	6	1	8	2	1	0	3	18
Total	3	20	9	32	2	2	3	7	6	32	4	42	13	6	1	20	101
05:00 PM	0	7	0	7	1	2	0	3	1	0	2	3	4	1	0	5	18
05:15 PM	0	4	1	5	0	2	0	2	2	1	1	4	1	0	0	1	12
05:30 PM	1	6	2	9	1	2	0	3	0	4	4	8	1	2	0	3	23
05:45 PM	0	3	2	5	2	0	0	2	3	5	0	8	1	3	0	4	19
Total	1	20	5	26	4	6	0	10	6	10	7	23	7	6	0	13	72
Grand Total	4	40	14	58	6	8	3	17	12	42	11	65	20	12	1	33	173
Apprch %	6.9	69	24.1		35.3	47.1	17.6		18.5	64.6	16.9		60.6	36.4	3		
Total %	2.3	23.1	8.1	33.5	3.5	4.6	1.7	9.8	6.9	24.3	6.4	37.6	11.6	6.9	0.6	19.1	

	Cherry Avenue Southbound				San Bernardino Avenue Westbound				Cherry Avenue Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**7**	2	9	0	**1**	**1**	2	**4**	**11**	1	**16**	3	**3**	**1**	**7**	**34**
04:15 PM	**2**	4	1	7	0	0	1	1	0	6	**2**	8	3	0	0	3	19
04:30 PM	1	7	**4**	**12**	**1**	0	0	1	1	9	0	10	**5**	2	0	7	30
04:45 PM	0	2	2	4	1	1	1	**3**	1	6	1	8	2	1	0	3	18
Total Volume	3	20	9	32	2	2	3	7	6	32	4	42	13	6	1	20	101
% App. Total	9.4	62.5	28.1		28.6	28.6	42.9		14.3	76.2	9.5		65	30	5		
PHF	.375	.714	.563	.667	.500	.500	.750	.583	.375	.727	.500	.656	.650	.500	.250	.714	.743

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue
Weather: Clear

File Name : FONCHSAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	**7**	2	9	0	**1**	**1**	2	**4**	**11**	1	**16**	3	**3**	**1**	**7**
+15 mins.	**2**	4	1	7	0	0	1	1	0	6	**2**	8	3	0	0	3
+30 mins.	1	7	**4**	**12**	**1**	0	0	1	1	9	0	10	**5**	2	0	7
+45 mins.	0	2	2	4	1	1	1	**3**	1	6	1	8	2	1	0	3
Total Volume	3	20	9	32	2	2	3	7	6	32	4	42	13	6	1	20
% App. Total	9.4	62.5	28.1		28.6	28.6	42.9		14.3	76.2	9.5		65	30	5	
PHF	.375	.714	.563	.667	.500	.500	.750	.583	.375	.727	.500	.656	.650	.500	.250	.714

Location: Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue

Site Code: 201-16023
Date: 1/12/2016
Weather: Clear

PEDESTRIANS

	North Leg Cherry Avenue	East Leg San Bernardino Avenue	South Leg Cherry Avenue	West Leg San Bernardino Avenue	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	1	0	1
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	1	0	1

	North Leg Cherry Avenue	East Leg San Bernardino Avenue	South Leg Cherry Avenue	West Leg San Bernardino Avenue	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	1	0	1	0	2
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	1	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	2	0	2
TOTAL VOLUMES:	1	0	4	0	5

Location: Fontana
N/S: Cherry Avenue
E/W: San Bernardino Avenue

Site Code: 201-16023
Date: 1/12/2016
Weather: Clear

BICYCLES

	North Leg Cherry Avenue	East Leg San Bernardino Avenue	South Leg Cherry Avenue	West Leg San Bernardino Avenue	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg Cherry Avenue	East Leg San Bernardino Avenue	South Leg Cherry Avenue	West Leg San Bernardino Avenue	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

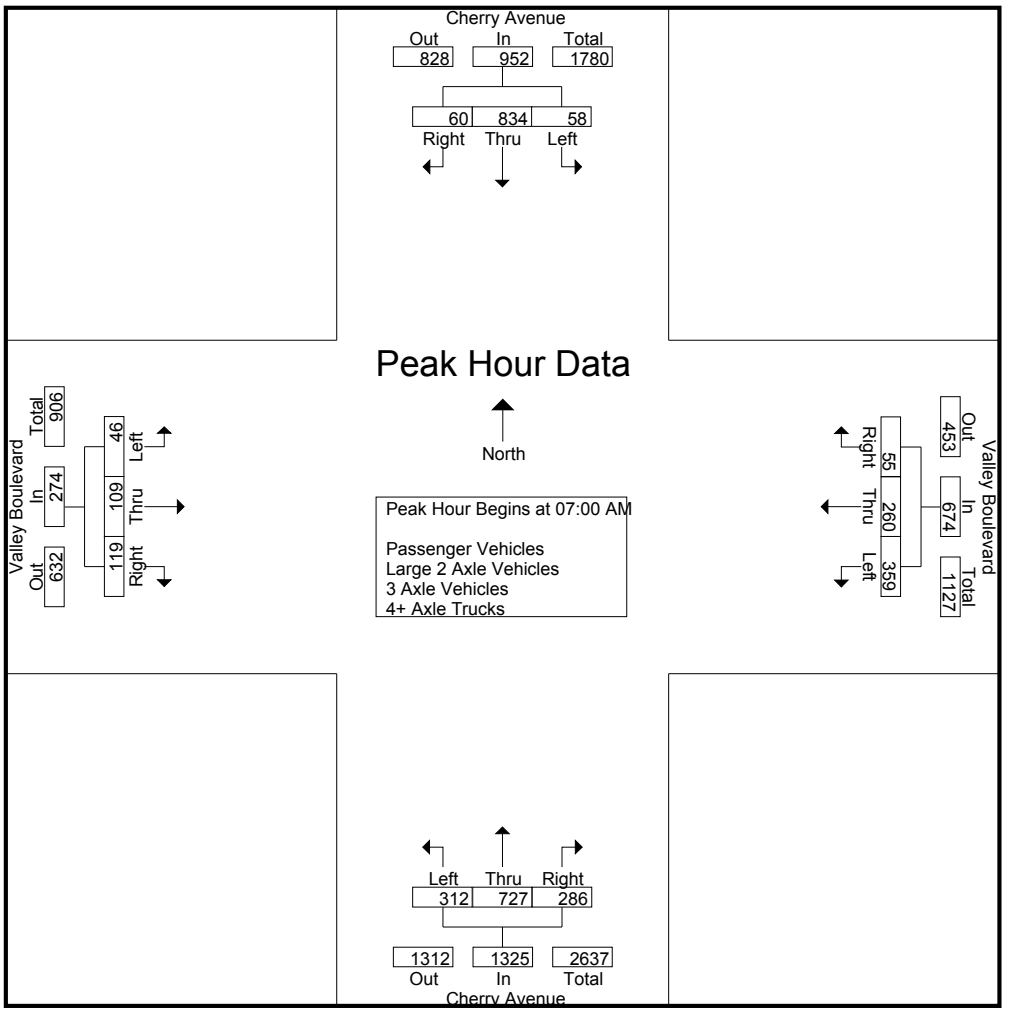
	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	11	226	14	251	94	48	8	150	84	165	62	311	10	27	28	65	777
07:15 AM	14	233	17	264	125	54	9	188	55	192	72	319	11	28	32	71	842
07:30 AM	11	194	16	221	82	80	16	178	87	187	81	355	13	32	30	75	829
07:45 AM	22	181	13	216	58	78	22	158	86	183	71	340	12	22	29	63	777
Total	58	834	60	952	359	260	55	674	312	727	286	1325	46	109	119	274	3225
08:00 AM	28	176	17	221	59	66	13	138	77	146	58	281	12	32	38	82	722
08:15 AM	21	158	11	190	69	60	14	143	56	142	68	266	18	34	33	85	684
08:30 AM	23	175	12	210	74	56	13	143	65	129	48	242	17	35	44	96	691
08:45 AM	13	126	11	150	50	45	13	108	69	125	51	245	15	33	46	94	597
Total	85	635	51	771	252	227	53	532	267	542	225	1034	62	134	161	357	2694
Grand Total	143	1469	111	1723	611	487	108	1206	579	1269	511	2359	108	243	280	631	5919
Apprch %	8.3	85.3	6.4		50.7	40.4	9		24.5	53.8	21.7		17.1	38.5	44.4		
Total %	2.4	24.8	1.9	29.1	10.3	8.2	1.8	20.4	9.8	21.4	8.6	39.9	1.8	4.1	4.7	10.7	
Passenger Vehicles	123	1251	74	1448	520	441	95	1056	431	1079	440	1950	84	198	163	445	4899
% Passenger Vehicles	86	85.2	66.7	84	85.1	90.6	88	87.6	74.4	85	86.1	82.7	77.8	81.5	58.2	70.5	82.8
Large 2 Axle Vehicles	7	69	8	84	32	18	9	59	35	63	20	118	7	17	23	47	308
% Large 2 Axle Vehicles	4.9	4.7	7.2	4.9	5.2	3.7	8.3	4.9	6	5	3.9	5	6.5	7	8.2	7.4	5.2
3 Axle Vehicles	7	46	12	65	13	14	2	29	25	34	14	73	9	7	35	51	218
% 3 Axle Vehicles	4.9	3.1	10.8	3.8	2.1	2.9	1.9	2.4	4.3	2.7	2.7	3.1	8.3	2.9	12.5	8.1	3.7
4+ Axle Trucks	6	103	17	126	46	14	2	62	88	93	37	218	8	21	59	88	494
% 4+ Axle Trucks	4.2	7	15.3	7.3	7.5	2.9	1.9	5.1	15.2	7.3	7.2	9.2	7.4	8.6	21.1	13.9	8.3

	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	11	226	14	251	94	48	8	150	84	165	62	311	10	27	28	65	777
07:15 AM	14	**233**	**17**	**264**	**125**	54	9	**188**	55	**192**	72	319	11	28	**32**	71	**842**
07:30 AM	11	194	16	221	82	**80**	16	178	**87**	187	**81**	**355**	**13**	**32**	30	**75**	829
07:45 AM	**22**	181	13	216	58	78	**22**	158	86	183	71	340	12	22	29	63	777
Total Volume	58	834	60	952	359	260	55	674	312	727	286	1325	46	109	119	274	3225
% App. Total	6.1	87.6	6.3		53.3	38.6	8.2		23.5	54.9	21.6		16.8	39.8	43.4		
PHF	.659	.895	.882	.902	.718	.813	.625	.896	.897	.947	.883	.933	.885	.852	.930	.913	.958

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				08:00 AM			
+0 mins.	11	226	14	251	94	48	8	150	84	165	62	311	12	32	38	82
+15 mins.	14	**233**	**17**	**264**	**125**	54	9	**188**	55	**192**	72	319	**18**	34	33	85
+30 mins.	11	194	16	221	82	**80**	16	178	**87**	187	**81**	**355**	17	**35**	44	**96**
+45 mins.	**22**	181	13	216	58	78	**22**	158	86	183	71	340	15	33	**46**	94
Total Volume	58	834	60	952	359	260	55	674	312	727	286	1325	62	134	161	357
% App. Total	6.1	87.6	6.3		53.3	38.6	8.2		23.5	54.9	21.6		17.4	37.5	45.1	
PHF	.659	.895	.882	.902	.718	.813	.625	.896	.897	.947	.883	.933	.861	.957	.875	.930

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles

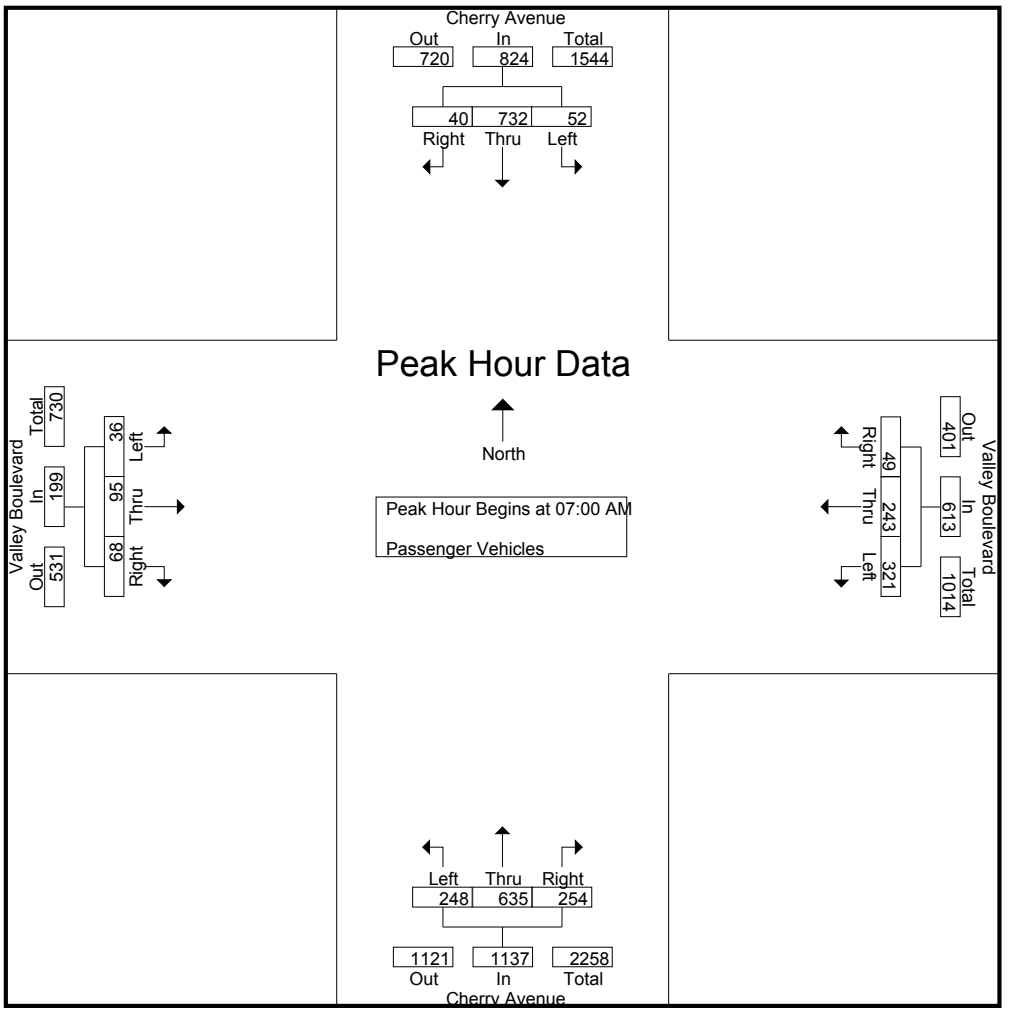
	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	9	203	10	222	88	46	7	141	65	147	55	267	8	24	20	52	682
07:15 AM	13	214	11	238	110	50	8	168	46	160	66	272	9	25	19	53	731
07:30 AM	9	159	9	177	71	78	13	162	70	169	76	315	10	26	14	50	704
07:45 AM	21	156	10	187	52	69	21	142	67	159	57	283	9	20	15	44	656
Total	52	732	40	824	321	243	49	613	248	635	254	1137	36	95	68	199	2773
08:00 AM	27	143	13	183	47	58	12	117	55	129	46	230	9	24	22	55	585
08:15 AM	16	132	6	154	56	50	14	120	43	117	59	219	13	24	20	57	550
08:30 AM	19	143	7	169	58	52	10	120	41	102	38	181	14	29	25	68	538
08:45 AM	9	101	8	118	38	38	10	86	44	96	43	183	12	26	28	66	453
Total	71	519	34	624	199	198	46	443	183	444	186	813	48	103	95	246	2126
Grand Total	123	1251	74	1448	520	441	95	1056	431	1079	440	1950	84	198	163	445	4899
Apprch %	8.5	86.4	5.1		49.2	41.8	9		22.1	55.3	22.6		18.9	44.5	36.6		
Total %	2.5	25.5	1.5	29.6	10.6	9	1.9	21.6	8.8	22	9	39.8	1.7	4	3.3	9.1	

	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	9	203	10	222	88	46	7	141	65	147	55	267	8	24	**20**	52	682
07:15 AM	13	**214**	**11**	**238**	**110**	50	8	**168**	46	160	66	272	9	25	19	**53**	**731**
07:30 AM	9	159	9	177	71	**78**	13	162	**70**	**169**	**76**	**315**	**10**	**26**	14	50	704
07:45 AM	**21**	156	10	187	52	69	**21**	142	67	159	57	283	9	20	15	44	656
Total Volume	52	732	40	824	321	243	49	613	248	635	254	1137	36	95	68	199	2773
% App. Total	6.3	88.8	4.9		52.4	39.6	8		21.8	55.8	22.3		18.1	47.7	34.2		
PHF	.619	.855	.909	.866	.730	.779	.583	.912	.886	.939	.836	.902	.900	.913	.850	.939	.948

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	9	203	10	222	88	46	7	141	65	147	55	267	8	24	**20**	52
+15 mins.	13	**214**	**11**	**238**	**110**	50	8	**168**	46	160	66	272	9	25	19	**53**
+30 mins.	9	159	9	177	71	**78**	13	162	**70**	**169**	**76**	**315**	**10**	**26**	14	50
+45 mins.	**21**	156	10	187	52	69	**21**	142	67	159	57	283	9	20	15	44
Total Volume	52	732	40	824	321	243	49	613	248	635	254	1137	36	95	68	199
% App. Total	6.3	88.8	4.9		52.4	39.6	8		21.8	55.8	22.3		18.1	47.7	34.2	
PHF	.619	.855	.909	.866	.730	.779	.583	.912	.886	.939	.836	.902	.900	.913	.850	.939

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

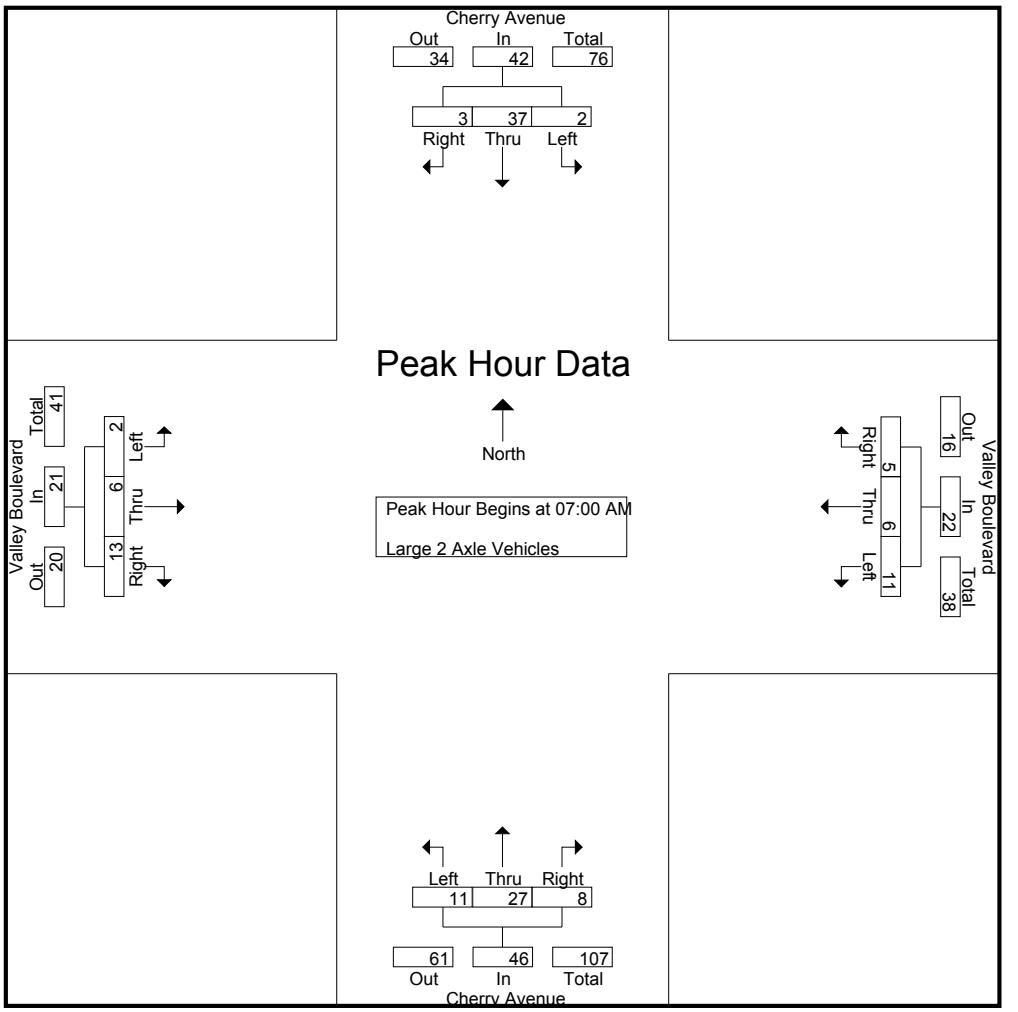
	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	8	1	10	1	0	1	2	4	7	1	12	0	1	4	5	29
07:15 AM	1	9	1	11	4	2	1	7	2	7	0	9	1	2	3	6	33
07:30 AM	0	11	1	12	3	1	2	6	5	6	1	12	1	3	4	8	38
07:45 AM	0	9	0	9	3	3	1	7	0	7	6	13	0	0	2	2	31
Total	2	37	3	42	11	6	5	22	11	27	8	46	2	6	13	21	131
08:00 AM	0	11	1	12	6	2	1	9	8	6	5	19	0	4	3	7	47
08:15 AM	2	9	2	13	7	6	0	13	2	10	3	15	2	4	5	11	52
08:30 AM	1	8	2	11	4	2	1	7	8	8	1	17	2	2	1	5	40
08:45 AM	2	4	0	6	4	2	2	8	6	12	3	21	1	1	1	3	38
Total	5	32	5	42	21	12	4	37	24	36	12	72	5	11	10	26	177
Grand Total	7	69	8	84	32	18	9	59	35	63	20	118	7	17	23	47	308
Apprch %	8.3	82.1	9.5		54.2	30.5	15.3		29.7	53.4	16.9		14.9	36.2	48.9		
Total %	2.3	22.4	2.6	27.3	10.4	5.8	2.9	19.2	11.4	20.5	6.5	38.3	2.3	5.5	7.5	15.3	

	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**1**	8	**1**	10	1	0	1	2	4	**7**	1	12	0	1	**4**	5	29
07:15 AM	1	9	1	11	**4**	2	1	**7**	2	7	0	9	**1**	2	3	6	33
07:30 AM	0	**11**	1	**12**	3	1	**2**	6	**5**	6	1	12	1	**3**	4	**8**	**38**
07:45 AM	0	9	0	9	3	**3**	1	7	0	7	**6**	**13**	0	0	2	2	31
Total Volume	2	37	3	42	11	6	5	22	11	27	8	46	2	6	13	21	131
% App. Total	4.8	88.1	7.1		50	27.3	22.7		23.9	58.7	17.4		9.5	28.6	61.9		
PHF	.500	.841	.750	.875	.688	.500	.625	.786	.550	.964	.333	.885	.500	.500	.813	.656	.862

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	**1**	8	**1**	10	1	0	1	2	4	**7**	1	12	0	1	**4**	5
+15 mins.	1	9	1	11	**4**	2	1	**7**	2	7	0	9	**1**	2	3	6
+30 mins.	0	**11**	1	**12**	3	1	**2**	6	**5**	6	1	12	1	**3**	4	**8**
+45 mins.	0	9	0	9	3	**3**	1	7	0	7	**6**	**13**	0	0	2	2
Total Volume	2	37	3	42	11	6	5	22	11	27	8	46	2	6	13	21
% App. Total	4.8	88.1	7.1		50	27.3	22.7		23.9	58.7	17.4		9.5	28.6	61.9	
PHF	.500	.841	.750	.875	.688	.500	.625	.786	.550	.964	.333	.885	.500	.500	.813	.656

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

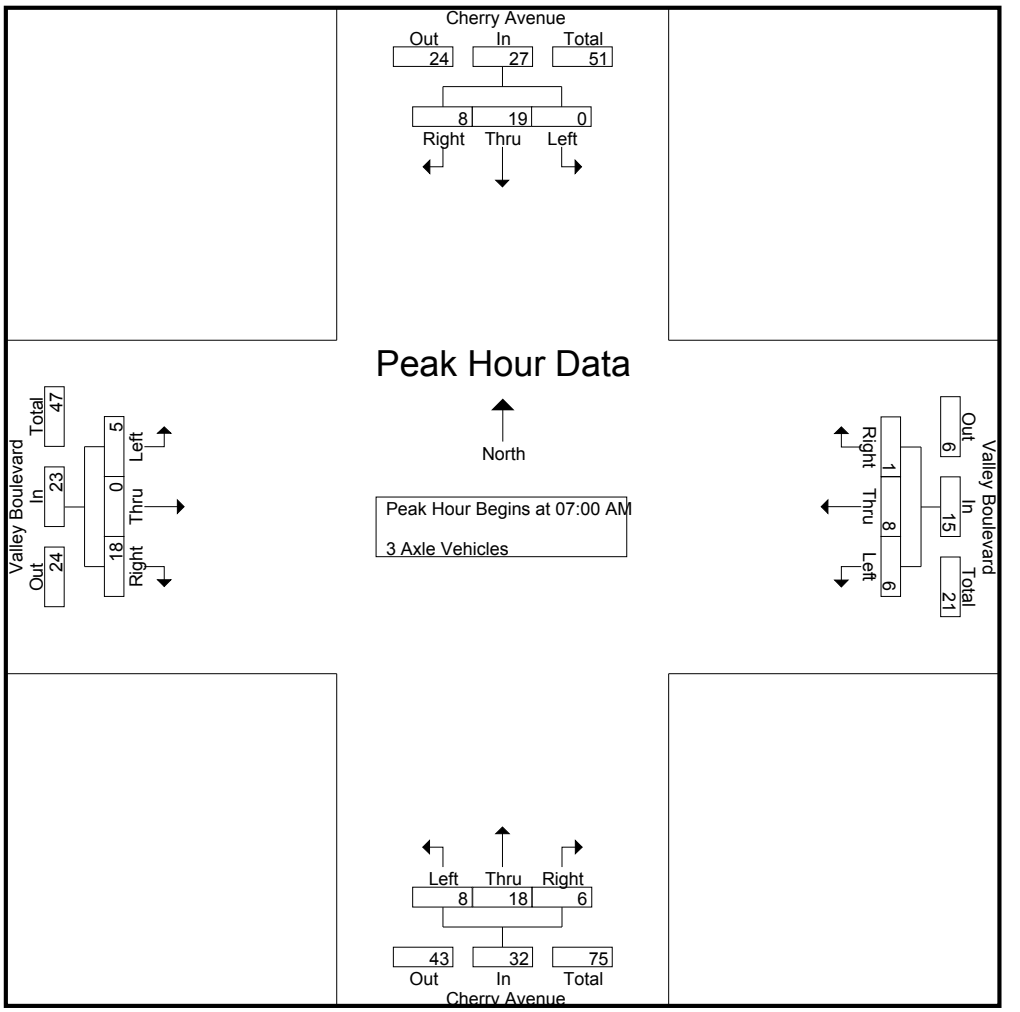
	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	5	3	8	2	1	0	3	2	1	1	4	1	0	1	2	17
07:15 AM	0	2	2	4	2	2	0	4	1	8	0	9	1	0	5	6	23
07:30 AM	0	7	2	9	1	1	1	3	2	0	2	4	2	0	7	9	25
07:45 AM	0	5	1	6	1	4	0	5	3	9	3	15	1	0	5	6	32
Total	0	19	8	27	6	8	1	15	8	18	6	32	5	0	18	23	97
08:00 AM	0	4	2	6	0	1	0	1	6	1	2	9	2	1	3	6	22
08:15 AM	3	7	1	11	0	1	0	1	2	3	1	6	1	2	2	5	23
08:30 AM	3	9	1	13	4	1	1	6	3	8	2	13	1	2	6	9	41
08:45 AM	1	7	0	8	3	3	0	6	6	4	3	13	0	2	6	8	35
Total	7	27	4	38	7	6	1	14	17	16	8	41	4	7	17	28	121
Grand Total	7	46	12	65	13	14	2	29	25	34	14	73	9	7	35	51	218
Apprch %	10.8	70.8	18.5		44.8	48.3	6.9		34.2	46.6	19.2		17.6	13.7	68.6		
Total %	3.2	21.1	5.5	29.8	6	6.4	0.9	13.3	11.5	15.6	6.4	33.5	4.1	3.2	16.1	23.4	

	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	5	**3**	8	**2**	1	0	3	2	1	1	4	1	0	1	2	17
07:15 AM	0	2	2	4	2	2	0	4	1	8	0	9	1	0	5	6	23
07:30 AM	0	**7**	2	**9**	1	1	**1**	3	2	0	2	4	**2**	0	**7**	**9**	25
07:45 AM	0	5	1	6	1	**4**	0	**5**	**3**	**9**	**3**	**15**	1	0	5	6	**32**
Total Volume	0	19	8	27	6	8	1	15	8	18	6	32	5	0	18	23	97
% App. Total	0	70.4	29.6		40	53.3	6.7		25	56.2	18.8		21.7	0	78.3		
PHF	.000	.679	.667	.750	.750	.500	.250	.750	.667	.500	.500	.533	.625	.000	.643	.639	.758

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	5	**3**	8	**2**	1	0	3	2	1	1	4	1	0	1	2
+15 mins.	0	2	2	4	2	2	0	4	1	8	0	9	1	0	5	6
+30 mins.	0	**7**	2	**9**	1	1	**1**	3	2	0	2	4	**2**	0	**7**	**9**
+45 mins.	0	5	1	6	1	**4**	0	**5**	**3**	**9**	**3**	**15**	1	0	5	6
Total Volume	0	19	8	27	6	8	1	15	8	18	6	32	5	0	18	23
% App. Total	0	70.4	29.6		40	53.3	6.7		25	56.2	18.8		21.7	0	78.3	
PHF	.000	.679	.667	.750	.750	.500	.250	.750	.667	.500	.500	.533	.625	.000	.643	.639

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

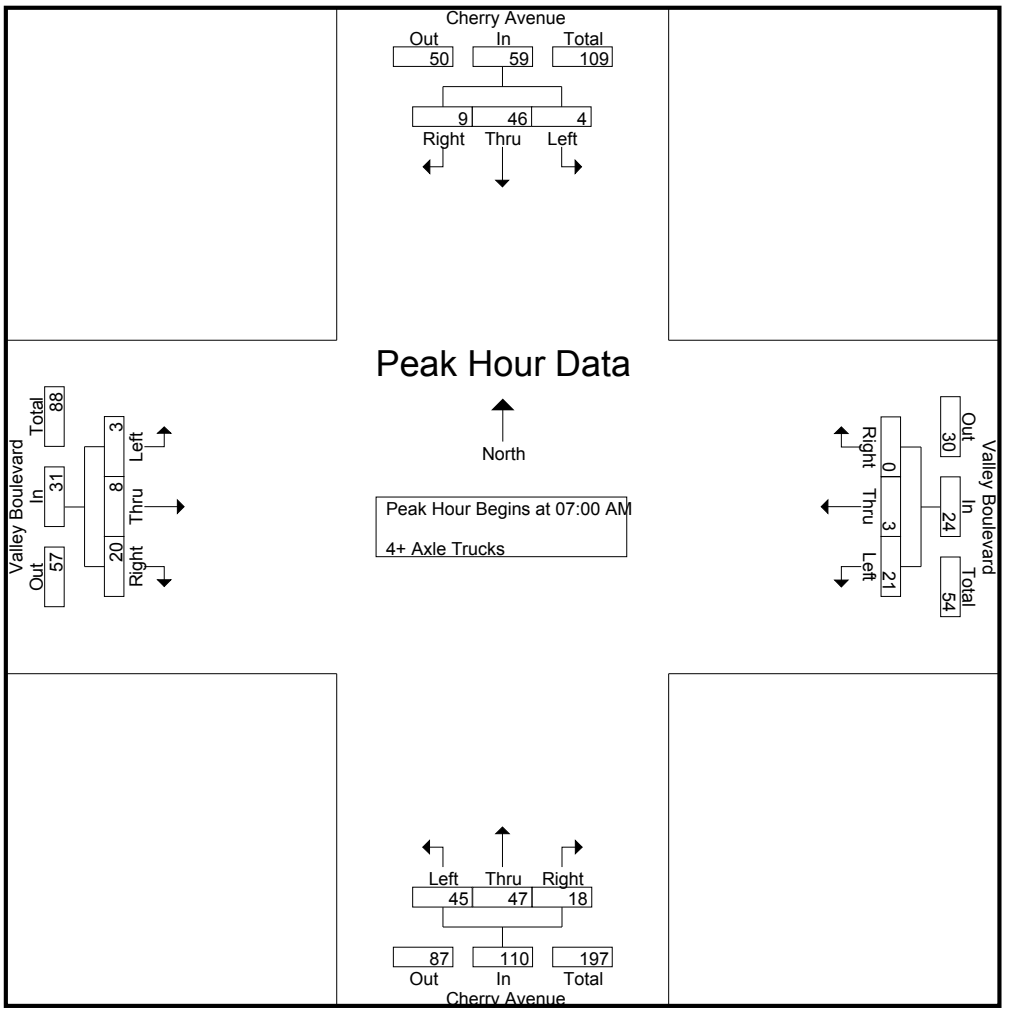
	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	10	0	11	3	1	0	4	13	10	5	28	1	2	3	6	49
07:15 AM	0	8	3	11	9	0	0	9	6	17	6	29	0	1	5	6	55
07:30 AM	2	17	4	23	7	0	0	7	10	12	2	24	0	3	5	8	62
07:45 AM	1	11	2	14	2	2	0	4	16	8	5	29	2	2	7	11	58
Total	4	46	9	59	21	3	0	24	45	47	18	110	3	8	20	31	224
08:00 AM	1	18	1	20	6	5	0	11	8	10	5	23	1	3	10	14	68
08:15 AM	0	10	2	12	6	3	0	9	9	12	5	26	2	4	6	12	59
08:30 AM	0	15	2	17	8	1	1	10	13	11	7	31	0	2	12	14	72
08:45 AM	1	14	3	18	5	2	1	8	13	13	2	28	2	4	11	17	71
Total	2	57	8	67	25	11	2	38	43	46	19	108	5	13	39	57	270
Grand Total	6	103	17	126	46	14	2	62	88	93	37	218	8	21	59	88	494
Apprch %	4.8	81.7	13.5		74.2	22.6	3.2		40.4	42.7	17		9.1	23.9	67		
Total %	1.2	20.9	3.4	25.5	9.3	2.8	0.4	12.6	17.8	18.8	7.5	44.1	1.6	4.3	11.9	17.8	

	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	10	0	11	3	1	0	4	13	10	5	28	1	2	3	6	49
07:15 AM	0	8	3	11	**9**	0	0	**9**	6	**17**	**6**	**29**	0	1	5	6	55
07:30 AM	**2**	**17**	**4**	**23**	7	0	0	7	10	12	2	24	0	**3**	5	8	**62**
07:45 AM	1	11	2	14	2	**2**	0	4	**16**	8	5	29	**2**	2	**7**	**11**	58
Total Volume	4	46	9	59	21	3	0	24	45	47	18	110	3	8	20	31	224
% App. Total	6.8	78	15.3		87.5	12.5	0		40.9	42.7	16.4		9.7	25.8	64.5		
PHF	.500	.676	.563	.641	.583	.375	.000	.667	.703	.691	.750	.948	.375	.667	.714	.705	.903

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	1	10	0	11	3	1	0	4	13	10	5	28	1	2	3	6
+15 mins.	0	8	3	11	**9**	0	0	**9**	6	**17**	**6**	**29**	0	1	5	6
+30 mins.	**2**	**17**	**4**	**23**	7	0	0	7	10	12	2	24	0	**3**	5	8
+45 mins.	1	11	2	14	2	**2**	0	4	**16**	8	5	29	**2**	2	**7**	**11**
Total Volume	4	46	9	59	21	3	0	24	45	47	18	110	3	8	20	31
% App. Total	6.8	78	15.3		87.5	12.5	0		40.9	42.7	16.4		9.7	25.8	64.5	
PHF	.500	.676	.563	.641	.583	.375	.000	.667	.703	.691	.750	.948	.375	.667	.714	.705

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

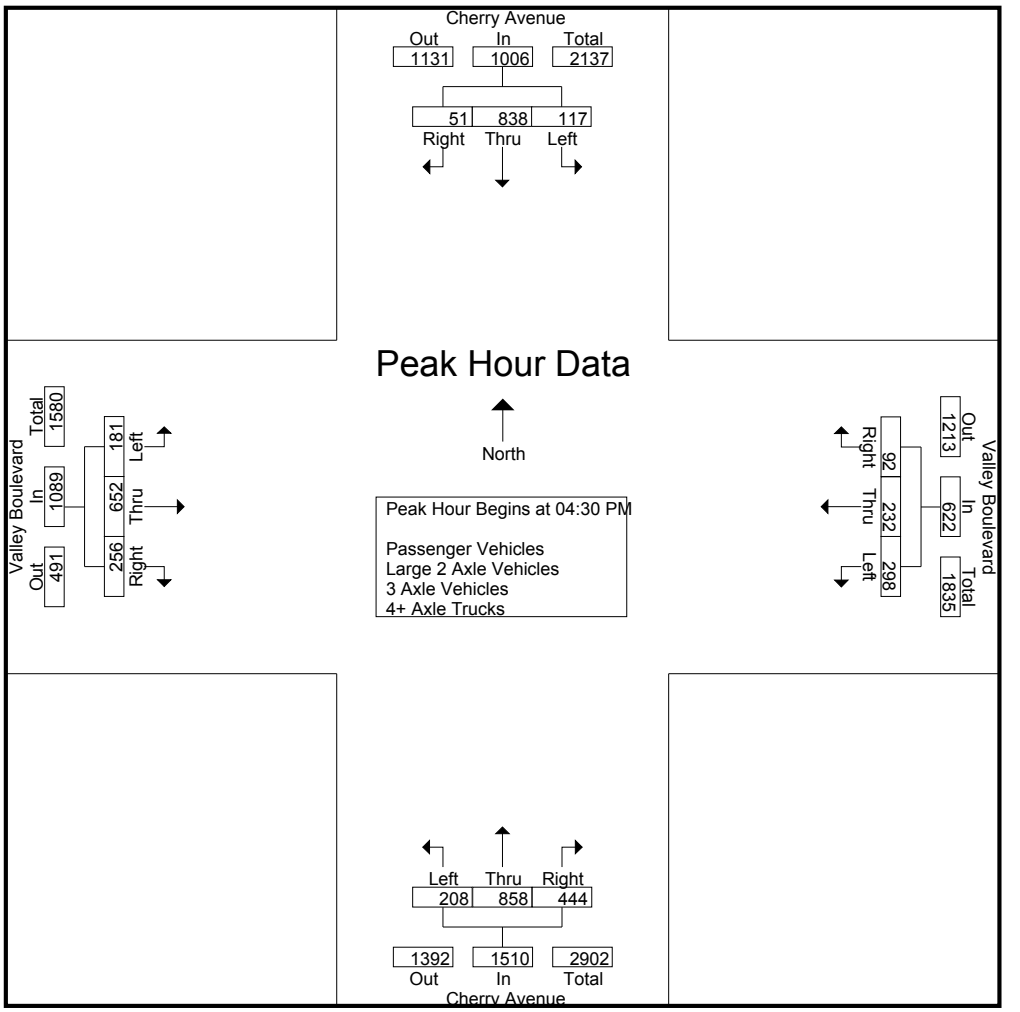
	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	33	224	10	267	76	55	26	157	59	198	114	371	59	151	76	286	1081
04:15 PM	29	204	12	245	82	48	17	147	55	180	94	329	53	136	60	249	970
04:30 PM	34	242	15	291	75	49	25	149	47	193	97	337	32	125	59	216	993
04:45 PM	27	165	10	202	84	68	29	181	51	223	148	422	60	169	50	279	1084
Total	123	835	47	1005	317	220	97	634	212	794	453	1459	204	581	245	1030	4128
05:00 PM	27	243	12	282	70	56	22	148	56	220	112	388	34	169	77	280	1098
05:15 PM	29	188	14	231	69	59	16	144	54	222	87	363	55	189	70	314	1052
05:30 PM	21	192	5	218	65	32	19	116	50	207	79	336	33	133	43	209	879
05:45 PM	25	128	10	163	57	35	15	107	61	164	88	313	37	98	45	180	763
Total	102	751	41	894	261	182	72	515	221	813	366	1400	159	589	235	983	3792
Grand Total	225	1586	88	1899	578	402	169	1149	433	1607	819	2859	363	1170	480	2013	7920
Apprch %	11.8	83.5	4.6		50.3	35	14.7		15.1	56.2	28.6		18	58.1	23.8		
Total %	2.8	20	1.1	24	7.3	5.1	2.1	14.5	5.5	20.3	10.3	36.1	4.6	14.8	6.1	25.4	
Passenger Vehicles	202	1420	70	1692	519	362	159	1040	307	1488	756	2551	333	1100	383	1816	7099
% Passenger Vehicles	89.8	89.5	79.5	89.1	89.8	90	94.1	90.5	70.9	92.6	92.3	89.2	91.7	94	79.8	90.2	89.6
Large 2 Axle Vehicles	10	59	3	72	15	11	4	30	20	40	16	76	11	24	16	51	229
% Large 2 Axle Vehicles	4.4	3.7	3.4	3.8	2.6	2.7	2.4	2.6	4.6	2.5	2	2.7	3	2.1	3.3	2.5	2.9
3 Axle Vehicles	4	43	8	55	21	12	3	36	26	27	14	67	8	13	27	48	206
% 3 Axle Vehicles	1.8	2.7	9.1	2.9	3.6	3	1.8	3.1	6	1.7	1.7	2.3	2.2	1.1	5.6	2.4	2.6
4+ Axle Trucks	9	64	7	80	23	17	3	43	80	52	33	165	11	33	54	98	386
% 4+ Axle Trucks	4	4	8	4.2	4	4.2	1.8	3.7	18.5	3.2	4	5.8	3	2.8	11.2	4.9	4.9

	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**34**	242	**15**	**291**	75	49	25	149	47	193	97	337	32	125	59	216	993
04:45 PM	27	165	10	202	**84**	**68**	**29**	**181**	51	**223**	**148**	**422**	**60**	169	50	279	1084
05:00 PM	27	**243**	12	282	70	56	22	148	**56**	220	112	388	34	169	**77**	280	**1098**
05:15 PM	29	188	14	231	69	59	16	144	54	222	87	363	55	**189**	70	**314**	1052
Total Volume	117	838	51	1006	298	232	92	622	208	858	444	1510	181	652	256	1089	4227
% App. Total	11.6	83.3	5.1		47.9	37.3	14.8		13.8	56.8	29.4		16.6	59.9	23.5		
PHF	.860	.862	.850	.864	.887	.853	.793	.859	.929	.962	.750	.895	.754	.862	.831	.867	.962

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:00 PM				04:30 PM				04:30 PM			
+0 mins.	29	204	12	245	76	55	26	157	47	193	97	337	32	125	59	216
+15 mins.	**34**	242	**15**	**291**	82	48	17	147	51	**223**	**148**	**422**	**60**	169	50	279
+30 mins.	27	165	10	202	75	49	25	149	**56**	220	112	388	34	169	**77**	280
+45 mins.	27	**243**	12	282	**84**	**68**	**29**	**181**	54	222	87	363	55	**189**	70	**314**
Total Volume	117	854	49	1020	317	220	97	634	208	858	444	1510	181	652	256	1089
% App. Total	11.5	83.7	4.8		50	34.7	15.3		13.8	56.8	29.4		16.6	59.9	23.5	
PHF	.860	.879	.817	.876	.943	.809	.836	.876	.929	.962	.750	.895	.754	.862	.831	.867

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles

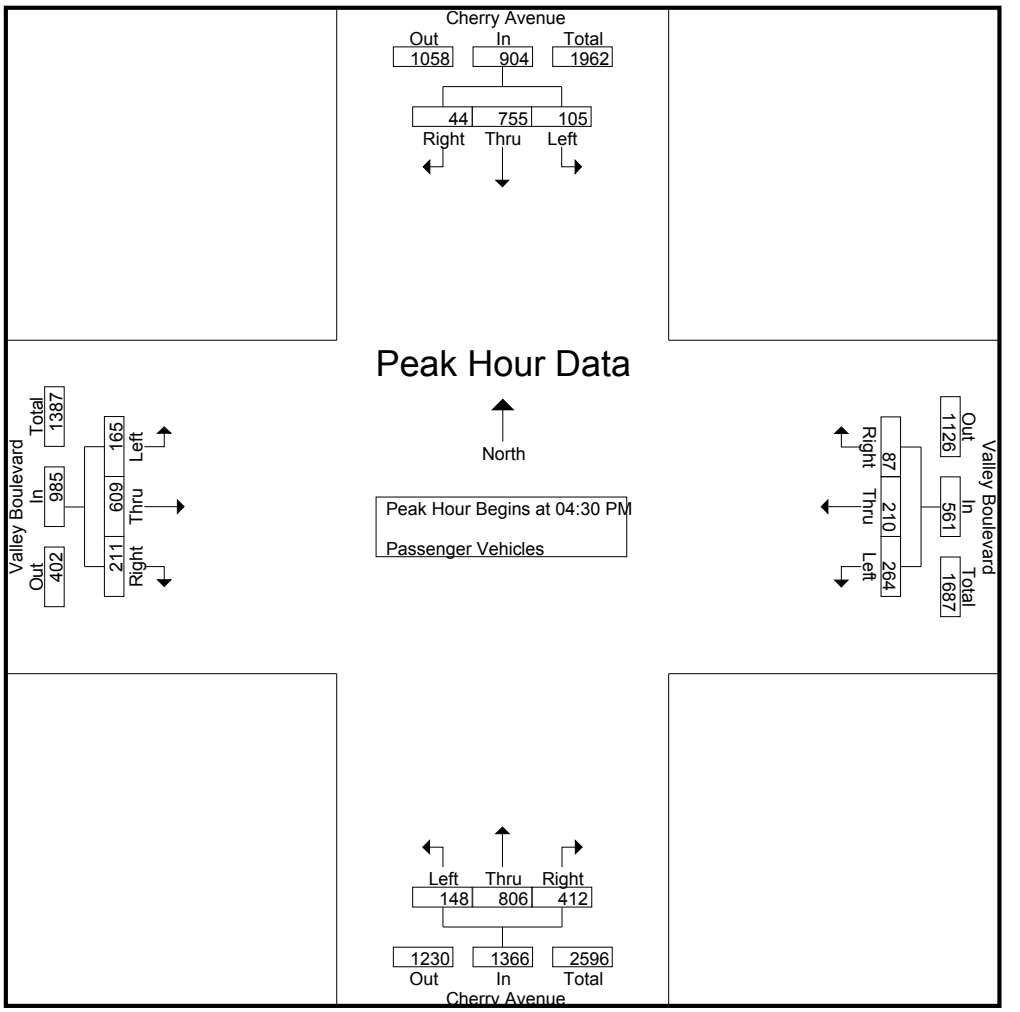
	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	31	200	7	238	68	49	24	141	38	177	107	322	57	142	61	260	961
04:15 PM	25	177	11	213	75	44	16	135	40	162	81	283	48	134	46	228	859
04:30 PM	30	214	11	255	67	46	23	136	35	179	90	304	29	112	44	185	880
04:45 PM	25	153	10	188	74	61	28	163	37	212	139	388	53	160	41	254	993
Total	111	744	39	894	284	200	91	575	150	730	417	1297	187	548	192	927	3693
05:00 PM	22	218	10	250	64	51	21	136	39	202	101	342	32	155	63	250	978
05:15 PM	28	170	13	211	59	52	15	126	37	213	82	332	51	182	63	296	965
05:30 PM	21	174	2	197	57	28	18	103	37	189	76	302	29	123	33	185	787
05:45 PM	20	114	6	140	55	31	14	100	44	154	80	278	34	92	32	158	676
Total	91	676	31	798	235	162	68	465	157	758	339	1254	146	552	191	889	3406
Grand Total	202	1420	70	1692	519	362	159	1040	307	1488	756	2551	333	1100	383	1816	7099
Apprch %	11.9	83.9	4.1		49.9	34.8	15.3		12	58.3	29.6		18.3	60.6	21.1		
Total %	2.8	20	1	23.8	7.3	5.1	2.2	14.6	4.3	21	10.6	35.9	4.7	15.5	5.4	25.6	

	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**30**	214	11	**255**	67	46	23	136	35	179	90	304	29	112	44	185	880
04:45 PM	25	153	10	188	**74**	**61**	**28**	**163**	37	212	**139**	**388**	**53**	160	41	254	**993**
05:00 PM	22	**218**	10	250	64	51	21	136	**39**	202	101	342	32	155	**63**	250	978
05:15 PM	28	170	**13**	211	59	52	15	126	37	**213**	82	332	51	**182**	63	**296**	965
Total Volume	105	755	44	904	264	210	87	561	148	806	412	1366	165	609	211	985	3816
% App. Total	11.6	83.5	4.9		47.1	37.4	15.5		10.8	59	30.2		16.8	61.8	21.4		
PHF	.875	.866	.846	.886	.892	.861	.777	.860	.949	.946	.741	.880	.778	.837	.837	.832	.961

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	**30**	214	11	**255**	67	46	23	136	35	179	90	304	29	112	44	185
+15 mins.	25	153	10	188	**74**	**61**	**28**	**163**	37	212	**139**	**388**	**53**	160	41	254
+30 mins.	22	**218**	10	250	64	51	21	136	**39**	202	101	342	32	155	**63**	250
+45 mins.	28	170	**13**	211	59	52	15	126	37	**213**	82	332	51	**182**	63	**296**
Total Volume	105	755	44	904	264	210	87	561	148	806	412	1366	165	609	211	985
% App. Total	11.6	83.5	4.9		47.1	37.4	15.5		10.8	59	30.2		16.8	61.8	21.4	
PHF	.875	.866	.846	.886	.892	.861	.777	.860	.949	.946	.741	.880	.778	.837	.837	.832

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

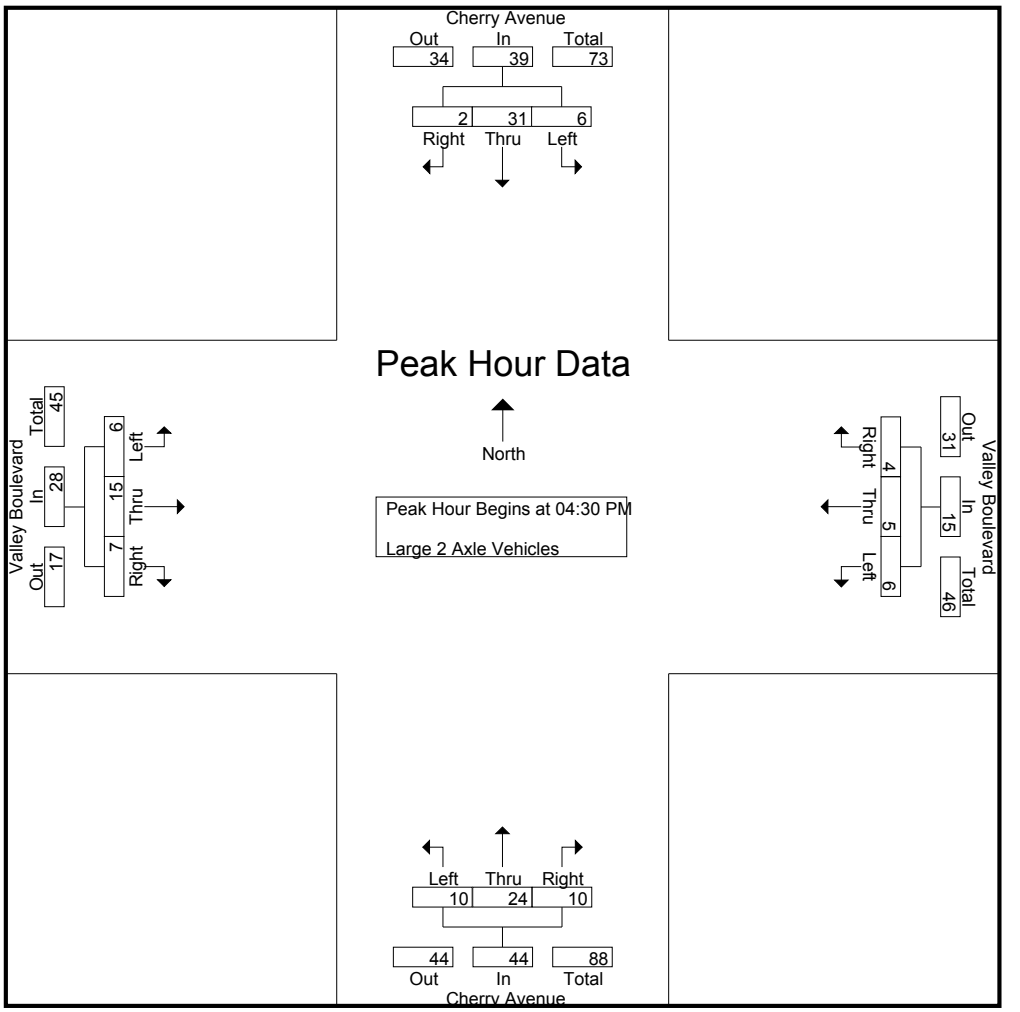
	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	11	0	12	4	2	0	6	6	4	1	11	1	5	2	8	37
04:15 PM	2	8	1	11	2	2	0	4	3	5	4	12	1	0	4	5	32
04:30 PM	0	8	2	10	1	1	2	4	1	5	1	7	1	5	2	8	29
04:45 PM	2	5	0	7	1	3	1	5	2	3	6	11	3	4	2	9	32
Total	5	32	3	40	8	8	3	19	12	17	12	41	6	14	10	30	130
05:00 PM	3	13	0	16	1	0	1	2	7	12	1	20	1	4	3	8	46
05:15 PM	1	5	0	6	3	1	0	4	0	4	2	6	1	2	0	3	19
05:30 PM	0	5	0	5	1	1	0	2	1	4	0	5	2	4	0	6	18
05:45 PM	1	4	0	5	2	1	0	3	0	3	1	4	1	0	3	4	16
Total	5	27	0	32	7	3	1	11	8	23	4	35	5	10	6	21	99
Grand Total	10	59	3	72	15	11	4	30	20	40	16	76	11	24	16	51	229
Apprch %	13.9	81.9	4.2		50	36.7	13.3		26.3	52.6	21.1		21.6	47.1	31.4		
Total %	4.4	25.8	1.3	31.4	6.6	4.8	1.7	13.1	8.7	17.5	7	33.2	4.8	10.5	7	22.3	

	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	8	**2**	10	1	1	**2**	4	1	5	1	7	1	**5**	2	8	29
04:45 PM	2	5	0	7	1	**3**	1	**5**	2	3	**6**	11	**3**	4	2	**9**	32
05:00 PM	**3**	**13**	0	**16**	1	0	1	2	**7**	**12**	1	**20**	1	4	**3**	8	**46**
05:15 PM	1	5	0	6	**3**	1	0	4	0	4	2	6	1	2	0	3	19
Total Volume	6	31	2	39	6	5	4	15	10	24	10	44	6	15	7	28	126
% App. Total	15.4	79.5	5.1		40	33.3	26.7		22.7	54.5	22.7		21.4	53.6	25		
PHF	.500	.596	.250	.609	.500	.417	.500	.750	.357	.500	.417	.550	.500	.750	.583	.778	.685

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	8	**2**	10	1	1	**2**	4	1	5	1	7	1	**5**	2	8
+15 mins.	2	5	0	7	1	**3**	1	**5**	2	3	**6**	11	**3**	4	2	**9**
+30 mins.	**3**	**13**	0	**16**	1	0	1	2	**7**	**12**	1	**20**	1	4	**3**	8
+45 mins.	1	5	0	6	**3**	1	0	4	0	4	2	6	1	2	0	3
Total Volume	6	31	2	39	6	5	4	15	10	24	10	44	6	15	7	28
% App. Total	15.4	79.5	5.1		40	33.3	26.7		22.7	54.5	22.7		21.4	53.6	25	
PHF	.500	.596	.250	.609	.500	.417	.500	.750	.357	.500	.417	.550	.500	.750	.583	.778

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

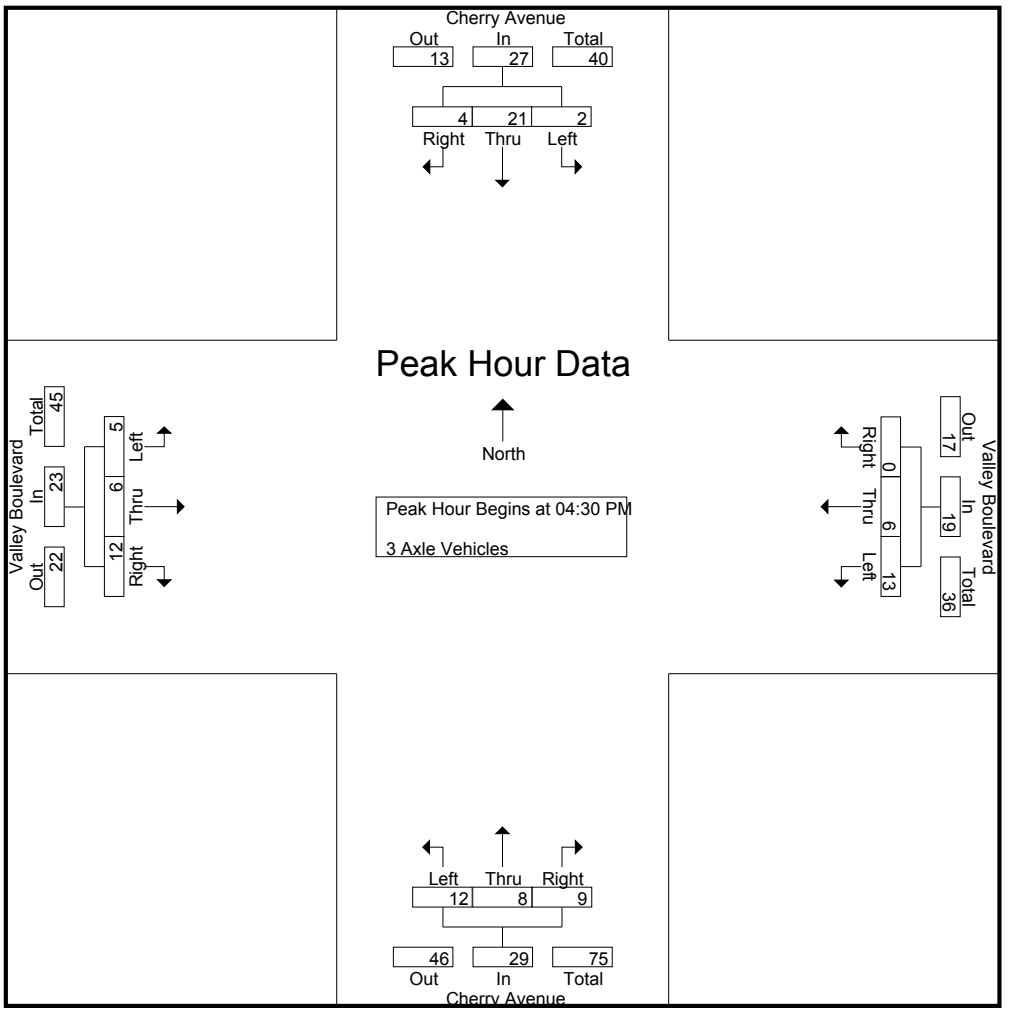
	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	4	0	4	2	1	1	4	5	7	1	13	0	2	5	7	28
04:15 PM	2	8	0	10	2	1	1	4	3	3	2	8	3	0	6	9	31
04:30 PM	2	11	2	15	4	0	0	4	2	2	2	6	0	1	5	6	31
04:45 PM	0	1	0	1	3	4	0	7	1	3	2	6	2	2	1	5	19
Total	4	24	2	30	11	6	2	19	11	15	7	33	5	5	17	27	109
05:00 PM	0	3	1	4	1	1	0	2	3	1	3	7	0	2	3	5	18
05:15 PM	0	6	1	7	5	1	0	6	6	2	2	10	3	1	3	7	30
05:30 PM	0	5	1	6	4	2	0	6	1	8	0	9	0	2	4	6	27
05:45 PM	0	5	3	8	0	2	1	3	5	1	2	8	0	3	0	3	22
Total	0	19	6	25	10	6	1	17	15	12	7	34	3	8	10	21	97
Grand Total	4	43	8	55	21	12	3	36	26	27	14	67	8	13	27	48	206
Apprch %	7.3	78.2	14.5		58.3	33.3	8.3		38.8	40.3	20.9		16.7	27.1	56.2		
Total %	1.9	20.9	3.9	26.7	10.2	5.8	1.5	17.5	12.6	13.1	6.8	32.5	3.9	6.3	13.1	23.3	

	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**2**	**11**	**2**	**15**	4	0	0	4	2	2	2	6	0	1	**5**	6	**31**
04:45 PM	0	1	0	1	3	**4**	0	**7**	1	**3**	2	6	2	**2**	1	5	19
05:00 PM	0	3	1	4	1	1	0	2	3	1	**3**	7	0	2	3	5	18
05:15 PM	0	6	1	7	**5**	1	0	6	**6**	2	2	**10**	**3**	1	3	**7**	30
Total Volume	2	21	4	27	13	6	0	19	12	8	9	29	5	6	12	23	98
% App. Total	7.4	77.8	14.8		68.4	31.6	0		41.4	27.6	31		21.7	26.1	52.2		
PHF	.250	.477	.500	.450	.650	.375	.000	.679	.500	.667	.750	.725	.417	.750	.600	.821	.790

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	**2**	**11**	**2**	**15**	4	0	0	4	2	2	2	6	0	1	**5**	6
+15 mins.	0	1	0	1	3	**4**	0	**7**	1	**3**	2	6	2	**2**	1	5
+30 mins.	0	3	1	4	1	1	0	2	3	1	**3**	7	0	2	3	5
+45 mins.	0	6	1	7	**5**	1	0	6	**6**	2	2	**10**	**3**	1	3	**7**
Total Volume	2	21	4	27	13	6	0	19	12	8	9	29	5	6	12	23
% App. Total	7.4	77.8	14.8		68.4	31.6	0		41.4	27.6	31		21.7	26.1	52.2	
PHF	.250	.477	.500	.450	.650	.375	.000	.679	.500	.667	.750	.725	.417	.750	.600	.821

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

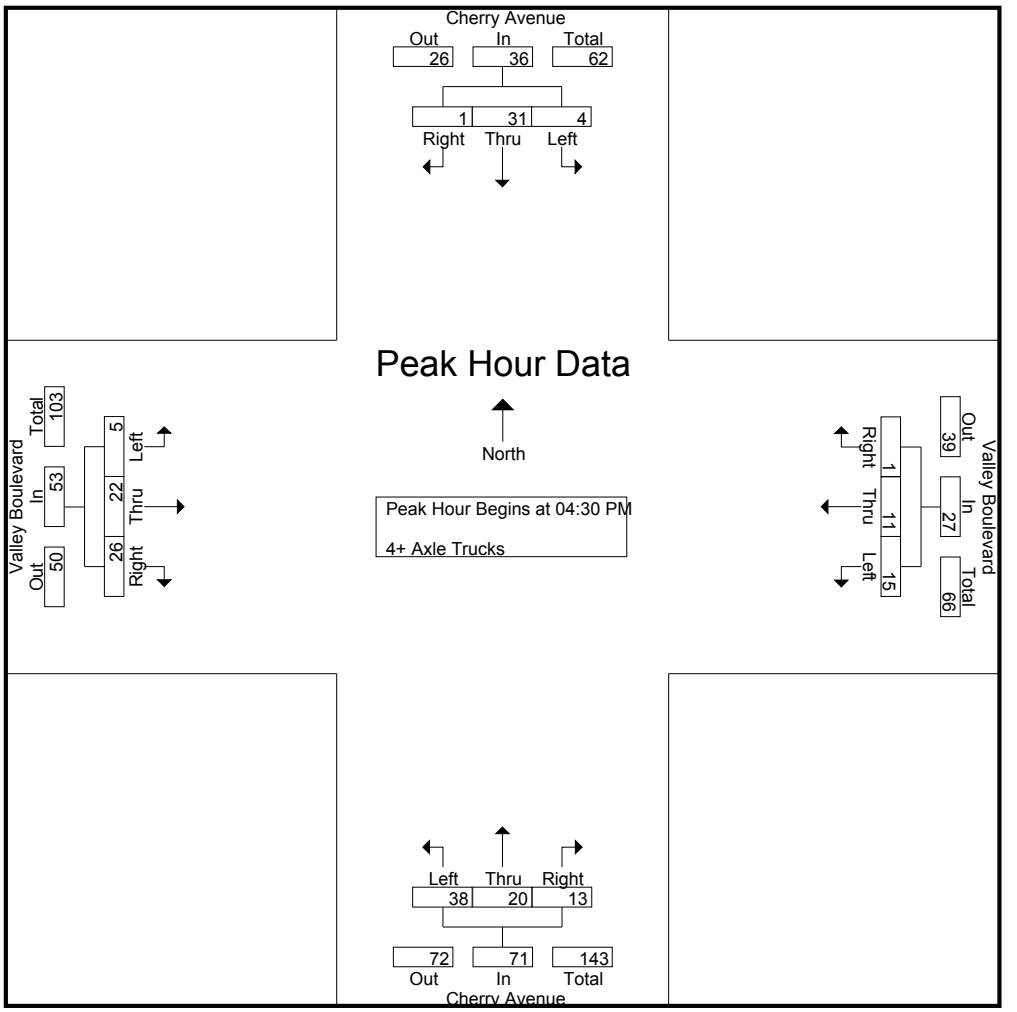
	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	9	3	13	2	3	1	6	10	10	5	25	1	2	8	11	55
04:15 PM	0	11	0	11	3	1	0	4	9	10	7	26	1	2	4	7	48
04:30 PM	2	9	0	11	3	2	0	5	9	7	4	20	2	7	8	17	53
04:45 PM	0	6	0	6	6	0	0	6	11	5	1	17	2	3	6	11	40
Total	3	35	3	41	14	6	1	21	39	32	17	88	6	14	26	46	196
05:00 PM	2	9	1	12	4	4	0	8	7	5	7	19	1	8	8	17	56
05:15 PM	0	7	0	7	2	5	1	8	11	3	1	15	0	4	4	8	38
05:30 PM	0	8	2	10	3	1	1	5	11	6	3	20	2	4	6	12	47
05:45 PM	4	5	1	10	0	1	0	1	12	6	5	23	2	3	10	15	49
Total	6	29	4	39	9	11	2	22	41	20	16	77	5	19	28	52	190
Grand Total	9	64	7	80	23	17	3	43	80	52	33	165	11	33	54	98	386
Apprch %	11.2	80	8.8		53.5	39.5	7		48.5	31.5	20		11.2	33.7	55.1		
Total %	2.3	16.6	1.8	20.7	6	4.4	0.8	11.1	20.7	13.5	8.5	42.7	2.8	8.5	14	25.4	

	Cherry Avenue Southbound				Valley Boulevard Westbound				Cherry Avenue Northbound				Valley Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**2**	**9**	0	11	3	2	0	5	9	**7**	4	**20**	**2**	7	**8**	**17**	53
04:45 PM	0	6	0	6	**6**	0	0	6	**11**	5	1	17	2	3	6	11	40
05:00 PM	2	9	**1**	**12**	4	4	0	**8**	7	5	**7**	19	1	**8**	8	17	**56**
05:15 PM	0	7	0	7	2	**5**	**1**	8	11	3	1	15	0	4	4	8	38
Total Volume	4	31	1	36	15	11	1	27	38	20	13	71	5	22	26	53	187
% App. Total	11.1	86.1	2.8		55.6	40.7	3.7		53.5	28.2	18.3		9.4	41.5	49.1		
PHF	.500	.861	.250	.750	.625	.550	.250	.844	.864	.714	.464	.888	.625	.688	.813	.779	.835

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard
Weather: Clear

File Name : FONCHVAPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	**2**	**9**	0	11	3	2	0	5	9	**7**	4	**20**	**2**	7	**8**	**17**
+15 mins.	0	6	0	6	**6**	0	0	6	**11**	5	1	17	2	3	6	11
+30 mins.	2	9	**1**	**12**	4	4	0	**8**	7	5	**7**	19	1	**8**	8	17
+45 mins.	0	7	0	7	2	**5**	**1**	8	11	3	1	15	0	4	4	8
Total Volume	4	31	1	36	15	11	1	27	38	20	13	71	5	22	26	53
% App. Total	11.1	86.1	2.8		55.6	40.7	3.7		53.5	28.2	18.3		9.4	41.5	49.1	
PHF	.500	.861	.250	.750	.625	.550	.250	.844	.864	.714	.464	.888	.625	.688	.813	.779

Location: Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard

Site Code: 201-16023
Date: 1/12/2016
Weather: Clear

PEDESTRIANS

	North Leg Cherry Avenue	East Leg Valley Boulevard	South Leg Cherry Avenue	West Leg Valley Boulevard	TOTAL
7:00 AM	1	1	0	0	2
7:15 AM	0	0	1	0	1
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	1	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	3	1	4
TOTAL VOLUMES:	1	1	4	2	8

	North Leg Cherry Avenue	East Leg Valley Boulevard	South Leg Cherry Avenue	West Leg Valley Boulevard	TOTAL
4:00 PM	0	0	1	0	1
4:15 PM	0	0	2	1	3
4:30 PM	0	0	0	0	0
4:45 PM	1	0	0	2	3
5:00 PM	5	2	1	1	9
5:15 PM	5	3	0	0	8
5:30 PM	0	0	0	1	1
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	11	5	4	5	25

Location: Fontana
N/S: Cherry Avenue
E/W: Valley Boulevard

Site Code: 201-16023
Date: 1/12/2016
Weather: Clear

BICYCLES

	North Leg Cherry Avenue	East Leg Valley Boulevard	South Leg Cherry Avenue	West Leg Valley Boulevard	TOTAL
7:00 AM	0	0	1	0	1
7:15 AM	0	0	0	0	0
7:30 AM	1	0	0	0	1
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	1	0	1	0	2

	North Leg Cherry Avenue	East Leg Valley Boulevard	South Leg Cherry Avenue	West Leg Valley Boulevard	TOTAL
4:00 PM	0	0	1	0	1
4:15 PM	1	0	0	0	1
4:30 PM	1	0	0	0	1
4:45 PM	0	0	1	0	1
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	1	0	0	0	1
TOTAL VOLUMES:	3	0	2	0	5

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

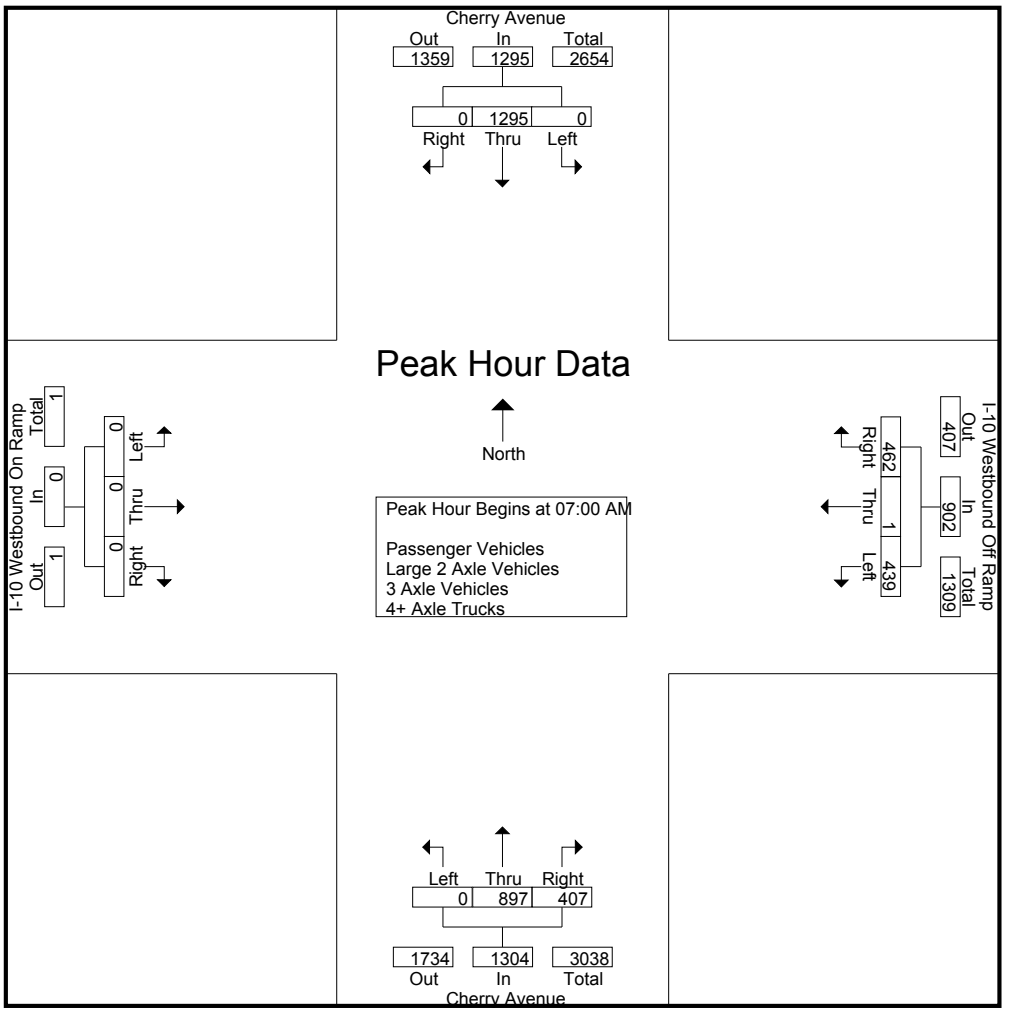
	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	354	0	354	136	1	127	264	0	174	89	263	0	0	0	0	881
07:15 AM	0	375	0	375	110	0	99	209	0	239	101	340	0	0	0	0	924
07:30 AM	0	288	0	288	83	0	112	195	0	278	114	392	0	0	0	0	875
07:45 AM	0	278	0	278	110	0	124	234	0	206	103	309	0	0	0	0	821
Total	0	1295	0	1295	439	1	462	902	0	897	407	1304	0	0	0	0	3501
08:00 AM	0	285	0	285	87	0	121	208	0	170	95	265	0	0	0	0	758
08:15 AM	0	258	0	258	88	0	100	188	0	176	72	248	0	0	0	0	694
08:30 AM	0	283	0	283	64	2	94	160	0	148	75	223	0	0	0	0	666
08:45 AM	0	238	0	238	78	0	85	163	0	172	100	272	0	0	0	0	673
Total	0	1064	0	1064	317	2	400	719	0	666	342	1008	0	0	0	0	2791
Grand Total	0	2359	0	2359	756	3	862	1621	0	1563	749	2312	0	0	0	0	6292
Apprch %	0	100	0		46.6	0.2	53.2		0	67.6	32.4		0	0	0		
Total %	0	37.5	0	37.5	12	0	13.7	25.8	0	24.8	11.9	36.7	0	0	0	0	
Passenger Vehicles	0	1899	0	1899	637	3	699	1339	0	1317	606	1923	0	0	0	0	5161
% Passenger Vehicles	0	80.5	0	80.5	84.3	100	81.1	82.6	0	84.3	80.9	83.2	0	0	0	0	82
Large 2 Axle Vehicles	0	143	0	143	25	0	55	80	0	62	21	83	0	0	0	0	306
% Large 2 Axle Vehicles	0	6.1	0	6.1	3.3	0	6.4	4.9	0	4	2.8	3.6	0	0	0	0	4.9
3 Axle Vehicles	0	90	0	90	22	0	29	51	0	45	12	57	0	0	0	0	198
% 3 Axle Vehicles	0	3.8	0	3.8	2.9	0	3.4	3.1	0	2.9	1.6	2.5	0	0	0	0	3.1
4+ Axle Trucks	0	227	0	227	72	0	79	151	0	139	110	249	0	0	0	0	627
% 4+ Axle Trucks	0	9.6	0	9.6	9.5	0	9.2	9.3	0	8.9	14.7	10.8	0	0	0	0	10

	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	354	0	354	**136**	**1**	**127**	**264**	0	174	89	263	0	0	0	0	881
07:15 AM	0	**375**	0	**375**	110	0	99	209	0	239	101	340	0	0	0	0	**924**
07:30 AM	0	288	0	288	83	0	112	195	0	**278**	**114**	**392**	0	0	0	0	875
07:45 AM	0	278	0	278	110	0	124	234	0	206	103	309	0	0	0	0	821
Total Volume	0	1295	0	1295	439	1	462	902	0	897	407	1304	0	0	0	0	3501
% App. Total	0	100	0		48.7	0.1	51.2		0	68.8	31.2		0	0	0		
PHF	.000	.863	.000	.863	.807	.250	.909	.854	.000	.807	.893	.832	.000	.000	.000	.000	.947

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:15 AM				07:00 AM			
+0 mins.	0	354	0	354	**136**	**1**	**127**	**264**	0	239	101	340	0	0	0	0
+15 mins.	0	**375**	0	**375**	110	0	99	209	0	**278**	**114**	**392**	0	0	0	0
+30 mins.	0	288	0	288	83	0	112	195	0	206	103	309	0	0	0	0
+45 mins.	0	278	0	278	110	0	124	234	0	170	95	265	0	0	0	0
Total Volume	0	1295	0	1295	439	1	462	902	0	893	413	1306	0	0	0	0
% App. Total	0	100	0		48.7	0.1	51.2		0	68.4	31.6		0	0	0	
PHF	.000	.863	.000	.863	.807	.250	.909	.854	.000	.803	.906	.833	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles

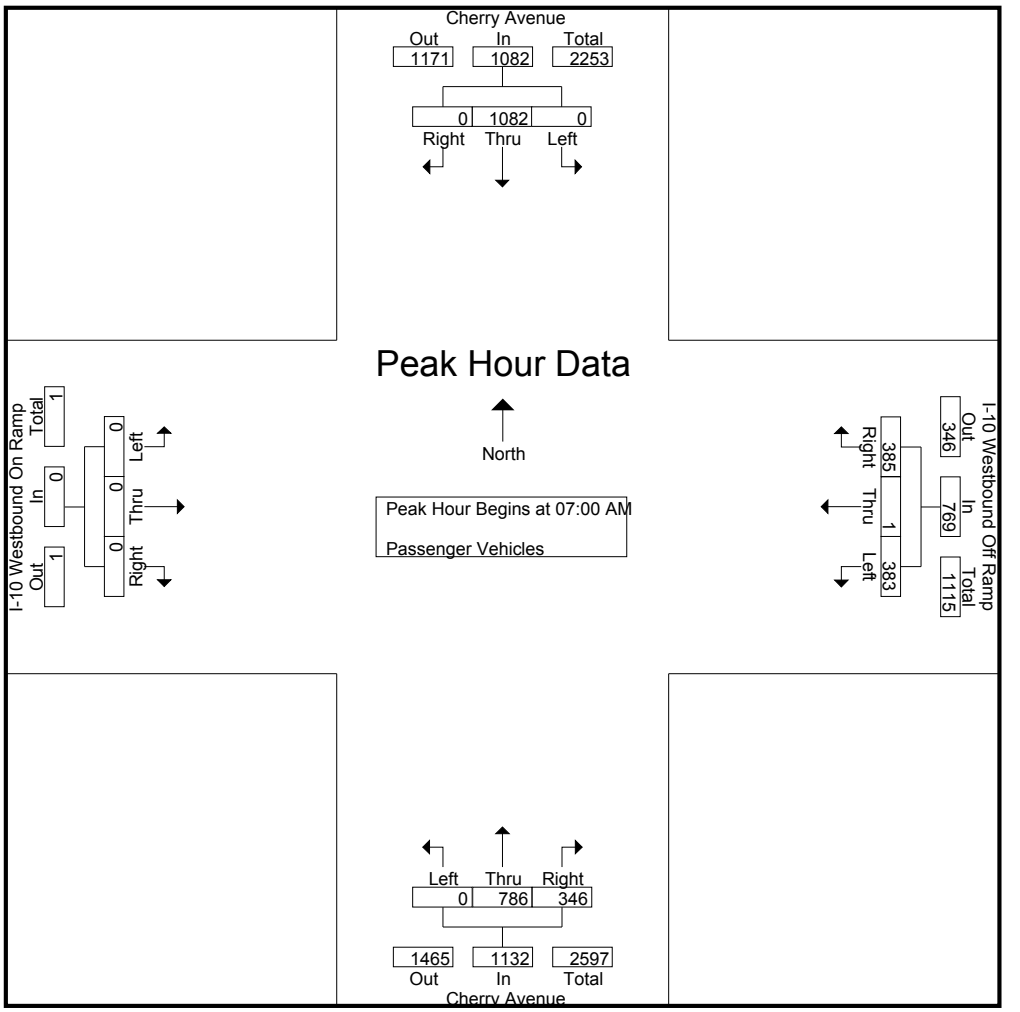
	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	310	0	310	122	1	105	228	0	153	78	231	0	0	0	0	769
07:15 AM	0	323	0	323	98	0	85	183	0	206	84	290	0	0	0	0	796
07:30 AM	0	225	0	225	66	0	91	157	0	254	99	353	0	0	0	0	735
07:45 AM	0	224	0	224	97	0	104	201	0	173	85	258	0	0	0	0	683
Total	0	1082	0	1082	383	1	385	769	0	786	346	1132	0	0	0	0	2983
08:00 AM	0	221	0	221	76	0	99	175	0	143	73	216	0	0	0	0	612
08:15 AM	0	203	0	203	71	0	84	155	0	146	50	196	0	0	0	0	554
08:30 AM	0	214	0	214	52	2	68	122	0	115	60	175	0	0	0	0	511
08:45 AM	0	179	0	179	55	0	63	118	0	127	77	204	0	0	0	0	501
Total	0	817	0	817	254	2	314	570	0	531	260	791	0	0	0	0	2178
Grand Total	0	1899	0	1899	637	3	699	1339	0	1317	606	1923	0	0	0	0	5161
Apprch %	0	100	0		47.6	0.2	52.2		0	68.5	31.5		0	0	0		
Total %	0	36.8	0	36.8	12.3	0.1	13.5	25.9	0	25.5	11.7	37.3	0	0	0	0	

	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	310	0	310	**122**	**1**	**105**	**228**	0	153	78	231	0	0	0	0	769
07:15 AM	0	**323**	0	**323**	98	0	85	183	0	206	84	290	0	0	0	0	**796**
07:30 AM	0	225	0	225	66	0	91	157	0	**254**	**99**	**353**	0	0	0	0	735
07:45 AM	0	224	0	224	97	0	104	201	0	173	85	258	0	0	0	0	683
Total Volume	0	1082	0	1082	383	1	385	769	0	786	346	1132	0	0	0	0	2983
% App. Total	0	100	0		49.8	0.1	50.1		0	69.4	30.6		0	0	0		
PHF	.000	.837	.000	.837	.785	.250	.917	.843	.000	.774	.874	.802	.000	.000	.000	.000	.937

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	310	0	310	**122**	**1**	**105**	**228**	0	153	78	231	0	0	0	0
+15 mins.	0	**323**	0	**323**	98	0	85	183	0	206	84	290	0	0	0	0
+30 mins.	0	225	0	225	66	0	91	157	0	**254**	**99**	**353**	0	0	0	0
+45 mins.	0	224	0	224	97	0	104	201	0	173	85	258	0	0	0	0
Total Volume	0	1082	0	1082	383	1	385	769	0	786	346	1132	0	0	0	0
% App. Total	0	100	0		49.8	0.1	50.1		0	69.4	30.6		0	0	0	
PHF	.000	.837	.000	.837	.785	.250	.917	.843	.000	.774	.874	.802	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

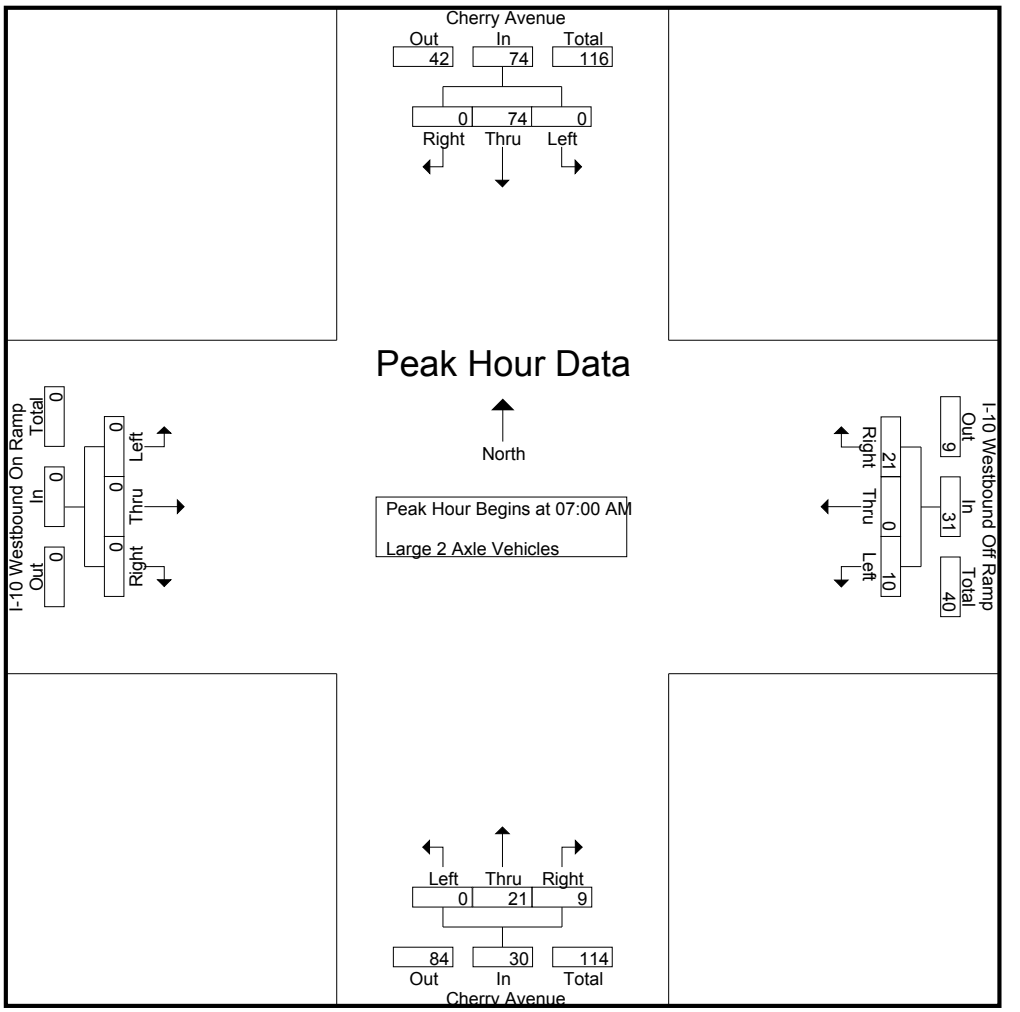
	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	15	0	15	3	0	6	9	0	3	1	4	0	0	0	0	28
07:15 AM	0	19	0	19	0	0	6	6	0	8	2	10	0	0	0	0	35
07:30 AM	0	20	0	20	4	0	6	10	0	4	5	9	0	0	0	0	39
07:45 AM	0	20	0	20	3	0	3	6	0	6	1	7	0	0	0	0	33
Total	0	74	0	74	10	0	21	31	0	21	9	30	0	0	0	0	135
08:00 AM	0	17	0	17	2	0	9	11	0	9	3	12	0	0	0	0	40
08:15 AM	0	25	0	25	5	0	6	11	0	10	3	13	0	0	0	0	49
08:30 AM	0	16	0	16	1	0	12	13	0	7	3	10	0	0	0	0	39
08:45 AM	0	11	0	11	7	0	7	14	0	15	3	18	0	0	0	0	43
Total	0	69	0	69	15	0	34	49	0	41	12	53	0	0	0	0	171
Grand Total	0	143	0	143	25	0	55	80	0	62	21	83	0	0	0	0	306
Apprch %	0	100	0		31.2	0	68.8		0	74.7	25.3		0	0	0		
Total %	0	46.7	0	46.7	8.2	0	18	26.1	0	20.3	6.9	27.1	0	0	0	0	

	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	15	0	15	3	0	**6**	9	0	3	1	4	0	0	0	0	28
07:15 AM	0	19	0	19	0	0	6	6	0	**8**	2	**10**	0	0	0	0	35
07:30 AM	0	**20**	0	**20**	**4**	0	6	**10**	0	4	**5**	9	0	0	0	0	**39**
07:45 AM	0	20	0	20	3	0	3	6	0	6	1	7	0	0	0	0	33
Total Volume	0	74	0	74	10	0	21	31	0	21	9	30	0	0	0	0	135
% App. Total	0	100	0		32.3	0	67.7		0	70	30		0	0	0		
PHF	.000	.925	.000	.925	.625	.000	.875	.775	.000	.656	.450	.750	.000	.000	.000	.000	.865

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	15	0	15	3	0	**6**	9	0	3	1	4	0	0	0	0
+15 mins.	0	19	0	19	0	0	6	6	0	**8**	2	**10**	0	0	0	0
+30 mins.	0	**20**	0	**20**	**4**	0	6	**10**	0	4	**5**	9	0	0	0	0
+45 mins.	0	20	0	20	3	0	3	6	0	6	1	7	0	0	0	0
Total Volume	0	74	0	74	10	0	21	31	0	21	9	30	0	0	0	0
% App. Total	0	100	0		32.3	0	67.7		0	70	30		0	0	0	
PHF	.000	.925	.000	.925	.625	.000	.875	.775	.000	.656	.450	.750	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

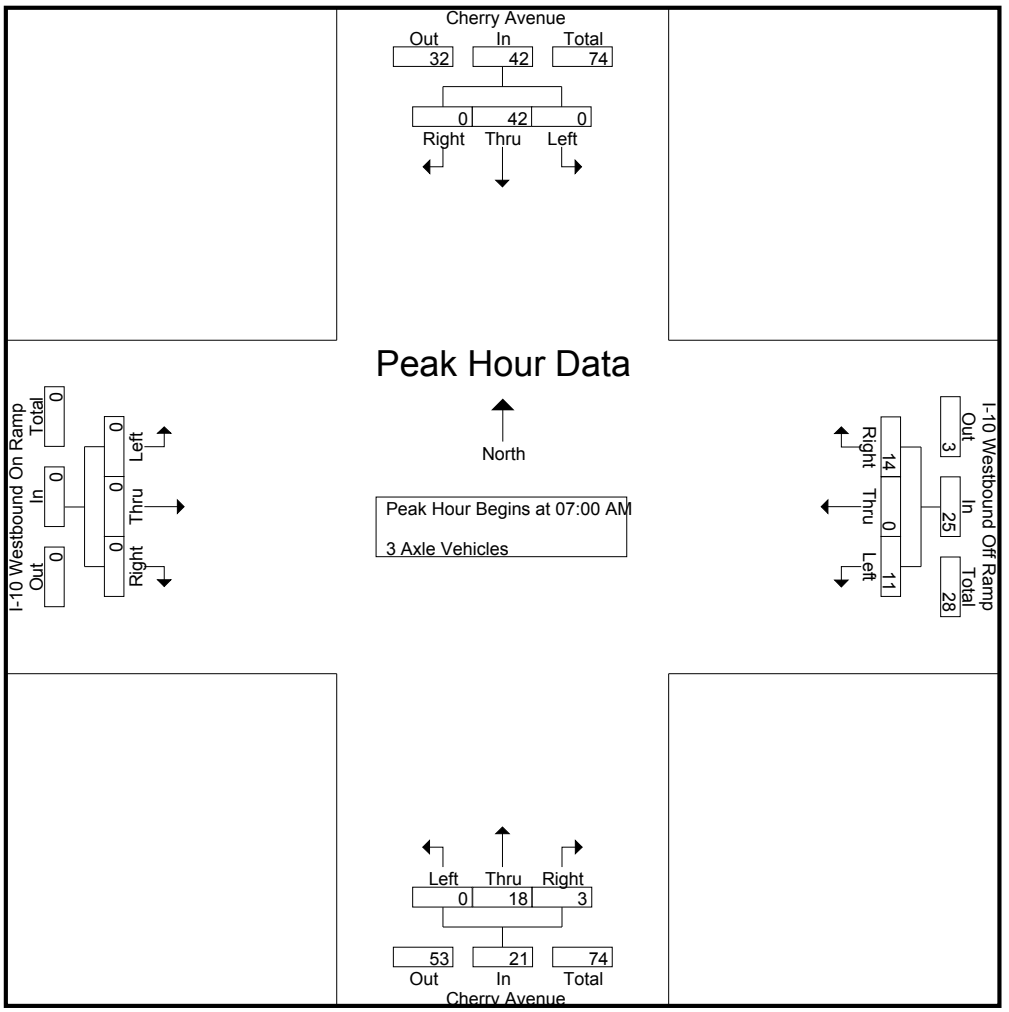
	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	11	0	11	3	0	1	4	0	2	0	2	0	0	0	0	17
07:15 AM	0	9	0	9	2	0	4	6	0	4	1	5	0	0	0	0	20
07:30 AM	0	13	0	13	3	0	2	5	0	4	0	4	0	0	0	0	22
07:45 AM	0	9	0	9	3	0	7	10	0	8	2	10	0	0	0	0	29
Total	0	42	0	42	11	0	14	25	0	18	3	21	0	0	0	0	88
08:00 AM	0	8	0	8	1	0	5	6	0	5	1	6	0	0	0	0	20
08:15 AM	0	5	0	5	3	0	2	5	0	3	1	4	0	0	0	0	14
08:30 AM	0	20	0	20	3	0	5	8	0	8	2	10	0	0	0	0	38
08:45 AM	0	15	0	15	4	0	3	7	0	11	5	16	0	0	0	0	38
Total	0	48	0	48	11	0	15	26	0	27	9	36	0	0	0	0	110
Grand Total	0	90	0	90	22	0	29	51	0	45	12	57	0	0	0	0	198
Apprch %	0	100	0		43.1	0	56.9		0	78.9	21.1		0	0	0		
Total %	0	45.5	0	45.5	11.1	0	14.6	25.8	0	22.7	6.1	28.8	0	0	0	0	

	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	11	0	11	**3**	0	1	4	0	2	0	2	0	0	0	0	17
07:15 AM	0	9	0	9	2	0	4	6	0	4	1	5	0	0	0	0	20
07:30 AM	0	**13**	0	**13**	3	0	2	5	0	4	0	4	0	0	0	0	22
07:45 AM	0	9	0	9	3	0	**7**	**10**	0	**8**	**2**	**10**	0	0	0	0	**29**
Total Volume	0	42	0	42	11	0	14	25	0	18	3	21	0	0	0	0	88
% App. Total	0	100	0		44	0	56		0	85.7	14.3		0	0	0		
PHF	.000	.808	.000	.808	.917	.000	.500	.625	.000	.563	.375	.525	.000	.000	.000	.000	.759

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	11	0	11	**3**	0	1	4	0	2	0	2	0	0	0	0
+15 mins.	0	9	0	9	2	0	4	6	0	4	1	5	0	0	0	0
+30 mins.	0	**13**	0	**13**	3	0	2	5	0	4	0	4	0	0	0	0
+45 mins.	0	9	0	9	3	0	**7**	**10**	0	**8**	**2**	**10**	0	0	0	0
Total Volume	0	42	0	42	11	0	14	25	0	18	3	21	0	0	0	0
% App. Total	0	100	0		44	0	56		0	85.7	14.3		0	0	0	
PHF	.000	.808	.000	.808	.917	.000	.500	.625	.000	.563	.375	.525	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

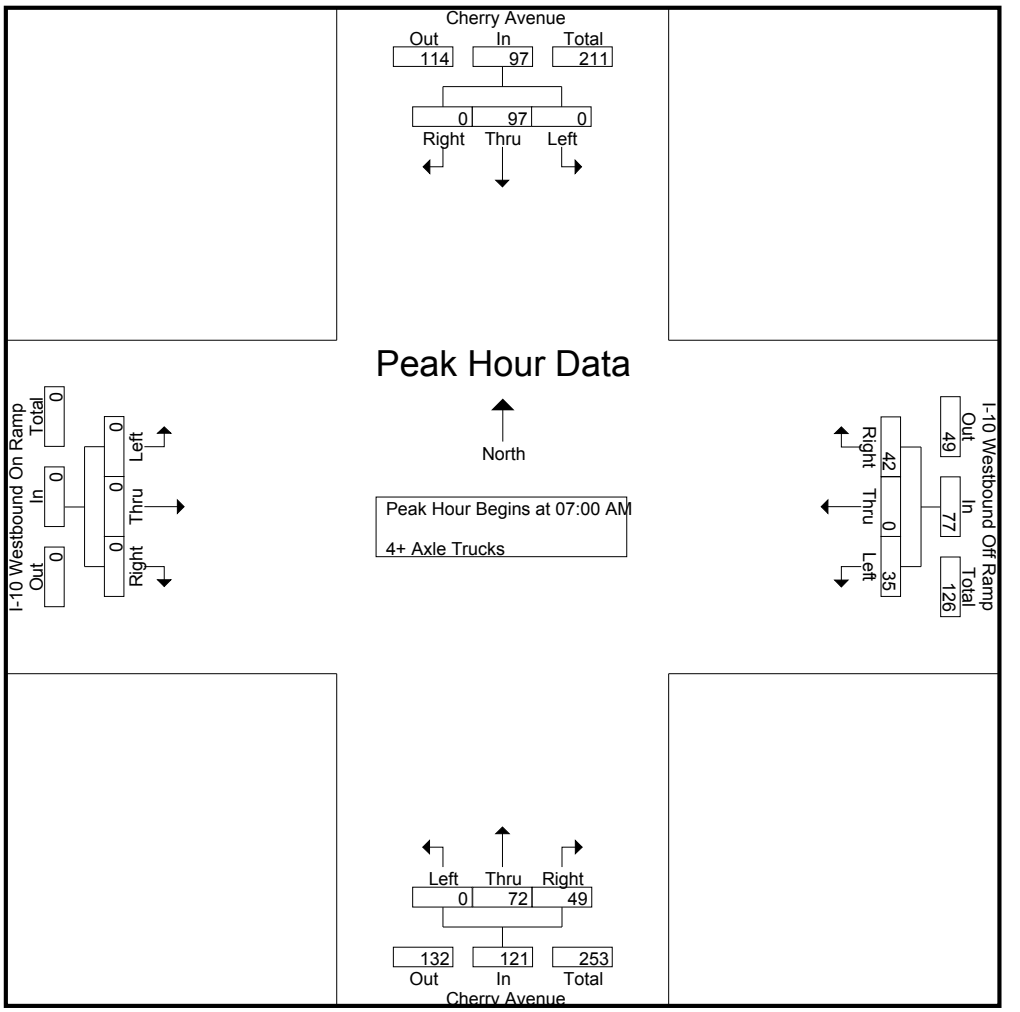
	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	18	0	18	8	0	15	23	0	16	10	26	0	0	0	0	67
07:15 AM	0	24	0	24	10	0	4	14	0	21	14	35	0	0	0	0	73
07:30 AM	0	30	0	30	10	0	13	23	0	16	10	26	0	0	0	0	79
07:45 AM	0	25	0	25	7	0	10	17	0	19	15	34	0	0	0	0	76
Total	0	97	0	97	35	0	42	77	0	72	49	121	0	0	0	0	295
08:00 AM	0	39	0	39	8	0	8	16	0	13	18	31	0	0	0	0	86
08:15 AM	0	25	0	25	9	0	8	17	0	17	18	35	0	0	0	0	77
08:30 AM	0	33	0	33	8	0	9	17	0	18	10	28	0	0	0	0	78
08:45 AM	0	33	0	33	12	0	12	24	0	19	15	34	0	0	0	0	91
Total	0	130	0	130	37	0	37	74	0	67	61	128	0	0	0	0	332
Grand Total	0	227	0	227	72	0	79	151	0	139	110	249	0	0	0	0	627
Apprch %	0	100	0		47.7	0	52.3		0	55.8	44.2		0	0	0		
Total %	0	36.2	0	36.2	11.5	0	12.6	24.1	0	22.2	17.5	39.7	0	0	0	0	

	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	18	0	18	8	0	**15**	**23**	0	16	10	26	0	0	0	0	67
07:15 AM	0	24	0	24	**10**	0	4	14	0	**21**	14	**35**	0	0	0	0	73
07:30 AM	0	**30**	0	**30**	10	0	13	23	0	16	10	26	0	0	0	0	**79**
07:45 AM	0	25	0	25	7	0	10	17	0	19	**15**	34	0	0	0	0	76
Total Volume	0	97	0	97	35	0	42	77	0	72	49	121	0	0	0	0	295
% App. Total	0	100	0		45.5	0	54.5		0	59.5	40.5		0	0	0		
PHF	.000	.808	.000	.808	.875	.000	.700	.837	.000	.857	.817	.864	.000	.000	.000	.000	.934

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	18	0	18	8	0	**15**	**23**	0	16	10	26	0	0	0	0
+15 mins.	0	24	0	24	**10**	0	4	14	0	**21**	14	**35**	0	0	0	0
+30 mins.	0	**30**	0	**30**	10	0	13	23	0	16	10	26	0	0	0	0
+45 mins.	0	25	0	25	7	0	10	17	0	19	**15**	34	0	0	0	0
Total Volume	0	97	0	97	35	0	42	77	0	72	49	121	0	0	0	0
% App. Total	0	100	0		45.5	0	54.5		0	59.5	40.5		0	0	0	
PHF	.000	.808	.000	.808	.875	.000	.700	.837	.000	.857	.817	.864	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

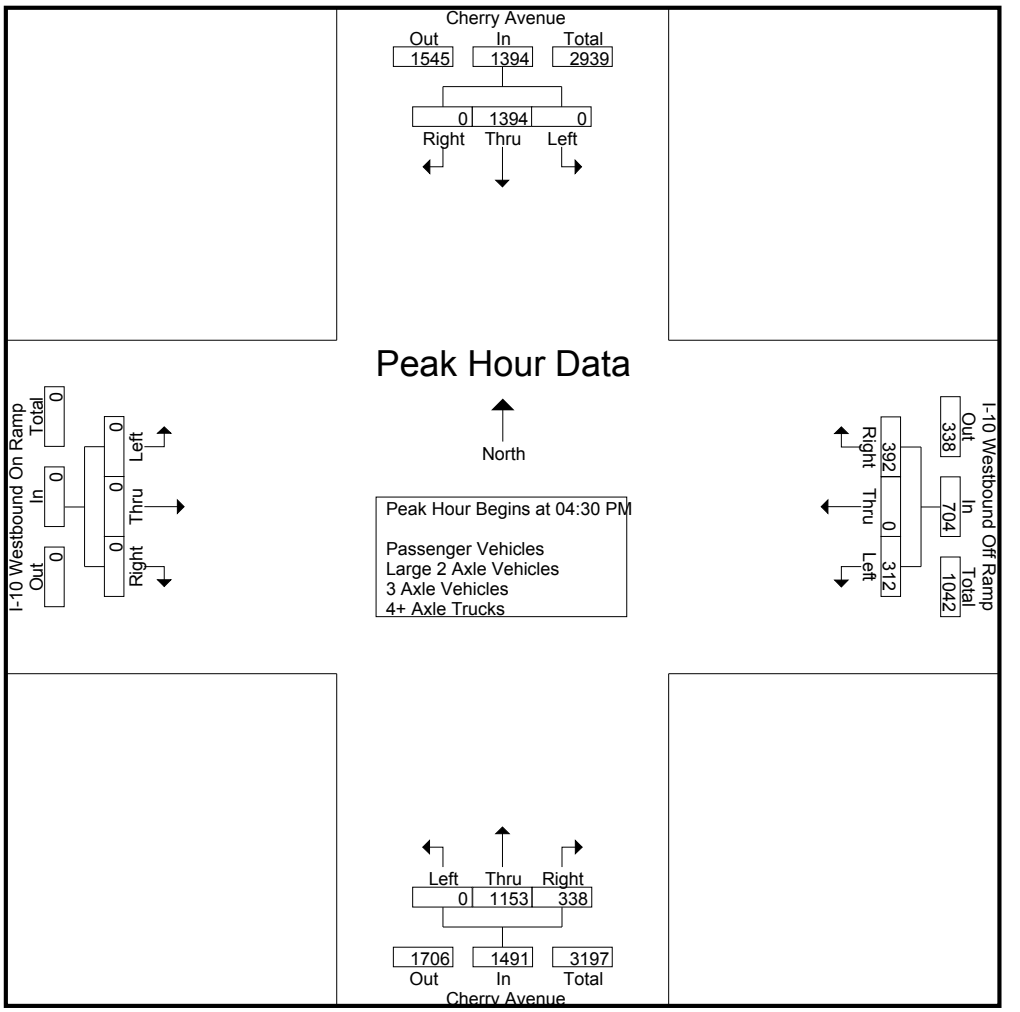
	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	359	0	359	75	0	101	176	0	252	100	352	0	0	0	0	887
04:15 PM	0	354	0	354	86	0	87	173	0	263	107	370	0	0	0	0	897
04:30 PM	0	355	0	355	75	0	81	156	0	268	71	339	0	0	0	0	850
04:45 PM	0	329	0	329	89	0	112	201	0	322	94	416	0	0	0	0	946
Total	0	1397	0	1397	325	0	381	706	0	1105	372	1477	0	0	0	0	3580
05:00 PM	0	348	0	348	81	0	85	166	0	288	93	381	0	0	0	0	895
05:15 PM	0	362	0	362	67	0	114	181	0	275	80	355	0	0	0	0	898
05:30 PM	0	287	0	287	85	0	112	197	0	245	47	292	0	0	0	0	776
05:45 PM	0	233	1	234	74	0	96	170	0	242	80	322	0	0	0	0	726
Total	0	1230	1	1231	307	0	407	714	0	1050	300	1350	0	0	0	0	3295
Grand Total	0	2627	1	2628	632	0	788	1420	0	2155	672	2827	0	0	0	0	6875
Apprch %	0	100	0		44.5	0	55.5		0	76.2	23.8		0	0	0		
Total %	0	38.2	0	38.2	9.2	0	11.5	20.7	0	31.3	9.8	41.1	0	0	0	0	
Passenger Vehicles	0	2293	1	2294	535	0	668	1203	0	1994	598	2592	0	0	0	0	6089
% Passenger Vehicles	0	87.3	100	87.3	84.7	0	84.8	84.7	0	92.5	89	91.7	0	0	0	0	88.6
Large 2 Axle Vehicles	0	88	0	88	20	0	12	32	0	35	12	47	0	0	0	0	167
% Large 2 Axle Vehicles	0	3.3	0	3.3	3.2	0	1.5	2.3	0	1.6	1.8	1.7	0	0	0	0	2.4
3 Axle Vehicles	0	90	0	90	21	0	26	47	0	41	9	50	0	0	0	0	187
% 3 Axle Vehicles	0	3.4	0	3.4	3.3	0	3.3	3.3	0	1.9	1.3	1.8	0	0	0	0	2.7
4+ Axle Trucks	0	156	0	156	56	0	82	138	0	85	53	138	0	0	0	0	432
% 4+ Axle Trucks	0	5.9	0	5.9	8.9	0	10.4	9.7	0	3.9	7.9	4.9	0	0	0	0	6.3

	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	355	0	355	75	0	81	156	0	268	71	339	0	0	0	0	850
04:45 PM	0	329	0	329	**89**	0	112	**201**	0	**322**	**94**	**416**	0	0	0	0	**946**
05:00 PM	0	348	0	348	81	0	85	166	0	288	93	381	0	0	0	0	895
05:15 PM	0	**362**	0	**362**	67	0	**114**	181	0	275	80	355	0	0	0	0	898
Total Volume	0	1394	0	1394	312	0	392	704	0	1153	338	1491	0	0	0	0	3589
% App. Total	0	100	0		44.3	0	55.7		0	77.3	22.7		0	0	0		
PHF	.000	.963	.000	.963	.876	.000	.860	.876	.000	.895	.899	.896	.000	.000	.000	.000	.948

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:45 PM				04:15 PM				04:00 PM			
+0 mins.	0	**359**	0	**359**	**89**	0	112	**201**	0	263	**107**	370	0	0	0	0
+15 mins.	0	354	0	354	81	0	85	166	0	268	71	339	0	0	0	0
+30 mins.	0	355	0	355	67	0	**114**	181	0	**322**	94	**416**	0	0	0	0
+45 mins.	0	329	0	329	85	0	112	197	0	288	93	381	0	0	0	0
Total Volume	0	1397	0	1397	322	0	423	745	0	1141	365	1506	0	0	0	0
% App. Total	0	100	0		43.2	0	56.8		0	75.8	24.2		0	0	0	
PHF	.000	.973	.000	.973	.904	.000	.928	.927	.000	.886	.853	.905	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles

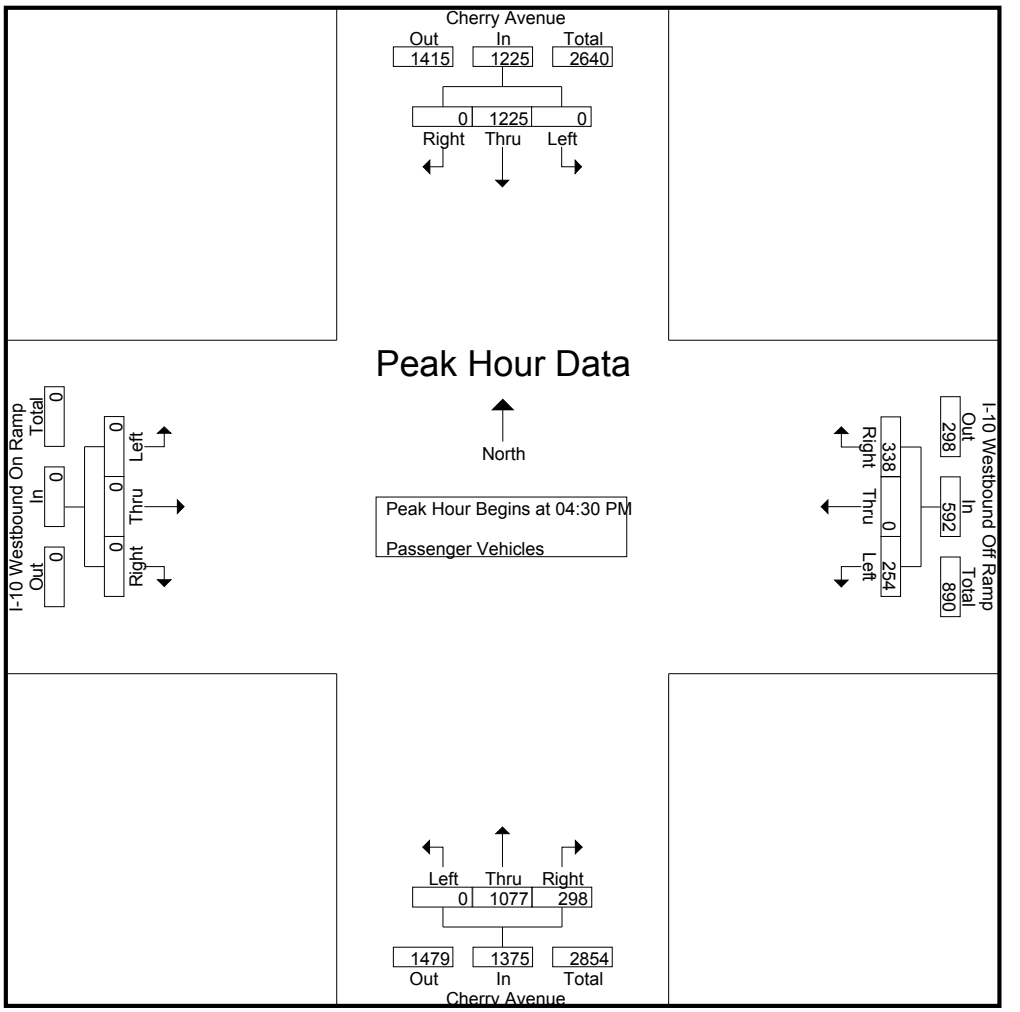
	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	314	0	314	62	0	81	143	0	226	93	319	0	0	0	0	776
04:15 PM	0	298	0	298	79	0	71	150	0	237	92	329	0	0	0	0	777
04:30 PM	0	309	0	309	49	0	70	119	0	246	63	309	0	0	0	0	737
04:45 PM	0	286	0	286	79	0	98	177	0	303	82	385	0	0	0	0	848
Total	0	1207	0	1207	269	0	320	589	0	1012	330	1342	0	0	0	0	3138
05:00 PM	0	313	0	313	71	0	69	140	0	274	86	360	0	0	0	0	813
05:15 PM	0	317	0	317	55	0	101	156	0	254	67	321	0	0	0	0	794
05:30 PM	0	252	0	252	78	0	94	172	0	233	45	278	0	0	0	0	702
05:45 PM	0	204	1	205	62	0	84	146	0	221	70	291	0	0	0	0	642
Total	0	1086	1	1087	266	0	348	614	0	982	268	1250	0	0	0	0	2951
Grand Total	0	2293	1	2294	535	0	668	1203	0	1994	598	2592	0	0	0	0	6089
Apprch %	0	100	0		44.5	0	55.5		0	76.9	23.1		0	0	0		
Total %	0	37.7	0	37.7	8.8	0	11	19.8	0	32.7	9.8	42.6	0	0	0	0	

	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	309	0	309	49	0	70	119	0	246	63	309	0	0	0	0	737
04:45 PM	0	286	0	286	**79**	0	98	**177**	0	**303**	82	**385**	0	0	0	0	**848**
05:00 PM	0	313	0	313	71	0	69	140	0	274	**86**	360	0	0	0	0	813
05:15 PM	0	**317**	0	**317**	55	0	**101**	156	0	254	67	321	0	0	0	0	794
Total Volume	0	1225	0	1225	254	0	338	592	0	1077	298	1375	0	0	0	0	3192
% App. Total	0	100	0		42.9	0	57.1		0	78.3	21.7		0	0	0		
PHF	.000	.966	.000	.966	.804	.000	.837	.836	.000	.889	.866	.893	.000	.000	.000	.000	.941

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	309	0	309	49	0	70	119	0	246	63	309	0	0	0	0
+15 mins.	0	286	0	286	**79**	0	98	**177**	0	**303**	82	**385**	0	0	0	0
+30 mins.	0	313	0	313	71	0	69	140	0	274	**86**	360	0	0	0	0
+45 mins.	0	**317**	0	**317**	55	0	**101**	156	0	254	67	321	0	0	0	0
Total Volume	0	1225	0	1225	254	0	338	592	0	1077	298	1375	0	0	0	0
% App. Total	0	100	0		42.9	0	57.1		0	78.3	21.7		0	0	0	
PHF	.000	.966	.000	.966	.804	.000	.837	.836	.000	.889	.866	.893	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

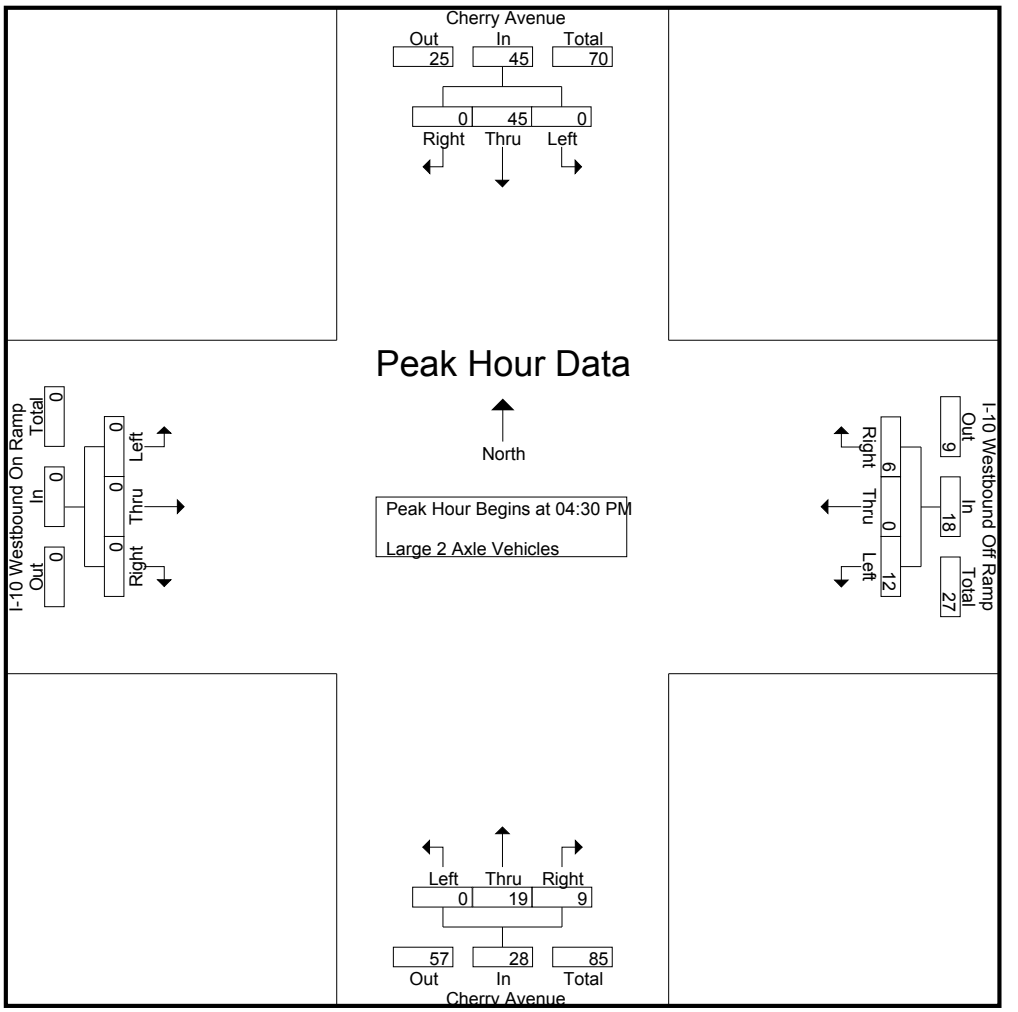
	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	16	0	16	5	0	4	9	0	5	0	5	0	0	0	0	30
04:15 PM	0	18	0	18	1	0	1	2	0	4	2	6	0	0	0	0	26
04:30 PM	0	11	0	11	5	0	2	7	0	8	0	8	0	0	0	0	26
04:45 PM	0	14	0	14	0	0	1	1	0	7	4	11	0	0	0	0	26
Total	0	59	0	59	11	0	8	19	0	24	6	30	0	0	0	0	108
05:00 PM	0	10	0	10	3	0	1	4	0	2	1	3	0	0	0	0	17
05:15 PM	0	10	0	10	4	0	2	6	0	2	4	6	0	0	0	0	22
05:30 PM	0	4	0	4	1	0	1	2	0	3	0	3	0	0	0	0	9
05:45 PM	0	5	0	5	1	0	0	1	0	4	1	5	0	0	0	0	11
Total	0	29	0	29	9	0	4	13	0	11	6	17	0	0	0	0	59
Grand Total	0	88	0	88	20	0	12	32	0	35	12	47	0	0	0	0	167
Apprch %	0	100	0		62.5	0	37.5		0	74.5	25.5		0	0	0		
Total %	0	52.7	0	52.7	12	0	7.2	19.2	0	21	7.2	28.1	0	0	0	0	

	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	11	0	11	**5**	0	**2**	**7**	0	**8**	0	8	0	0	0	0	**26**
04:45 PM	0	**14**	0	**14**	0	0	1	1	0	7	**4**	**11**	0	0	0	0	26
05:00 PM	0	10	0	10	3	0	1	4	0	2	1	3	0	0	0	0	17
05:15 PM	0	10	0	10	4	0	2	6	0	2	4	6	0	0	0	0	22
Total Volume	0	45	0	45	12	0	6	18	0	19	9	28	0	0	0	0	91
% App. Total	0	100	0		66.7	0	33.3		0	67.9	32.1		0	0	0		
PHF	.000	.804	.000	.804	.600	.000	.750	.643	.000	.594	.563	.636	.000	.000	.000	.000	.875

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	11	0	11	**5**	0	**2**	**7**	0	**8**	0	8	0	0	0	0
+15 mins.	0	**14**	0	**14**	0	0	1	1	0	7	**4**	**11**	0	0	0	0
+30 mins.	0	10	0	10	3	0	1	4	0	2	1	3	0	0	0	0
+45 mins.	0	10	0	10	4	0	2	6	0	2	4	6	0	0	0	0
Total Volume	0	45	0	45	12	0	6	18	0	19	9	28	0	0	0	0
% App. Total	0	100	0		66.7	0	33.3		0	67.9	32.1		0	0	0	
PHF	.000	.804	.000	.804	.600	.000	.750	.643	.000	.594	.563	.636	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

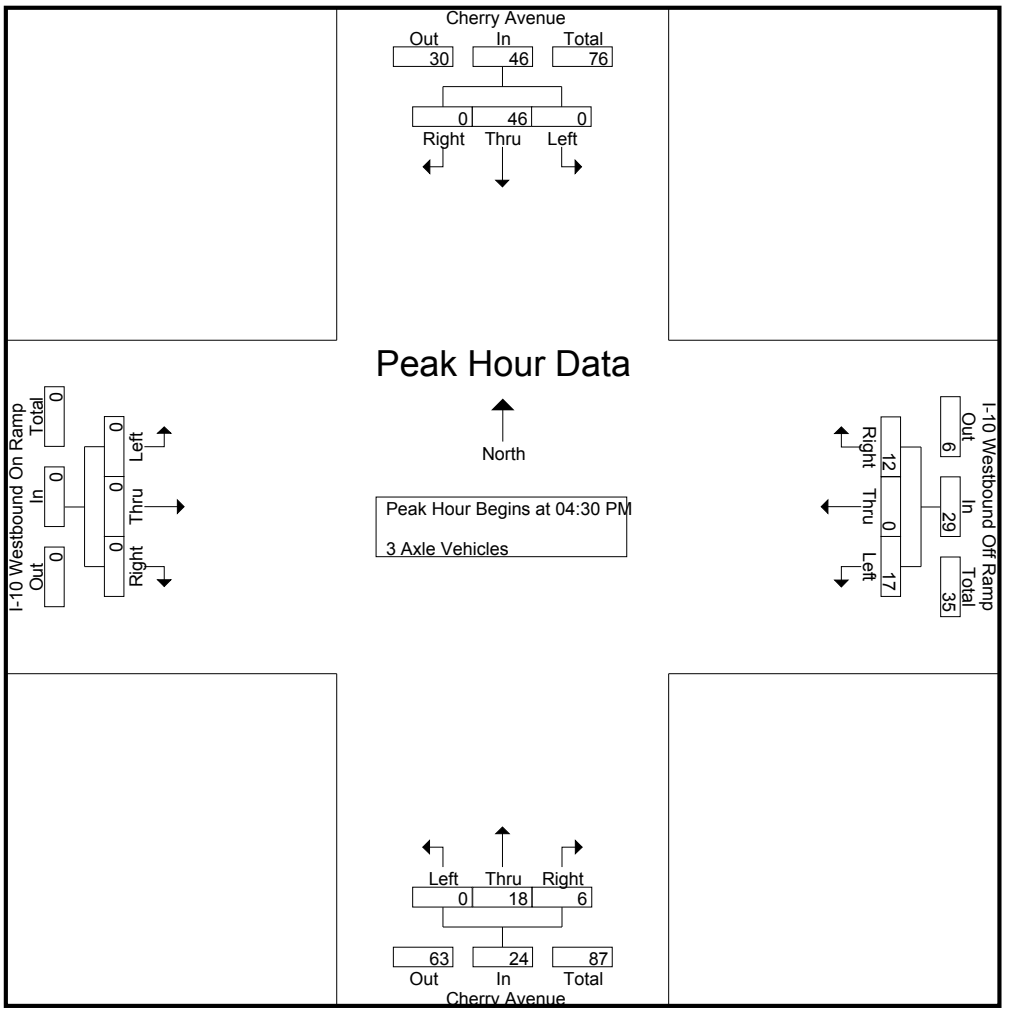
	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	11	0	11	2	0	4	6	0	8	1	9	0	0	0	0	26
04:15 PM	0	15	0	15	1	0	3	4	0	7	1	8	0	0	0	0	27
04:30 PM	0	15	0	15	5	0	0	5	0	5	1	6	0	0	0	0	26
04:45 PM	0	8	0	8	7	0	3	10	0	4	1	5	0	0	0	0	23
Total	0	49	0	49	15	0	10	25	0	24	4	28	0	0	0	0	102
05:00 PM	0	7	0	7	2	0	5	7	0	4	2	6	0	0	0	0	20
05:15 PM	0	16	0	16	3	0	4	7	0	5	2	7	0	0	0	0	30
05:30 PM	0	13	0	13	1	0	5	6	0	2	1	3	0	0	0	0	22
05:45 PM	0	5	0	5	0	0	2	2	0	6	0	6	0	0	0	0	13
Total	0	41	0	41	6	0	16	22	0	17	5	22	0	0	0	0	85
Grand Total	0	90	0	90	21	0	26	47	0	41	9	50	0	0	0	0	187
Apprch %	0	100	0		44.7	0	55.3		0	82	18		0	0	0		
Total %	0	48.1	0	48.1	11.2	0	13.9	25.1	0	21.9	4.8	26.7	0	0	0	0	

	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	15	0	15	5	0	0	5	0	**5**	1	6	0	0	0	0	26
04:45 PM	0	8	0	8	**7**	0	3	**10**	0	4	1	5	0	0	0	0	23
05:00 PM	0	7	0	7	2	0	**5**	7	0	4	**2**	6	0	0	0	0	20
05:15 PM	0	**16**	0	**16**	3	0	4	7	0	5	2	**7**	0	0	0	0	**30**
Total Volume	0	46	0	46	17	0	12	29	0	18	6	24	0	0	0	0	99
% App. Total	0	100	0		58.6	0	41.4		0	75	25		0	0	0		
PHF	.000	.719	.000	.719	.607	.000	.600	.725	.000	.900	.750	.857	.000	.000	.000	.000	.825

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	15	0	15	5	0	0	5	0	**5**	1	6	0	0	0	0
+15 mins.	0	8	0	8	**7**	0	3	**10**	0	4	1	5	0	0	0	0
+30 mins.	0	7	0	7	2	0	**5**	7	0	4	**2**	6	0	0	0	0
+45 mins.	0	**16**	0	**16**	3	0	4	7	0	5	2	**7**	0	0	0	0
Total Volume	0	46	0	46	17	0	12	29	0	18	6	24	0	0	0	0
% App. Total	0	100	0		58.6	0	41.4		0	75	25		0	0	0	
PHF	.000	.719	.000	.719	.607	.000	.600	.725	.000	.900	.750	.857	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

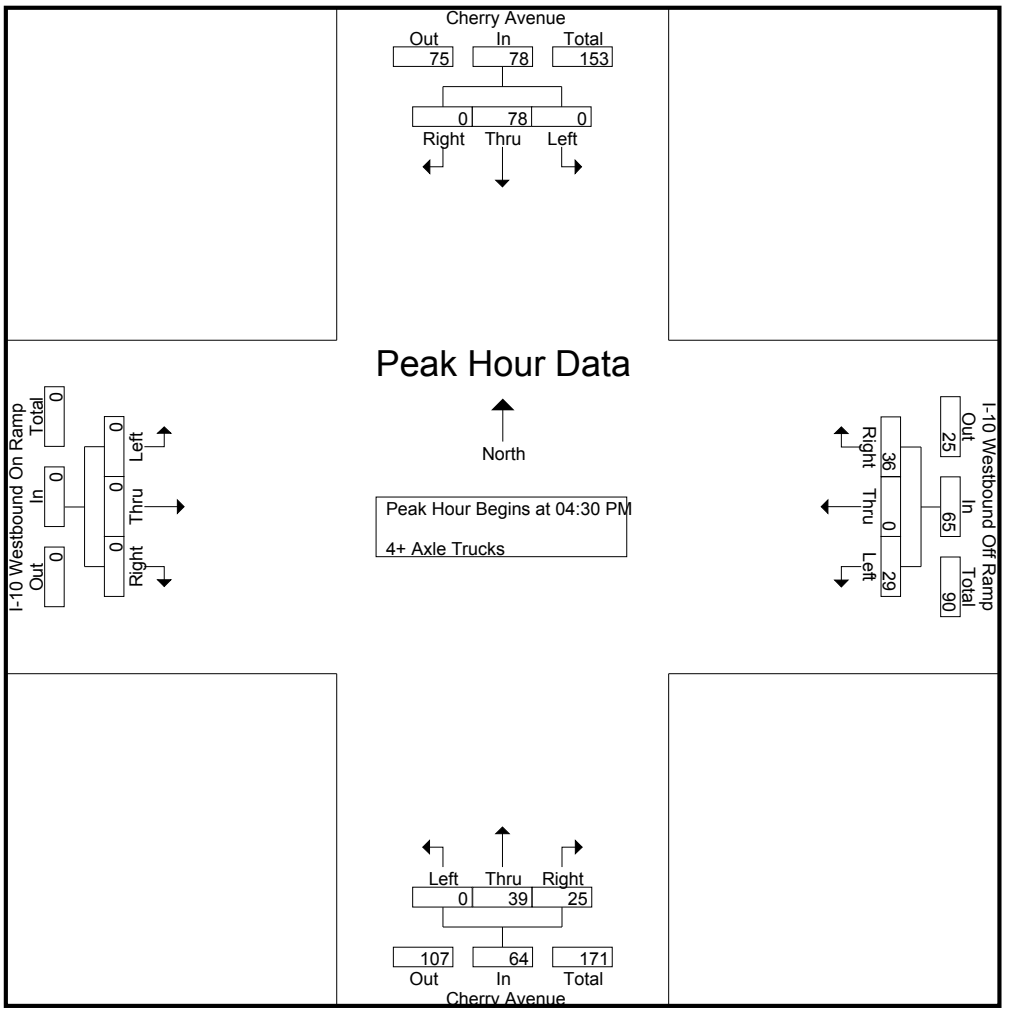
	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	18	0	18	6	0	12	18	0	13	6	19	0	0	0	0	55
04:15 PM	0	23	0	23	5	0	12	17	0	15	12	27	0	0	0	0	67
04:30 PM	0	20	0	20	16	0	9	25	0	9	7	16	0	0	0	0	61
04:45 PM	0	21	0	21	3	0	10	13	0	8	7	15	0	0	0	0	49
Total	0	82	0	82	30	0	43	73	0	45	32	77	0	0	0	0	232
05:00 PM	0	18	0	18	5	0	10	15	0	8	4	12	0	0	0	0	45
05:15 PM	0	19	0	19	5	0	7	12	0	14	7	21	0	0	0	0	52
05:30 PM	0	18	0	18	5	0	12	17	0	7	1	8	0	0	0	0	43
05:45 PM	0	19	0	19	11	0	10	21	0	11	9	20	0	0	0	0	60
Total	0	74	0	74	26	0	39	65	0	40	21	61	0	0	0	0	200
Grand Total	0	156	0	156	56	0	82	138	0	85	53	138	0	0	0	0	432
Apprch %	0	100	0		40.6	0	59.4		0	61.6	38.4		0	0	0		
Total %	0	36.1	0	36.1	13	0	19	31.9	0	19.7	12.3	31.9	0	0	0	0	

	Cherry Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cherry Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	20	0	20	**16**	0	9	**25**	0	9	**7**	16	0	0	0	0	**61**
04:45 PM	0	**21**	0	**21**	3	0	**10**	13	0	8	7	15	0	0	0	0	49
05:00 PM	0	18	0	18	5	0	10	15	0	8	4	12	0	0	0	0	45
05:15 PM	0	19	0	19	5	0	7	12	0	**14**	7	**21**	0	0	0	0	52
Total Volume	0	78	0	78	29	0	36	65	0	39	25	64	0	0	0	0	207
% App. Total	0	100	0		44.6	0	55.4		0	60.9	39.1		0	0	0		
PHF	.000	.929	.000	.929	.453	.000	.900	.650	.000	.696	.893	.762	.000	.000	.000	.000	.848

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : FONCH10WPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	20	0	20	**16**	0	9	**25**	0	9	**7**	16	0	0	0	0
+15 mins.	0	**21**	0	**21**	3	0	**10**	13	0	8	7	15	0	0	0	0
+30 mins.	0	18	0	18	5	0	10	15	0	8	4	12	0	0	0	0
+45 mins.	0	19	0	19	5	0	7	12	0	**14**	7	**21**	0	0	0	0
Total Volume	0	78	0	78	29	0	36	65	0	39	25	64	0	0	0	0
% App. Total	0	100	0		44.6	0	55.4		0	60.9	39.1		0	0	0	
PHF	.000	.929	.000	.929	.453	.000	.900	.650	.000	.696	.893	.762	.000	.000	.000	.000

Location: Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps

Site Code: 201-16023
Date: 1/12/2016
Weather: Clear

PEDESTRIANS

	North Leg Cherry Avenue	East Leg I-10 Westbound Ramps	South Leg Cherry Avenue	West Leg I-10 Westbound Ramps	TOTAL
7:00 AM	0	0	0	1	1
7:15 AM	0	0	0	1	1
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	2	2
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	3	3
TOTAL VOLUMES:	0	0	0	7	7

	North Leg Cherry Avenue	East Leg I-10 Westbound Ramps	South Leg Cherry Avenue	West Leg I-10 Westbound Ramps	TOTAL
4:00 PM	0	0	0	3	3
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	3	3

Location: Fontana
N/S: Cherry Avenue
E/W: I-10 Westbound Ramps

Site Code: 201-16023
Date: 1/12/2016
Weather: Clear

BICYCLES

	North Leg Cherry Avenue	East Leg I-10 Westbound Ramps	South Leg Cherry Avenue	West Leg I-10 Westbound Ramps	TOTAL
7:00 AM	0	0	0	1	1
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	1	0	0	1
8:45 AM	0	0	0	1	1
TOTAL VOLUMES:	0	1	0	2	3

	North Leg Cherry Avenue	East Leg I-10 Westbound Ramps	South Leg Cherry Avenue	West Leg I-10 Westbound Ramps	TOTAL
4:00 PM	0	0	0	2	2
4:15 PM	0	0	0	2	2
4:30 PM	0	0	0	1	1
4:45 PM	0	0	0	4	4
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	1	0	0	1
TOTAL VOLUMES:	0	1	0	9	10

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

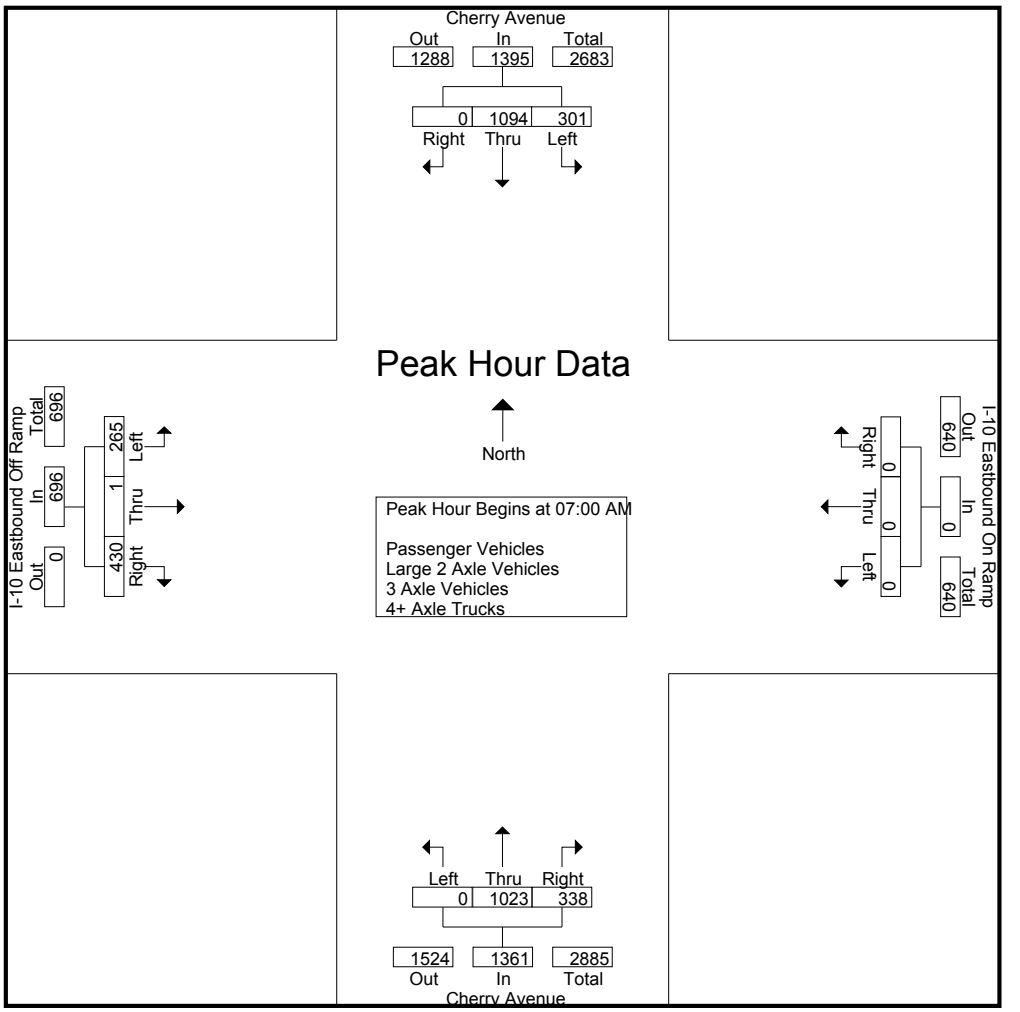
	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	72	323	0	395	0	0	0	0	0	212	71	283	58	0	133	191	869
07:15 AM	71	327	0	398	0	0	0	0	0	271	77	348	69	0	93	162	908
07:30 AM	84	206	0	290	0	0	0	0	0	313	95	408	59	0	99	158	856
07:45 AM	74	238	0	312	0	0	0	0	0	227	95	322	79	1	105	185	819
Total	301	1094	0	1395	0	0	0	0	0	1023	338	1361	265	1	430	696	3452
08:00 AM	61	206	0	267	0	0	0	0	0	193	64	257	74	0	105	179	703
08:15 AM	78	168	0	246	0	0	0	0	0	184	60	244	70	2	106	178	668
08:30 AM	90	162	0	252	0	0	0	0	0	163	69	232	69	1	70	140	624
08:45 AM	61	167	0	228	0	0	0	0	0	180	52	232	61	1	90	152	612
Total	290	703	0	993	0	0	0	0	0	720	245	965	274	4	371	649	2607
Grand Total	591	1797	0	2388	0	0	0	0	0	1743	583	2326	539	5	801	1345	6059
Apprch %	24.7	75.3	0		0	0	0		0	74.9	25.1		40.1	0.4	59.6		
Total %	9.8	29.7	0	39.4	0	0	0	0	0	28.8	9.6	38.4	8.9	0.1	13.2	22.2	
Passenger Vehicles	459	1556	0	2015	0	0	0	0	0	1450	481	1931	441	4	615	1060	5006
% Passenger Vehicles	77.7	86.6	0	84.4	0	0	0	0	0	83.2	82.5	83	81.8	80	76.8	78.8	82.6
Large 2 Axle Vehicles	39	74	0	113	0	0	0	0	0	55	23	78	21	0	31	52	243
% Large 2 Axle Vehicles	6.6	4.1	0	4.7	0	0	0	0	0	3.2	3.9	3.4	3.9	0	3.9	3.9	4
3 Axle Vehicles	21	65	0	86	0	0	0	0	0	42	12	54	15	0	27	42	182
% 3 Axle Vehicles	3.6	3.6	0	3.6	0	0	0	0	0	2.4	2.1	2.3	2.8	0	3.4	3.1	3
4+ Axle Trucks	72	102	0	174	0	0	0	0	0	196	67	263	62	1	128	191	628
% 4+ Axle Trucks	12.2	5.7	0	7.3	0	0	0	0	0	11.2	11.5	11.3	11.5	20	16	14.2	10.4

	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	72	323	0	395	0	0	0	0	0	212	71	283	58	0	**133**	**191**	869
07:15 AM	71	**327**	0	**398**	0	0	0	0	0	271	77	348	69	0	93	162	**908**
07:30 AM	**84**	206	0	290	0	0	0	0	0	**313**	**95**	**408**	59	0	99	158	856
07:45 AM	74	238	0	312	0	0	0	0	0	227	95	322	**79**	**1**	105	185	819
Total Volume	301	1094	0	1395	0	0	0	0	0	1023	338	1361	265	1	430	696	3452
% App. Total	21.6	78.4	0		0	0	0		0	75.2	24.8		38.1	0.1	61.8		
PHF	.896	.836	.000	.876	.000	.000	.000	.000	.000	.817	.889	.834	.839	.250	.808	.911	.950

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:30 AM			
+0 mins.	72	323	0	395	0	0	0	0	0	212	71	283	59	0	99	158
+15 mins.	71	**327**	0	**398**	0	0	0	0	0	271	77	348	**79**	1	105	**185**
+30 mins.	**84**	206	0	290	0	0	0	0	0	**313**	**95**	**408**	74	0	105	179
+45 mins.	74	238	0	312	0	0	0	0	0	227	95	322	70	**2**	**106**	178
Total Volume	301	1094	0	1395	0	0	0	0	0	1023	338	1361	282	3	415	700
% App. Total	21.6	78.4	0		0	0	0		0	75.2	24.8		40.3	0.4	59.3	
PHF	.896	.836	.000	.876	.000	.000	.000	.000	.000	.817	.889	.834	.892	.375	.979	.946

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles

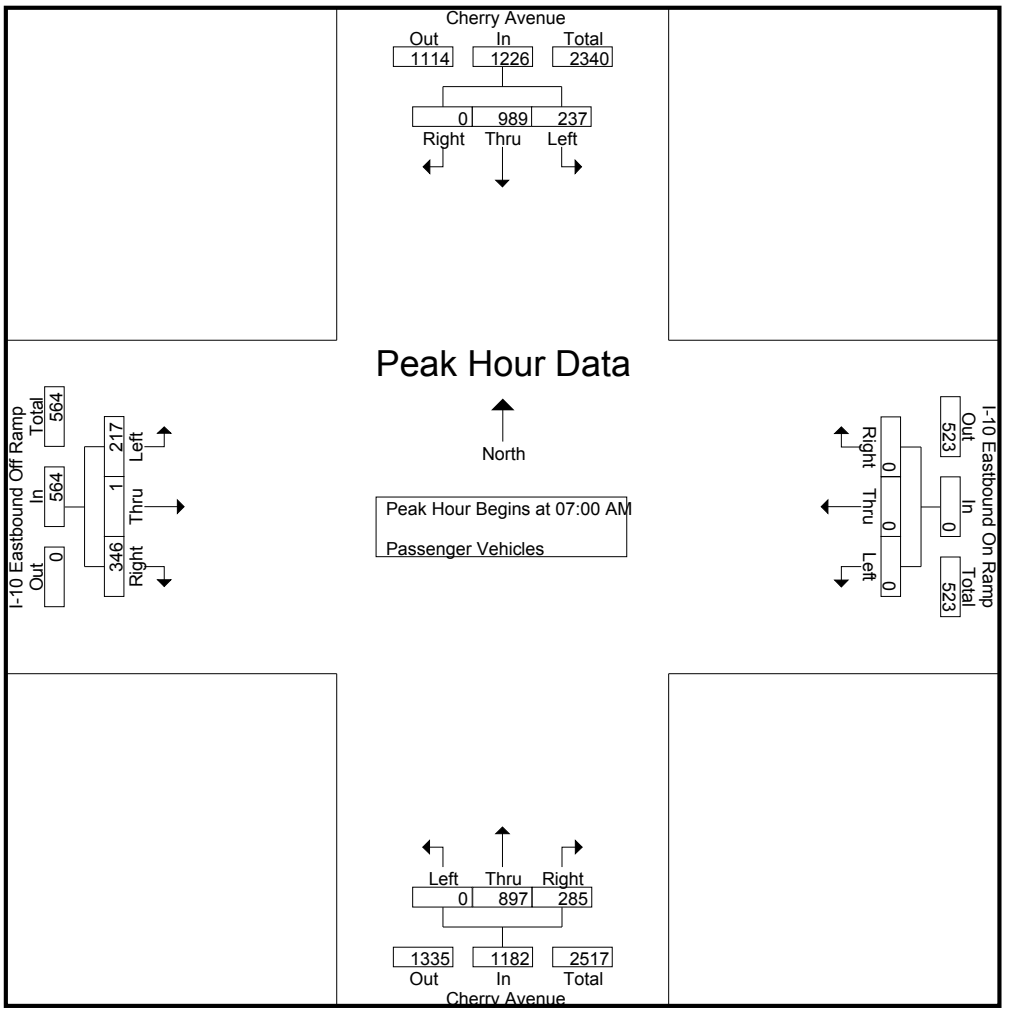
	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	61	305	0	366	0	0	0	0	0	194	61	255	46	0	105	151	772
07:15 AM	55	301	0	356	0	0	0	0	0	237	66	303	51	0	78	129	788
07:30 AM	60	175	0	235	0	0	0	0	0	282	81	363	54	0	78	132	730
07:45 AM	61	208	0	269	0	0	0	0	0	184	77	261	66	1	85	152	682
Total	237	989	0	1226	0	0	0	0	0	897	285	1182	217	1	346	564	2972
08:00 AM	46	171	0	217	0	0	0	0	0	154	54	208	62	0	86	148	573
08:15 AM	64	138	0	202	0	0	0	0	0	140	49	189	60	2	73	135	526
08:30 AM	69	133	0	202	0	0	0	0	0	125	53	178	54	0	49	103	483
08:45 AM	43	125	0	168	0	0	0	0	0	134	40	174	48	1	61	110	452
Total	222	567	0	789	0	0	0	0	0	553	196	749	224	3	269	496	2034
Grand Total	459	1556	0	2015	0	0	0	0	0	1450	481	1931	441	4	615	1060	5006
Apprch %	22.8	77.2	0		0	0	0		0	75.1	24.9		41.6	0.4	58		
Total %	9.2	31.1	0	40.3	0	0	0	0	0	29	9.6	38.6	8.8	0.1	12.3	21.2	

	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**61**	**305**	0	**366**	0	0	0	0	0	194	61	255	46	0	**105**	151	772
07:15 AM	55	301	0	356	0	0	0	0	0	237	66	303	51	0	78	129	**788**
07:30 AM	60	175	0	235	0	0	0	0	0	**282**	**81**	**363**	54	0	78	132	730
07:45 AM	61	208	0	269	0	0	0	0	0	184	77	261	**66**	**1**	85	**152**	682
Total Volume	237	989	0	1226	0	0	0	0	0	897	285	1182	217	1	346	564	2972
% App. Total	19.3	80.7	0		0	0	0		0	75.9	24.1		38.5	0.2	61.3		
PHF	.971	.811	.000	.837	.000	.000	.000	.000	.000	.795	.880	.814	.822	.250	.824	.928	.943

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	**61**	**305**	0	**366**	0	0	0	0	0	194	61	255	46	0	**105**	151
+15 mins.	55	301	0	356	0	0	0	0	0	237	66	303	51	0	78	129
+30 mins.	60	175	0	235	0	0	0	0	0	**282**	**81**	**363**	54	0	78	132
+45 mins.	61	208	0	269	0	0	0	0	0	184	77	261	**66**	**1**	85	**152**
Total Volume	237	989	0	1226	0	0	0	0	0	897	285	1182	217	1	346	564
% App. Total	19.3	80.7	0		0	0	0		0	75.9	24.1		38.5	0.2	61.3	
PHF	.971	.811	.000	.837	.000	.000	.000	.000	.000	.795	.880	.814	.822	.250	.824	.928

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

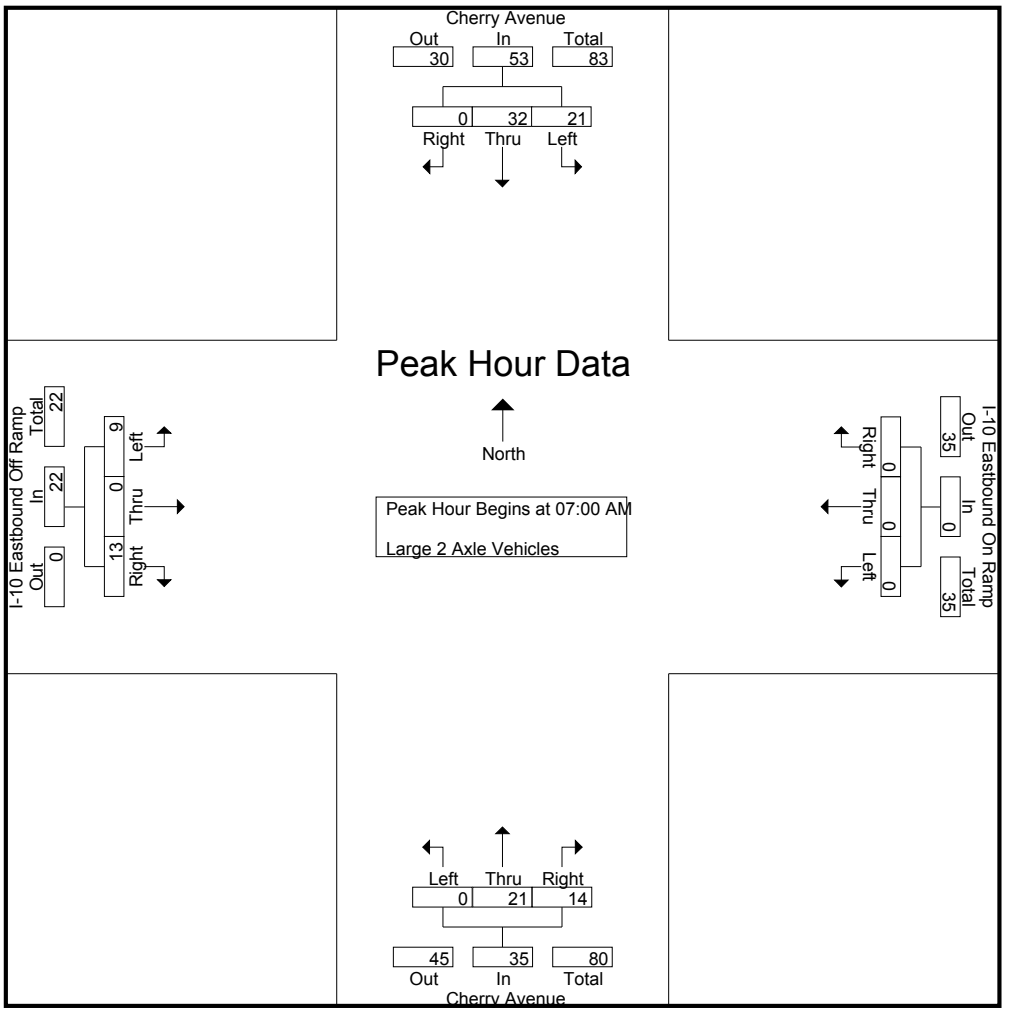
	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	6	6	0	12	0	0	0	0	0	2	1	3	1	0	2	3	18
07:15 AM	5	8	0	13	0	0	0	0	0	5	3	8	4	0	2	6	27
07:30 AM	7	9	0	16	0	0	0	0	0	7	6	13	0	0	4	4	33
07:45 AM	3	9	0	12	0	0	0	0	0	7	4	11	4	0	5	9	32
Total	21	32	0	53	0	0	0	0	0	21	14	35	9	0	13	22	110
08:00 AM	4	12	0	16	0	0	0	0	0	9	0	9	3	0	4	7	32
08:15 AM	5	11	0	16	0	0	0	0	0	9	3	12	3	0	4	7	35
08:30 AM	5	7	0	12	0	0	0	0	0	7	4	11	2	0	3	5	28
08:45 AM	4	12	0	16	0	0	0	0	0	9	2	11	4	0	7	11	38
Total	18	42	0	60	0	0	0	0	0	34	9	43	12	0	18	30	133
Grand Total	39	74	0	113	0	0	0	0	0	55	23	78	21	0	31	52	243
Apprch %	34.5	65.5	0		0	0	0		0	70.5	29.5		40.4	0	59.6		
Total %	16	30.5	0	46.5	0	0	0	0	0	22.6	9.5	32.1	8.6	0	12.8	21.4	

	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	6	6	0	12	0	0	0	0	0	2	1	3	1	0	2	3	18
07:15 AM	5	8	0	13	0	0	0	0	0	5	3	8	**4**	0	2	6	27
07:30 AM	**7**	**9**	0	**16**	0	0	0	0	0	**7**	**6**	**13**	0	0	4	4	**33**
07:45 AM	3	9	0	12	0	0	0	0	0	7	4	11	4	0	**5**	**9**	32
Total Volume	21	32	0	53	0	0	0	0	0	21	14	35	9	0	13	22	110
% App. Total	39.6	60.4	0		0	0	0		0	60	40		40.9	0	59.1		
PHF	.750	.889	.000	.828	.000	.000	.000	.000	.000	.750	.583	.673	.563	.000	.650	.611	.833

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	6	6	0	12	0	0	0	0	0	2	1	3	1	0	2	3
+15 mins.	5	8	0	13	0	0	0	0	0	5	3	8	**4**	0	2	6
+30 mins.	**7**	**9**	0	**16**	0	0	0	0	0	**7**	**6**	**13**	0	0	4	4
+45 mins.	3	9	0	12	0	0	0	0	0	7	4	11	4	0	**5**	**9**
Total Volume	21	32	0	53	0	0	0	0	0	21	14	35	9	0	13	22
% App. Total	39.6	60.4	0		0	0	0		0	60	40		40.9	0	59.1	
PHF	.750	.889	.000	.828	.000	.000	.000	.000	.000	.750	.583	.673	.563	.000	.650	.611

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

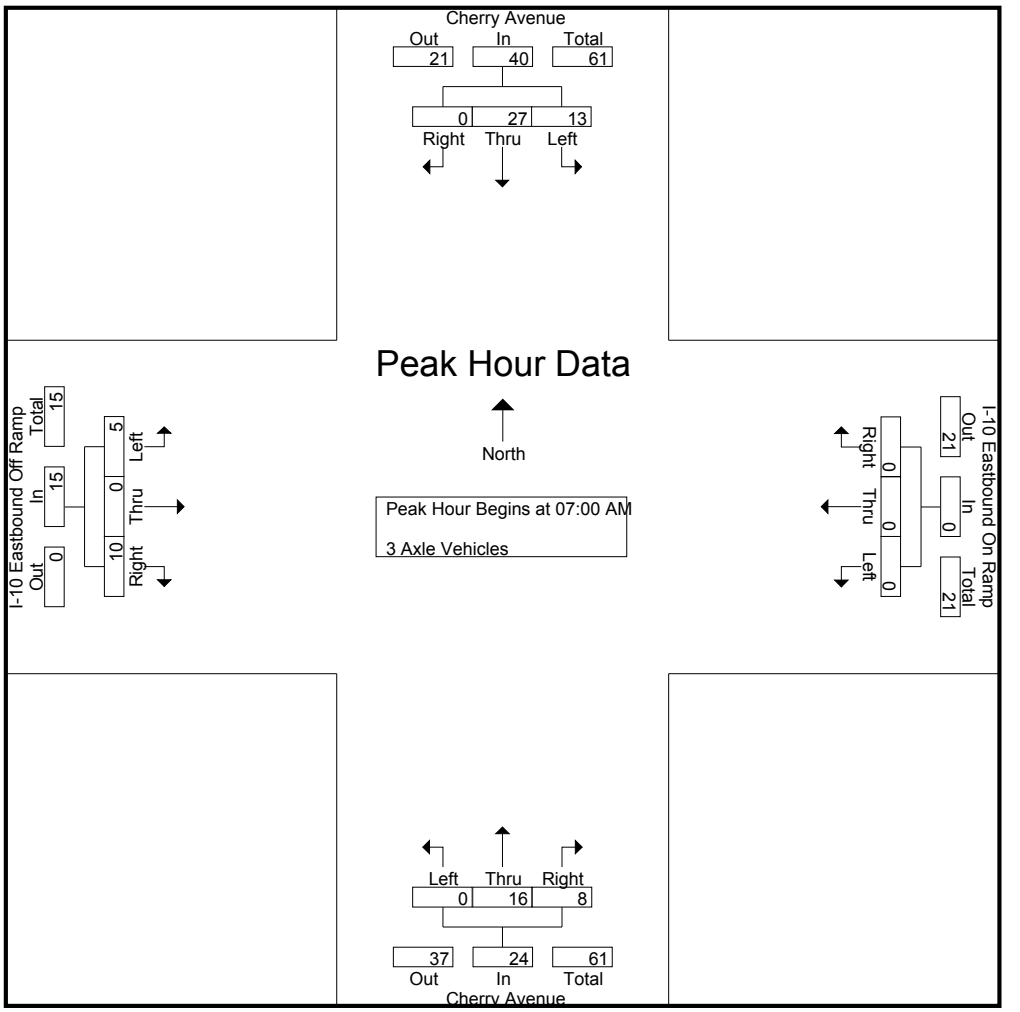
	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	5	0	6	0	0	0	0	0	1	2	3	1	0	4	5	14
07:15 AM	2	6	0	8	0	0	0	0	0	3	1	4	1	0	2	3	15
07:30 AM	7	7	0	14	0	0	0	0	0	2	1	3	1	0	3	4	21
07:45 AM	3	9	0	12	0	0	0	0	0	10	4	14	2	0	1	3	29
Total	13	27	0	40	0	0	0	0	0	16	8	24	5	0	10	15	79
08:00 AM	3	5	0	8	0	0	0	0	0	5	2	7	2	0	2	4	19
08:15 AM	1	6	0	7	0	0	0	0	0	5	1	6	0	0	6	6	19
08:30 AM	2	12	0	14	0	0	0	0	0	6	0	6	3	0	5	8	28
08:45 AM	2	15	0	17	0	0	0	0	0	10	1	11	5	0	4	9	37
Total	8	38	0	46	0	0	0	0	0	26	4	30	10	0	17	27	103
Grand Total	21	65	0	86	0	0	0	0	0	42	12	54	15	0	27	42	182
Apprch %	24.4	75.6	0		0	0	0		0	77.8	22.2		35.7	0	64.3		
Total %	11.5	35.7	0	47.3	0	0	0	0	0	23.1	6.6	29.7	8.2	0	14.8	23.1	

	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	5	0	6	0	0	0	0	0	1	2	3	1	0	**4**	**5**	14
07:15 AM	2	6	0	8	0	0	0	0	0	3	1	4	1	0	2	3	15
07:30 AM	**7**	7	0	**14**	0	0	0	0	0	2	1	3	1	0	3	4	21
07:45 AM	3	**9**	0	12	0	0	0	0	0	**10**	**4**	**14**	**2**	0	1	3	**29**
Total Volume	13	27	0	40	0	0	0	0	0	16	8	24	5	0	10	15	79
% App. Total	32.5	67.5	0		0	0	0		0	66.7	33.3		33.3	0	66.7		
PHF	.464	.750	.000	.714	.000	.000	.000	.000	.000	.400	.500	.429	.625	.000	.625	.750	.681

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	1	5	0	6	0	0	0	0	0	1	2	3	1	0	**4**	**5**
+15 mins.	2	6	0	8	0	0	0	0	0	3	1	4	1	0	2	3
+30 mins.	**7**	7	0	**14**	0	0	0	0	0	2	1	3	1	0	3	4
+45 mins.	3	**9**	0	12	0	0	0	0	0	**10**	**4**	**14**	**2**	0	1	3
Total Volume	13	27	0	40	0	0	0	0	0	16	8	24	5	0	10	15
% App. Total	32.5	67.5	0		0	0	0		0	66.7	33.3		33.3	0	66.7	
PHF	.464	.750	.000	.714	.000	.000	.000	.000	.000	.400	.500	.429	.625	.000	.625	.750

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

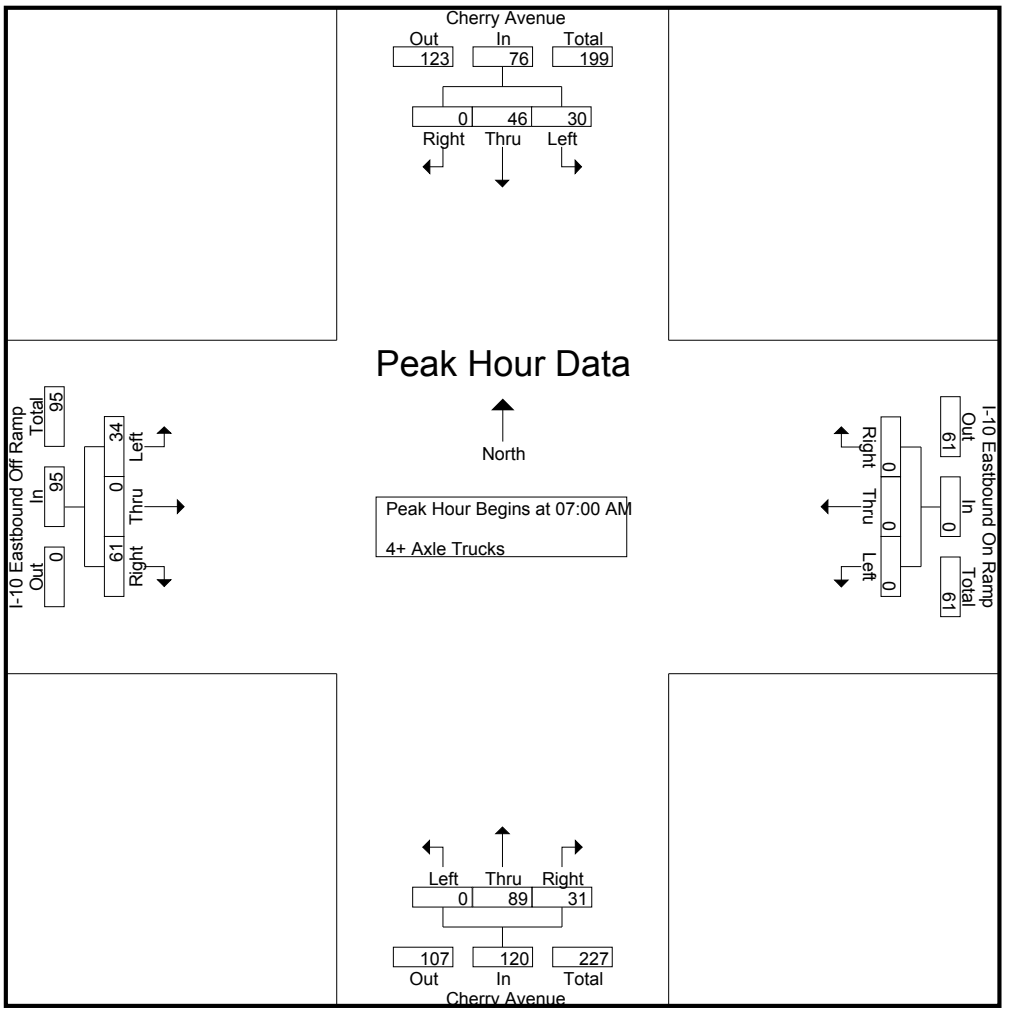
	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	7	0	11	0	0	0	0	0	15	7	22	10	0	22	32	65
07:15 AM	9	12	0	21	0	0	0	0	0	26	7	33	13	0	11	24	78
07:30 AM	10	15	0	25	0	0	0	0	0	22	7	29	4	0	14	18	72
07:45 AM	7	12	0	19	0	0	0	0	0	26	10	36	7	0	14	21	76
Total	30	46	0	76	0	0	0	0	0	89	31	120	34	0	61	95	291
08:00 AM	8	18	0	26	0	0	0	0	0	25	8	33	7	0	13	20	79
08:15 AM	8	13	0	21	0	0	0	0	0	30	7	37	7	0	23	30	88
08:30 AM	14	10	0	24	0	0	0	0	0	25	12	37	10	1	13	24	85
08:45 AM	12	15	0	27	0	0	0	0	0	27	9	36	4	0	18	22	85
Total	42	56	0	98	0	0	0	0	0	107	36	143	28	1	67	96	337
Grand Total	72	102	0	174	0	0	0	0	0	196	67	263	62	1	128	191	628
Apprch %	41.4	58.6	0		0	0	0		0	74.5	25.5		32.5	0.5	67		
Total %	11.5	16.2	0	27.7	0	0	0	0	0	31.2	10.7	41.9	9.9	0.2	20.4	30.4	

	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	4	7	0	11	0	0	0	0	0	15	7	22	10	0	**22**	**32**	65
07:15 AM	9	12	0	21	0	0	0	0	0	**26**	7	33	**13**	0	11	24	**78**
07:30 AM	**10**	**15**	0	**25**	0	0	0	0	0	22	7	29	4	0	14	18	72
07:45 AM	7	12	0	19	0	0	0	0	0	26	**10**	**36**	7	0	14	21	76
Total Volume	30	46	0	76	0	0	0	0	0	89	31	120	34	0	61	95	291
% App. Total	39.5	60.5	0		0	0	0		0	74.2	25.8		35.8	0	64.2		
PHF	.750	.767	.000	.760	.000	.000	.000	.000	.000	.856	.775	.833	.654	.000	.693	.742	.933

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EAM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	4	7	0	11	0	0	0	0	0	15	7	22	10	0	**22**	**32**
+15 mins.	9	12	0	21	0	0	0	0	0	**26**	7	33	**13**	0	11	24
+30 mins.	**10**	**15**	0	**25**	0	0	0	0	0	22	7	29	4	0	14	18
+45 mins.	7	12	0	19	0	0	0	0	0	26	**10**	**36**	7	0	14	21
Total Volume	30	46	0	76	0	0	0	0	0	89	31	120	34	0	61	95
% App. Total	39.5	60.5	0		0	0	0		0	74.2	25.8		35.8	0	64.2	
PHF	.750	.767	.000	.760	.000	.000	.000	.000	.000	.856	.775	.833	.654	.000	.693	.742

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

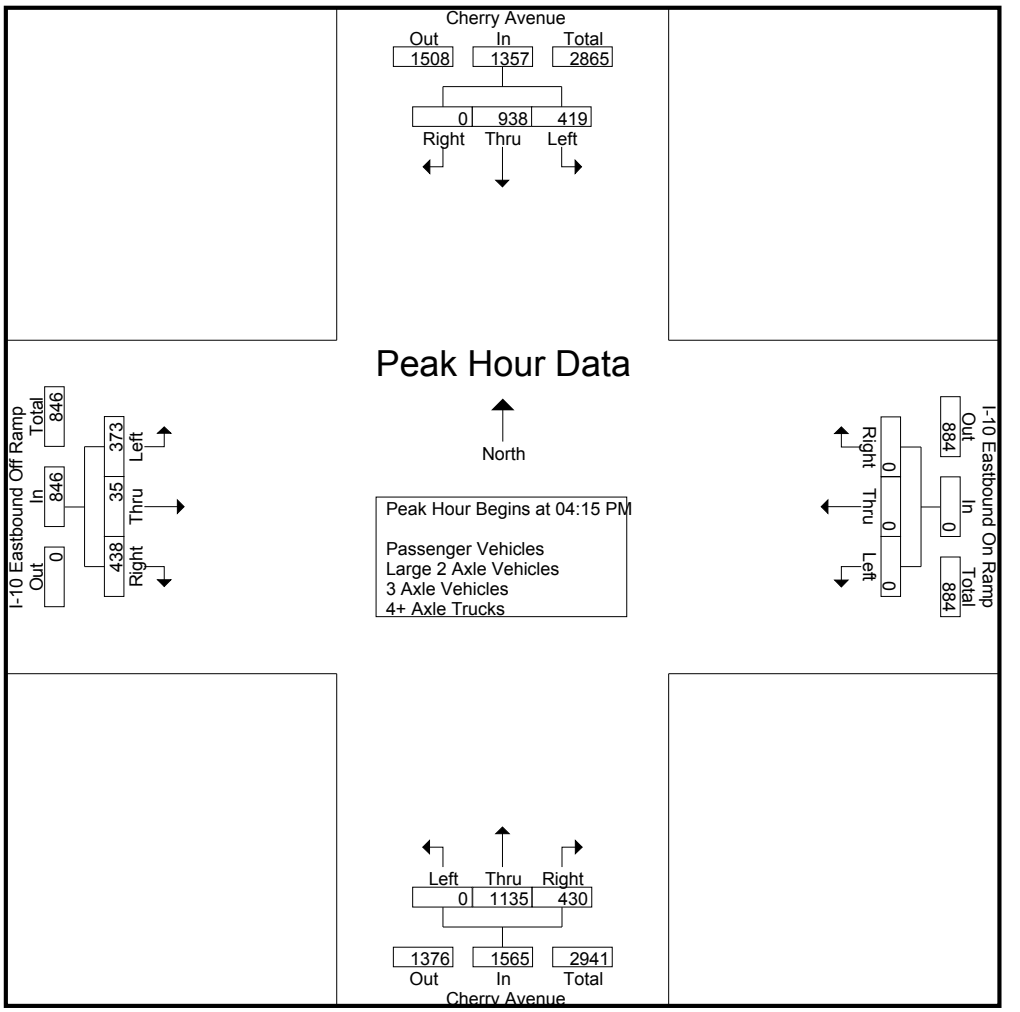
	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	108	227	0	335	0	0	0	0	0	277	106	383	98	3	126	227	945
04:15 PM	124	234	0	358	0	0	0	0	0	261	93	354	88	4	114	206	918
04:30 PM	85	216	0	301	0	0	0	0	0	271	101	372	102	6	118	226	899
04:45 PM	102	245	0	347	0	0	0	0	0	314	119	433	71	18	101	190	970
Total	419	922	0	1341	0	0	0	0	0	1123	419	1542	359	31	459	849	3732
05:00 PM	108	243	0	351	0	0	0	0	0	289	117	406	112	7	105	224	981
05:15 PM	103	250	0	353	0	0	0	0	0	275	76	351	76	4	74	154	858
05:30 PM	103	221	0	324	0	0	0	0	0	229	96	325	91	7	110	208	857
05:45 PM	62	189	0	251	0	0	0	0	0	228	68	296	94	10	94	198	745
Total	376	903	0	1279	0	0	0	0	0	1021	357	1378	373	28	383	784	3441
Grand Total	795	1825	0	2620	0	0	0	0	0	2144	776	2920	732	59	842	1633	7173
Apprch %	30.3	69.7	0		0	0	0		0	73.4	26.6		44.8	3.6	51.6		
Total %	11.1	25.4	0	36.5	0	0	0	0	0	29.9	10.8	40.7	10.2	0.8	11.7	22.8	
Passenger Vehicles	708	1620	0	2328	0	0	0	0	0	1970	679	2649	664	59	716	1439	6416
% Passenger Vehicles	89.1	88.8	0	88.9	0	0	0	0	0	91.9	87.5	90.7	90.7	100	85	88.1	89.4
Large 2 Axle Vehicles	22	57	0	79	0	0	0	0	0	41	25	66	17	0	31	48	193
% Large 2 Axle Vehicles	2.8	3.1	0	3	0	0	0	0	0	1.9	3.2	2.3	2.3	0	3.7	2.9	2.7
3 Axle Vehicles	14	53	0	67	0	0	0	0	0	39	16	55	9	0	15	24	146
% 3 Axle Vehicles	1.8	2.9	0	2.6	0	0	0	0	0	1.8	2.1	1.9	1.2	0	1.8	1.5	2
4+ Axle Trucks	51	95	0	146	0	0	0	0	0	94	56	150	42	0	80	122	418
% 4+ Axle Trucks	6.4	5.2	0	5.6	0	0	0	0	0	4.4	7.2	5.1	5.7	0	9.5	7.5	5.8

	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**124**	234	0	**358**	0	0	0	0	0	261	93	354	88	4	114	206	918
04:30 PM	85	216	0	301	0	0	0	0	0	271	101	372	102	6	**118**	**226**	899
04:45 PM	102	**245**	0	347	0	0	0	0	0	**314**	**119**	**433**	71	**18**	101	190	970
05:00 PM	108	243	0	351	0	0	0	0	0	289	117	406	**112**	7	105	224	**981**
Total Volume	419	938	0	1357	0	0	0	0	0	1135	430	1565	373	35	438	846	3768
% App. Total	30.9	69.1	0		0	0	0		0	72.5	27.5		44.1	4.1	51.8		
PHF	.845	.957	.000	.948	.000	.000	.000	.000	.000	.904	.903	.904	.833	.486	.928	.936	.960

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM				04:15 PM				04:00 PM			
+0 mins.	102	245	0	347	0	0	0	0	0	261	93	354	98	3	**126**	**227**
+15 mins.	**108**	243	0	351	0	0	0	0	0	271	101	372	88	4	114	206
+30 mins.	103	**250**	0	**353**	0	0	0	0	0	**314**	**119**	**433**	**102**	6	118	226
+45 mins.	103	221	0	324	0	0	0	0	0	289	117	406	71	**18**	101	190
Total Volume	416	959	0	1375	0	0	0	0	0	1135	430	1565	359	31	459	849
% App. Total	30.3	69.7	0		0	0	0		0	72.5	27.5		42.3	3.7	54.1	
PHF	.963	.959	.000	.974	.000	.000	.000	.000	.000	.904	.903	.904	.880	.431	.911	.935

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Passenger Vehicles

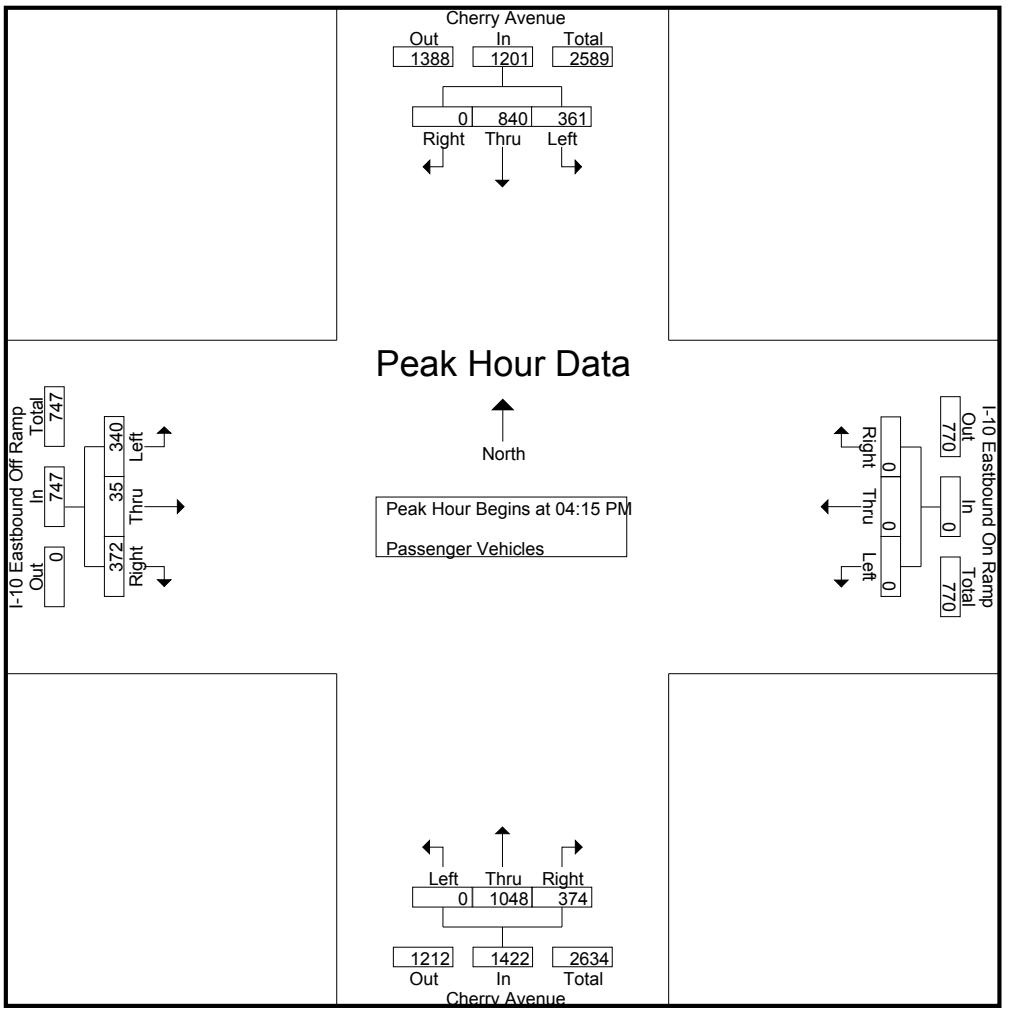
	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	101	190	0	291	0	0	0	0	0	250	91	341	86	3	103	192	824
04:15 PM	104	207	0	311	0	0	0	0	0	229	80	309	78	4	101	183	803
04:30 PM	71	179	0	250	0	0	0	0	0	251	89	340	90	6	91	187	777
04:45 PM	88	234	0	322	0	0	0	0	0	296	103	399	68	18	91	177	898
Total	364	810	0	1174	0	0	0	0	0	1026	363	1389	322	31	386	739	3302
05:00 PM	98	220	0	318	0	0	0	0	0	272	102	374	104	7	89	200	892
05:15 PM	96	222	0	318	0	0	0	0	0	246	70	316	73	4	63	140	774
05:30 PM	97	200	0	297	0	0	0	0	0	216	86	302	84	7	92	183	782
05:45 PM	53	168	0	221	0	0	0	0	0	210	58	268	81	10	86	177	666
Total	344	810	0	1154	0	0	0	0	0	944	316	1260	342	28	330	700	3114
Grand Total	708	1620	0	2328	0	0	0	0	0	1970	679	2649	664	59	716	1439	6416
Apprch %	30.4	69.6	0		0	0	0		0	74.4	25.6		46.1	4.1	49.8		
Total %	11	25.2	0	36.3	0	0	0	0	0	30.7	10.6	41.3	10.3	0.9	11.2	22.4	

	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**104**	207	0	311	0	0	0	0	0	229	80	309	78	4	**101**	183	803
04:30 PM	71	179	0	250	0	0	0	0	0	251	89	340	90	6	91	187	777
04:45 PM	88	**234**	0	**322**	0	0	0	0	0	**296**	**103**	**399**	68	**18**	91	177	**898**
05:00 PM	98	220	0	318	0	0	0	0	0	272	102	374	**104**	7	89	**200**	892
Total Volume	361	840	0	1201	0	0	0	0	0	1048	374	1422	340	35	372	747	3370
% App. Total	30.1	69.9	0		0	0	0		0	73.7	26.3		45.5	4.7	49.8		
PHF	.868	.897	.000	.932	.000	.000	.000	.000	.000	.885	.908	.891	.817	.486	.921	.934	.938

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	**104**	207	0	311	0	0	0	0	0	229	80	309	78	4	**101**	183
+15 mins.	71	179	0	250	0	0	0	0	0	251	89	340	90	6	91	187
+30 mins.	88	**234**	0	**322**	0	0	0	0	0	**296**	**103**	**399**	68	**18**	91	177
+45 mins.	98	220	0	318	0	0	0	0	0	272	102	374	**104**	7	89	**200**
Total Volume	361	840	0	1201	0	0	0	0	0	1048	374	1422	340	35	372	747
% App. Total	30.1	69.9	0		0	0	0		0	73.7	26.3		45.5	4.7	49.8	
PHF	.868	.897	.000	.932	.000	.000	.000	.000	.000	.885	.908	.891	.817	.486	.921	.934

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

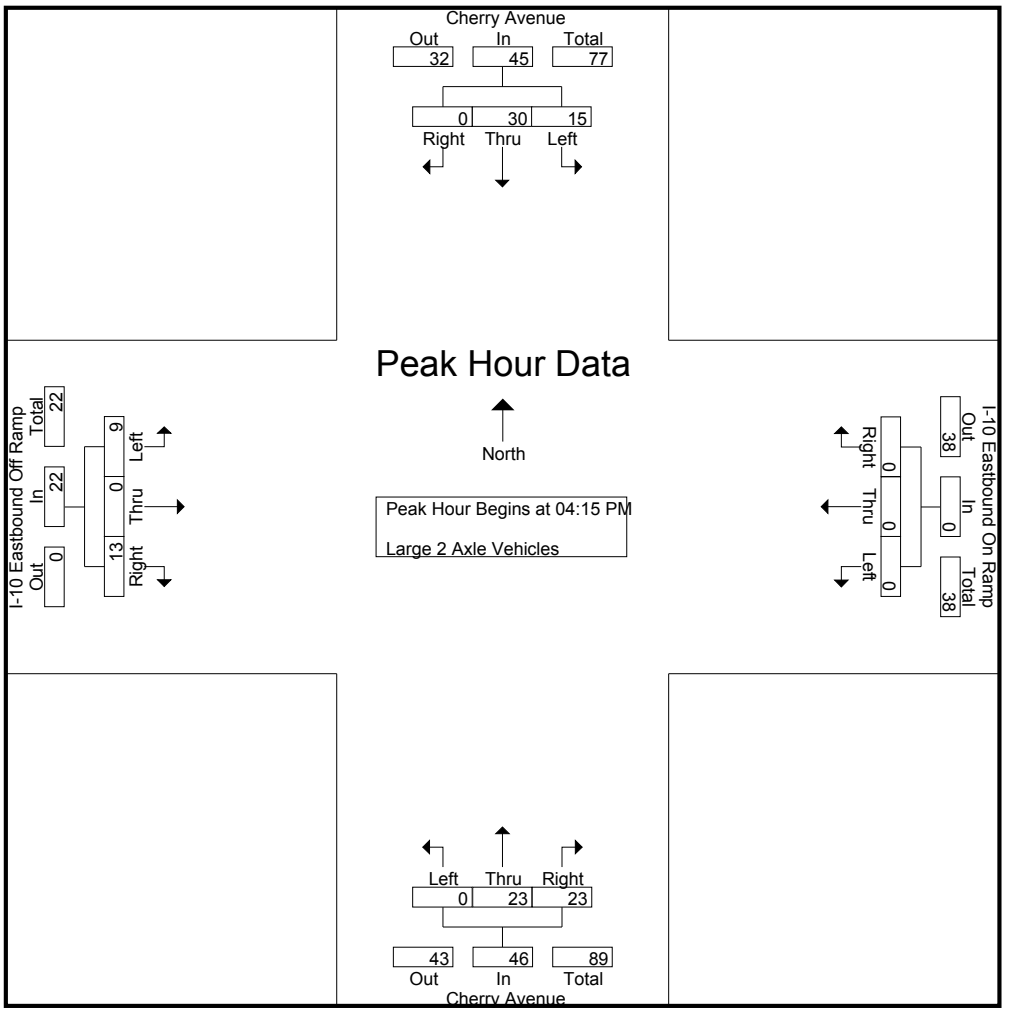
	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	3	13	0	16	0	0	0	0	0	7	1	8	4	0	10	14	38
04:15 PM	6	8	0	14	0	0	0	0	0	7	5	12	3	0	1	4	30
04:30 PM	3	8	0	11	0	0	0	0	0	3	2	5	5	0	6	11	27
04:45 PM	6	7	0	13	0	0	0	0	0	8	11	19	0	0	3	3	35
Total	18	36	0	54	0	0	0	0	0	25	19	44	12	0	20	32	130
05:00 PM	0	7	0	7	0	0	0	0	0	5	5	10	1	0	3	4	21
05:15 PM	2	6	0	8	0	0	0	0	0	6	0	6	1	0	5	6	20
05:30 PM	2	3	0	5	0	0	0	0	0	4	1	5	0	0	3	3	13
05:45 PM	0	5	0	5	0	0	0	0	0	1	0	1	3	0	0	3	9
Total	4	21	0	25	0	0	0	0	0	16	6	22	5	0	11	16	63
Grand Total	22	57	0	79	0	0	0	0	0	41	25	66	17	0	31	48	193
Apprch %	27.8	72.2	0		0	0	0		0	62.1	37.9		35.4	0	64.6		
Total %	11.4	29.5	0	40.9	0	0	0	0	0	21.2	13	34.2	8.8	0	16.1	24.9	

	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**6**	**8**	0	**14**	0	0	0	0	0	7	5	12	3	0	1	4	30
04:30 PM	3	8	0	11	0	0	0	0	0	3	2	5	**5**	0	**6**	**11**	27
04:45 PM	6	7	0	13	0	0	0	0	0	**8**	**11**	**19**	0	0	3	3	**35**
05:00 PM	0	7	0	7	0	0	0	0	0	5	5	10	1	0	3	4	21
Total Volume	15	30	0	45	0	0	0	0	0	23	23	46	9	0	13	22	113
% App. Total	33.3	66.7	0		0	0	0		0	50	50		40.9	0	59.1		
PHF	.625	.938	.000	.804	.000	.000	.000	.000	.000	.719	.523	.605	.450	.000	.542	.500	.807

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	**6**	**8**	0	**14**	0	0	0	0	0	7	5	12	3	0	1	4
+15 mins.	3	8	0	11	0	0	0	0	0	3	2	5	**5**	0	**6**	**11**
+30 mins.	6	7	0	13	0	0	0	0	0	**8**	**11**	**19**	0	0	3	3
+45 mins.	0	7	0	7	0	0	0	0	0	5	5	10	1	0	3	4
Total Volume	15	30	0	45	0	0	0	0	0	23	23	46	9	0	13	22
% App. Total	33.3	66.7	0		0	0	0		0	50	50		40.9	0	59.1	
PHF	.625	.938	.000	.804	.000	.000	.000	.000	.000	.719	.523	.605	.450	.000	.542	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

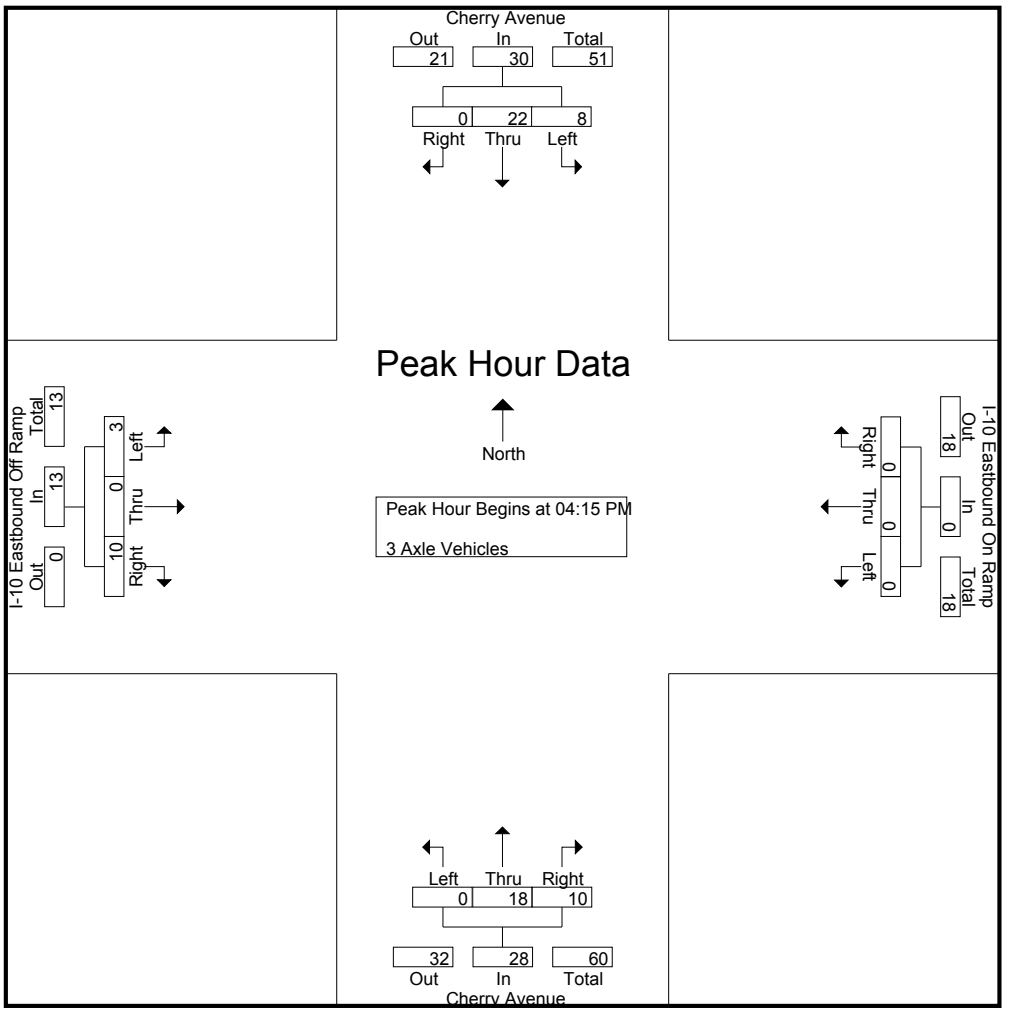
	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	12	0	13	0	0	0	0	0	6	0	6	2	0	1	3	22
04:15 PM	2	10	0	12	0	0	0	0	0	6	1	7	1	0	3	4	23
04:30 PM	6	6	0	12	0	0	0	0	0	6	5	11	1	0	7	8	31
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	9	28	0	37	0	0	0	0	0	18	6	24	4	0	11	15	76
05:00 PM	0	6	0	6	0	0	0	0	0	6	4	10	1	0	0	1	17
05:15 PM	2	10	0	12	0	0	0	0	0	6	0	6	1	0	1	2	20
05:30 PM	2	7	0	9	0	0	0	0	0	4	2	6	1	0	3	4	19
05:45 PM	1	2	0	3	0	0	0	0	0	5	4	9	2	0	0	2	14
Total	5	25	0	30	0	0	0	0	0	21	10	31	5	0	4	9	70
Grand Total	14	53	0	67	0	0	0	0	0	39	16	55	9	0	15	24	146
Apprch %	20.9	79.1	0		0	0	0		0	70.9	29.1		37.5	0	62.5		
Total %	9.6	36.3	0	45.9	0	0	0	0	0	26.7	11	37.7	6.2	0	10.3	16.4	

	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	2	**10**	0	**12**	0	0	0	0	0	**6**	1	7	**1**	0	3	4	23
04:30 PM	**6**	6	0	12	0	0	0	0	0	6	**5**	**11**	1	0	**7**	**8**	**31**
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	6	0	6	0	0	0	0	0	6	4	10	1	0	0	1	17
Total Volume	8	22	0	30	0	0	0	0	0	18	10	28	3	0	10	13	71
% App. Total	26.7	73.3	0		0	0	0		0	64.3	35.7		23.1	0	76.9		
PHF	.333	.550	.000	.625	.000	.000	.000	.000	.000	.750	.500	.636	.750	.000	.357	.406	.573

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	2	**10**	0	**12**	0	0	0	0	0	**6**	1	7	**1**	0	3	4
+15 mins.	**6**	6	0	12	0	0	0	0	0	6	**5**	**11**	1	0	**7**	**8**
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	6	0	6	0	0	0	0	0	6	4	10	1	0	0	1
Total Volume	8	22	0	30	0	0	0	0	0	18	10	28	3	0	10	13
% App. Total	26.7	73.3	0		0	0	0		0	64.3	35.7		23.1	0	76.9	
PHF	.333	.550	.000	.625	.000	.000	.000	.000	.000	.750	.500	.636	.750	.000	.357	.406

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

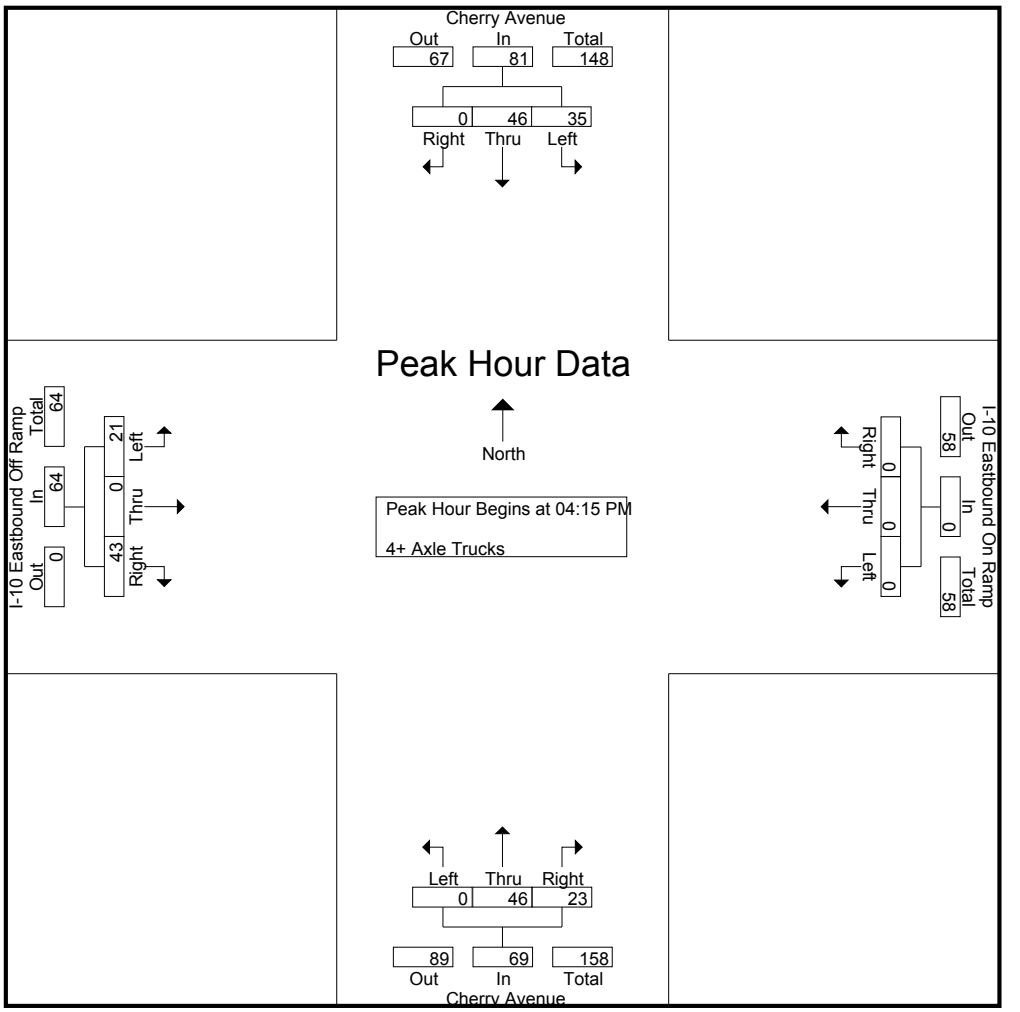
	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	3	12	0	15	0	0	0	0	0	14	14	28	6	0	12	18	61
04:15 PM	12	9	0	21	0	0	0	0	0	19	7	26	6	0	9	15	62
04:30 PM	5	23	0	28	0	0	0	0	0	11	5	16	6	0	14	20	64
04:45 PM	8	4	0	12	0	0	0	0	0	10	5	15	3	0	7	10	37
Total	28	48	0	76	0	0	0	0	0	54	31	85	21	0	42	63	224
05:00 PM	10	10	0	20	0	0	0	0	0	6	6	12	6	0	13	19	51
05:15 PM	3	12	0	15	0	0	0	0	0	17	6	23	1	0	5	6	44
05:30 PM	2	11	0	13	0	0	0	0	0	5	7	12	6	0	12	18	43
05:45 PM	8	14	0	22	0	0	0	0	0	12	6	18	8	0	8	16	56
Total	23	47	0	70	0	0	0	0	0	40	25	65	21	0	38	59	194
Grand Total	51	95	0	146	0	0	0	0	0	94	56	150	42	0	80	122	418
Apprch %	34.9	65.1	0		0	0	0		0	62.7	37.3		34.4	0	65.6		
Total %	12.2	22.7	0	34.9	0	0	0	0	0	22.5	13.4	35.9	10	0	19.1	29.2	

	Cherry Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cherry Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**12**	9	0	21	0	0	0	0	0	**19**	**7**	**26**	**6**	0	9	15	62
04:30 PM	5	**23**	0	**28**	0	0	0	0	0	11	5	16	6	0	**14**	**20**	**64**
04:45 PM	8	4	0	12	0	0	0	0	0	10	5	15	3	0	7	10	37
05:00 PM	10	10	0	20	0	0	0	0	0	6	6	12	6	0	13	19	51
Total Volume	35	46	0	81	0	0	0	0	0	46	23	69	21	0	43	64	214
% App. Total	43.2	56.8	0		0	0	0		0	66.7	33.3		32.8	0	67.2		
PHF	.729	.500	.000	.723	.000	.000	.000	.000	.000	.605	.821	.663	.875	.000	.768	.800	.836

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : FONCH10EPM
Site Code : 20116023
Start Date : 1/12/2016
Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	**12**	9	0	21	0	0	0	0	0	**19**	**7**	**26**	**6**	0	9	15
+15 mins.	5	**23**	0	**28**	0	0	0	0	0	11	5	16	6	0	**14**	**20**
+30 mins.	8	4	0	12	0	0	0	0	0	10	5	15	3	0	7	10
+45 mins.	10	10	0	20	0	0	0	0	0	6	6	12	6	0	13	19
Total Volume	35	46	0	81	0	0	0	0	0	46	23	69	21	0	43	64
% App. Total	43.2	56.8	0		0	0	0		0	66.7	33.3		32.8	0	67.2	
PHF	.729	.500	.000	.723	.000	.000	.000	.000	.000	.605	.821	.663	.875	.000	.768	.800

Location: Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps

Site Code: 201-16023
Date: 1/12/2016
Weather: Clear

PEDESTRIANS

	North Leg Cherry Avenue	East Leg I-10 Eastbound Ramps	South Leg Cherry Avenue	West Leg I-10 Eastbound Ramps	TOTAL
7:00 AM	0	0	0	1	1
7:15 AM	0	0	0	0	0
7:30 AM	0	1	0	1	2
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	1	1
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	3	4

	North Leg Cherry Avenue	East Leg I-10 Eastbound Ramps	South Leg Cherry Avenue	West Leg I-10 Eastbound Ramps	TOTAL
4:00 PM	0	0	0	1	1
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	1	1
5:00 PM	0	0	0	1	1
5:15 PM	0	0	0	1	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	4	4

Location: Fontana
N/S: Cherry Avenue
E/W: I-10 Eastbound Ramps

Site Code: 201-16023
Date: 1/12/2016
Weather: Clear

BICYCLES

	North Leg Cherry Avenue	East Leg I-10 Eastbound Ramps	South Leg Cherry Avenue	West Leg I-10 Eastbound Ramps	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	1	0	0	1
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	1

	North Leg Cherry Avenue	East Leg I-10 Eastbound Ramps	South Leg Cherry Avenue	West Leg I-10 Eastbound Ramps	TOTAL
4:00 PM	0	0	0	1	1
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	1	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	1	1
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	3	3

2014

Annual Average Daily Truck Traffic on the California State Highway System

Compiled by
Traffic Data Branch

State of California
California State Transportation Agency
Department of Transportation

Prepared in cooperation with the
U.S. Department of Transportation
Federal Highway Administration

RTE	DIST	CNTY	POST MILE	LEG	DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK ----------By Axle----- 2	3	4	5+	TOTAL ----------By Axle----- 2	3	4	5+	% TRUCK AADT	EAL 2-WAY (1000)	YEAR VER/ EST
010	07	LA	42.443	A	POMONA, JCT. RTES. 57/71	241,000	16,219	6.73	4,446	1,677	757	9,339	27.41	10.34	4.67	57.58	3,643	10E
010	07	LA	47.737	B	POMONA, INDIAN HILL BLVD	244,000	16,104	6.60	4,414	1,665	752	9,273	27.41	10.34	4.67	57.58	3,617	10V
010	07	LA	48.265	O	LOS ANGELES/SAN BERNARDINO COUNTY LINE	245,000	16,047	6.55	4,399	1,659	749	9,240	27.41	10.34	4.67	57.58	3,604	10E
010	08	SBD	0	O	LOS ANGELES/SAN BERNARDINO COUNTY LINE	245,000	16,047	6.55	4,399	1,659	749	9,240	27.41	10.34	4.67	57.58	3,604	10E
010	08	SBD	1.229	B	MONTCLAIR, CENTRAL AVE	246,000	16,334	6.64	4,752	1,553	590	9,439	29.09	9.51	3.61	57.79	3,652	05E
010	08	SBD	1.229	A	MONTCLAIR, CENTRAL AVE	253,000	16,799	6.64	4,887	1,598	606	9,708	29.09	9.51	3.61	57.79	3,756	05E
010	08	SBD	3.468	B	UPLAND, JCT. RTE. 83	253,000	16,927	6.69	4,924	1,610	611	9,782	29.09	9.51	3.61	57.79	3,785	05E
010	08	SBD	3.468	A	UPLAND, JCT. RTE. 83	256,000	17,126	6.69	4,982	1,629	618	9,897	29.09	9.51	3.61	57.79	3,830	05E
010	08	SBD	9.936	B	ONTARIO, JCT. RTE. 15	265,000	17,729	6.69	5,157	1,686	640	10,246	29.09	9.51	3.61	57.79	3,965	05E
010	08	SBD	9.936	A	ONTARIO, JCT. RTE. 15	250,000	25,574	10.23	6,511	2,606	744	15,713	25.46	10.19	2.91	61.44	5,998	06E
010	08	SBD	11.132	B	ETIWANDA AVE	250,000	25,574	10.23	6,511	2,606	744	15,713	25.46	10.19	2.91	61.44	5,998	06E
010	08	SBD	11.132	A	ETIWANDA AVE	214,000	21,892	10.23	5,574	2,231	637	13,450	25.46	10.19	2.91	61.44	5,134	06V
010	08	SBD	13.169	B	FONTANA, CHERRY AVE	214,000	22,021	10.29	5,871	2,237	650	13,263	26.66	10.16	2.95	60.23	5,083	08V
010	08	SBD	R18.492	B	BLOOMINGTON, CEDAR AVE	200,000	20,458	10.23	4,953	2,138	602	12,765	24.21	10.45	2.94	62.39	4,862	06E
010	08	SBD	R18.492	A	BLOOMINGTON, CEDAR AVE	196,000	19,953	10.18	4,988	1,995	599	12,371	25.00	10.00	3.00	62.00	4,714	06E
010	08	SBD	20.965	B	PEPPER AVE	197,000	19,897	10.10	4,875	1,890	597	12,535	24.50	9.50	3.00	63.00	4,757	06E

Caltrans Performance Measurement System (PeMS)
Freeway Mainline Volumes

I-10 Westbound, East of Cherry Avenue

DAILY				Data Quality	
Time	1/12/2016	1/13/2016	1/14/2016	# Lane Points	% Observed
0:00	1251	1311	1216	144	0.0
1:00	1211	1214	1249	144	0.0
2:00	1330	1326	1324	144	0.0
3:00	1886	1859	1905	144	0.0
4:00	3490	3499	3429	144	0.0
5:00	4231	4263	4384	144	0.0
6:00	4450	4584	4528	144	0.0
7:00	5087	5030	5189	144	0.0
8:00	4193	4002	4269	144	0.0
9:00	3744	3565	3754	144	0.0
10:00	3585	3506	5178	144	0.0
11:00	3895	3650	4943	144	0.0
12:00	3921	3845	3872	144	0.0
13:00	3844	3787	3885	144	0.0
14:00	4043	3883	4287	144	0.0
15:00	3836	4134	4114	144	0.0
16:00	4255	3872	4012	144	0.0
17:00	4096	4162	4101	144	0.0
18:00	3220	3443	3343	144	0.0
19:00	2772	2777	2845	144	0.0
20:00	2256	2370	2330	144	0.0
21:00	2055	2047	2260	144	0.0
22:00	1721	1702	1781	144	0.0
23:00	1471	1439	1535	144	0.0
Total	75,843	75,270	79,733	3,456	0.0

Daily Peak	79,733	1/14/2016

PEAK HOUR				Data Quality	
Time	Minimum	Mean	Maximum	# Lane Points	% Observed
7:00	5030	5102	5189	144	0.0
8:00	4002	4154.67	4269	144	0.0
9:00	3565	3687.67	3754	144	0.0
16:00	3872	4046.33	4255	144	0.0
17:00	4096	4119.67	4162	144	0.0
18:00	3220	3335.33	3443	144	0.0

AM Peak	5,189	7:00
PM Peak	4,255	16:00

I-10 Eastbound, West of Cherry Avenue

DAILY				Data Quality	
Time	1/12/2016	1/13/2016	1/14/2016	# Lane Points	% Observed
0:00	2321	2371	2414	144	0.0
1:00	2113	2123	2192	144	0.0
2:00	1924	1964	1998	144	0.0
3:00	2045	2041	2014	144	0.0
4:00	2371	2316	2314	144	0.0
5:00	3190	3218	3219	144	0.0
6:00	4400	4466	4512	144	0.0
7:00	5251	5275	5344	144	0.0
8:00	4849	5183	5067	144	0.0
9:00	4306	4412	4230	144	0.0
10:00	4453	4407	4312	144	0.0
11:00	4474	4392	4414	144	0.0
12:00	4792	4718	4942	144	0.0
13:00	5146	4995	4651	144	0.0
14:00	5407	5385	5622	144	0.0
15:00	4835	5466	5472	144	0.0
16:00	4869	5072	4606	144	0.0
17:00	4893	4952	4866	144	0.0
18:00	4925	5074	5046	144	0.0
19:00	4476	4520	4682	144	0.0
20:00	4321	4148	4258	144	0.0
21:00	3923	3833	4016	144	0.0
22:00	3413	3414	3623	144	0.0
23:00	2995	2890	2819	144	0.0
Total	95,692	96,635	96,633	3,456	0.0

Daily Peak	96,635	1/13/2016

PEAK HOUR				Data Quality	
Time	Minimum	Mean	Maximum	# Lane Points	% Observed
7:00	5251	5290	5344	144	0.0
8:00	4849	5033	5183	144	0.0
9:00	4230	4316	4412	144	0.0
16:00	3414	3496.67	3579	144	0.0
17:00	3492	3560.33	3611	144	0.0
18:00	3447	3513.33	3559	144	0.0

AM Peak	5,344	7:00
PM Peak	3,611	17:00

FREEWAY TO RAMP AM PEAK HOUR VOLUMES

I-10 WB Ramps						
Location	Existing (2016) Raw	Project Total	Cumulative Total	EA (2017) Total	EAP (2017) Total	EAPC (2017) Total
East of Cherry Ave.	5,189	9	5	5,293	5,302	5,307
Off-Ramp	1,096	9	5	1,118	1,127	1,132
Between	4,093	0	0	4,175	4,175	4,175
Loop On-Ramp	513	0	0	523	523	523
Between	4,606	0	0	4,698	4,698	4,698
Slip On-Ramp	479	1	1	489	490	491
West of Cherry Ave.	5,085	1	1	5,187	5,188	5,189
I-10 EB Ramps						
Location	Existing (2016) Raw	Project Total	Cumulative Total	EA (2017) Total	EAP (2017) Total	EAPC (2017) Total
West of Cherry Ave.	5,344	9	4	5,451	5,460	5,464
Off-Ramp	912	9	4	930	939	943
Between	4,432	0	0	4,521	4,521	4,521
On-Ramp	800	1	2	816	817	819
East of Cherry Ave.	5,232	1	2	5,337	5,338	5,340

Note: Freeway Mainline Truck %: 10.29 - Based on 2014 Annual Average Daily Truck Traffic (Source: Caltrans)

XX = PeMS Data for Week of January 12-14, 2016 (consistent with count data).
XX = Flow Conserved Volumes.

FREEWAY TO RAMP PM PEAK HOUR VOLUMES

I-10 WB Ramps						
Location	Existing (2016) Raw	Project Total	Cumulative Total	EA (2017) Total	EAP (2017) Total	EAPC (2017) Total
East of Cherry Ave.	4,255	1	2	4,340	4,341	4,343
Off-Ramp	872	1	2	890	891	893
Between	3,383	0	0	3,450	3,450	3,450
Loop On-Ramp	399	0	0	407	407	407
Between	3,782	0	0	3,857	3,857	3,857
Slip On-Ramp	440	22	4	449	471	475
West of Cherry Ave.	4,222	22	4	4,306	4,328	4,332
I-10 EB Ramps						
Location	Existing (2016) Raw	Project Total	Cumulative Total	EA (2017) Total	EAP (2017) Total	EAPC (2017) Total
West of Cherry Ave.	3,611	1	1	3,683	3,684	3,685
Off-Ramp	964	1	1	983	984	985
Between	2,647	0	0	2,700	2,700	2,700
On-Ramp	1,003	22	5	1,023	1,045	1,050
East of Cherry Ave.	3,650	22	5	3,723	3,745	3,750

Note: Freeway Mainline Truck %: 10.29 - Based on 2014 Annual Average Daily Truck Traffic (Source: Caltrans)

XX = PeMS Data for Week of January 12-14, 2016 (consistent with count data).
XX = Flow Conserved Volumes.

APPENDIX 3.2

EXISTING (2016) CONDITIONS
INTERSECTION ANALYSIS CALCULATION WORKSHEETS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	178	0	230	1	733	107	144	1118	0
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		130	270		0	60		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			40			50			40	
Link Distance (ft)		506			600			1582			1080	
Travel Time (s)		13.8			10.2			21.6			18.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type			Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	8.0	37.0	37.0	19.0	48.0	48.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	10.0%	46.3%	46.3%	23.8%	60.0%	60.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Cherry Av. & Merrill Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	178	0	230	1	733	107	144	1118	0
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	1800	1765	1765	1700	1765	1765	1667	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	0	0	0	184	0	237	1	756	110	148	1153	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	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	333	283	356	0	283	2	1933	821	181	2330	990
Arrive On Green	0.00	0.00	0.00	0.19	0.00	0.19	0.00	0.55	0.55	0.11	0.66	0.00
Sat Flow, veh/h	0	1765	1500	1412	0	1500	1587	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	0	0	0	184	0	237	1	756	110	148	1153	0
Grp Sat Flow(s),veh/h/ln	0	1765	1500	1412	0	1500	1587	1765	1500	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	0.0	9.7	0.0	12.2	0.1	9.9	2.9	7.3	13.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	9.7	0.0	12.2	0.1	9.9	2.9	7.3	13.2	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	333	283	356	0	283	2	1933	821	181	2330	990
V/C Ratio(X)	0.00	0.00	0.00	0.52	0.00	0.84	0.50	0.39	0.13	0.82	0.49	0.00
Avail Cap(c_a), veh/h	0	441	375	443	0	375	79	1933	821	298	2330	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	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	0.0	0.0	0.0	30.3	0.0	31.3	39.9	10.4	8.8	34.6	6.9	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.2	0.0	11.9	126.9	0.6	0.3	8.8	0.8	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	0.0	0.0	0.0	3.9	0.0	5.9	0.1	4.9	1.2	3.6	6.5	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	31.4	0.0	43.2	166.9	11.0	9.2	43.5	7.6	0.0
LnGrp LOS				C		D	F	B	A	D	A	
Approach Vol, veh/h		0			421			867			1301	
Approach Delay, s/veh		0.0			38.1			11.0			11.7	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.1	47.8		19.1	4.1	56.8		19.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	15.0	33.0		20.0	4.0	44.0		20.0
Max Q Clear Time (g_c+I1), s	9.3	11.9		0.0	2.1	15.2		14.2
Green Ext Time (p_c), s	0.2	13.5		0.0	0.0	16.3		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	0	0	199	3	112	22	781	86	98	1116	8
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		50	260		0	70		200
Storage Lanes	0		1	0		1	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		589			331			2702			1062	
Travel Time (s)		13.4			7.5			36.8			14.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	12.0	32.0		19.0	39.0	39.0
Total Split (%)	36.3%	36.3%	36.3%	36.3%	36.3%	36.3%	15.0%	40.0%		23.8%	48.8%	48.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 8 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Cherry Av. & Randall Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	0	199	3	112	22	781	86	98	1116	8
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	1700	1765	1765	1700	1765	1765	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	1	0	0	205	3	115	23	805	89	101	1151	8
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	0	240	344	4	240	32	2861	314	126	3546	1005
Arrive On Green	0.16	0.00	0.00	0.16	0.16	0.16	0.04	1.00	1.00	0.08	0.67	0.67
Sat Flow, veh/h	330	0	1500	1591	23	1500	1587	4688	515	1587	5294	1500
Grp Volume(v), veh/h	1	0	0	208	0	115	23	605	289	101	1151	8
Grp Sat Flow(s),veh/h/ln	330	0	1500	1614	0	1500	1587	1765	1674	1587	1765	1500
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	5.6	1.1	0.0	0.0	5.0	7.3	0.1
Cycle Q Clear(g_c), s	9.5	0.0	0.0	9.5	0.0	5.6	1.1	0.0	0.0	5.0	7.3	0.1
Prop In Lane	1.00		1.00	0.99		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	143	0	240	348	0	240	32	2154	1021	126	3546	1005
V/C Ratio(X)	0.01	0.00	0.00	0.60	0.00	0.48	0.72	0.28	0.28	0.80	0.32	0.01
Avail Cap(c_a), veh/h	336	0	469	564	0	469	159	2154	1021	298	3546	1005
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	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	0.0	0.0	32.2	0.0	30.6	38.2	0.0	0.0	36.2	5.6	4.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.6	0.0	1.5	24.1	0.3	0.6	11.0	0.2	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	0.0	0.0	0.0	4.6	0.0	2.4	0.7	0.1	0.2	2.6	3.6	0.1
LnGrp Delay(d),s/veh	36.8	0.0	0.0	33.8	0.0	32.0	62.3	0.3	0.6	47.2	5.8	4.4
LnGrp LOS	D			C		C	E	A	A	D	A	A
Approach Vol, veh/h		1			323			917			1260	
Approach Delay, s/veh		36.7			33.2			2.0			9.1	
Approach LOS		D			C			A			A	

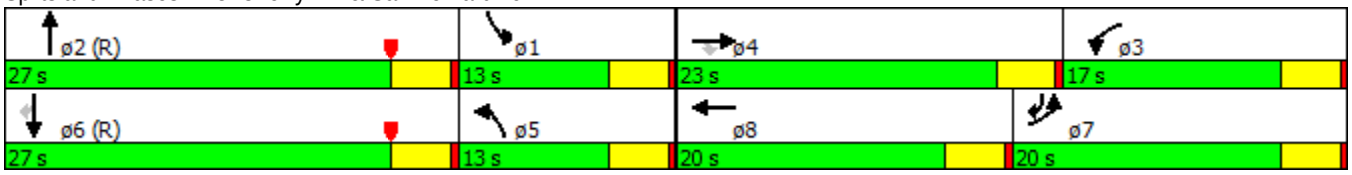
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.4	52.8		16.8	5.6	57.6		16.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	15.0	28.0		25.0	8.0	35.0		25.0
Max Q Clear Time (g_c+I1), s	7.0	2.0		11.5	3.1	9.3		11.5
Green Ext Time (p_c), s	0.1	14.9		1.3	0.0	14.8		1.3

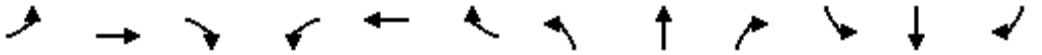
Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	69	93	143	337	86	83	731	87	74	831	372
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	300		285	50		0	220		0	210		300
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		555			705			459			2702	
Travel Time (s)		12.6			16.0			6.3			36.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Detector Phase	7	4	4	3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0		8.0	20.0		8.0	20.0	8.0
Total Split (s)	20.0	23.0	23.0	17.0	20.0		13.0	27.0		13.0	27.0	20.0
Total Split (%)	25.0%	28.8%	28.8%	21.3%	25.0%		16.3%	33.8%		16.3%	33.8%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lag	Lead		Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Cherry Av. & San Bernardino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	178	69	93	143	337	86	83	731	87	74	831	372
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	1667	1765	1765	1667	1765	1800	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	184	71	0	147	347	89	86	754	90	76	857	384
Adj No. of Lanes	1	2	1	1	2	0	1	3	0	1	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	176	75	397	440	111	337	1336	158	337	1522	639
Arrive On Green	0.14	0.05	0.00	0.25	0.16	0.16	0.21	0.29	0.29	0.07	0.09	0.09
Sat Flow, veh/h	1587	3529	1500	1587	2720	688	1587	4646	550	1587	5294	1500
Grp Volume(v), veh/h	184	71	0	147	223	213	86	571	273	76	857	384
Grp Sat Flow(s),veh/h/ln	1587	1765	1500	1587	1765	1643	1587	1765	1668	1587	1765	1500
Q Serve(g_s), s	9.0	1.6	0.0	6.1	9.7	10.0	3.6	11.0	11.1	3.6	12.4	8.1
Cycle Q Clear(g_c), s	9.0	1.6	0.0	6.1	9.7	10.0	3.6	11.0	11.1	3.6	12.4	8.1
Prop In Lane	1.00		1.00	1.00		0.42	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	220	176	75	397	285	266	337	1015	479	337	1522	639
V/C Ratio(X)	0.84	0.40	0.00	0.37	0.78	0.80	0.26	0.56	0.57	0.23	0.56	0.60
Avail Cap(c_a), veh/h	317	838	356	397	353	329	337	1015	479	337	1522	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	33.6	36.8	0.0	24.8	32.2	32.3	26.2	24.2	24.3	31.0	31.4	24.3
Incr Delay (d2), s/veh	12.2	1.5	0.0	0.6	8.9	10.8	0.4	2.3	4.8	0.3	1.4	4.0
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	4.7	0.8	0.0	2.8	5.4	5.3	1.6	5.6	5.7	1.6	6.3	4.1
LnGrp Delay(d),s/veh	45.7	38.3	0.0	25.3	41.1	43.1	26.6	26.5	29.1	31.3	32.8	28.2
LnGrp LOS	D	D		C	D	D	C	C	C	C	C	C
Approach Vol, veh/h		255			583			930			1317	
Approach Delay, s/veh		43.7			37.9			27.3			31.4	
Approach LOS		D			D			C			C	

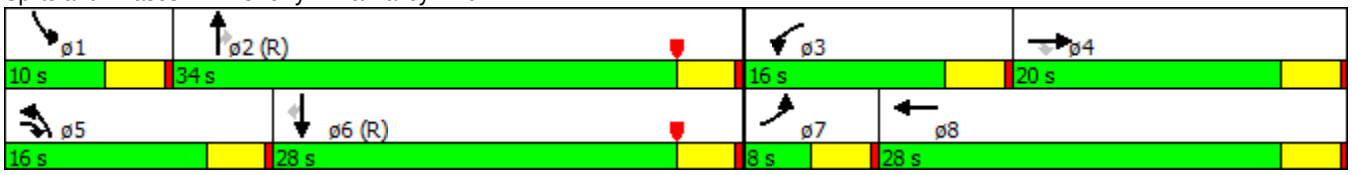
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	27.0	24.0	8.0	21.0	27.0	15.1	16.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	23.0	13.0	19.0	9.0	23.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	5.6	13.1	8.1	3.6	5.6	14.4	11.0	12.0
Green Ext Time (p_c), s	0.1	3.4	0.5	0.3	0.1	4.2	0.3	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.4
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	128	184	413	277	59	416	853	332	67	964	88
Ideal Flow (vphpl)	1600	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Storage Length (ft)	250		160	250		0	420		220	170		0
Storage Lanes	2		1	2		0	2		0	1		1
Taper Length (ft)	120			120			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		845			1019			968			718	
Travel Time (s)		19.2			23.2			13.2			9.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	5	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0		8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	8.0	20.0	16.0	16.0	28.0		16.0	34.0	34.0	10.0	28.0	28.0
Total Split (%)	10.0%	25.0%	20.0%	20.0%	35.0%		20.0%	42.5%	42.5%	12.5%	35.0%	35.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Cherry Av. & Valley Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	128	184	413	277	59	416	853	332	67	964	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1765	1765	1569	1765	1800	1569	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	60	133	192	430	289	61	433	889	346	70	1004	92
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	532	451	448	748	156	448	1571	668	86	1233	524
Arrive On Green	0.04	0.15	0.15	0.15	0.26	0.26	0.30	0.89	0.89	0.05	0.35	0.35
Sat Flow, veh/h	2988	3529	1500	2988	2836	590	2988	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	60	133	192	430	178	172	433	889	346	70	1004	92
Grp Sat Flow(s),veh/h/ln	1494	1765	1500	1494	1765	1661	1494	1765	1500	1587	1765	1500
Q Serve(g_s), s	1.6	2.7	8.2	11.4	6.6	6.8	11.4	4.5	3.8	3.5	20.7	3.4
Cycle Q Clear(g_c), s	1.6	2.7	8.2	11.4	6.6	6.8	11.4	4.5	3.8	3.5	20.7	3.4
Prop In Lane	1.00		1.00	1.00		0.36	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	110	532	451	448	466	438	448	1571	668	86	1233	524
V/C Ratio(X)	0.55	0.25	0.43	0.96	0.38	0.39	0.97	0.57	0.52	0.81	0.81	0.18
Avail Cap(c_a), veh/h	149	706	525	448	529	498	448	1571	668	119	1233	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	30.0	22.4	33.8	24.1	24.2	27.8	2.7	2.6	37.4	23.7	18.0
Incr Delay (d2), s/veh	4.2	0.2	0.6	32.2	0.5	0.6	29.8	1.2	2.3	24.9	6.0	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	0.7	1.3	3.5	6.7	3.3	3.2	6.5	2.0	1.7	2.1	11.1	1.5
LnGrp Delay(d),s/veh	42.0	30.2	23.1	65.9	24.6	24.7	57.6	3.9	5.0	62.4	29.6	18.8
LnGrp LOS	D	C	C	E	C	C	E	A	A	E	C	B
Approach Vol, veh/h		385			780			1668			1166	
Approach Delay, s/veh		28.5			47.4			18.0			30.8	
Approach LOS		C			D			B			C	

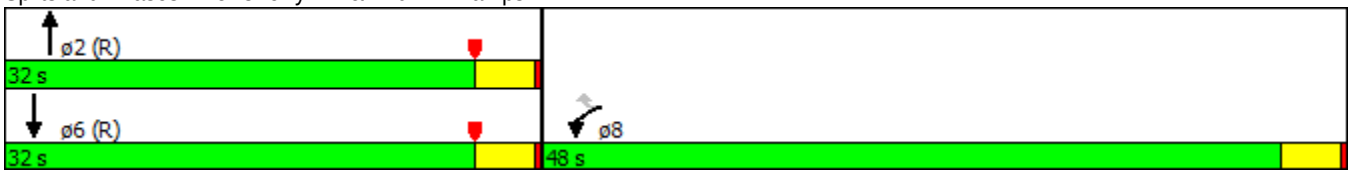
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	39.6	16.0	16.1	16.0	31.9	6.9	25.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	30.0	12.0	16.0	12.0	24.0	4.0	24.0
Max Q Clear Time (g_c+I1), s	5.5	6.5	13.4	10.2	13.4	22.7	3.6	8.8
Green Ext Time (p_c), s	0.0	15.1	0.0	1.8	0.0	1.2	0.0	3.2

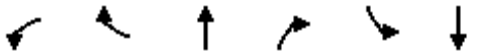
Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	525	571	1070	513	0	1568
Ideal Flow (vphpl)	1600	1800	1800	1800	1800	1800
Storage Length (ft)	0	0		200	0	
Storage Lanes	2	1		1	0	
Taper Length (ft)	60				60	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		45			45
Link Distance (ft)	252		337			968
Travel Time (s)	5.7		5.1			14.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	NA	Free		NA
Protected Phases	8		2			6
Permitted Phases		8		Free		
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0			4.0
Minimum Split (s)	20.0	20.0	20.0			20.0
Total Split (s)	48.0	48.0	32.0			32.0
Total Split (%)	60.0%	60.0%	40.0%			40.0%
Yellow Time (s)	3.5	3.5	3.5			3.5
All-Red Time (s)	0.5	0.5	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.0	4.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max			C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Cherry Av. & I-10 WB Ramps





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	525	571	1070	513	0	1568
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1765	1765	1765	0	1765
Adj Flow Rate, veh/h	553	601	1126	0	0	1651
Adj No. of Lanes	2	1	3	1	0	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1329	667	2410	683	0	3214
Arrive On Green	0.44	0.44	0.91	0.00	0.00	0.91
Sat Flow, veh/h	2988	1500	5294	1500	0	7059
Grp Volume(v), veh/h	553	601	1126	0	0	1651
Grp Sat Flow(s),veh/h/ln	1494	1500	1765	1500	0	1765
Q Serve(g_s), s	10.1	29.7	2.6	0.0	0.0	3.1
Cycle Q Clear(g_c), s	10.1	29.7	2.6	0.0	0.0	3.1
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1329	667	2410	683	0	3214
V/C Ratio(X)	0.42	0.90	0.47	0.00	0.00	0.51
Avail Cap(c_a), veh/h	1643	825	2410	683	0	3214
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.54
Uniform Delay (d), s/veh	15.1	20.6	2.1	0.0	0.0	2.1
Incr Delay (d2), s/veh	0.2	11.2	0.7	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	14.3	1.2	0.0	0.0	1.2
LnGrp Delay(d),s/veh	15.3	31.8	2.7	0.0	0.0	2.4
LnGrp LOS	B	C	A			A
Approach Vol, veh/h	1154		1126			1651
Approach Delay, s/veh	23.9		2.7			2.4
Approach LOS	C		A			A

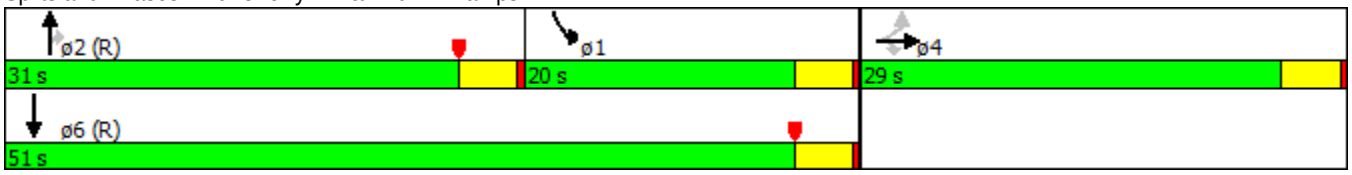
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		40.4				40.4		39.6
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		28.0				28.0		44.0
Max Q Clear Time (g_c+I1), s		4.6				5.1		31.7
Green Ext Time (p_c), s		19.1				18.7		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	343	0	569	0	0	0	0	1240	415	385	1229	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Storage Length (ft)	0		350	0		0	0		0	300		0
Storage Lanes	1		1	0		0	0		1	2		0
Taper Length (ft)	120			60			60			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		722			861			873			429	
Travel Time (s)		16.4			19.6			13.2			6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	10%		47%									
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0					20.0	20.0	8.0	20.0	
Total Split (s)	29.0	29.0	29.0					31.0	31.0	20.0	51.0	
Total Split (%)	36.3%	36.3%	36.3%					38.8%	38.8%	25.0%	63.8%	
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5					0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Cherry Av. & I-10 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	343	0	569	0	0	0	0	1240	415	385	1229	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1667	1765	1765				0	1765	1765	1569	1765	0
Adj Flow Rate, veh/h	241	0	728				0	1305	437	405	1294	0
Adj No. of Lanes	1	0	2				0	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	442	0	836				0	1787	506	699	3290	0
Arrive On Green	0.28	0.00	0.28				0.00	0.34	0.34	0.47	1.00	0.00
Sat Flow, veh/h	1587	0	3000				0	5294	1500	2988	5294	0
Grp Volume(v), veh/h	241	0	728				0	1305	437	405	1294	0
Grp Sat Flow(s),veh/h/ln	1587	0	1500				0	1765	1500	1494	1765	0
Q Serve(g_s), s	10.3	0.0	18.5				0.0	17.3	21.8	7.9	0.0	0.0
Cycle Q Clear(g_c), s	10.3	0.0	18.5				0.0	17.3	21.8	7.9	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	442	0	836				0	1787	506	699	3290	0
V/C Ratio(X)	0.54	0.00	0.87				0.00	0.73	0.86	0.58	0.39	0.00
Avail Cap(c_a), veh/h	496	0	938				0	1787	506	699	3290	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.5	0.0	27.5				0.0	23.3	24.8	18.4	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	8.3				0.0	2.7	17.5	1.2	0.4	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
%ile BackOfQ(50%),veh/ln	4.6	0.0	8.6				0.0	8.9	11.4	3.3	0.1	0.0
LnGrp Delay(d),s/veh	25.6	0.0	35.8				0.0	26.0	42.2	19.6	0.4	0.0
LnGrp LOS	C		D					C	D	B	A	
Approach Vol, veh/h		969						1742			1699	
Approach Delay, s/veh		33.2						30.1			4.9	
Approach LOS		C						C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	22.7	31.0		26.3		53.7		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	16.0	27.0		25.0		47.0		
Max Q Clear Time (g_c+I1), s	9.9	23.8		20.5		2.0		
Green Ext Time (p_c), s	4.3	2.5		1.8		14.1		

Intersection Summary	
HCM 2010 Ctrl Delay	21.1
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	99	0	173	0	1229	160	209	803	0
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		130	270		0	60		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			40			50			40	
Link Distance (ft)		506			600			1582			1080	
Travel Time (s)		13.8			10.2			21.6			18.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type			Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	40.0	40.0	20.0	52.0	52.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	10.0%	50.0%	50.0%	25.0%	65.0%	65.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 58 (73%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Cherry Av. & Merrill Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	99	0	173	0	1229	160	209	803	0
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	1800	1765	1765	1700	1765	1765	1667	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	0	0	0	105	0	184	0	1307	170	222	854	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	264	224	301	0	224	2	1900	808	258	2649	1126
Arrive On Green	0.00	0.00	0.00	0.15	0.00	0.15	0.00	0.54	0.54	0.16	0.75	0.00
Sat Flow, veh/h	0	1765	1500	1412	0	1500	1587	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	0	0	0	105	0	184	0	1307	170	222	854	0
Grp Sat Flow(s),veh/h/ln	0	1765	1500	1412	0	1500	1587	1765	1500	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	0.0	5.5	0.0	9.5	0.0	21.7	4.7	10.9	6.4	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	5.5	0.0	9.5	0.0	21.7	4.7	10.9	6.4	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	264	224	301	0	224	2	1900	808	258	2649	1126
V/C Ratio(X)	0.00	0.00	0.00	0.35	0.00	0.82	0.00	0.69	0.21	0.86	0.32	0.00
Avail Cap(c_a), veh/h	0	353	300	372	0	300	79	1900	808	317	2649	1126
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)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	31.3	0.0	33.0	0.0	13.5	9.6	32.6	3.3	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.7	0.0	12.6	0.0	2.1	0.6	17.9	0.3	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	0.0	0.0	0.0	2.2	0.0	4.7	0.0	11.1	2.1	6.0	3.2	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	32.0	0.0	45.6	0.0	15.6	10.2	50.5	3.6	0.0
LnGrp LOS				C		D		B	B	D	A	
Approach Vol, veh/h		0			289			1477			1076	
Approach Delay, s/veh		0.0			40.6			15.0			13.3	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.0	47.1		15.9	0.0	64.1		15.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	36.0		16.0	4.0	48.0		16.0
Max Q Clear Time (g_c+I1), s	12.9	23.7		0.0	0.0	8.4		11.5
Green Ext Time (p_c), s	0.2	9.8		0.0	0.0	22.9		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	4	23	90	0	89	9	1327	151	110	831	4
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		50	260		0	70		200
Storage Lanes	0		1	0		1	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		589			331			2702			1062	
Travel Time (s)		13.4			7.5			36.8			14.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	8.0	41.0		17.0	50.0	50.0
Total Split (%)	27.5%	27.5%	27.5%	27.5%	27.5%	27.5%	10.0%	51.3%		21.3%	62.5%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 23 (29%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Cherry Av. & Randall Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	4	23	90	0	89	9	1327	151	110	831	4
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	1700	1765	1765	1800	1765	1765	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	12	4	25	99	0	98	10	1458	166	121	913	4
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	15	338	90	0	338	16	2478	282	150	3256	923
Arrive On Green	0.22	0.22	0.22	0.22	0.00	0.22	0.02	1.00	1.00	0.09	0.62	0.62
Sat Flow, veh/h	0	65	1500	0	0	1500	1587	4669	531	1587	5294	1500
Grp Volume(v), veh/h	16	0	25	99	0	98	10	1102	522	121	913	4
Grp Sat Flow(s),veh/h/ln	65	0	1500	0	0	1500	1587	1765	1671	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	1.1	0.0	0.0	4.3	0.5	0.0	0.0	6.0	6.4	0.1
Cycle Q Clear(g_c), s	18.0	0.0	1.1	18.0	0.0	4.3	0.5	0.0	0.0	6.0	6.4	0.1
Prop In Lane	0.75		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	93	0	338	90	0	338	16	1873	887	150	3256	923
V/C Ratio(X)	0.17	0.00	0.07	1.10	0.00	0.29	0.63	0.59	0.59	0.81	0.28	0.00
Avail Cap(c_a), veh/h	93	0	338	90	0	338	79	1873	887	258	3256	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.69	0.69	0.69	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	24.4	40.0	0.0	25.7	39.1	0.0	0.0	35.5	7.2	5.9
Incr Delay (d2), s/veh	0.9	0.0	0.1	124.5	0.0	0.5	25.3	0.9	2.0	9.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	5.1	0.0	1.8	0.3	0.2	0.5	3.0	3.2	0.0
LnGrp Delay(d),s/veh	27.0	0.0	24.5	164.6	0.0	26.2	64.4	0.9	2.0	45.4	7.4	6.0
LnGrp LOS	C		C	F		C	E	A	A	D	A	A
Approach Vol, veh/h		41			197			1634			1038	
Approach Delay, s/veh		25.5			95.7			1.7			11.8	
Approach LOS		C			F			A			B	

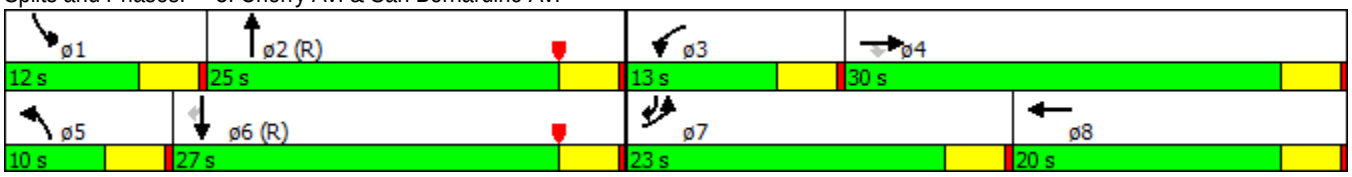
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	46.5		22.0	4.8	53.2		22.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	13.0	37.0		18.0	4.0	46.0		18.0
Max Q Clear Time (g_c+I1), s	8.0	2.0		20.0	2.5	8.4		20.0
Green Ext Time (p_c), s	0.1	22.9		0.0	0.0	24.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.0
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	291	601	152	72	147	83	58	960	125	93	775	258
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	300		285	50		0	220		0	210		300
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		555			705			459			2702	
Travel Time (s)		12.6			16.0			6.3			36.8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Detector Phase	7	4	4	3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0		8.0	20.0		8.0	20.0	8.0
Total Split (s)	23.0	30.0	30.0	13.0	20.0		10.0	25.0		12.0	27.0	23.0
Total Split (%)	28.8%	37.5%	37.5%	16.3%	25.0%		12.5%	31.3%		15.0%	33.8%	28.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 46 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Cherry Av. & San Bernardino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	291	601	152	72	147	83	58	960	125	93	775	258
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	1667	1765	1765	1667	1765	1800	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	320	660	0	79	162	91	64	1055	137	102	852	284
Adj No. of Lanes	1	2	1	1	2	0	1	3	0	1	3	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	354	1078	458	98	313	167	78	1625	211	125	2030	910
Arrive On Green	0.22	0.31	0.00	0.06	0.14	0.14	0.05	0.35	0.35	0.11	0.51	0.51
Sat Flow, veh/h	1587	3529	1500	1587	2169	1156	1587	4593	596	1587	5294	1500
Grp Volume(v), veh/h	320	660	0	79	130	123	64	810	382	102	852	284
Grp Sat Flow(s),veh/h/ln	1587	1765	1500	1587	1765	1561	1587	1765	1660	1587	1765	1500
Q Serve(g_s), s	15.7	12.8	0.0	3.9	5.5	5.8	3.2	15.4	15.4	5.0	8.0	6.3
Cycle Q Clear(g_c), s	15.7	12.8	0.0	3.9	5.5	5.8	3.2	15.4	15.4	5.0	8.0	6.3
Prop In Lane	1.00		1.00	1.00		0.74	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	354	1078	458	98	255	225	78	1249	587	125	2030	910
V/C Ratio(X)	0.90	0.61	0.00	0.81	0.51	0.55	0.82	0.65	0.65	0.81	0.42	0.31
Avail Cap(c_a), veh/h	377	1147	488	179	353	312	119	1249	587	159	2030	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	30.3	23.7	0.0	37.1	31.6	31.8	37.7	21.7	21.7	35.2	14.0	5.9
Incr Delay (d2), s/veh	23.7	0.9	0.0	14.2	1.6	2.1	22.2	2.6	5.5	21.6	0.6	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	9.2	6.4	0.0	2.1	2.8	2.7	1.9	7.9	7.9	2.9	4.0	2.7
LnGrp Delay(d),s/veh	54.0	24.6	0.0	51.3	33.2	33.8	59.9	24.3	27.2	56.8	14.7	6.8
LnGrp LOS	D	C		D	C	C	E	C	C	E	B	A
Approach Vol, veh/h		980			332			1256			1238	
Approach Delay, s/veh		34.2			37.7			27.0			16.3	
Approach LOS		C			D			C			B	

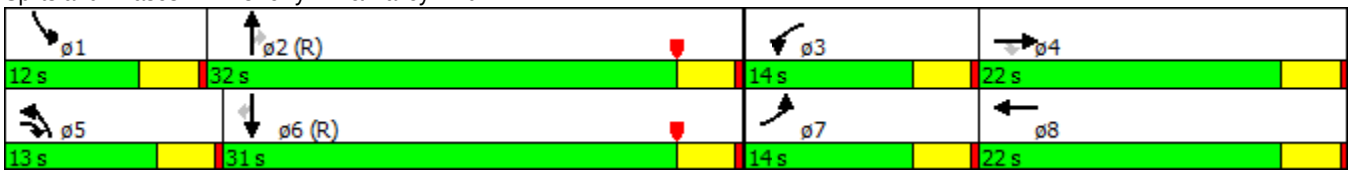
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	32.3	8.9	28.4	7.9	34.7	21.8	15.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	21.0	9.0	26.0	6.0	23.0	19.0	16.0
Max Q Clear Time (g_c+I1), s	7.0	17.4	5.9	14.8	5.2	10.0	17.7	7.8
Green Ext Time (p_c), s	0.0	3.1	0.0	4.6	0.0	9.8	0.1	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	26.3
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	710	324	344	263	96	301	918	484	130	937	58
Ideal Flow (vphpl)	1600	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Storage Length (ft)	250		160	250		0	420		220	170		0
Storage Lanes	2		1	2		0	2		0	1		1
Taper Length (ft)	120			120			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		845			1019			968			718	
Travel Time (s)		19.2			23.2			13.2			9.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	5	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0		8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	14.0	22.0	13.0	14.0	22.0		13.0	32.0	32.0	12.0	31.0	31.0
Total Split (%)	17.5%	27.5%	16.3%	17.5%	27.5%		16.3%	40.0%	40.0%	15.0%	38.8%	38.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Cherry Av. & Valley Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	199	710	324	344	263	96	301	918	484	130	937	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1765	1765	1569	1765	1800	1569	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	207	740	338	358	274	100	314	956	504	135	976	60
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	794	506	373	638	227	336	1235	525	159	1191	506
Arrive On Green	0.09	0.22	0.22	0.13	0.26	0.26	0.04	0.12	0.12	0.10	0.34	0.34
Sat Flow, veh/h	2988	3529	1500	2988	2487	886	2988	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	207	740	338	358	192	182	314	956	504	135	976	60
Grp Sat Flow(s),veh/h/ln	1494	1765	1500	1494	1765	1608	1494	1765	1500	1587	1765	1500
Q Serve(g_s), s	5.4	16.4	15.4	9.5	7.3	7.6	8.4	21.0	26.7	6.7	20.3	2.2
Cycle Q Clear(g_c), s	5.4	16.4	15.4	9.5	7.3	7.6	8.4	21.0	26.7	6.7	20.3	2.2
Prop In Lane	1.00		1.00	1.00		0.55	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	794	506	373	452	412	336	1235	525	159	1191	506
V/C Ratio(X)	0.74	0.93	0.67	0.96	0.43	0.44	0.93	0.77	0.96	0.85	0.82	0.12
Avail Cap(c_a), veh/h	373	794	506	373	452	412	336	1235	525	159	1191	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	30.4	22.7	34.8	24.8	24.9	38.2	32.3	34.8	35.4	24.3	18.3
Incr Delay (d2), s/veh	5.3	17.6	3.3	35.7	0.6	0.7	28.5	3.9	27.0	33.1	6.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	10.0	6.9	5.8	3.6	3.4	4.8	10.9	15.0	4.4	10.8	1.0
LnGrp Delay(d),s/veh	40.6	48.0	26.0	70.5	25.5	25.7	66.7	36.2	61.8	68.5	30.6	18.8
LnGrp LOS	D	D	C	E	C	C	E	D	E	E	C	B
Approach Vol, veh/h		1285			732			1774			1171	
Approach Delay, s/veh		41.0			47.6			48.9			34.4	
Approach LOS		D			D			D			C	

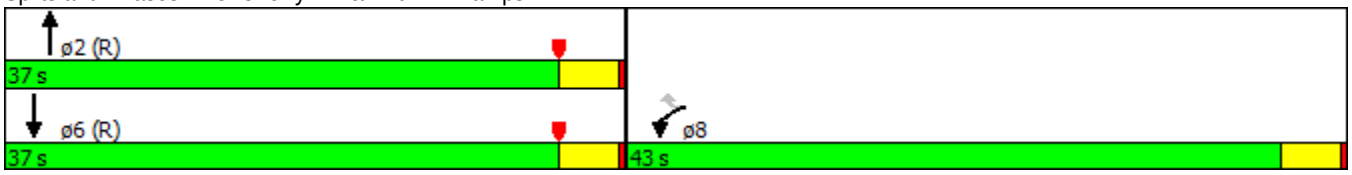
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	32.0	14.0	22.0	13.0	31.0	11.5	24.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	28.0	10.0	18.0	9.0	27.0	10.0	18.0
Max Q Clear Time (g_c+I1), s	8.7	28.7	11.5	18.4	10.4	22.3	7.4	9.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.2	0.2	5.2

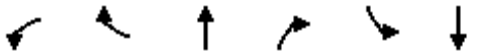
Intersection Summary	
HCM 2010 Ctrl Delay	43.2
HCM 2010 LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	393	479	1281	399	0	1619
Ideal Flow (vphpl)	1600	1800	1800	1800	1800	1800
Storage Length (ft)	0	0		200	0	
Storage Lanes	2	1		1	0	
Taper Length (ft)	60				60	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		45			45
Link Distance (ft)	252		337			968
Travel Time (s)	5.7		5.1			14.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	NA	Free		NA
Protected Phases	8		2			6
Permitted Phases		8		Free		
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0			4.0
Minimum Split (s)	20.0	20.0	20.0			20.0
Total Split (s)	43.0	43.0	37.0			37.0
Total Split (%)	53.8%	53.8%	46.3%			46.3%
Yellow Time (s)	3.5	3.5	3.5			3.5
All-Red Time (s)	0.5	0.5	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.0	4.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max			C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 39 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Cherry Av. & I-10 WB Ramps





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	393	479	1281	399	0	1619
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1765	1765	1765	0	1765
Adj Flow Rate, veh/h	414	504	1348	0	0	1704
Adj No. of Lanes	2	1	3	1	0	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1126	565	2769	785	0	3692
Arrive On Green	0.38	0.38	1.00	0.00	0.00	0.17
Sat Flow, veh/h	2988	1500	5294	1500	0	7059
Grp Volume(v), veh/h	414	504	1348	0	0	1704
Grp Sat Flow(s),veh/h/ln	1494	1500	1765	1500	0	1765
Q Serve(g_s), s	8.0	25.2	0.0	0.0	0.0	17.4
Cycle Q Clear(g_c), s	8.0	25.2	0.0	0.0	0.0	17.4
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1126	565	2769	785	0	3692
V/C Ratio(X)	0.37	0.89	0.49	0.00	0.00	0.46
Avail Cap(c_a), veh/h	1457	731	2769	785	0	3692
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.57
Uniform Delay (d), s/veh	18.0	23.4	0.0	0.0	0.0	23.0
Incr Delay (d2), s/veh	0.2	11.0	0.6	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	12.1	0.2	0.0	0.0	8.6
LnGrp Delay(d),s/veh	18.2	34.3	0.6	0.0	0.0	23.2
LnGrp LOS	B	C	A			C
Approach Vol, veh/h	918		1348			1704
Approach Delay, s/veh	27.1		0.6			23.2
Approach LOS	C		A			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		45.8				45.8		34.2
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		33.0				33.0		39.0
Max Q Clear Time (g_c+I1), s		2.0				19.4		27.2
Green Ext Time (p_c), s		25.7				12.4		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	423	0	541	0	0	0	0	1257	498	505	1067	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Storage Length (ft)	0		350	0		0	0		0	300		0
Storage Lanes	1		1	0		0	0		1	2		0
Taper Length (ft)	120			60			60			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		722			861			873			429	
Travel Time (s)		16.4			19.6			13.2			6.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)	21%		43%									
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0					20.0	20.0	8.0	20.0	
Total Split (s)	28.0	28.0	28.0					30.0	30.0	22.0	52.0	
Total Split (%)	35.0%	35.0%	35.0%					37.5%	37.5%	27.5%	65.0%	
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5					0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 28 (35%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Cherry Av. & I-10 EB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	423	0	541	0	0	0	0	1257	498	505	1067	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1667	1765	1765				0	1765	1765	1569	1765	0
Adj Flow Rate, veh/h	636	0	356				0	1309	519	526	1111	0
Adj No. of Lanes	2	0	1				0	3	1	2	3	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	861	0	407				0	1721	488	758	3329	0
Arrive On Green	0.27	0.00	0.27				0.00	0.32	0.32	0.51	1.00	0.00
Sat Flow, veh/h	3175	0	1500				0	5294	1500	2988	5294	0
Grp Volume(v), veh/h	636	0	356				0	1309	519	526	1111	0
Grp Sat Flow(s),veh/h/ln	1587	0	1500				0	1765	1500	1494	1765	0
Q Serve(g_s), s	14.6	0.0	18.1				0.0	17.7	26.0	10.7	0.0	0.0
Cycle Q Clear(g_c), s	14.6	0.0	18.1				0.0	17.7	26.0	10.7	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	861	0	407				0	1721	488	758	3329	0
V/C Ratio(X)	0.74	0.00	0.87				0.00	0.76	1.06	0.69	0.33	0.00
Avail Cap(c_a), veh/h	952	0	450				0	1721	488	758	3329	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.6	0.0	27.9				0.0	24.2	27.0	17.3	0.0	0.0
Incr Delay (d2), s/veh	2.8	0.0	16.2				0.0	3.2	59.0	2.7	0.3	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
%ile BackOfQ(50%),veh/ln	6.7	0.0	9.3				0.0	9.1	18.7	4.5	0.1	0.0
LnGrp Delay(d),s/veh	29.3	0.0	44.0				0.0	27.4	86.0	20.1	0.3	0.0
LnGrp LOS	C		D					C	F	C	A	
Approach Vol, veh/h		992						1828			1637	
Approach Delay, s/veh		34.6						44.1			6.6	
Approach LOS		C						D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	24.3	30.0		25.7		54.3		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	18.0	26.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	12.7	28.0		20.1		2.0		
Green Ext Time (p_c), s	3.7	0.0		1.6		12.5		

Intersection Summary	
HCM 2010 Ctrl Delay	28.2
HCM 2010 LOS	C

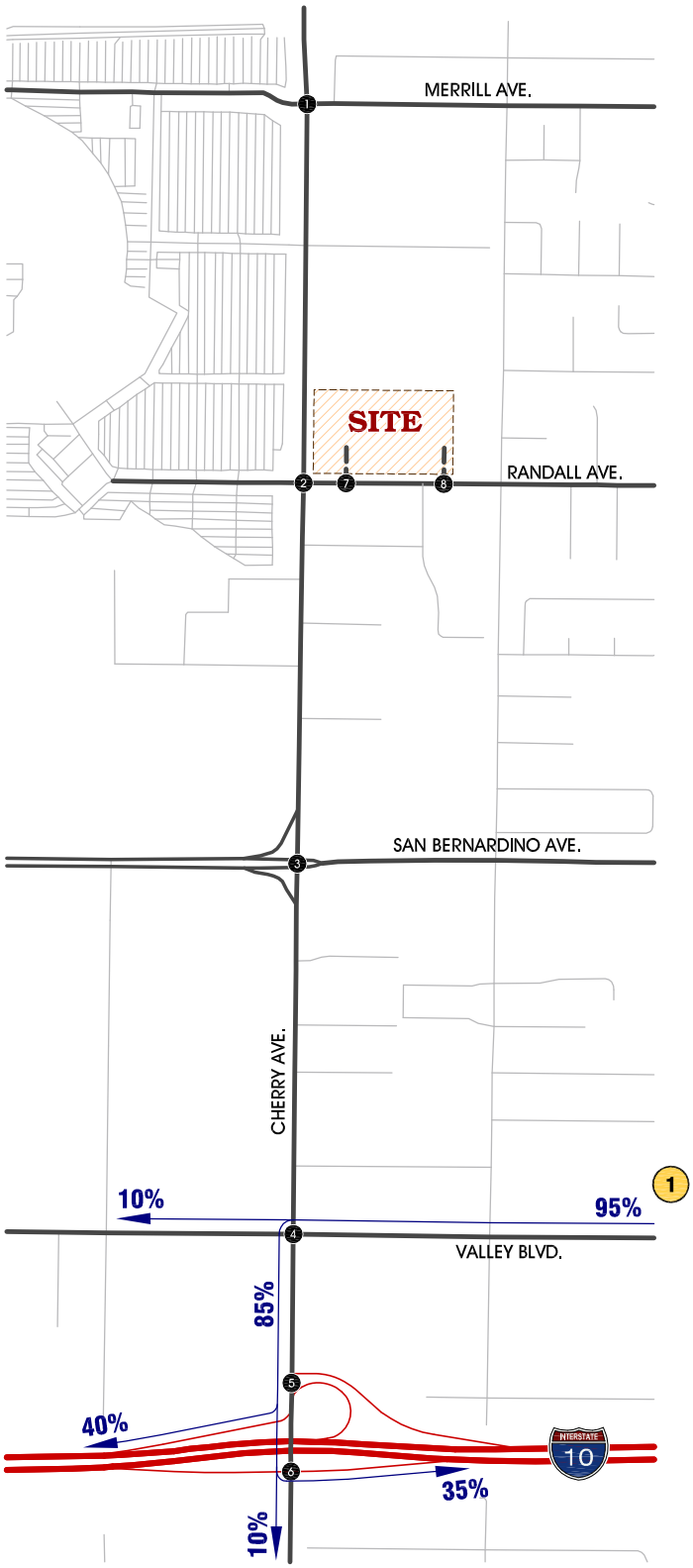
Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 4.1

CUMULATIVE DEVELOPMENT PROJECTS
TRIP DISTRIBUTION PATTERNS

FIGURE 1
HIGH CUBE WAREHOUSE PASSENGER CAR TRIP DISTRIBUTION



LEGEND:

8 = INTERSECTION ID
= PROJECT DRIVEWAY
1 = HIGH CUBE WAREHOUSE
10% = PERCENT TO/FROM PROJECT

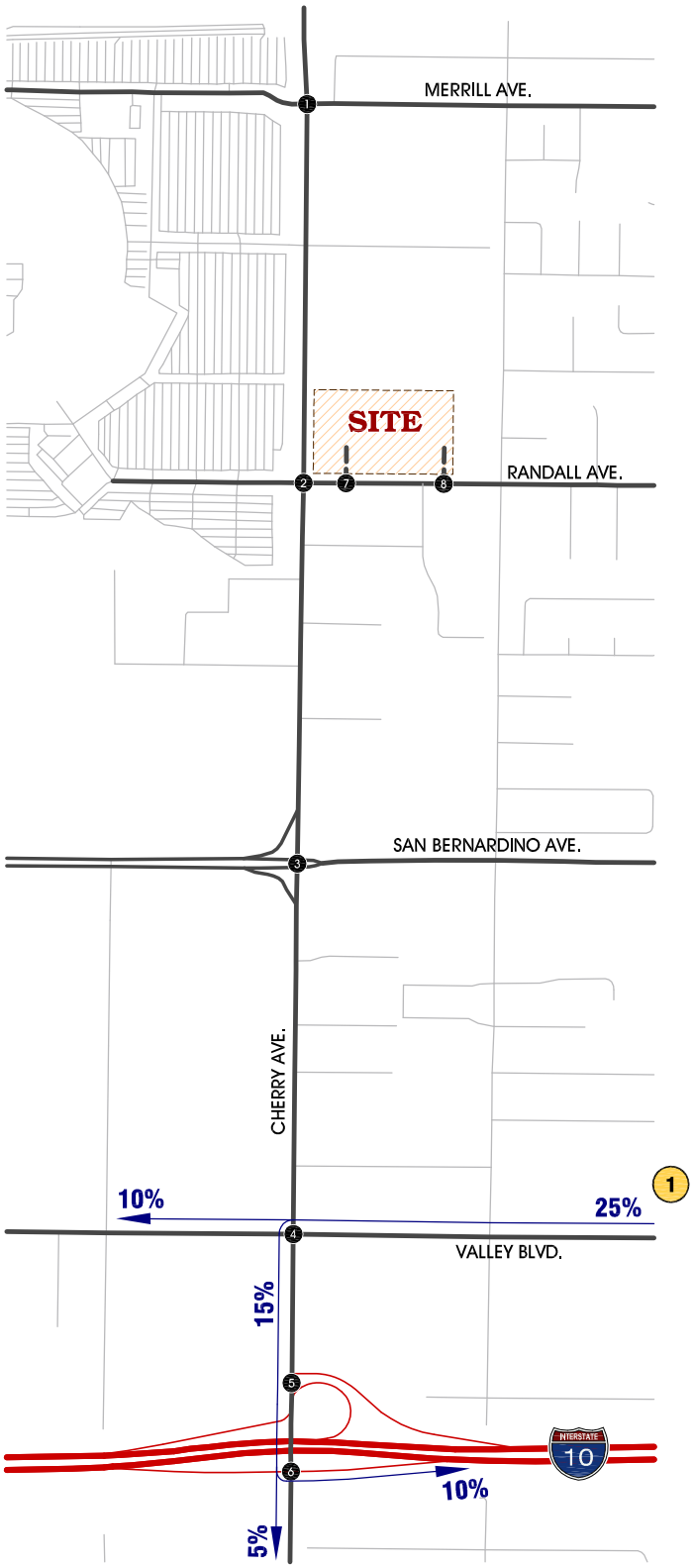
N

TEC Equipment New Truck Dealership Traffic Impact Analysis
San Bernardino, CA (0255-0001:01.dwg)

TRAMES SOLUTIONS INC.

FIGURE 2

HIGH CUBE WAREHOUSE TRUCK TRIP DISTRIBUTION



LEGEND:

8 = INTERSECTION ID

= PROJECT DRIVEWAY

1 = HIGH CUBE WAREHOUSE

10% = PERCENT TO/FROM PROJECT

N

TEC Equipment New Truck Dealership Traffic Impact Analysis
San Bernardino, CA (0255-0001:01.dwg)

TRAMES SOLUTIONS INC.

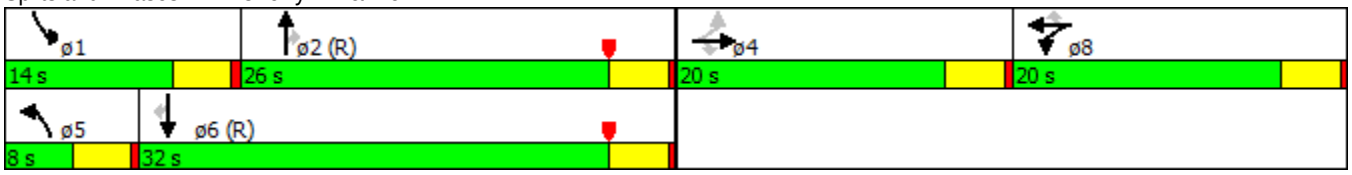
APPENDIX 5.1

EXISTING PLUS PROJECT (E+P) CONDITIONS
INTERSECTION ANALYSIS CALCULATION WORKSHEETS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	180	0	230	1	734	107	144	1125	0
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		130	270		0	60		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			40			50			40	
Link Distance (ft)		506			600			1582			1080	
Travel Time (s)		13.8			10.2			21.6			18.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type			Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	26.0	26.0	14.0	32.0	32.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	10.0%	32.5%	32.5%	17.5%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Cherry Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	180	0	230	1	734	107	144	1125	0
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	1800	1765	1765	1700	1765	1765	1667	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	0	0	0	186	0	237	1	757	110	148	1160	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	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	2	2	307	0	274	2	1959	833	178	2351	999
Arrive On Green	0.00	0.00	0.00	0.18	0.00	0.18	0.00	0.56	0.56	0.11	0.67	0.00
Sat Flow, veh/h	0	1765	1500	1681	0	1500	1587	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	0	0	0	186	0	237	1	757	110	148	1160	0
Grp Sat Flow(s),veh/h/ln	0	1765	1500	1681	0	1500	1587	1765	1500	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	0.0	8.1	0.0	12.3	0.1	9.7	2.8	7.3	13.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	8.1	0.0	12.3	0.1	9.7	2.8	7.3	13.1	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	2	2	307	0	274	2	1959	833	178	2351	999
V/C Ratio(X)	0.00	0.00	0.00	0.61	0.00	0.86	0.50	0.39	0.13	0.83	0.49	0.00
Avail Cap(c_a), veh/h	0	353	300	336	0	300	79	1959	833	198	2351	999
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)	0.00	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	0.0	0.0	0.0	30.0	0.0	31.7	39.9	10.1	8.5	34.8	6.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.7	0.0	21.0	126.9	0.6	0.3	22.9	0.7	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	0.0	0.0	0.0	4.0	0.0	6.7	0.1	4.9	1.2	4.3	6.5	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	32.7	0.0	52.7	166.9	10.7	8.9	57.7	7.4	0.0
LnGrp LOS				C		D	F	B	A	E	A	
Approach Vol, veh/h		0			423			868			1308	
Approach Delay, s/veh		0.0			43.9			10.6			13.1	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	48.4		0.0	4.1	57.3		18.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	22.0		16.0	4.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	9.3	11.7		0.0	2.1	15.1		14.3
Green Ext Time (p_c), s	0.0	7.8		0.0	0.0	9.4		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	0	0	203	3	113	22	781	120	107	1116	8
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		50	260		0	70		200
Storage Lanes	0		1	0		1	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		589			331			2702			1062	
Travel Time (s)		13.4			7.5			36.8			14.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	11.0	33.0		19.0	41.0	41.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	13.8%	41.3%		23.8%	51.3%	51.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 8 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Cherry Av. & Randall Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	0	203	3	113	22	781	120	107	1116	8
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	1700	1765	1765	1700	1765	1765	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	1	0	0	209	3	116	23	805	124	110	1151	8
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	0	243	347	4	243	32	2699	413	137	3536	1002
Arrive On Green	0.16	0.00	0.00	0.16	0.16	0.16	0.04	1.00	1.00	0.09	0.67	0.67
Sat Flow, veh/h	322	0	1500	1593	23	1500	1587	4487	686	1587	5294	1500
Grp Volume(v), veh/h	1	0	0	212	0	116	23	632	297	110	1151	8
Grp Sat Flow(s),veh/h/ln	322	0	1500	1615	0	1500	1587	1765	1644	1587	1765	1500
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	5.6	1.1	0.0	0.0	5.4	7.4	0.1
Cycle Q Clear(g_c), s	9.7	0.0	0.0	9.7	0.0	5.6	1.1	0.0	0.0	5.4	7.4	0.1
Prop In Lane	1.00		1.00	0.99		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	142	0	243	351	0	243	32	2123	989	137	3536	1002
V/C Ratio(X)	0.01	0.00	0.00	0.60	0.00	0.48	0.72	0.30	0.30	0.80	0.33	0.01
Avail Cap(c_a), veh/h	317	0	450	546	0	450	139	2123	989	298	3536	1002
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	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	0.0	0.0	32.1	0.0	30.4	38.2	0.0	0.0	35.9	5.6	4.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.7	0.0	1.5	23.9	0.3	0.7	10.3	0.2	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	0.0	0.0	0.0	4.6	0.0	2.4	0.7	0.1	0.2	2.8	3.6	0.1
LnGrp Delay(d),s/veh	36.8	0.0	0.0	33.8	0.0	31.9	62.1	0.3	0.7	46.2	5.9	4.4
LnGrp LOS	D			C		C	E	A	A	D	A	A
Approach Vol, veh/h		1			328			952			1269	
Approach Delay, s/veh		36.8			33.1			1.9			9.4	
Approach LOS		D			C			A			A	

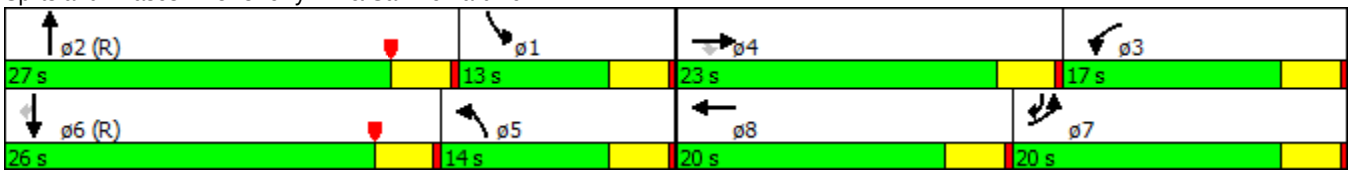
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	52.1		17.0	5.6	57.4		17.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	15.0	29.0		24.0	7.0	37.0		24.0
Max Q Clear Time (g_c+I1), s	7.4	2.0		11.7	3.1	9.4		11.7
Green Ext Time (p_c), s	0.1	15.6		1.2	0.0	15.8		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	69	93	143	337	88	83	760	87	74	834	372
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	300		285	50		0	220		0	210		300
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		555			705			459			2702	
Travel Time (s)		12.6			16.0			6.3			36.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Detector Phase	7	4	4	3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0		8.0	20.0		8.0	20.0	8.0
Total Split (s)	20.0	23.0	23.0	17.0	20.0		14.0	27.0		13.0	26.0	20.0
Total Split (%)	25.0%	28.8%	28.8%	21.3%	25.0%		17.5%	33.8%		16.3%	32.5%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lag	Lead		Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Cherry Av. & San Bernardino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	180	69	93	143	337	88	83	760	87	74	834	372
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	1667	1765	1765	1667	1765	1800	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	186	71	0	147	347	91	86	784	90	76	860	384
Adj No. of Lanes	1	2	1	1	2	0	1	3	0	1	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	176	75	400	439	114	354	1342	153	334	1456	623
Arrive On Green	0.14	0.05	0.00	0.25	0.16	0.16	0.22	0.29	0.29	0.07	0.09	0.09
Sat Flow, veh/h	1587	3529	1500	1587	2706	700	1587	4668	532	1587	5294	1500
Grp Volume(v), veh/h	186	71	0	147	225	213	86	592	282	76	860	384
Grp Sat Flow(s),veh/h/ln	1587	1765	1500	1587	1765	1641	1587	1765	1671	1587	1765	1500
Q Serve(g_s), s	9.1	1.6	0.0	6.1	9.8	10.0	3.6	11.5	11.6	3.6	12.5	8.1
Cycle Q Clear(g_c), s	9.1	1.6	0.0	6.1	9.8	10.0	3.6	11.5	11.6	3.6	12.5	8.1
Prop In Lane	1.00		1.00	1.00		0.43	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	222	176	75	400	286	266	354	1015	480	334	1456	623
V/C Ratio(X)	0.84	0.40	0.00	0.37	0.78	0.80	0.24	0.58	0.59	0.23	0.59	0.62
Avail Cap(c_a), veh/h	317	838	356	400	353	328	354	1015	480	334	1456	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	33.5	36.8	0.0	24.6	32.2	32.3	25.5	24.4	24.4	31.1	32.0	24.8
Incr Delay (d2), s/veh	12.5	1.5	0.0	0.6	9.0	11.0	0.4	2.4	5.2	0.3	1.7	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.8	0.0	2.7	5.5	5.3	1.6	5.9	6.0	1.6	6.3	4.1
LnGrp Delay(d),s/veh	46.0	38.3	0.0	25.2	41.2	43.2	25.9	26.8	29.6	31.4	33.7	29.1
LnGrp LOS	D	D		C	D	D	C	C	C	C	C	C
Approach Vol, veh/h		257			585			960			1320	
Approach Delay, s/veh		43.9			37.9			27.6			32.3	
Approach LOS		D			D			C			C	

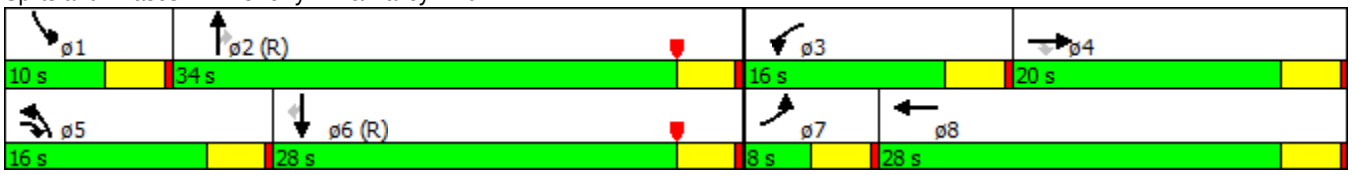
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	27.0	24.2	8.0	21.8	26.0	15.2	17.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	23.0	13.0	19.0	10.0	22.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	5.6	13.6	8.1	3.6	5.6	14.5	11.1	12.0
Green Ext Time (p_c), s	0.1	3.5	0.5	0.3	0.1	3.9	0.3	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.8
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	128	184	413	277	64	416	873	332	68	966	89
Ideal Flow (vphpl)	1600	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Storage Length (ft)	250		160	250		0	420		220	170		0
Storage Lanes	2		1	2		0	2		0	1		1
Taper Length (ft)	120			120			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		845			1019			968			718	
Travel Time (s)		19.2			23.2			13.2			9.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	5	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0		8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	8.0	20.0	16.0	16.0	28.0		16.0	34.0	34.0	10.0	28.0	28.0
Total Split (%)	10.0%	25.0%	20.0%	20.0%	35.0%		20.0%	42.5%	42.5%	12.5%	35.0%	35.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Cherry Av. & Valley Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	128	184	413	277	64	416	873	332	68	966	89
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	1569	1765	1765	1569	1765	1800	1569	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	66	133	192	430	289	67	433	909	346	71	1006	93
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	533	451	448	730	167	448	1567	666	87	1232	524
Arrive On Green	0.04	0.15	0.15	0.15	0.26	0.26	0.30	0.89	0.89	0.06	0.35	0.35
Sat Flow, veh/h	2988	3529	1500	2988	2783	635	2988	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	66	133	192	430	182	174	433	909	346	71	1006	93
Grp Sat Flow(s),veh/h/ln	1494	1765	1500	1494	1765	1653	1494	1765	1500	1587	1765	1500
Q Serve(g_s), s	1.7	2.7	8.2	11.4	6.8	7.0	11.4	4.8	3.8	3.5	20.8	3.4
Cycle Q Clear(g_c), s	1.7	2.7	8.2	11.4	6.8	7.0	11.4	4.8	3.8	3.5	20.8	3.4
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	533	451	448	463	434	448	1567	666	87	1232	524
V/C Ratio(X)	0.57	0.25	0.43	0.96	0.39	0.40	0.97	0.58	0.52	0.81	0.82	0.18
Avail Cap(c_a), veh/h	149	706	525	448	529	496	448	1567	666	119	1232	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	30.0	22.4	33.8	24.3	24.3	27.8	2.8	2.7	37.4	23.7	18.1
Incr Delay (d2), s/veh	4.5	0.2	0.6	32.2	0.5	0.6	29.6	1.3	2.3	25.3	6.1	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	0.8	1.3	3.5	6.7	3.3	3.2	6.5	2.3	1.7	2.2	11.1	1.5
LnGrp Delay(d),s/veh	42.3	30.2	23.1	65.9	24.8	24.9	57.4	4.0	5.0	62.7	29.8	18.8
LnGrp LOS	D	C	C	E	C	C	E	A	A	E	C	B
Approach Vol, veh/h		391			786			1688			1170	
Approach Delay, s/veh		28.7			47.3			17.9			30.9	
Approach LOS		C			D			B			C	

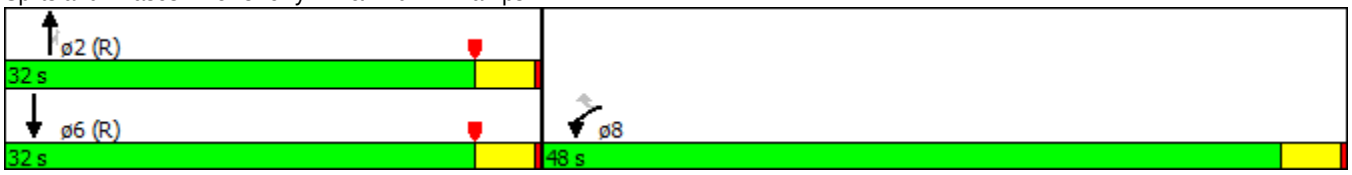
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	39.5	16.0	16.1	16.0	31.9	7.1	25.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	30.0	12.0	16.0	12.0	24.0	4.0	24.0
Max Q Clear Time (g_c+I1), s	5.5	6.8	13.4	10.2	13.4	22.8	3.7	9.0
Green Ext Time (p_c), s	0.0	15.2	0.0	1.9	0.0	1.1	0.0	3.2

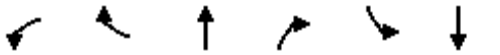
Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	525	580	1081	513	0	1570
Ideal Flow (vphpl)	1600	1800	1800	1800	1800	1800
Storage Length (ft)	0	0		200	0	
Storage Lanes	2	1		1	0	
Taper Length (ft)	60				60	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		45			45
Link Distance (ft)	252		337			968
Travel Time (s)	5.7		5.1			14.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	8		2			6
Permitted Phases		8		2		
Detector Phase	8	8	2	2		6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	20.0	20.0	20.0	20.0		20.0
Total Split (s)	48.0	48.0	32.0	32.0		32.0
Total Split (%)	60.0%	60.0%	40.0%	40.0%		40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max		C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Cherry Av. & I-10 WB Ramps





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	525	580	1081	513	0	1570
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1765	1765	1765	0	1765
Adj Flow Rate, veh/h	553	611	1138	0	0	1653
Adj No. of Lanes	2	1	3	1	0	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1347	676	2379	674	0	3172
Arrive On Green	0.45	0.45	0.90	0.00	0.00	0.90
Sat Flow, veh/h	2988	1500	5294	1500	0	7059
Grp Volume(v), veh/h	553	611	1138	0	0	1653
Grp Sat Flow(s),veh/h/ln	1494	1500	1765	1500	0	1765
Q Serve(g_s), s	10.0	30.2	3.1	0.0	0.0	3.6
Cycle Q Clear(g_c), s	10.0	30.2	3.1	0.0	0.0	3.6
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1347	676	2379	674	0	3172
V/C Ratio(X)	0.41	0.90	0.48	0.00	0.00	0.52
Avail Cap(c_a), veh/h	1643	825	2379	674	0	3172
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.54
Uniform Delay (d), s/veh	14.8	20.4	2.4	0.0	0.0	2.4
Incr Delay (d2), s/veh	0.2	11.7	0.7	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	14.6	1.4	0.0	0.0	1.4
LnGrp Delay(d),s/veh	15.0	32.1	3.1	0.0	0.0	2.7
LnGrp LOS	B	C	A			A
Approach Vol, veh/h	1164		1138			1653
Approach Delay, s/veh	24.0		3.1			2.7
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		39.9				39.9		40.1
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		28.0				28.0		44.0
Max Q Clear Time (g_c+I1), s		5.1				5.6		32.2
Green Ext Time (p_c), s		18.8				18.5		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	352	0	569	0	0	0	0	1242	415	386	1229	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Storage Length (ft)	0		350	0		0	0		0	300		0
Storage Lanes	1		1	0		0	0		1	2		0
Taper Length (ft)	120			60			60			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		722			861			873			429	
Travel Time (s)		16.4			19.6			13.2			6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	10%		47%									
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0					20.0	20.0	8.0	20.0	
Total Split (s)	30.0	30.0	30.0					30.0	30.0	20.0	50.0	
Total Split (%)	37.5%	37.5%	37.5%					37.5%	37.5%	25.0%	62.5%	
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5					0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 6: Cherry Av. & I-10 EB Ramps

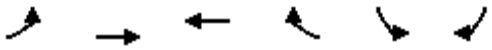
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	352	0	569	0	0	0	0	1242	415	386	1229	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1667	1765	1765				0	1765	1765	1569	1765	0
Adj Flow Rate, veh/h	247	0	732				0	1307	437	406	1294	0
Adj No. of Lanes	1	0	2				0	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	449	0	848				0	1721	488	724	3268	0
Arrive On Green	0.28	0.00	0.28				0.00	0.32	0.32	0.48	1.00	0.00
Sat Flow, veh/h	1587	0	3000				0	5294	1500	2988	5294	0
Grp Volume(v), veh/h	247	0	732				0	1307	437	406	1294	0
Grp Sat Flow(s),veh/h/ln	1587	0	1500				0	1765	1500	1494	1765	0
Q Serve(g_s), s	10.6	0.0	18.5				0.0	17.7	22.2	7.7	0.0	0.0
Cycle Q Clear(g_c), s	10.6	0.0	18.5				0.0	17.7	22.2	7.7	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	449	0	848				0	1721	488	724	3268	0
V/C Ratio(X)	0.55	0.00	0.86				0.00	0.76	0.90	0.56	0.40	0.00
Avail Cap(c_a), veh/h	516	0	975				0	1721	488	724	3268	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.4	0.0	27.2				0.0	24.2	25.7	17.6	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	7.3				0.0	3.2	21.8	1.0	0.4	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
%ile BackOfQ(50%),veh/ln	4.7	0.0	8.5				0.0	9.1	12.1	3.3	0.1	0.0
LnGrp Delay(d),s/veh	25.4	0.0	34.5				0.0	27.4	47.5	18.6	0.4	0.0
LnGrp LOS	C		C					C	D	B	A	
Approach Vol, veh/h		979						1744			1700	
Approach Delay, s/veh		32.2						32.4			4.7	
Approach LOS		C						C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	23.4	30.0		26.6		53.4		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	16.0	26.0		26.0		46.0		
Max Q Clear Time (g_c+I1), s	9.7	24.2		20.5		2.0		
Green Ext Time (p_c), s	4.5	1.5		2.1		14.0		

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	32	195	315	0	0	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		30	
Link Distance (ft)		331	684		288	
Travel Time (s)		7.5	15.5		6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

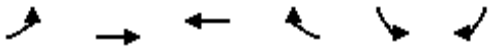
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	32	195	315	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	205	332	0	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	332	0	-	0	605	332
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1227	-	-	-	461	710
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	773	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1227	-	-	-	447	710
Mov Cap-2 Maneuver	-	-	-	-	447	-
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	749	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1227	-	-	-	710
HCM Lane V/C Ratio	0.027	-	-	-	0.006
HCM Control Delay (s)	8	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	184	314	2	0	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		30	
Link Distance (ft)		684	436		304	
Travel Time (s)		15.5	9.9		6.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	11	184	314	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	194	331	2	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	333	0	-	0	549	332
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	217	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1226	-	-	-	497	710
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	819	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1226	-	-	-	492	710
Mov Cap-2 Maneuver	-	-	-	-	492	-
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	810	-

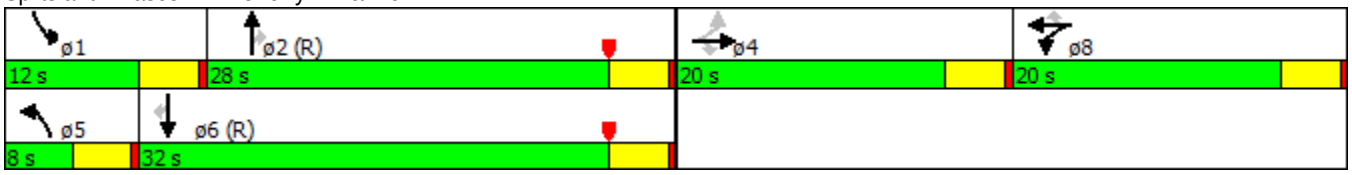
Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1226	-	-	-	710
HCM Lane V/C Ratio	0.009	-	-	-	0.001
HCM Control Delay (s)	8	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	99	0	173	0	1246	166	209	804	0
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		130	270		0	60		275
Storage Lanes	0		1	0		0	1		1	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			40			50			40	
Link Distance (ft)		506			600			1582			1080	
Travel Time (s)		13.8			10.2			21.6			18.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type			Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	28.0	28.0	12.0	32.0	32.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	10.0%	35.0%	35.0%	15.0%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Cherry Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	99	0	173	0	1246	166	209	804	0
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	1800	1765	1765	1700	1765	1765	1667	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	0	0	0	105	0	184	0	1326	177	222	855	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	2	2	251	0	224	2	2120	901	159	2649	1126
Arrive On Green	0.00	0.00	0.00	0.15	0.00	0.15	0.00	0.60	0.60	0.10	0.75	0.00
Sat Flow, veh/h	0	1765	1500	1681	0	1500	1587	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	0	0	0	105	0	184	0	1326	177	222	855	0
Grp Sat Flow(s),veh/h/ln	0	1765	1500	1681	0	1500	1587	1765	1500	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	0.0	4.5	0.0	9.5	0.0	19.2	4.3	8.0	6.4	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	4.5	0.0	9.5	0.0	19.2	4.3	8.0	6.4	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	2	2	251	0	224	2	2120	901	159	2649	1126
V/C Ratio(X)	0.00	0.00	0.00	0.42	0.00	0.82	0.00	0.63	0.20	1.40	0.32	0.00
Avail Cap(c_a), veh/h	0	353	300	336	0	300	79	2120	901	159	2649	1126
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)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	30.9	0.0	33.0	0.0	10.2	7.2	36.0	3.3	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.1	0.0	12.5	0.0	1.4	0.5	212.9	0.3	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	0.0	0.0	0.0	2.2	0.0	4.7	0.0	9.6	1.9	12.9	3.2	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	32.0	0.0	45.5	0.0	11.6	7.7	248.9	3.6	0.0
LnGrp LOS				C		D		B	A	F	A	
Approach Vol, veh/h		0			289			1503			1077	
Approach Delay, s/veh		0.0			40.6			11.2			54.2	
Approach LOS					D			B			D	

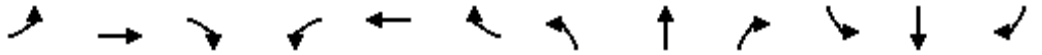
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	52.0		0.0	0.0	64.0		16.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	24.0		16.0	4.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	10.0	21.2		0.0	0.0	8.4		11.5
Green Ext Time (p_c), s	0.0	2.5		0.0	0.0	14.4		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	30.3
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	4	23	174	0	111	9	1327	156	111	831	4
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		50	260		0	70		200
Storage Lanes	0		1	0		1	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		589			331			2702			1062	
Travel Time (s)		13.4			7.5			36.8			14.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	8.0	41.0		17.0	50.0	50.0
Total Split (%)	27.5%	27.5%	27.5%	27.5%	27.5%	27.5%	10.0%	51.3%		21.3%	62.5%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 23 (29%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Cherry Av. & Randall Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	4	23	174	0	111	9	1327	156	111	831	4
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	1700	1765	1765	1800	1765	1765	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	12	4	25	191	0	122	10	1458	171	122	913	4
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	15	338	90	0	338	16	2466	289	151	3256	923
Arrive On Green	0.22	0.22	0.22	0.22	0.00	0.22	0.02	1.00	1.00	0.09	0.62	0.62
Sat Flow, veh/h	0	65	1500	0	0	1500	1587	4653	545	1587	5294	1500
Grp Volume(v), veh/h	16	0	25	191	0	122	10	1106	523	122	913	4
Grp Sat Flow(s),veh/h/ln	65	0	1500	0	0	1500	1587	1765	1668	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	1.1	0.0	0.0	5.5	0.5	0.0	0.0	6.0	6.4	0.1
Cycle Q Clear(g_c), s	18.0	0.0	1.1	18.0	0.0	5.5	0.5	0.0	0.0	6.0	6.4	0.1
Prop In Lane	0.75		1.00	1.00		1.00	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	93	0	338	90	0	338	16	1871	884	151	3256	923
V/C Ratio(X)	0.17	0.00	0.07	2.12	0.00	0.36	0.63	0.59	0.59	0.81	0.28	0.00
Avail Cap(c_a), veh/h	93	0	338	90	0	338	79	1871	884	258	3256	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.68	0.68	0.68	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	24.4	40.0	0.0	26.2	39.1	0.0	0.0	35.5	7.2	5.9
Incr Delay (d2), s/veh	0.9	0.0	0.1	540.3	0.0	0.7	25.1	0.9	2.0	9.8	0.2	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	0.3	0.0	0.4	15.5	0.0	2.3	0.3	0.2	0.5	3.1	3.2	0.0
LnGrp Delay(d),s/veh	27.0	0.0	24.5	580.3	0.0	26.8	64.2	0.9	2.0	45.3	7.4	6.0
LnGrp LOS	C		C	F		C	E	A	A	D	A	A
Approach Vol, veh/h		41			313			1639			1039	
Approach Delay, s/veh		25.5			364.6			1.7			11.8	
Approach LOS		C			F			A			B	

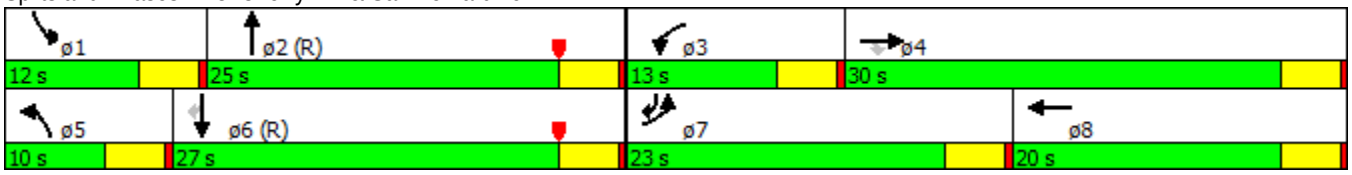
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.6	46.4		22.0	4.8	53.2		22.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	13.0	37.0		18.0	4.0	46.0		18.0
Max Q Clear Time (g_c+I1), s	8.0	2.0		20.0	2.5	8.4		20.0
Green Ext Time (p_c), s	0.1	23.0		0.0	0.0	24.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.9
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	291	601	152	72	147	83	58	965	125	99	848	264
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	300		285	50		0	220		0	210		300
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		555			705			459			2702	
Travel Time (s)		12.6			16.0			6.3			36.8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Detector Phase	7	4	4	3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0		8.0	20.0		8.0	20.0	8.0
Total Split (s)	23.0	30.0	30.0	13.0	20.0		10.0	25.0		12.0	27.0	23.0
Total Split (%)	28.8%	37.5%	37.5%	16.3%	25.0%		12.5%	31.3%		15.0%	33.8%	28.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 46 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Cherry Av. & San Bernardino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	291	601	152	72	147	83	58	965	125	99	848	264
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	1667	1765	1765	1667	1765	1800	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	320	660	0	79	162	91	64	1060	137	109	932	290
Adj No. of Lanes	1	2	1	1	2	0	1	3	0	1	3	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	354	1078	458	98	313	167	78	1603	207	133	2030	910
Arrive On Green	0.22	0.31	0.00	0.06	0.14	0.14	0.05	0.35	0.35	0.11	0.51	0.51
Sat Flow, veh/h	1587	3529	1500	1587	2169	1156	1587	4596	593	1587	5294	1500
Grp Volume(v), veh/h	320	660	0	79	130	123	64	814	383	109	932	290
Grp Sat Flow(s),veh/h/ln	1587	1765	1500	1587	1765	1561	1587	1765	1660	1587	1765	1500
Q Serve(g_s), s	15.7	12.8	0.0	3.9	5.5	5.8	3.2	15.6	15.6	5.4	9.0	6.5
Cycle Q Clear(g_c), s	15.7	12.8	0.0	3.9	5.5	5.8	3.2	15.6	15.6	5.4	9.0	6.5
Prop In Lane	1.00		1.00	1.00		0.74	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	354	1078	458	98	255	225	78	1231	579	133	2030	910
V/C Ratio(X)	0.90	0.61	0.00	0.81	0.51	0.55	0.82	0.66	0.66	0.82	0.46	0.32
Avail Cap(c_a), veh/h	377	1147	488	179	353	312	119	1231	579	159	2030	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	30.3	23.7	0.0	37.1	31.6	31.8	37.7	22.0	22.1	34.9	14.3	5.9
Incr Delay (d2), s/veh	23.7	0.9	0.0	14.2	1.6	2.1	22.2	2.8	5.9	23.4	0.7	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	9.2	6.4	0.0	2.1	2.8	2.7	1.9	8.0	8.1	3.2	4.5	2.9
LnGrp Delay(d),s/veh	54.0	24.6	0.0	51.3	33.2	33.8	59.9	24.8	27.9	58.3	15.0	6.9
LnGrp LOS	D	C		D	C	C	E	C	C	E	B	A
Approach Vol, veh/h		980			332			1261			1331	
Approach Delay, s/veh		34.2			37.7			27.6			16.8	
Approach LOS		C			D			C			B	

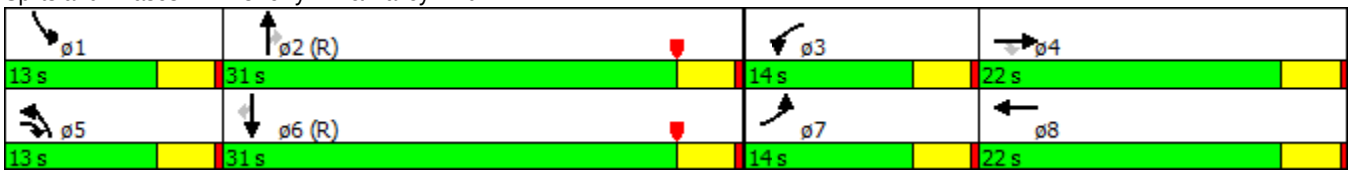
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	31.9	8.9	28.4	7.9	34.7	21.8	15.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	21.0	9.0	26.0	6.0	23.0	19.0	16.0
Max Q Clear Time (g_c+I1), s	7.4	17.6	5.9	14.8	5.2	11.0	17.7	7.8
Green Ext Time (p_c), s	0.0	3.0	0.0	4.6	0.0	9.4	0.1	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	26.4
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	710	324	344	263	97	301	921	484	141	987	69
Ideal Flow (vphpl)	1600	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Storage Length (ft)	250		160	250		0	420		220	170		0
Storage Lanes	2		1	2		0	2		0	1		1
Taper Length (ft)	120			120			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		845			1019			968			718	
Travel Time (s)		19.2			23.2			13.2			9.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	5	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0		8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	14.0	22.0	13.0	14.0	22.0		13.0	31.0	31.0	13.0	31.0	31.0
Total Split (%)	17.5%	27.5%	16.3%	17.5%	27.5%		16.3%	38.8%	38.8%	16.3%	38.8%	38.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Cherry Av. & Valley Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	200	710	324	344	263	97	301	921	484	141	987	69
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	1569	1765	1765	1569	1765	1800	1569	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	208	740	338	358	274	101	314	959	504	147	1028	72
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	794	506	373	635	228	336	1195	508	177	1191	506
Arrive On Green	0.09	0.22	0.22	0.13	0.26	0.26	0.04	0.11	0.11	0.11	0.34	0.34
Sat Flow, veh/h	2988	3529	1500	2988	2480	892	2988	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	208	740	338	358	193	182	314	959	504	147	1028	72
Grp Sat Flow(s),veh/h/ln	1494	1765	1500	1494	1765	1607	1494	1765	1500	1587	1765	1500
Q Serve(g_s), s	5.4	16.4	15.4	9.5	7.3	7.6	8.4	21.2	26.9	7.3	21.8	2.7
Cycle Q Clear(g_c), s	5.4	16.4	15.4	9.5	7.3	7.6	8.4	21.2	26.9	7.3	21.8	2.7
Prop In Lane	1.00		1.00	1.00		0.56	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	794	506	373	452	412	336	1195	508	177	1191	506
V/C Ratio(X)	0.74	0.93	0.67	0.96	0.43	0.44	0.93	0.80	0.99	0.83	0.86	0.14
Avail Cap(c_a), veh/h	373	794	506	373	452	412	336	1195	508	179	1191	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	30.4	22.7	34.8	24.9	25.0	38.2	32.9	35.4	34.8	24.8	18.4
Incr Delay (d2), s/veh	5.4	17.6	3.3	35.7	0.6	0.7	28.5	4.7	34.2	26.9	8.4	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	2.4	10.0	6.9	5.8	3.6	3.5	4.8	11.2	16.0	4.5	12.0	1.2
LnGrp Delay(d),s/veh	40.7	48.0	26.0	70.5	25.5	25.7	66.7	37.7	69.7	61.7	33.2	19.0
LnGrp LOS	D	D	C	E	C	C	E	D	E	E	C	B
Approach Vol, veh/h		1286			733			1777			1247	
Approach Delay, s/veh		41.0			47.5			51.9			35.7	
Approach LOS		D			D			D			D	

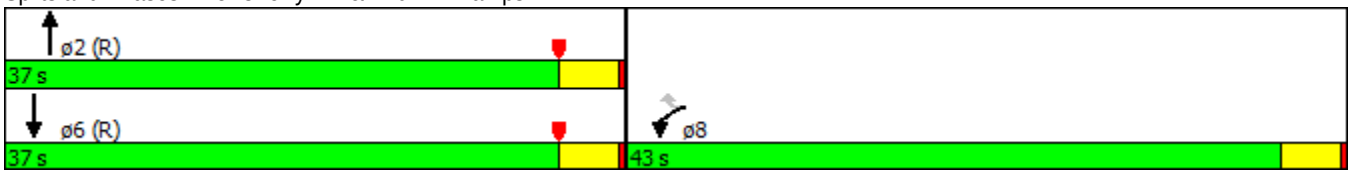
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	31.1	14.0	22.0	13.0	31.0	11.5	24.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	27.0	10.0	18.0	9.0	27.0	10.0	18.0
Max Q Clear Time (g_c+I1), s	9.3	28.9	11.5	18.4	10.4	23.8	7.4	9.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.9	0.2	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	44.5
HCM 2010 LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	393	480	1283	399	0	1669
Ideal Flow (vphpl)	1600	1800	1800	1800	1800	1800
Storage Length (ft)	0	0		200	0	
Storage Lanes	2	1		1	0	
Taper Length (ft)	60				60	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		45			45
Link Distance (ft)	252		337			968
Travel Time (s)	5.7		5.1			14.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	NA	Free		NA
Protected Phases	8		2			6
Permitted Phases		8		Free		
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0			4.0
Minimum Split (s)	20.0	20.0	20.0			20.0
Total Split (s)	43.0	43.0	37.0			37.0
Total Split (%)	53.8%	53.8%	46.3%			46.3%
Yellow Time (s)	3.5	3.5	3.5			3.5
All-Red Time (s)	0.5	0.5	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.0	4.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max			C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 39 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Cherry Av. & I-10 WB Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	393	480	1283	399	0	1669
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1765	1765	1765	0	1765
Adj Flow Rate, veh/h	414	505	1351	0	0	1757
Adj No. of Lanes	2	1	3	1	0	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1128	566	2766	784	0	3688
Arrive On Green	0.38	0.38	1.00	0.00	0.00	0.17
Sat Flow, veh/h	2988	1500	5294	1500	0	7059
Grp Volume(v), veh/h	414	505	1351	0	0	1757
Grp Sat Flow(s),veh/h/ln	1494	1500	1765	1500	0	1765
Q Serve(g_s), s	8.0	25.3	0.0	0.0	0.0	18.0
Cycle Q Clear(g_c), s	8.0	25.3	0.0	0.0	0.0	18.0
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1128	566	2766	784	0	3688
V/C Ratio(X)	0.37	0.89	0.49	0.00	0.00	0.48
Avail Cap(c_a), veh/h	1457	731	2766	784	0	3688
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.53
Uniform Delay (d), s/veh	18.0	23.4	0.0	0.0	0.0	23.2
Incr Delay (d2), s/veh	0.2	11.0	0.6	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	12.1	0.2	0.0	0.0	8.9
LnGrp Delay(d),s/veh	18.2	34.4	0.6	0.0	0.0	23.5
LnGrp LOS	B	C	A			C
Approach Vol, veh/h	919		1351			1757
Approach Delay, s/veh	27.1		0.6			23.5
Approach LOS	C		A			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		45.8				45.8		34.2
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		33.0				33.0		39.0
Max Q Clear Time (g_c+I1), s		2.0				20.0		27.3
Green Ext Time (p_c), s		26.1				12.0		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.6
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	424	0	541	0	0	0	0	1257	498	527	1073	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Storage Length (ft)	0		350	0		0	0		0	300		0
Storage Lanes	1		1	0		0	0		1	2		0
Taper Length (ft)	120			60			60			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		722			861			873			429	
Travel Time (s)		16.4			19.6			13.2			6.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)	21%		43%									
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0					20.0	20.0	8.0	20.0	
Total Split (s)	28.0	28.0	28.0					29.0	29.0	23.0	52.0	
Total Split (%)	35.0%	35.0%	35.0%					36.3%	36.3%	28.8%	65.0%	
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5					0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 28 (35%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Cherry Av. & I-10 EB Ramps

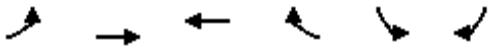
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	424	0	541	0	0	0	0	1257	498	527	1073	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1667	1765	1765				0	1765	1765	1569	1765	0
Adj Flow Rate, veh/h	636	0	356				0	1309	519	549	1118	0
Adj No. of Lanes	2	0	1				0	3	1	2	3	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	861	0	407				0	1654	469	796	3329	0
Arrive On Green	0.27	0.00	0.27				0.00	0.31	0.31	0.53	1.00	0.00
Sat Flow, veh/h	3175	0	1500				0	5294	1500	2988	5294	0
Grp Volume(v), veh/h	636	0	356				0	1309	519	549	1118	0
Grp Sat Flow(s),veh/h/ln	1587	0	1500				0	1765	1500	1494	1765	0
Q Serve(g_s), s	14.6	0.0	18.1				0.0	18.1	25.0	10.9	0.0	0.0
Cycle Q Clear(g_c), s	14.6	0.0	18.1				0.0	18.1	25.0	10.9	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	861	0	407				0	1654	469	796	3329	0
V/C Ratio(X)	0.74	0.00	0.87				0.00	0.79	1.11	0.69	0.34	0.00
Avail Cap(c_a), veh/h	952	0	450				0	1654	469	796	3329	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.6	0.0	27.9				0.0	25.1	27.5	16.3	0.0	0.0
Incr Delay (d2), s/veh	2.8	0.0	16.2				0.0	4.0	74.1	2.5	0.3	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
%ile BackOfQ(50%),veh/ln	6.7	0.0	9.3				0.0	9.3	19.9	4.6	0.1	0.0
LnGrp Delay(d),s/veh	29.3	0.0	44.0				0.0	29.1	101.6	18.8	0.3	0.0
LnGrp LOS	C		D					C	F	B	A	
Approach Vol, veh/h		992						1828			1667	
Approach Delay, s/veh		34.6						49.7			6.4	
Approach LOS		C						D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	25.3	29.0		25.7		54.3		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	19.0	25.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	12.9	27.0		20.1		2.0		
Green Ext Time (p_c), s	4.2	0.0		1.6		12.8		

Intersection Summary	
HCM 2010 Ctrl Delay	30.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	5	267	207	0	0	78
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		30	
Link Distance (ft)		331	684		288	
Travel Time (s)		7.5	15.5		6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

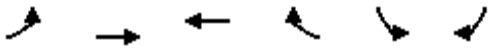
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	267	207	0	0	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	281	218	0	0	82

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	218	0	-	0	510	218
Stage 1	-	-	-	-	218	-
Stage 2	-	-	-	-	292	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1352	-	-	-	523	822
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	758	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1352	-	-	-	521	822
Mov Cap-2 Maneuver	-	-	-	-	521	-
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	755	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1352	-	-	-	822
HCM Lane V/C Ratio	0.004	-	-	-	0.1
HCM Control Delay (s)	7.7	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	2	265	179	0	6	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		30	
Link Distance (ft)		684	436		304	
Travel Time (s)		15.5	9.9		6.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	2	265	179	0	6	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	279	188	0	6	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	188	0	-	0	471	188
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	283	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1386	-	-	-	551	854
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	765	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1386	-	-	-	550	854
Mov Cap-2 Maneuver	-	-	-	-	550	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	763	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1386	-	-	-	778
HCM Lane V/C Ratio	0.002	-	-	-	0.046
HCM Control Delay (s)	7.6	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

APPENDIX 5.2

EXISTING PLUS AMBIENT (E+A 2017) CONDITIONS
INTERSECTION ANALYSIS CALCULATION WORKSHEETS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	182	0	235	1	748	109	147	1140	0
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		130	270		0	60		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			40			50			40	
Link Distance (ft)		506			600			1582			1080	
Travel Time (s)		13.8			10.2			21.6			18.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type			Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	8.0	37.0	37.0	20.0	49.0	49.0
Total Split (%)	28.8%	28.8%	28.8%	28.8%	28.8%	28.8%	10.0%	46.3%	46.3%	25.0%	61.3%	61.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Cherry Av. & Merrill Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	182	0	235	1	748	109	147	1140	0
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	1800	1765	1765	1700	1765	1765	1667	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	0	0	0	188	0	242	1	771	112	152	1175	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	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	336	286	359	0	286	2	1916	814	185	2324	988
Arrive On Green	0.00	0.00	0.00	0.19	0.00	0.19	0.00	0.54	0.54	0.12	0.66	0.00
Sat Flow, veh/h	0	1765	1500	1412	0	1500	1587	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	0	0	0	188	0	242	1	771	112	152	1175	0
Grp Sat Flow(s),veh/h/ln	0	1765	1500	1412	0	1500	1587	1765	1500	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	0.0	9.9	0.0	12.5	0.1	10.2	3.0	7.5	13.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	9.9	0.0	12.5	0.1	10.2	3.0	7.5	13.6	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	336	286	359	0	286	2	1916	814	185	2324	988
V/C Ratio(X)	0.00	0.00	0.00	0.52	0.00	0.85	0.50	0.40	0.14	0.82	0.51	0.00
Avail Cap(c_a), veh/h	0	419	356	425	0	356	79	1916	814	317	2324	988
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)	0.00	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	0.0	0.0	0.0	30.2	0.0	31.3	39.9	10.7	9.0	34.5	7.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.2	0.0	14.3	126.9	0.6	0.4	8.6	0.8	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	0.0	0.0	0.0	4.0	0.0	6.3	0.1	5.1	1.3	3.7	6.8	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	31.4	0.0	45.6	166.9	11.3	9.4	43.2	7.8	0.0
LnGrp LOS				C		D	F	B	A	D	A	
Approach Vol, veh/h		0			430			884			1327	
Approach Delay, s/veh		0.0			39.4			11.3			11.8	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.3	47.4		19.2	4.1	56.7		19.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	33.0		19.0	4.0	45.0		19.0
Max Q Clear Time (g_c+I1), s	9.5	12.2		0.0	2.1	15.6		14.5
Green Ext Time (p_c), s	0.2	13.6		0.0	0.0	16.9		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	0	0	203	3	114	22	797	88	100	1138	8
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		50	260		0	70		200
Storage Lanes	0		1	0		1	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		589			331			2702			1062	
Travel Time (s)		13.4			7.5			36.8			14.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	11.0	33.0		19.0	41.0	41.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	13.8%	41.3%		23.8%	51.3%	51.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 8 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Cherry Av. & Randall Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	0	203	3	114	22	797	88	100	1138	8
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	1700	1765	1765	1700	1765	1765	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	1	0	0	209	3	118	23	822	91	103	1173	8
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	0	243	348	4	243	32	2844	313	129	3536	1002
Arrive On Green	0.16	0.00	0.00	0.16	0.16	0.16	0.04	1.00	1.00	0.08	0.67	0.67
Sat Flow, veh/h	322	0	1500	1592	23	1500	1587	4687	516	1587	5294	1500
Grp Volume(v), veh/h	1	0	0	212	0	118	23	618	295	103	1173	8
Grp Sat Flow(s),veh/h/ln	322	0	1500	1615	0	1500	1587	1765	1674	1587	1765	1500
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	5.7	1.1	0.0	0.0	5.1	7.6	0.1
Cycle Q Clear(g_c), s	9.7	0.0	0.0	9.7	0.0	5.7	1.1	0.0	0.0	5.1	7.6	0.1
Prop In Lane	1.00		1.00	0.99		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	142	0	243	351	0	243	32	2141	1015	129	3536	1002
V/C Ratio(X)	0.01	0.00	0.00	0.60	0.00	0.49	0.72	0.29	0.29	0.80	0.33	0.01
Avail Cap(c_a), veh/h	317	0	450	546	0	450	139	2141	1015	298	3536	1002
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	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	0.0	0.0	32.1	0.0	30.5	38.2	0.0	0.0	36.1	5.7	4.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.7	0.0	1.5	23.9	0.3	0.6	10.8	0.3	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	0.0	0.0	0.0	4.6	0.0	2.5	0.7	0.1	0.2	2.6	3.7	0.1
LnGrp Delay(d),s/veh	36.8	0.0	0.0	33.8	0.0	32.0	62.1	0.3	0.6	46.9	5.9	4.5
LnGrp LOS	D			C		C	E	A	A	D	A	A
Approach Vol, veh/h		1			330			936			1284	
Approach Delay, s/veh		36.8			33.1			1.9			9.2	
Approach LOS		D			C			A			A	

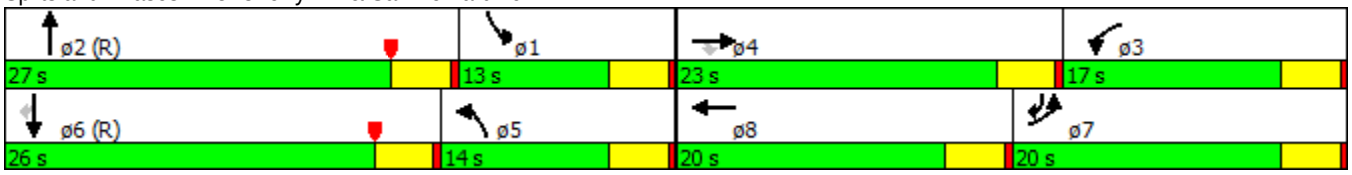
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	52.5		17.0	5.6	57.4		17.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	15.0	29.0		24.0	7.0	37.0		24.0
Max Q Clear Time (g_c+I1), s	7.1	2.0		11.7	3.1	9.6		11.7
Green Ext Time (p_c), s	0.1	15.6		1.3	0.0	15.8		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	182	70	95	146	344	88	85	746	89	75	848	379
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	300		285	50		0	220		0	210		300
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		555			705			459			2702	
Travel Time (s)		12.6			16.0			6.3			36.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Detector Phase	7	4	4	3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0		8.0	20.0		8.0	20.0	8.0
Total Split (s)	20.0	23.0	23.0	17.0	20.0		14.0	27.0		13.0	26.0	20.0
Total Split (%)	25.0%	28.8%	28.8%	21.3%	25.0%		17.5%	33.8%		16.3%	32.5%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lag	Lead		Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Cherry Av. & San Bernardino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	182	70	95	146	344	88	85	746	89	75	848	379
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	1667	1765	1765	1667	1765	1800	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	188	72	0	151	355	91	88	769	92	77	874	391
Adj No. of Lanes	1	2	1	1	2	0	1	3	0	1	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	224	176	75	406	447	113	348	1335	159	329	1456	624
Arrive On Green	0.14	0.05	0.00	0.26	0.16	0.16	0.22	0.29	0.29	0.07	0.09	0.09
Sat Flow, veh/h	1587	3529	1500	1587	2720	688	1587	4645	552	1587	5294	1500
Grp Volume(v), veh/h	188	72	0	151	229	217	88	583	278	77	874	391
Grp Sat Flow(s),veh/h/ln	1587	1765	1500	1587	1765	1643	1587	1765	1667	1587	1765	1500
Q Serve(g_s), s	9.2	1.6	0.0	6.3	10.0	10.2	3.7	11.3	11.4	3.7	12.7	8.4
Cycle Q Clear(g_c), s	9.2	1.6	0.0	6.3	10.0	10.2	3.7	11.3	11.4	3.7	12.7	8.4
Prop In Lane	1.00		1.00	1.00		0.42	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	224	176	75	406	290	270	348	1015	479	329	1456	624
V/C Ratio(X)	0.84	0.41	0.00	0.37	0.79	0.81	0.25	0.57	0.58	0.23	0.60	0.63
Avail Cap(c_a), veh/h	317	838	356	406	353	329	348	1015	479	329	1456	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	33.5	36.9	0.0	24.5	32.1	32.2	25.8	24.3	24.4	31.3	32.1	24.8
Incr Delay (d2), s/veh	12.7	1.5	0.0	0.6	9.5	11.4	0.4	2.4	5.0	0.3	1.8	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.8	0.0	2.8	5.6	5.4	1.6	5.8	5.9	1.7	6.4	4.3
LnGrp Delay(d),s/veh	46.2	38.4	0.0	25.1	41.6	43.7	26.2	26.7	29.4	31.6	33.9	29.3
LnGrp LOS	D	D		C	D	D	C	C	C	C	C	C
Approach Vol, veh/h		260			597			949			1342	
Approach Delay, s/veh		44.0			38.2			27.4			32.4	
Approach LOS		D			D			C			C	

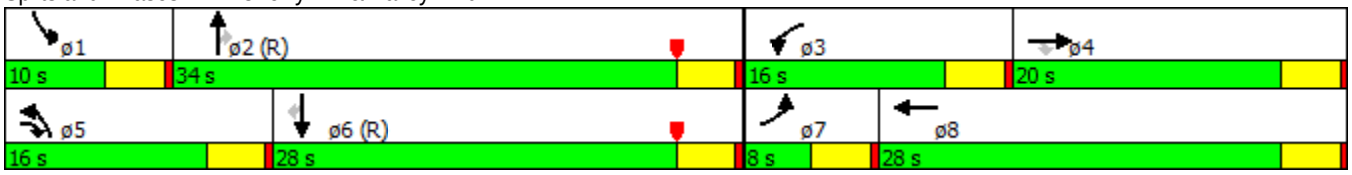
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	27.0	24.4	8.0	21.6	26.0	15.3	17.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	23.0	13.0	19.0	10.0	22.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	5.7	13.4	8.3	3.6	5.7	14.7	11.2	12.2
Green Ext Time (p_c), s	0.1	3.5	0.5	0.3	0.1	3.8	0.3	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	33.0
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	131	188	421	283	60	424	870	339	68	983	90
Ideal Flow (vphpl)	1600	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Storage Length (ft)	250		160	250		0	420		220	170		0
Storage Lanes	2		1	2		0	2		0	1		1
Taper Length (ft)	120			120			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		845			1019			968			718	
Travel Time (s)		19.2			23.2			13.2			9.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	5	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0		8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	8.0	20.0	16.0	16.0	28.0		16.0	34.0	34.0	10.0	28.0	28.0
Total Split (%)	10.0%	25.0%	20.0%	20.0%	35.0%		20.0%	42.5%	42.5%	12.5%	35.0%	35.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Cherry Av. & Valley Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	59	131	188	421	283	60	424	870	339	68	983	90
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	1569	1765	1765	1569	1765	1800	1569	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	61	136	196	439	295	62	442	906	353	71	1024	94
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	539	454	448	754	156	448	1561	663	87	1225	521
Arrive On Green	0.04	0.15	0.15	0.15	0.27	0.27	0.30	0.88	0.88	0.06	0.35	0.35
Sat Flow, veh/h	2988	3529	1500	2988	2838	588	2988	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	61	136	196	439	182	175	442	906	353	71	1024	94
Grp Sat Flow(s),veh/h/ln	1494	1765	1500	1494	1765	1661	1494	1765	1500	1587	1765	1500
Q Serve(g_s), s	1.6	2.7	8.4	11.7	6.7	6.9	11.8	4.9	4.1	3.5	21.3	3.5
Cycle Q Clear(g_c), s	1.6	2.7	8.4	11.7	6.7	6.9	11.8	4.9	4.1	3.5	21.3	3.5
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	539	454	448	469	441	448	1561	663	87	1225	521
V/C Ratio(X)	0.55	0.25	0.43	0.98	0.39	0.40	0.99	0.58	0.53	0.81	0.84	0.18
Avail Cap(c_a), veh/h	149	706	525	448	529	498	448	1561	663	119	1225	521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	29.9	22.4	33.9	24.0	24.1	27.9	2.9	2.8	37.4	24.0	18.2
Incr Delay (d2), s/veh	4.2	0.2	0.6	37.0	0.5	0.6	34.4	1.3	2.4	25.3	6.8	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	0.7	1.3	3.6	7.1	3.4	3.2	6.9	2.3	1.9	2.2	11.5	1.6
LnGrp Delay(d),s/veh	42.1	30.1	23.0	70.9	24.6	24.7	62.3	4.1	5.3	62.7	30.9	18.9
LnGrp LOS	D	C	C	E	C	C	E	A	A	E	C	B
Approach Vol, veh/h		393			796			1701			1189	
Approach Delay, s/veh		28.4			50.2			19.5			31.8	
Approach LOS		C			D			B			C	

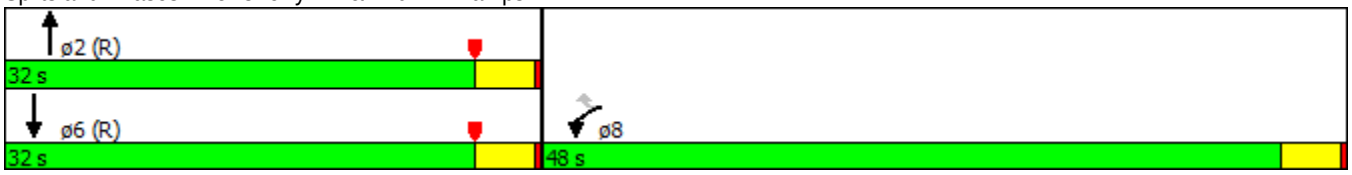
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	39.4	16.0	16.2	16.0	31.8	7.0	25.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	30.0	12.0	16.0	12.0	24.0	4.0	24.0
Max Q Clear Time (g_c+I1), s	5.5	6.9	13.7	10.4	13.8	23.3	3.6	8.9
Green Ext Time (p_c), s	0.0	15.3	0.0	1.8	0.0	0.6	0.0	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	29.9
HCM 2010 LOS	C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	536	582	1091	523	0	1599
Ideal Flow (vphpl)	1600	1800	1800	1800	1800	1800
Storage Length (ft)	0	0		200	0	
Storage Lanes	2	1		1	0	
Taper Length (ft)	60				60	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		45			45
Link Distance (ft)	252		337			968
Travel Time (s)	5.7		5.1			14.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	NA	Free		NA
Protected Phases	8		2			6
Permitted Phases		8		Free		
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0			4.0
Minimum Split (s)	20.0	20.0	20.0			20.0
Total Split (s)	48.0	48.0	32.0			32.0
Total Split (%)	60.0%	60.0%	40.0%			40.0%
Yellow Time (s)	3.5	3.5	3.5			3.5
All-Red Time (s)	0.5	0.5	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.0	4.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max			C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Cherry Av. & I-10 WB Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	536	582	1091	523	0	1599
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1765	1765	1765	0	1765
Adj Flow Rate, veh/h	564	613	1148	0	0	1683
Adj No. of Lanes	2	1	3	1	0	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1351	678	2371	672	0	3161
Arrive On Green	0.45	0.45	0.90	0.00	0.00	0.90
Sat Flow, veh/h	2988	1500	5294	1500	0	7059
Grp Volume(v), veh/h	564	613	1148	0	0	1683
Grp Sat Flow(s),veh/h/ln	1494	1500	1765	1500	0	1765
Q Serve(g_s), s	10.2	30.3	3.2	0.0	0.0	3.8
Cycle Q Clear(g_c), s	10.2	30.3	3.2	0.0	0.0	3.8
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1351	678	2371	672	0	3161
V/C Ratio(X)	0.42	0.90	0.48	0.00	0.00	0.53
Avail Cap(c_a), veh/h	1643	825	2371	672	0	3161
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.51
Uniform Delay (d), s/veh	14.8	20.3	2.5	0.0	0.0	2.5
Incr Delay (d2), s/veh	0.2	11.7	0.7	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	14.6	1.4	0.0	0.0	1.7
LnGrp Delay(d),s/veh	15.0	32.0	3.2	0.0	0.0	2.8
LnGrp LOS	B	C	A			A
Approach Vol, veh/h	1177		1148			1683
Approach Delay, s/veh	23.9		3.2			2.8
Approach LOS	C		A			A

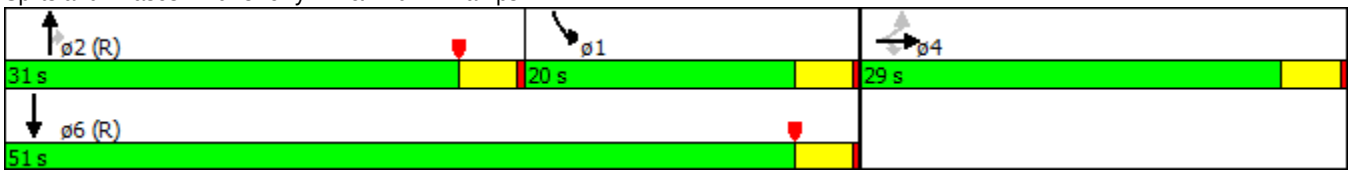
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		39.8				39.8		40.2
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		28.0				28.0		44.0
Max Q Clear Time (g_c+I1), s		5.2				5.8		32.3
Green Ext Time (p_c), s		18.9				18.5		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	0	580	0	0	0	0	1265	423	393	1254	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Storage Length (ft)	0		350	0		0	0		0	300		0
Storage Lanes	1		1	0		0	0		1	2		0
Taper Length (ft)	120			60			60			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		722			861			873			429	
Travel Time (s)		16.4			19.6			13.2			6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	10%		47%									
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0					20.0	20.0	8.0	20.0	
Total Split (s)	29.0	29.0	29.0					31.0	31.0	20.0	51.0	
Total Split (%)	36.3%	36.3%	36.3%					38.8%	38.8%	25.0%	63.8%	
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5					0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Cherry Av. & I-10 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	350	0	580	0	0	0	0	1265	423	393	1254	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1667	1765	1765				0	1765	1765	1569	1765	0
Adj Flow Rate, veh/h	245	0	742				0	1332	445	414	1320	0
Adj No. of Lanes	1	0	2				0	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	448	0	847				0	1787	506	688	3270	0
Arrive On Green	0.28	0.00	0.28				0.00	0.34	0.34	0.46	1.00	0.00
Sat Flow, veh/h	1587	0	3000				0	5294	1500	2988	5294	0
Grp Volume(v), veh/h	245	0	742				0	1332	445	414	1320	0
Grp Sat Flow(s),veh/h/ln	1587	0	1500				0	1765	1500	1494	1765	0
Q Serve(g_s), s	10.5	0.0	18.9				0.0	17.8	22.4	8.3	0.0	0.0
Cycle Q Clear(g_c), s	10.5	0.0	18.9				0.0	17.8	22.4	8.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	448	0	847				0	1787	506	688	3270	0
V/C Ratio(X)	0.55	0.00	0.88				0.00	0.75	0.88	0.60	0.40	0.00
Avail Cap(c_a), veh/h	496	0	938				0	1787	506	688	3270	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.4	0.0	27.4				0.0	23.5	25.0	18.8	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	8.8				0.0	2.9	19.1	1.5	0.4	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
%ile BackOfQ(50%),veh/ln	4.7	0.0	8.9				0.0	9.1	11.8	3.5	0.1	0.0
LnGrp Delay(d),s/veh	25.4	0.0	36.1				0.0	26.3	44.1	20.3	0.4	0.0
LnGrp LOS	C		D					C	D	C	A	
Approach Vol, veh/h		987						1777			1734	
Approach Delay, s/veh		33.5						30.8			5.1	
Approach LOS		C						C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	22.4	31.0		26.6		53.4		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	16.0	27.0		25.0		47.0		
Max Q Clear Time (g_c+I1), s	10.3	24.4		20.9		2.0		
Green Ext Time (p_c), s	4.2	2.1		1.7		14.5		

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	101	0	176	0	1254	163	213	819	0
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		130	270		0	60		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			40			50			40	
Link Distance (ft)		506			600			1582			1080	
Travel Time (s)		13.8			10.2			21.6			18.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type			Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	40.0	40.0	20.0	52.0	52.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	10.0%	50.0%	50.0%	25.0%	65.0%	65.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 58 (73%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Cherry Av. & Merrill Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	101	0	176	0	1254	163	213	819	0
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	1800	1765	1765	1700	1765	1765	1667	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	0	0	0	107	0	187	0	1334	173	227	871	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	267	227	304	0	227	2	1882	800	263	2643	1123
Arrive On Green	0.00	0.00	0.00	0.15	0.00	0.15	0.00	0.53	0.53	0.17	0.75	0.00
Sat Flow, veh/h	0	1765	1500	1412	0	1500	1587	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	0	0	0	107	0	187	0	1334	173	227	871	0
Grp Sat Flow(s),veh/h/ln	0	1765	1500	1412	0	1500	1587	1765	1500	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	0.0	5.6	0.0	9.7	0.0	22.7	4.9	11.1	6.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	5.6	0.0	9.7	0.0	22.7	4.9	11.1	6.6	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	267	227	304	0	227	2	1882	800	263	2643	1123
V/C Ratio(X)	0.00	0.00	0.00	0.35	0.00	0.82	0.00	0.71	0.22	0.86	0.33	0.00
Avail Cap(c_a), veh/h	0	353	300	372	0	300	79	1882	800	317	2643	1123
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)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	31.2	0.0	32.9	0.0	14.0	9.8	32.5	3.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.7	0.0	13.1	0.0	2.3	0.6	18.6	0.3	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	0.0	0.0	0.0	2.2	0.0	4.8	0.0	11.5	2.2	6.2	3.3	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	31.9	0.0	46.0	0.0	16.3	10.5	51.1	3.7	0.0
LnGrp LOS				C		D		B	B	D	A	
Approach Vol, veh/h		0			294			1507			1098	
Approach Delay, s/veh		0.0			40.8			15.6			13.5	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.2	46.7		16.1	0.0	63.9		16.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	36.0		16.0	4.0	48.0		16.0
Max Q Clear Time (g_c+I1), s	13.1	24.7		0.0	0.0	8.6		11.7
Green Ext Time (p_c), s	0.2	9.3		0.0	0.0	23.4		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	17.4
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	4	23	92	0	91	9	1354	154	112	848	4
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		50	260		0	70		200
Storage Lanes	0		1	0		1	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		589			331			2702			1062	
Travel Time (s)		13.4			7.5			36.8			14.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	8.0	41.0		17.0	50.0	50.0
Total Split (%)	27.5%	27.5%	27.5%	27.5%	27.5%	27.5%	10.0%	51.3%		21.3%	62.5%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 23 (29%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Cherry Av. & Randall Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	4	23	92	0	91	9	1354	154	112	848	4
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	1700	1765	1765	1800	1765	1765	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	12	4	25	101	0	100	10	1488	169	123	932	4
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	15	338	90	0	338	16	2472	281	152	3256	923
Arrive On Green	0.22	0.22	0.22	0.22	0.00	0.22	0.02	1.00	1.00	0.10	0.62	0.62
Sat Flow, veh/h	0	65	1500	0	0	1500	1587	4671	530	1587	5294	1500
Grp Volume(v), veh/h	16	0	25	101	0	100	10	1124	533	123	932	4
Grp Sat Flow(s),veh/h/ln	65	0	1500	0	0	1500	1587	1765	1671	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	1.1	0.0	0.0	4.4	0.5	0.0	0.0	6.1	6.6	0.1
Cycle Q Clear(g_c), s	18.0	0.0	1.1	18.0	0.0	4.4	0.5	0.0	0.0	6.1	6.6	0.1
Prop In Lane	0.75		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	93	0	338	90	0	338	16	1868	885	152	3256	923
V/C Ratio(X)	0.17	0.00	0.07	1.12	0.00	0.30	0.63	0.60	0.60	0.81	0.29	0.00
Avail Cap(c_a), veh/h	93	0	338	90	0	338	79	1868	885	258	3256	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	24.4	40.0	0.0	25.7	39.1	0.0	0.0	35.5	7.2	5.9
Incr Delay (d2), s/veh	0.9	0.0	0.1	131.7	0.0	0.5	24.7	1.0	2.0	9.8	0.2	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	0.3	0.0	0.4	5.3	0.0	1.9	0.3	0.3	0.5	3.1	3.3	0.0
LnGrp Delay(d),s/veh	27.0	0.0	24.5	171.7	0.0	26.2	63.7	1.0	2.0	45.3	7.4	6.0
LnGrp LOS	C		C	F		C	E	A	A	D	A	A
Approach Vol, veh/h		41			201			1667			1059	
Approach Delay, s/veh		25.5			99.3			1.7			11.8	
Approach LOS		C			F			A			B	

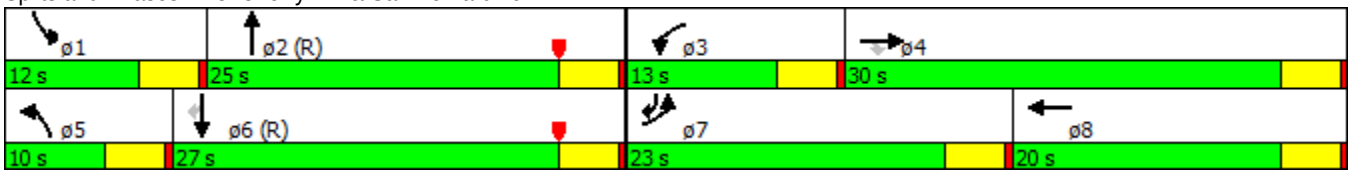
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	46.3		22.0	4.8	53.2		22.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	13.0	37.0		18.0	4.0	46.0		18.0
Max Q Clear Time (g_c+I1), s	8.1	2.0		20.0	2.5	8.6		20.0
Green Ext Time (p_c), s	0.1	23.5		0.0	0.0	24.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	297	613	155	73	150	85	59	979	128	95	791	263
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	300		285	50		0	220		0	210		300
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		555			705			459			2702	
Travel Time (s)		12.6			16.0			6.3			36.8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Detector Phase	7	4	4	3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0		8.0	20.0		8.0	20.0	8.0
Total Split (s)	23.0	30.0	30.0	13.0	20.0		10.0	25.0		12.0	27.0	23.0
Total Split (%)	28.8%	37.5%	37.5%	16.3%	25.0%		12.5%	31.3%		15.0%	33.8%	28.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 46 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Cherry Av. & San Bernardino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	297	613	155	73	150	85	59	979	128	95	791	263
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	1667	1765	1765	1667	1765	1800	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	326	674	0	80	165	93	65	1076	141	104	869	289
Adj No. of Lanes	1	2	1	1	2	0	1	3	0	1	3	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1094	465	99	317	169	80	1593	208	128	1998	906
Arrive On Green	0.23	0.31	0.00	0.06	0.15	0.15	0.05	0.35	0.35	0.11	0.50	0.50
Sat Flow, veh/h	1587	3529	1500	1587	2166	1159	1587	4588	600	1587	5294	1500
Grp Volume(v), veh/h	326	674	0	80	133	125	65	827	390	104	869	289
Grp Sat Flow(s),veh/h/ln	1587	1765	1500	1587	1765	1560	1587	1765	1659	1587	1765	1500
Q Serve(g_s), s	16.0	13.0	0.0	4.0	5.6	6.0	3.2	16.0	16.0	5.1	8.4	6.6
Cycle Q Clear(g_c), s	16.0	13.0	0.0	4.0	5.6	6.0	3.2	16.0	16.0	5.1	8.4	6.6
Prop In Lane	1.00		1.00	1.00		0.74	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	359	1094	465	99	258	228	80	1225	576	128	1998	906
V/C Ratio(X)	0.91	0.62	0.00	0.81	0.51	0.55	0.82	0.68	0.68	0.81	0.43	0.32
Avail Cap(c_a), veh/h	377	1147	488	179	353	312	119	1225	576	159	1998	906
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	30.1	23.5	0.0	37.0	31.5	31.7	37.6	22.3	22.3	35.1	14.5	6.1
Incr Delay (d2), s/veh	24.4	0.9	0.0	14.0	1.6	2.1	22.7	3.0	6.3	22.1	0.7	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	9.4	6.5	0.0	2.1	2.8	2.7	1.9	8.3	8.4	3.0	4.2	2.9
LnGrp Delay(d),s/veh	54.6	24.5	0.0	51.1	33.1	33.8	60.4	25.3	28.6	57.3	15.2	7.0
LnGrp LOS	D	C		D	C	C	E	C	C	E	B	A
Approach Vol, veh/h		1000			338			1282			1262	
Approach Delay, s/veh		34.3			37.6			28.0			16.8	
Approach LOS		C			D			C			B	

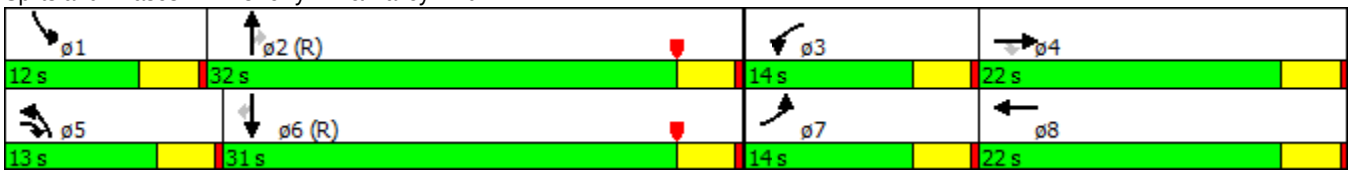
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	31.8	9.0	28.8	8.0	34.2	22.1	15.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	21.0	9.0	26.0	6.0	23.0	19.0	16.0
Max Q Clear Time (g_c+I1), s	7.1	18.0	6.0	15.0	5.2	10.4	18.0	8.0
Green Ext Time (p_c), s	0.0	2.6	0.0	4.6	0.0	9.7	0.1	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	203	724	330	351	268	98	307	936	494	133	956	59
Ideal Flow (vphpl)	1600	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Storage Length (ft)	250		160	250		0	420		220	170		0
Storage Lanes	2		1	2		0	2		0	1		1
Taper Length (ft)	120			120			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		845			1019			968			718	
Travel Time (s)		19.2			23.2			13.2			9.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	5	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0		8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	14.0	22.0	13.0	14.0	22.0		13.0	32.0	32.0	12.0	31.0	31.0
Total Split (%)	17.5%	27.5%	16.3%	17.5%	27.5%		16.3%	40.0%	40.0%	15.0%	38.8%	38.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Cherry Av. & Valley Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	203	724	330	351	268	98	307	936	494	133	956	59
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	1569	1765	1765	1569	1765	1800	1569	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	211	754	344	366	279	102	320	975	515	139	996	61
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	794	506	373	634	226	336	1235	525	159	1191	506
Arrive On Green	0.09	0.22	0.22	0.13	0.26	0.26	0.04	0.12	0.12	0.10	0.34	0.34
Sat Flow, veh/h	2988	3529	1500	2988	2485	887	2988	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	211	754	344	366	196	185	320	975	515	139	996	61
Grp Sat Flow(s),veh/h/ln	1494	1765	1500	1494	1765	1608	1494	1765	1500	1587	1765	1500
Q Serve(g_s), s	5.5	16.8	15.8	9.8	7.5	7.7	8.6	21.5	27.4	6.9	20.8	2.2
Cycle Q Clear(g_c), s	5.5	16.8	15.8	9.8	7.5	7.7	8.6	21.5	27.4	6.9	20.8	2.2
Prop In Lane	1.00		1.00	1.00		0.55	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	284	794	506	373	450	410	336	1235	525	159	1191	506
V/C Ratio(X)	0.74	0.95	0.68	0.98	0.44	0.45	0.95	0.79	0.98	0.88	0.84	0.12
Avail Cap(c_a), veh/h	373	794	506	373	450	410	336	1235	525	159	1191	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	30.6	22.8	34.9	25.0	25.1	38.3	32.5	35.1	35.5	24.5	18.3
Incr Delay (d2), s/veh	5.6	20.6	3.7	41.1	0.7	0.8	32.0	4.2	31.0	38.2	7.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	10.4	7.0	6.1	3.7	3.5	5.0	11.2	15.9	4.7	11.3	1.0
LnGrp Delay(d),s/veh	40.8	51.1	26.4	76.0	25.6	25.9	70.3	36.7	66.1	73.7	31.5	18.8
LnGrp LOS	D	D	C	E	C	C	E	D	E	E	C	B
Approach Vol, veh/h		1309			747			1810			1196	
Approach Delay, s/veh		43.0			50.4			51.0			35.8	
Approach LOS		D			D			D			D	

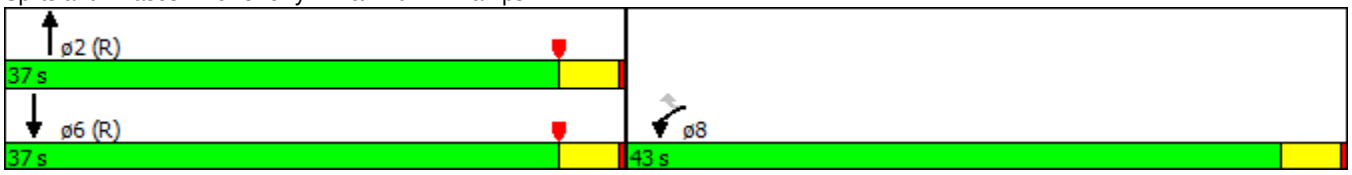
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	32.0	14.0	22.0	13.0	31.0	11.6	24.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	28.0	10.0	18.0	9.0	27.0	10.0	18.0
Max Q Clear Time (g_c+I1), s	8.9	29.4	11.8	18.8	10.6	22.8	7.5	9.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.7	0.2	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	45.2
HCM 2010 LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	401	489	1307	407	0	1651
Ideal Flow (vphpl)	1600	1800	1800	1800	1800	1800
Storage Length (ft)	0	0		200	0	
Storage Lanes	2	1		1	0	
Taper Length (ft)	60				60	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		45			45
Link Distance (ft)	252		337			968
Travel Time (s)	5.7		5.1			14.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	NA	Free		NA
Protected Phases	8		2			6
Permitted Phases		8		Free		
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0			4.0
Minimum Split (s)	20.0	20.0	20.0			20.0
Total Split (s)	43.0	43.0	37.0			37.0
Total Split (%)	53.8%	53.8%	46.3%			46.3%
Yellow Time (s)	3.5	3.5	3.5			3.5
All-Red Time (s)	0.5	0.5	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.0	4.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max			C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 39 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Cherry Av. & I-10 WB Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	401	489	1307	407	0	1651
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1765	1765	1765	0	1765
Adj Flow Rate, veh/h	422	515	1376	0	0	1738
Adj No. of Lanes	2	1	3	1	0	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1147	576	2733	774	0	3643
Arrive On Green	0.38	0.38	1.00	0.00	0.00	0.17
Sat Flow, veh/h	2988	1500	5294	1500	0	7059
Grp Volume(v), veh/h	422	515	1376	0	0	1738
Grp Sat Flow(s),veh/h/ln	1494	1500	1765	1500	0	1765
Q Serve(g_s), s	8.1	25.8	0.0	0.0	0.0	17.8
Cycle Q Clear(g_c), s	8.1	25.8	0.0	0.0	0.0	17.8
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1147	576	2733	774	0	3643
V/C Ratio(X)	0.37	0.89	0.50	0.00	0.00	0.48
Avail Cap(c_a), veh/h	1457	731	2733	774	0	3643
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.55
Uniform Delay (d), s/veh	17.7	23.1	0.0	0.0	0.0	23.4
Incr Delay (d2), s/veh	0.2	11.4	0.7	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	12.4	0.2	0.0	0.0	8.8
LnGrp Delay(d),s/veh	17.9	34.6	0.7	0.0	0.0	23.7
LnGrp LOS	B	C	A			C
Approach Vol, veh/h	937		1376			1738
Approach Delay, s/veh	27.1		0.7			23.7
Approach LOS	C		A			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		45.3				45.3		34.7
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		33.0				33.0		39.0
Max Q Clear Time (g_c+I1), s		2.0				19.8		27.8
Green Ext Time (p_c), s		26.1				12.1		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.6
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	431	0	552	0	0	0	0	1282	508	515	1088	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Storage Length (ft)	0		350	0		0	0		0	300		0
Storage Lanes	1		1	0		0	0		1	2		0
Taper Length (ft)	120			60			60			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		722			861			873			429	
Travel Time (s)		16.4			19.6			13.2			6.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)	21%		43%									
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0					20.0	20.0	8.0	20.0	
Total Split (s)	28.0	28.0	28.0					30.0	30.0	22.0	52.0	
Total Split (%)	35.0%	35.0%	35.0%					37.5%	37.5%	27.5%	65.0%	
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5					0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 28 (35%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Cherry Av. & I-10 EB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	431	0	552	0	0	0	0	1282	508	515	1088	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1667	1765	1765				0	1765	1765	1569	1765	0
Adj Flow Rate, veh/h	647	0	362				0	1335	529	536	1133	0
Adj No. of Lanes	2	0	1				0	3	1	2	3	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	871	0	411				0	1721	488	749	3312	0
Arrive On Green	0.27	0.00	0.27				0.00	0.32	0.32	0.50	1.00	0.00
Sat Flow, veh/h	3175	0	1500				0	5294	1500	2988	5294	0
Grp Volume(v), veh/h	647	0	362				0	1335	529	536	1133	0
Grp Sat Flow(s),veh/h/ln	1587	0	1500				0	1765	1500	1494	1765	0
Q Serve(g_s), s	14.9	0.0	18.5				0.0	18.2	26.0	11.2	0.0	0.0
Cycle Q Clear(g_c), s	14.9	0.0	18.5				0.0	18.2	26.0	11.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	871	0	411				0	1721	488	749	3312	0
V/C Ratio(X)	0.74	0.00	0.88				0.00	0.78	1.09	0.72	0.34	0.00
Avail Cap(c_a), veh/h	952	0	450				0	1721	488	749	3312	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.5	0.0	27.8				0.0	24.4	27.0	17.7	0.0	0.0
Incr Delay (d2), s/veh	2.9	0.0	16.9				0.0	3.5	65.7	3.3	0.3	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
%ile BackOfQ(50%),veh/ln	6.8	0.0	9.6				0.0	9.3	19.6	4.8	0.1	0.0
LnGrp Delay(d),s/veh	29.4	0.0	44.7				0.0	27.9	92.7	21.0	0.3	0.0
LnGrp LOS	C		D					C	F	C	A	
Approach Vol, veh/h		1009						1864			1669	
Approach Delay, s/veh		34.9						46.3			6.9	
Approach LOS		C						D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	24.1	30.0		25.9		54.1		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	18.0	26.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	13.2	28.0		20.5		2.0		
Green Ext Time (p_c), s	3.5	0.0		1.5		12.9		

Intersection Summary	
HCM 2010 Ctrl Delay	29.3
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

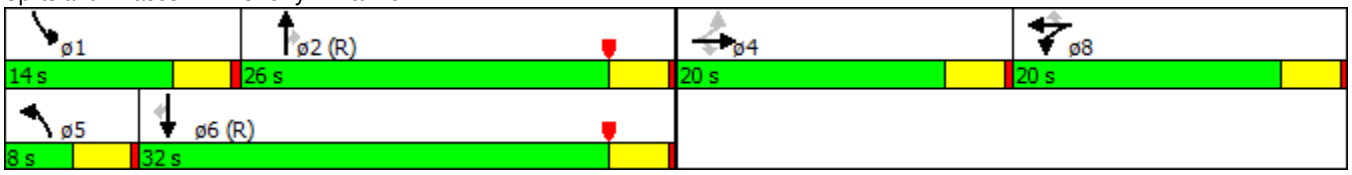
APPENDIX 5.3

EXISTING PLUS AMBIENT PLUS PROJECT (EAP 2017) CONDITIONS
INTERSECTION ANALYSIS CALCULATION WORKSHEETS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	184	0	235	1	749	109	147	1147	0
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		130	270		0	60		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			40			50			40	
Link Distance (ft)		506			600			1582			1080	
Travel Time (s)		13.8			10.2			21.6			18.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type			Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	26.0	26.0	14.0	32.0	32.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	10.0%	32.5%	32.5%	17.5%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Cherry Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	184	0	235	1	749	109	147	1147	0
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	1800	1765	1765	1700	1765	1765	1667	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	0	0	0	190	0	242	1	772	112	152	1182	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	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	2	2	312	0	278	2	1940	824	182	2341	995
Arrive On Green	0.00	0.00	0.00	0.19	0.00	0.19	0.00	0.55	0.55	0.11	0.66	0.00
Sat Flow, veh/h	0	1765	1500	1681	0	1500	1587	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	0	0	0	190	0	242	1	772	112	152	1182	0
Grp Sat Flow(s),veh/h/ln	0	1765	1500	1681	0	1500	1587	1765	1500	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	0.0	8.3	0.0	12.5	0.1	10.1	2.9	7.5	13.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	8.3	0.0	12.5	0.1	10.1	2.9	7.5	13.6	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	2	2	312	0	278	2	1940	824	182	2341	995
V/C Ratio(X)	0.00	0.00	0.00	0.61	0.00	0.87	0.50	0.40	0.14	0.83	0.50	0.00
Avail Cap(c_a), veh/h	0	353	300	336	0	300	79	1940	824	198	2341	995
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)	0.00	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	0.0	0.0	0.0	29.9	0.0	31.6	39.9	10.4	8.8	34.7	6.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.8	0.0	21.9	126.9	0.6	0.3	23.7	0.8	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	0.0	0.0	0.0	4.1	0.0	6.9	0.1	5.0	1.3	4.5	6.8	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	32.7	0.0	53.6	166.9	11.0	9.1	58.4	7.6	0.0
LnGrp LOS				C		D	F	B	A	E	A	
Approach Vol, veh/h		0			432			885			1334	
Approach Delay, s/veh		0.0			44.4			10.9			13.4	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.2	48.0		0.0	4.1	57.1		18.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	22.0		16.0	4.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	9.5	12.1		0.0	2.1	15.6		14.5
Green Ext Time (p_c), s	0.0	7.7		0.0	0.0	9.3		0.3

Intersection Summary		
HCM 2010 Ctrl Delay		17.6
HCM 2010 LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	0	0	207	3	115	22	797	122	109	1138	8
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		50	260		0	70		200
Storage Lanes	0		1	0		1	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		589			331			2702			1062	
Travel Time (s)		13.4			7.5			36.8			14.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	11.0	33.0		19.0	41.0	41.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	13.8%	41.3%		23.8%	51.3%	51.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 8 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Cherry Av. & Randall Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	0	207	3	115	22	797	122	109	1138	8
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	1700	1765	1765	1700	1765	1765	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	1	0	0	213	3	119	23	822	126	112	1173	8
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	0	247	352	4	247	32	2683	408	140	3523	998
Arrive On Green	0.16	0.00	0.00	0.16	0.16	0.16	0.04	1.00	1.00	0.09	0.67	0.67
Sat Flow, veh/h	319	0	1500	1593	22	1500	1587	4490	684	1587	5294	1500
Grp Volume(v), veh/h	1	0	0	216	0	119	23	645	303	112	1173	8
Grp Sat Flow(s),veh/h/ln	319	0	1500	1616	0	1500	1587	1765	1644	1587	1765	1500
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	5.8	1.1	0.0	0.0	5.5	7.6	0.1
Cycle Q Clear(g_c), s	9.9	0.0	0.0	9.8	0.0	5.8	1.1	0.0	0.0	5.5	7.6	0.1
Prop In Lane	1.00		1.00	0.99		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	142	0	247	355	0	247	32	2109	982	140	3523	998
V/C Ratio(X)	0.01	0.00	0.00	0.61	0.00	0.48	0.72	0.31	0.31	0.80	0.33	0.01
Avail Cap(c_a), veh/h	314	0	450	547	0	450	139	2109	982	298	3523	998
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	0.88	0.88	0.88	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	0.0	0.0	32.0	0.0	30.3	38.2	0.0	0.0	35.8	5.8	4.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.7	0.0	1.5	23.7	0.3	0.7	10.2	0.3	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	0.0	0.0	0.0	4.7	0.0	2.5	0.7	0.1	0.2	2.8	3.8	0.1
LnGrp Delay(d),s/veh	36.8	0.0	0.0	33.7	0.0	31.8	61.9	0.3	0.7	46.0	6.0	4.5
LnGrp LOS	D			C		C	E	A	A	D	A	A
Approach Vol, veh/h		1			335			971			1293	
Approach Delay, s/veh		36.8			33.0			1.9			9.5	
Approach LOS		D			C			A			A	

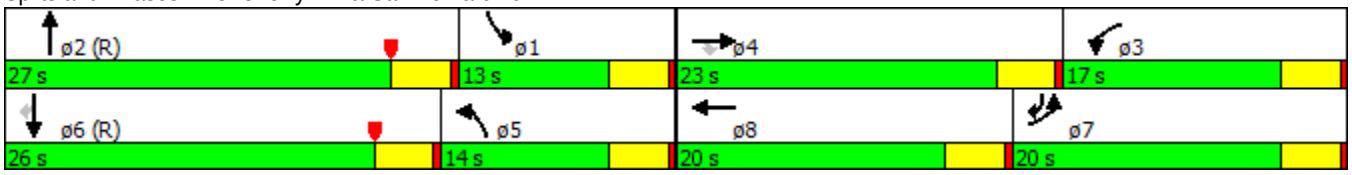
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	51.8		17.2	5.6	57.2		17.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	15.0	29.0		24.0	7.0	37.0		24.0
Max Q Clear Time (g_c+I1), s	7.5	2.0		11.9	3.1	9.6		11.8
Green Ext Time (p_c), s	0.1	15.9		1.3	0.0	16.1		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	70	95	146	344	90	85	775	89	75	851	379
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	300		285	50		0	220		0	210		300
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		555			705			459			2702	
Travel Time (s)		12.6			16.0			6.3			36.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Detector Phase	7	4	4	3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0		8.0	20.0		8.0	20.0	8.0
Total Split (s)	20.0	23.0	23.0	17.0	20.0		14.0	27.0		13.0	26.0	20.0
Total Split (%)	25.0%	28.8%	28.8%	21.3%	25.0%		17.5%	33.8%		16.3%	32.5%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lag	Lead		Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Cherry Av. & San Bernardino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	184	70	95	146	344	90	85	775	89	75	851	379
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	1667	1765	1765	1667	1765	1800	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	190	72	0	151	355	93	88	799	92	77	877	391
Adj No. of Lanes	1	2	1	1	2	0	1	3	0	1	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	226	176	75	409	446	115	345	1341	154	326	1456	626
Arrive On Green	0.14	0.05	0.00	0.26	0.16	0.16	0.22	0.29	0.29	0.07	0.09	0.09
Sat Flow, veh/h	1587	3529	1500	1587	2706	700	1587	4666	534	1587	5294	1500
Grp Volume(v), veh/h	190	72	0	151	230	218	88	603	288	77	877	391
Grp Sat Flow(s),veh/h/ln	1587	1765	1500	1587	1765	1641	1587	1765	1670	1587	1765	1500
Q Serve(g_s), s	9.3	1.6	0.0	6.2	10.0	10.2	3.7	11.7	11.9	3.7	12.7	8.3
Cycle Q Clear(g_c), s	9.3	1.6	0.0	6.2	10.0	10.2	3.7	11.7	11.9	3.7	12.7	8.3
Prop In Lane	1.00		1.00	1.00		0.43	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	226	176	75	409	291	270	345	1015	480	326	1456	626
V/C Ratio(X)	0.84	0.41	0.00	0.37	0.79	0.81	0.25	0.59	0.60	0.24	0.60	0.62
Avail Cap(c_a), veh/h	317	838	356	409	353	328	345	1015	480	326	1456	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	33.4	36.9	0.0	24.4	32.1	32.2	25.9	24.5	24.5	31.4	32.2	24.7
Incr Delay (d2), s/veh	13.0	1.5	0.0	0.6	9.6	11.6	0.4	2.6	5.4	0.4	1.8	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.8	0.0	2.8	5.6	5.5	1.7	6.1	6.2	1.7	6.5	4.2
LnGrp Delay(d),s/veh	46.4	38.4	0.0	24.9	41.7	43.8	26.3	27.1	30.0	31.7	33.9	29.2
LnGrp LOS	D	D		C	D	D	C	C	C	C	C	C
Approach Vol, veh/h		262			599			979			1345	
Approach Delay, s/veh		44.2			38.2			27.8			32.4	
Approach LOS		D			D			C			C	

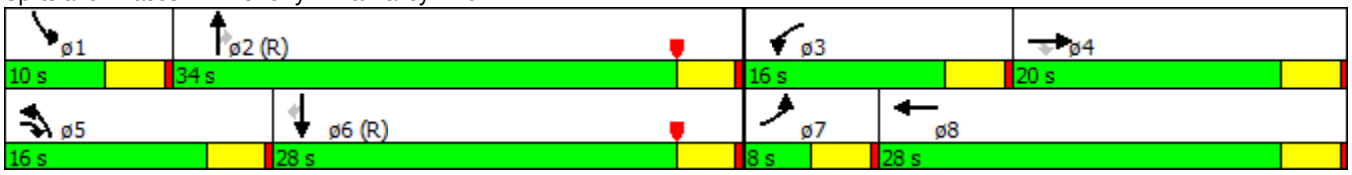
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	27.0	24.6	8.0	21.4	26.0	15.4	17.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	23.0	13.0	19.0	10.0	22.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	5.7	13.9	8.2	3.6	5.7	14.7	11.3	12.2
Green Ext Time (p_c), s	0.1	3.5	0.5	0.3	0.1	3.8	0.3	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	33.1
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	131	188	421	283	65	424	890	339	69	985	91
Ideal Flow (vphpl)	1600	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Storage Length (ft)	250		160	250		0	420		220	170		0
Storage Lanes	2		1	2		0	2		0	1		1
Taper Length (ft)	120			120			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		845			1019			968			718	
Travel Time (s)		19.2			23.2			13.2			9.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	5	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0		8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	8.0	20.0	16.0	16.0	28.0		16.0	34.0	34.0	10.0	28.0	28.0
Total Split (%)	10.0%	25.0%	20.0%	20.0%	35.0%		20.0%	42.5%	42.5%	12.5%	35.0%	35.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Cherry Av. & Valley Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	131	188	421	283	65	424	890	339	69	985	91
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	1569	1765	1765	1569	1765	1800	1569	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	67	136	196	439	295	68	442	927	353	72	1026	95
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	540	455	448	736	167	448	1557	662	89	1225	520
Arrive On Green	0.04	0.15	0.15	0.15	0.26	0.26	0.30	0.88	0.88	0.06	0.35	0.35
Sat Flow, veh/h	2988	3529	1500	2988	2786	632	2988	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	67	136	196	439	185	178	442	927	353	72	1026	95
Grp Sat Flow(s),veh/h/ln	1494	1765	1500	1494	1765	1653	1494	1765	1500	1587	1765	1500
Q Serve(g_s), s	1.8	2.7	8.4	11.7	6.9	7.1	11.8	5.2	4.2	3.6	21.4	3.5
Cycle Q Clear(g_c), s	1.8	2.7	8.4	11.7	6.9	7.1	11.8	5.2	4.2	3.6	21.4	3.5
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	540	455	448	466	437	448	1557	662	89	1225	520
V/C Ratio(X)	0.58	0.25	0.43	0.98	0.40	0.41	0.99	0.60	0.53	0.81	0.84	0.18
Avail Cap(c_a), veh/h	149	706	525	448	529	496	448	1557	662	119	1225	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	29.8	22.4	33.9	24.2	24.3	27.9	2.9	2.9	37.4	24.0	18.2
Incr Delay (d2), s/veh	4.5	0.2	0.6	37.0	0.5	0.6	34.2	1.3	2.4	25.7	6.9	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	0.8	1.3	3.6	7.1	3.4	3.3	6.9	2.3	2.0	2.2	11.6	1.6
LnGrp Delay(d),s/veh	42.3	30.1	23.0	70.9	24.7	24.9	62.1	4.3	5.3	63.1	31.0	19.0
LnGrp LOS	D	C	C	E	C	C	E	A	A	E	C	B
Approach Vol, veh/h		399			802			1722			1193	
Approach Delay, s/veh		28.7			50.0			19.3			32.0	
Approach LOS		C			D			B			C	

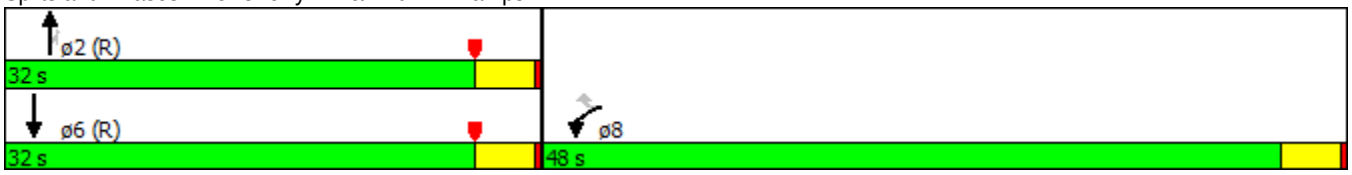
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	39.3	16.0	16.2	16.0	31.8	7.1	25.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	30.0	12.0	16.0	12.0	24.0	4.0	24.0
Max Q Clear Time (g_c+I1), s	5.6	7.2	13.7	10.4	13.8	23.4	3.8	9.1
Green Ext Time (p_c), s	0.0	15.3	0.0	1.9	0.0	0.5	0.0	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	29.9
HCM 2010 LOS	C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	536	591	1102	523	0	1601
Ideal Flow (vphpl)	1600	1800	1800	1800	1800	1800
Storage Length (ft)	0	0		200	0	
Storage Lanes	2	1		1	0	
Taper Length (ft)	60				60	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		45			45
Link Distance (ft)	252		337			968
Travel Time (s)	5.7		5.1			14.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	8		2			6
Permitted Phases		8		2		
Detector Phase	8	8	2	2		6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	20.0	20.0	20.0	20.0		20.0
Total Split (s)	48.0	48.0	32.0	32.0		32.0
Total Split (%)	60.0%	60.0%	40.0%	40.0%		40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max		C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Cherry Av. & I-10 WB Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	536	591	1102	523	0	1601
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1765	1765	1765	0	1765
Adj Flow Rate, veh/h	564	622	1160	0	0	1685
Adj No. of Lanes	2	1	3	1	0	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1367	686	2343	664	0	3124
Arrive On Green	0.46	0.46	0.89	0.00	0.00	0.89
Sat Flow, veh/h	2988	1500	5294	1500	0	7059
Grp Volume(v), veh/h	564	622	1160	0	0	1685
Grp Sat Flow(s),veh/h/ln	1494	1500	1765	1500	0	1765
Q Serve(g_s), s	10.1	30.8	3.6	0.0	0.0	4.2
Cycle Q Clear(g_c), s	10.1	30.8	3.6	0.0	0.0	4.2
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1367	686	2343	664	0	3124
V/C Ratio(X)	0.41	0.91	0.50	0.00	0.00	0.54
Avail Cap(c_a), veh/h	1643	825	2343	664	0	3124
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.51
Uniform Delay (d), s/veh	14.5	20.1	2.8	0.0	0.0	2.8
Incr Delay (d2), s/veh	0.2	12.1	0.8	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	14.9	1.7	0.0	0.0	1.7
LnGrp Delay(d),s/veh	14.7	32.2	3.5	0.0	0.0	3.1
LnGrp LOS	B	C	A			A
Approach Vol, veh/h	1186		1160			1685
Approach Delay, s/veh	23.9		3.5			3.1
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		39.4				39.4		40.6
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		28.0				28.0		44.0
Max Q Clear Time (g_c+I1), s		5.6				6.2		32.8
Green Ext Time (p_c), s		18.7				18.3		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	359	0	580	0	0	0	0	1267	423	394	1254	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Storage Length (ft)	0		350	0		0	0		0	300		0
Storage Lanes	1		1	0		0	0		1	2		0
Taper Length (ft)	120			60			60			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		722			861			873			429	
Travel Time (s)		16.4			19.6			13.2			6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	10%		47%									
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0					20.0	20.0	8.0	20.0	
Total Split (s)	30.0	30.0	30.0					30.0	30.0	20.0	50.0	
Total Split (%)	37.5%	37.5%	37.5%					37.5%	37.5%	25.0%	62.5%	
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5					0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 6: Cherry Av. & I-10 EB Ramps

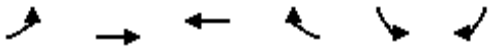
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	359	0	580	0	0	0	0	1267	423	394	1254	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1667	1765	1765				0	1765	1765	1569	1765	0
Adj Flow Rate, veh/h	252	0	746				0	1334	445	415	1320	0
Adj No. of Lanes	1	0	2				0	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	455	0	860				0	1721	488	713	3248	0
Arrive On Green	0.29	0.00	0.29				0.00	0.32	0.32	0.48	1.00	0.00
Sat Flow, veh/h	1587	0	3000				0	5294	1500	2988	5294	0
Grp Volume(v), veh/h	252	0	746				0	1334	445	415	1320	0
Grp Sat Flow(s),veh/h/ln	1587	0	1500				0	1765	1500	1494	1765	0
Q Serve(g_s), s	10.8	0.0	18.9				0.0	18.2	22.8	8.0	0.0	0.0
Cycle Q Clear(g_c), s	10.8	0.0	18.9				0.0	18.2	22.8	8.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	455	0	860				0	1721	488	713	3248	0
V/C Ratio(X)	0.55	0.00	0.87				0.00	0.78	0.91	0.58	0.41	0.00
Avail Cap(c_a), veh/h	516	0	975				0	1721	488	713	3248	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.2	0.0	27.1				0.0	24.4	25.9	18.0	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	7.7				0.0	3.5	24.0	1.2	0.4	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
%ile BackOfQ(50%),veh/ln	4.8	0.0	8.7				0.0	9.3	12.6	3.3	0.1	0.0
LnGrp Delay(d),s/veh	25.3	0.0	34.8				0.0	27.9	49.9	19.2	0.4	0.0
LnGrp LOS	C		C					C	D	B	A	
Approach Vol, veh/h		998						1779			1735	
Approach Delay, s/veh		32.4						33.4			4.9	
Approach LOS		C						C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	23.1	30.0		26.9		53.1		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	16.0	26.0		26.0		46.0		
Max Q Clear Time (g_c+I1), s	10.0	24.8		20.9		2.0		
Green Ext Time (p_c), s	4.3	1.0		2.0		14.5		

Intersection Summary	
HCM 2010 Ctrl Delay	22.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	32	199	321	0	0	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		30	
Link Distance (ft)		331	684		288	
Travel Time (s)		7.5	15.5		6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

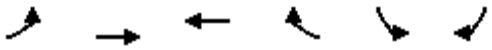
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	32	199	321	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	209	338	0	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	338	0	-	0	615	338
Stage 1	-	-	-	-	338	-
Stage 2	-	-	-	-	277	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1221	-	-	-	455	704
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	770	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1221	-	-	-	440	704
Mov Cap-2 Maneuver	-	-	-	-	440	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	745	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1221	-	-	-	704
HCM Lane V/C Ratio	0.028	-	-	-	0.006
HCM Control Delay (s)	8	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	188	320	2	0	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		30	
Link Distance (ft)		684	436		304	
Travel Time (s)		15.5	9.9		6.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	11	188	320	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	198	337	2	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	339	0	-	0	559	338
Stage 1	-	-	-	-	338	-
Stage 2	-	-	-	-	221	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1220	-	-	-	490	704
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	816	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1220	-	-	-	485	704
Mov Cap-2 Maneuver	-	-	-	-	485	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	807	-

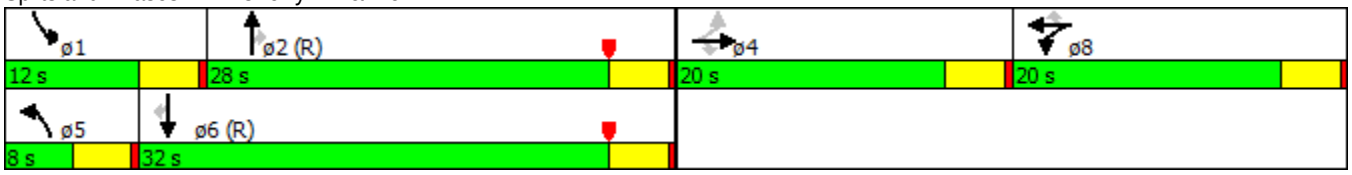
Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1220	-	-	-	704
HCM Lane V/C Ratio	0.009	-	-	-	0.001
HCM Control Delay (s)	8	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	101	0	176	0	1271	169	213	820	0
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		130	270		0	60		275
Storage Lanes	0		1	0		0	1		1	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			40			50			40	
Link Distance (ft)		506			600			1582			1080	
Travel Time (s)		13.8			10.2			21.6			18.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type			Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	28.0	28.0	12.0	32.0	32.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	10.0%	35.0%	35.0%	15.0%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Cherry Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	101	0	176	0	1271	169	213	820	0
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	1800	1765	1765	1700	1765	1765	1667	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	0	0	0	107	0	187	0	1352	180	227	872	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	2	2	254	0	227	2	2113	898	159	2642	1123
Arrive On Green	0.00	0.00	0.00	0.15	0.00	0.15	0.00	0.60	0.60	0.10	0.75	0.00
Sat Flow, veh/h	0	1765	1500	1681	0	1500	1587	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	0	0	0	107	0	187	0	1352	180	227	872	0
Grp Sat Flow(s),veh/h/ln	0	1765	1500	1681	0	1500	1587	1765	1500	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	0.0	4.6	0.0	9.7	0.0	19.9	4.4	8.0	6.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	4.6	0.0	9.7	0.0	19.9	4.4	8.0	6.6	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	2	2	254	0	227	2	2113	898	159	2642	1123
V/C Ratio(X)	0.00	0.00	0.00	0.42	0.00	0.82	0.00	0.64	0.20	1.43	0.33	0.00
Avail Cap(c_a), veh/h	0	353	300	336	0	300	79	2113	898	159	2642	1123
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)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	30.8	0.0	32.9	0.0	10.4	7.3	36.0	3.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.1	0.0	13.0	0.0	1.5	0.5	225.9	0.3	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	0.0	0.0	0.0	2.2	0.0	4.8	0.0	10.0	1.9	13.4	3.3	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	31.9	0.0	45.9	0.0	11.9	7.8	261.9	3.7	0.0
LnGrp LOS				C		D		B	A	F	A	
Approach Vol, veh/h		0			294			1532			1099	
Approach Delay, s/veh		0.0			40.8			11.5			57.0	
Approach LOS					D			B			E	

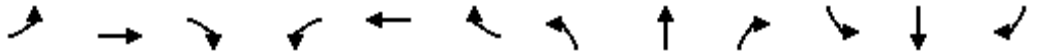
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	51.9		0.0	0.0	63.9		16.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	24.0		16.0	4.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	10.0	21.9		0.0	0.0	8.6		11.7
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	14.6		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	4	23	176	0	113	9	1354	159	113	848	4
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		50	260		0	70		200
Storage Lanes	0		1	0		1	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		589			331			2702			1062	
Travel Time (s)		13.4			7.5			36.8			14.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	8.0	41.0		17.0	50.0	50.0
Total Split (%)	27.5%	27.5%	27.5%	27.5%	27.5%	27.5%	10.0%	51.3%		21.3%	62.5%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 23 (29%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Cherry Av. & Randall Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	4	23	176	0	113	9	1354	159	113	848	4
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	1700	1765	1765	1800	1765	1765	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	12	4	25	193	0	124	10	1488	175	124	932	4
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	15	338	90	0	338	16	2459	289	153	3256	923
Arrive On Green	0.22	0.22	0.22	0.22	0.00	0.22	0.02	1.00	1.00	0.10	0.62	0.62
Sat Flow, veh/h	0	65	1500	0	0	1500	1587	4651	547	1587	5294	1500
Grp Volume(v), veh/h	16	0	25	193	0	124	10	1129	534	124	932	4
Grp Sat Flow(s),veh/h/ln	65	0	1500	0	0	1500	1587	1765	1668	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	1.1	0.0	0.0	5.6	0.5	0.0	0.0	6.1	6.6	0.1
Cycle Q Clear(g_c), s	18.0	0.0	1.1	18.0	0.0	5.6	0.5	0.0	0.0	6.1	6.6	0.1
Prop In Lane	0.75		1.00	1.00		1.00	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	93	0	338	90	0	338	16	1866	882	153	3256	923
V/C Ratio(X)	0.17	0.00	0.07	2.14	0.00	0.37	0.63	0.61	0.61	0.81	0.29	0.00
Avail Cap(c_a), veh/h	93	0	338	90	0	338	79	1866	882	258	3256	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.66	0.66	0.66	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	24.4	40.0	0.0	26.2	39.1	0.0	0.0	35.4	7.2	5.9
Incr Delay (d2), s/veh	0.9	0.0	0.1	550.1	0.0	0.7	24.5	1.0	2.1	9.8	0.2	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	0.3	0.0	0.4	15.7	0.0	2.4	0.3	0.3	0.5	3.1	3.3	0.0
LnGrp Delay(d),s/veh	27.0	0.0	24.5	590.1	0.0	26.9	63.5	1.0	2.1	45.2	7.4	6.0
LnGrp LOS	C		C	F		C	E	A	A	D	A	A
Approach Vol, veh/h		41			317			1673			1060	
Approach Delay, s/veh		25.5			369.8			1.7			11.8	
Approach LOS		C			F			A			B	

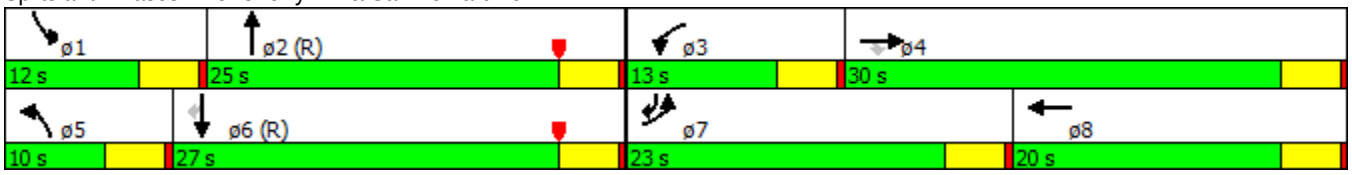
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	46.3		22.0	4.8	53.2		22.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	13.0	37.0		18.0	4.0	46.0		18.0
Max Q Clear Time (g_c+I1), s	8.1	2.0		20.0	2.5	8.6		20.0
Green Ext Time (p_c), s	0.1	23.5		0.0	0.0	24.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	43.2
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	297	613	155	73	150	85	59	984	128	101	864	269
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	300		285	50		0	220		0	210		300
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		555			705			459			2702	
Travel Time (s)		12.6			16.0			6.3			36.8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Detector Phase	7	4	4	3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0		8.0	20.0		8.0	20.0	8.0
Total Split (s)	23.0	30.0	30.0	13.0	20.0		10.0	25.0		12.0	27.0	23.0
Total Split (%)	28.8%	37.5%	37.5%	16.3%	25.0%		12.5%	31.3%		15.0%	33.8%	28.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 46 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Cherry Av. & San Bernardino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	297	613	155	73	150	85	59	984	128	101	864	269
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	1667	1765	1765	1667	1765	1800	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	326	674	0	80	165	93	65	1081	141	111	949	296
Adj No. of Lanes	1	2	1	1	2	0	1	3	0	1	3	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1094	465	99	317	169	80	1570	205	136	1998	906
Arrive On Green	0.23	0.31	0.00	0.06	0.15	0.15	0.05	0.34	0.34	0.11	0.50	0.50
Sat Flow, veh/h	1587	3529	1500	1587	2166	1159	1587	4591	598	1587	5294	1500
Grp Volume(v), veh/h	326	674	0	80	133	125	65	831	391	111	949	296
Grp Sat Flow(s),veh/h/ln	1587	1765	1500	1587	1765	1560	1587	1765	1659	1587	1765	1500
Q Serve(g_s), s	16.0	13.0	0.0	4.0	5.6	6.0	3.2	16.2	16.2	5.5	9.4	6.8
Cycle Q Clear(g_c), s	16.0	13.0	0.0	4.0	5.6	6.0	3.2	16.2	16.2	5.5	9.4	6.8
Prop In Lane	1.00		1.00	1.00		0.74	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	359	1094	465	99	258	228	80	1207	567	136	1998	906
V/C Ratio(X)	0.91	0.62	0.00	0.81	0.51	0.55	0.82	0.69	0.69	0.82	0.47	0.33
Avail Cap(c_a), veh/h	377	1147	488	179	353	312	119	1207	567	159	1998	906
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	30.1	23.5	0.0	37.0	31.5	31.7	37.6	22.6	22.7	34.8	14.7	6.1
Incr Delay (d2), s/veh	24.4	0.9	0.0	14.0	1.6	2.1	22.7	3.2	6.7	23.8	0.8	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	9.4	6.5	0.0	2.1	2.8	2.7	1.9	8.4	8.4	3.3	4.6	3.0
LnGrp Delay(d),s/veh	54.6	24.5	0.0	51.1	33.1	33.8	60.4	25.9	29.4	58.7	15.5	7.0
LnGrp LOS	D	C		D	C	C	E	C	C	E	B	A
Approach Vol, veh/h		1000			338			1287			1356	
Approach Delay, s/veh		34.3			37.6			28.7			17.2	
Approach LOS		C			D			C			B	

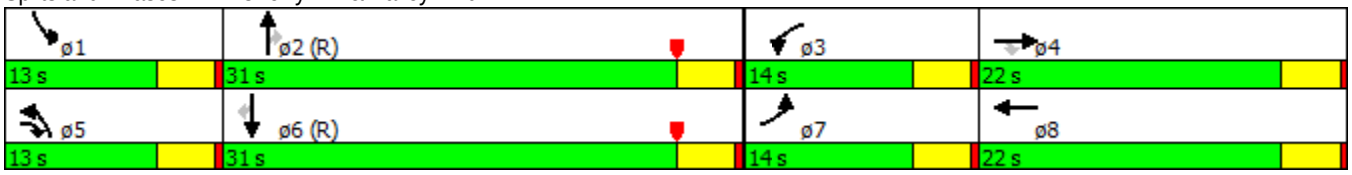
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	31.4	9.0	28.8	8.0	34.2	22.1	15.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	21.0	9.0	26.0	6.0	23.0	19.0	16.0
Max Q Clear Time (g_c+I1), s	7.5	18.2	6.0	15.0	5.2	11.4	18.0	8.0
Green Ext Time (p_c), s	0.0	2.5	0.0	4.6	0.0	9.3	0.1	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	204	724	330	351	268	99	307	939	494	144	1006	70
Ideal Flow (vphpl)	1600	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Storage Length (ft)	250		160	250		0	420		220	170		0
Storage Lanes	2		1	2		0	2		0	1		1
Taper Length (ft)	120			120			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		845			1019			968			718	
Travel Time (s)		19.2			23.2			13.2			9.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	5	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0		8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	14.0	22.0	13.0	14.0	22.0		13.0	31.0	31.0	13.0	31.0	31.0
Total Split (%)	17.5%	27.5%	16.3%	17.5%	27.5%		16.3%	38.8%	38.8%	16.3%	38.8%	38.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Cherry Av. & Valley Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	204	724	330	351	268	99	307	939	494	144	1006	70
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	1569	1765	1765	1569	1765	1800	1569	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	212	754	344	366	279	103	320	978	515	150	1048	73
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	794	506	373	631	228	336	1191	506	179	1191	506
Arrive On Green	0.10	0.22	0.22	0.13	0.25	0.25	0.04	0.11	0.11	0.11	0.34	0.34
Sat Flow, veh/h	2988	3529	1500	2988	2478	893	2988	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	212	754	344	366	197	185	320	978	515	150	1048	73
Grp Sat Flow(s),veh/h/ln	1494	1765	1500	1494	1765	1607	1494	1765	1500	1587	1765	1500
Q Serve(g_s), s	5.5	16.8	15.8	9.8	7.5	7.8	8.6	21.7	27.0	7.4	22.4	2.7
Cycle Q Clear(g_c), s	5.5	16.8	15.8	9.8	7.5	7.8	8.6	21.7	27.0	7.4	22.4	2.7
Prop In Lane	1.00		1.00	1.00		0.56	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	794	506	373	449	409	336	1191	506	179	1191	506
V/C Ratio(X)	0.74	0.95	0.68	0.98	0.44	0.45	0.95	0.82	1.02	0.84	0.88	0.14
Avail Cap(c_a), veh/h	373	794	506	373	449	409	336	1191	506	179	1191	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	30.6	22.8	34.9	25.0	25.1	38.3	33.2	35.5	34.8	25.0	18.5
Incr Delay (d2), s/veh	5.7	20.6	3.7	41.1	0.7	0.8	32.0	5.3	40.4	28.4	9.4	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	2.5	10.4	7.0	6.1	3.7	3.5	5.0	11.5	16.9	4.7	12.3	1.2
LnGrp Delay(d),s/veh	40.9	51.1	26.4	76.0	25.7	25.9	70.3	38.4	75.9	63.2	34.4	19.1
LnGrp LOS	D	D	C	E	C	C	E	D	F	E	C	B
Approach Vol, veh/h		1310			748			1813			1271	
Approach Delay, s/veh		43.0			50.3			54.7			36.9	
Approach LOS		D			D			D			D	

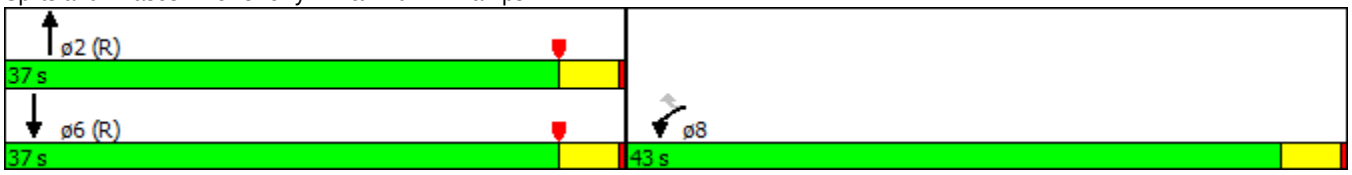
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	31.0	14.0	22.0	13.0	31.0	11.6	24.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	27.0	10.0	18.0	9.0	27.0	10.0	18.0
Max Q Clear Time (g_c+I1), s	9.4	29.0	11.8	18.8	10.6	24.4	7.5	9.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.4	0.2	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	46.7
HCM 2010 LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	401	490	1309	407	0	1701
Ideal Flow (vphpl)	1600	1800	1800	1800	1800	1800
Storage Length (ft)	0	0		200	0	
Storage Lanes	2	1		1	0	
Taper Length (ft)	60				60	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		45			45
Link Distance (ft)	252		337			968
Travel Time (s)	5.7		5.1			14.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	NA	Free		NA
Protected Phases	8		2			6
Permitted Phases		8		Free		
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0			4.0
Minimum Split (s)	20.0	20.0	20.0			20.0
Total Split (s)	43.0	43.0	37.0			37.0
Total Split (%)	53.8%	53.8%	46.3%			46.3%
Yellow Time (s)	3.5	3.5	3.5			3.5
All-Red Time (s)	0.5	0.5	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.0	4.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max			C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 39 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Cherry Av. & I-10 WB Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	401	490	1309	407	0	1701
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1765	1765	1765	0	1765
Adj Flow Rate, veh/h	422	516	1378	0	0	1791
Adj No. of Lanes	2	1	3	1	0	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1149	577	2729	773	0	3639
Arrive On Green	0.38	0.38	1.00	0.00	0.00	0.17
Sat Flow, veh/h	2988	1500	5294	1500	0	7059
Grp Volume(v), veh/h	422	516	1378	0	0	1791
Grp Sat Flow(s),veh/h/ln	1494	1500	1765	1500	0	1765
Q Serve(g_s), s	8.1	25.8	0.0	0.0	0.0	18.4
Cycle Q Clear(g_c), s	8.1	25.8	0.0	0.0	0.0	18.4
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1149	577	2729	773	0	3639
V/C Ratio(X)	0.37	0.89	0.50	0.00	0.00	0.49
Avail Cap(c_a), veh/h	1457	731	2729	773	0	3639
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.51
Uniform Delay (d), s/veh	17.6	23.1	0.0	0.0	0.0	23.7
Incr Delay (d2), s/veh	0.2	11.5	0.7	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	12.4	0.2	0.0	0.0	9.1
LnGrp Delay(d),s/veh	17.8	34.6	0.7	0.0	0.0	24.0
LnGrp LOS	B	C	A			C
Approach Vol, veh/h	938		1378			1791
Approach Delay, s/veh	27.1		0.7			24.0
Approach LOS	C		A			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		45.2				45.2		34.8
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		33.0				33.0		39.0
Max Q Clear Time (g_c+I1), s		2.0				20.4		27.8
Green Ext Time (p_c), s		26.4				11.7		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	432	0	552	0	0	0	0	1282	508	537	1094	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Storage Length (ft)	0		350	0		0	0		0	300		0
Storage Lanes	1		1	0		0	0		1	2		0
Taper Length (ft)	120			60			60			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		722			861			873			429	
Travel Time (s)		16.4			19.6			13.2			6.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)	21%		43%									
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0					20.0	20.0	8.0	20.0	
Total Split (s)	28.0	28.0	28.0					29.0	29.0	23.0	52.0	
Total Split (%)	35.0%	35.0%	35.0%					36.3%	36.3%	28.8%	65.0%	
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5					0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 28 (35%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Cherry Av. & I-10 EB Ramps

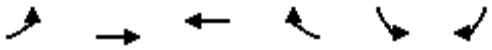
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	432	0	552	0	0	0	0	1282	508	537	1094	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1667	1765	1765				0	1765	1765	1569	1765	0
Adj Flow Rate, veh/h	648	0	362				0	1335	529	559	1140	0
Adj No. of Lanes	2	0	1				0	3	1	2	3	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	871	0	411				0	1654	469	786	3312	0
Arrive On Green	0.27	0.00	0.27				0.00	0.31	0.31	0.53	1.00	0.00
Sat Flow, veh/h	3175	0	1500				0	5294	1500	2988	5294	0
Grp Volume(v), veh/h	648	0	362				0	1335	529	559	1140	0
Grp Sat Flow(s),veh/h/ln	1587	0	1500				0	1765	1500	1494	1765	0
Q Serve(g_s), s	14.9	0.0	18.5				0.0	18.5	25.0	11.3	0.0	0.0
Cycle Q Clear(g_c), s	14.9	0.0	18.5				0.0	18.5	25.0	11.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	871	0	411				0	1654	469	786	3312	0
V/C Ratio(X)	0.74	0.00	0.88				0.00	0.81	1.13	0.71	0.34	0.00
Avail Cap(c_a), veh/h	952	0	450				0	1654	469	786	3312	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.5	0.0	27.8				0.0	25.3	27.5	16.6	0.0	0.0
Incr Delay (d2), s/veh	2.9	0.0	16.9				0.0	4.3	81.7	3.0	0.3	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
%ile BackOfQ(50%),veh/ln	6.8	0.0	9.6				0.0	9.7	20.9	4.8	0.1	0.0
LnGrp Delay(d),s/veh	29.4	0.0	44.7				0.0	29.6	109.2	19.7	0.3	0.0
LnGrp LOS	C		D					C	F	B	A	
Approach Vol, veh/h		1010						1864			1699	
Approach Delay, s/veh		34.9						52.2			6.7	
Approach LOS		C						D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	25.1	29.0		25.9		54.1		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	19.0	25.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	13.3	27.0		20.5		2.0		
Green Ext Time (p_c), s	4.0	0.0		1.5		13.2		

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	5	272	211	0	0	78
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		30	
Link Distance (ft)		331	684		288	
Travel Time (s)		7.5	15.5		6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

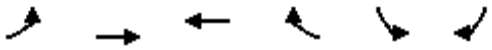
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	272	211	0	0	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	286	222	0	0	82

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	222	0	-	0	519	222
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	297	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1347	-	-	-	517	818
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	754	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1347	-	-	-	515	818
Mov Cap-2 Maneuver	-	-	-	-	515	-
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	751	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1347	-	-	-	818
HCM Lane V/C Ratio	0.004	-	-	-	0.1
HCM Control Delay (s)	7.7	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	2	270	183	0	6	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		30	
Link Distance (ft)		684	436		304	
Travel Time (s)		15.5	9.9		6.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	2	270	183	0	6	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	284	193	0	6	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	193	0	-	0	481	193
Stage 1	-	-	-	-	193	-
Stage 2	-	-	-	-	288	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1380	-	-	-	544	849
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	761	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1380	-	-	-	543	849
Mov Cap-2 Maneuver	-	-	-	-	543	-
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	759	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1380	-	-	-	772
HCM Lane V/C Ratio	0.002	-	-	-	0.046
HCM Control Delay (s)	7.6	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

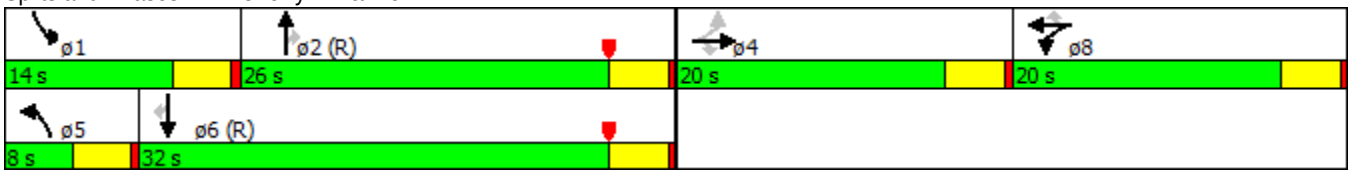
APPENDIX 5.4

EXISTING PLUS AMBIENT PLUS PROJECT PLUS CUMULATIVE
(EAPC 2017) CONDITIONS
INTERSECTION ANALYSIS CALCULATION WORKSHEETS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	184	0	235	1	749	109	147	1147	0
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		130	270		0	60		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			40			50			40	
Link Distance (ft)		506			600			1582			1080	
Travel Time (s)		13.8			10.2			21.6			18.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type			Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	26.0	26.0	14.0	32.0	32.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	10.0%	32.5%	32.5%	17.5%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Cherry Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	184	0	235	1	749	109	147	1147	0
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	1800	1765	1765	1700	1765	1765	1667	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	0	0	0	190	0	242	1	772	112	152	1182	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	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	2	2	312	0	278	2	1940	824	182	2341	995
Arrive On Green	0.00	0.00	0.00	0.19	0.00	0.19	0.00	0.55	0.55	0.11	0.66	0.00
Sat Flow, veh/h	0	1765	1500	1681	0	1500	1587	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	0	0	0	190	0	242	1	772	112	152	1182	0
Grp Sat Flow(s),veh/h/ln	0	1765	1500	1681	0	1500	1587	1765	1500	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	0.0	8.3	0.0	12.5	0.1	10.1	2.9	7.5	13.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	8.3	0.0	12.5	0.1	10.1	2.9	7.5	13.6	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	2	2	312	0	278	2	1940	824	182	2341	995
V/C Ratio(X)	0.00	0.00	0.00	0.61	0.00	0.87	0.50	0.40	0.14	0.83	0.50	0.00
Avail Cap(c_a), veh/h	0	353	300	336	0	300	79	1940	824	198	2341	995
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)	0.00	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	0.0	0.0	0.0	29.9	0.0	31.6	39.9	10.4	8.8	34.7	6.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.8	0.0	21.9	126.9	0.6	0.3	23.7	0.8	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	0.0	0.0	0.0	4.1	0.0	6.9	0.1	5.0	1.3	4.5	6.8	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	32.7	0.0	53.6	166.9	11.0	9.1	58.4	7.6	0.0
LnGrp LOS				C		D	F	B	A	E	A	
Approach Vol, veh/h		0			432			885			1334	
Approach Delay, s/veh		0.0			44.4			10.9			13.4	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.2	48.0		0.0	4.1	57.1		18.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	22.0		16.0	4.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	9.5	12.1		0.0	2.1	15.6		14.5
Green Ext Time (p_c), s	0.0	7.7		0.0	0.0	9.3		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	0	0	207	3	115	22	797	122	109	1138	8
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		50	260		0	70		200
Storage Lanes	0		1	0		1	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		589			331			2702			1062	
Travel Time (s)		13.4			7.5			36.8			14.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	11.0	33.0		19.0	41.0	41.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	13.8%	41.3%		23.8%	51.3%	51.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 8 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Cherry Av. & Randall Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	0	207	3	115	22	797	122	109	1138	8
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	1700	1765	1765	1700	1765	1765	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	1	0	0	213	3	119	23	822	126	112	1173	8
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	0	247	352	4	247	32	2683	408	140	3523	998
Arrive On Green	0.16	0.00	0.00	0.16	0.16	0.16	0.04	1.00	1.00	0.09	0.67	0.67
Sat Flow, veh/h	319	0	1500	1593	22	1500	1587	4490	684	1587	5294	1500
Grp Volume(v), veh/h	1	0	0	216	0	119	23	645	303	112	1173	8
Grp Sat Flow(s),veh/h/ln	319	0	1500	1616	0	1500	1587	1765	1644	1587	1765	1500
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	5.8	1.1	0.0	0.0	5.5	7.6	0.1
Cycle Q Clear(g_c), s	9.9	0.0	0.0	9.8	0.0	5.8	1.1	0.0	0.0	5.5	7.6	0.1
Prop In Lane	1.00		1.00	0.99		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	142	0	247	355	0	247	32	2109	982	140	3523	998
V/C Ratio(X)	0.01	0.00	0.00	0.61	0.00	0.48	0.72	0.31	0.31	0.80	0.33	0.01
Avail Cap(c_a), veh/h	314	0	450	547	0	450	139	2109	982	298	3523	998
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	0.88	0.88	0.88	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	0.0	0.0	32.0	0.0	30.3	38.2	0.0	0.0	35.8	5.8	4.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.7	0.0	1.5	23.7	0.3	0.7	10.2	0.3	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	0.0	0.0	0.0	4.7	0.0	2.5	0.7	0.1	0.2	2.8	3.8	0.1
LnGrp Delay(d),s/veh	36.8	0.0	0.0	33.7	0.0	31.8	61.9	0.3	0.7	46.0	6.0	4.5
LnGrp LOS	D			C		C	E	A	A	D	A	A
Approach Vol, veh/h		1			335			971			1293	
Approach Delay, s/veh		36.8			33.0			1.9			9.5	
Approach LOS		D			C			A			A	

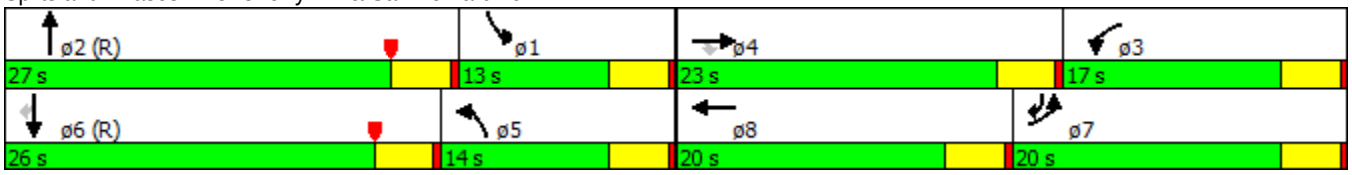
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	51.8		17.2	5.6	57.2		17.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	15.0	29.0		24.0	7.0	37.0		24.0
Max Q Clear Time (g_c+I1), s	7.5	2.0		11.9	3.1	9.6		11.8
Green Ext Time (p_c), s	0.1	15.9		1.3	0.0	16.1		1.3

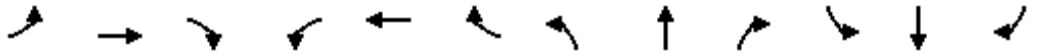
Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	70	95	146	344	90	85	775	89	75	851	379
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	300		285	50		0	220		0	210		300
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		555			705			459			2702	
Travel Time (s)		12.6			16.0			6.3			36.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Detector Phase	7	4	4	3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0		8.0	20.0		8.0	20.0	8.0
Total Split (s)	20.0	23.0	23.0	17.0	20.0		14.0	27.0		13.0	26.0	20.0
Total Split (%)	25.0%	28.8%	28.8%	21.3%	25.0%		17.5%	33.8%		16.3%	32.5%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lag	Lead		Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Cherry Av. & San Bernardino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	184	70	95	146	344	90	85	775	89	75	851	379
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	1667	1765	1765	1667	1765	1800	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	190	72	0	151	355	93	88	799	92	77	877	391
Adj No. of Lanes	1	2	1	1	2	0	1	3	0	1	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	226	176	75	409	446	115	345	1341	154	326	1456	626
Arrive On Green	0.14	0.05	0.00	0.26	0.16	0.16	0.22	0.29	0.29	0.07	0.09	0.09
Sat Flow, veh/h	1587	3529	1500	1587	2706	700	1587	4666	534	1587	5294	1500
Grp Volume(v), veh/h	190	72	0	151	230	218	88	603	288	77	877	391
Grp Sat Flow(s),veh/h/ln	1587	1765	1500	1587	1765	1641	1587	1765	1670	1587	1765	1500
Q Serve(g_s), s	9.3	1.6	0.0	6.2	10.0	10.2	3.7	11.7	11.9	3.7	12.7	8.3
Cycle Q Clear(g_c), s	9.3	1.6	0.0	6.2	10.0	10.2	3.7	11.7	11.9	3.7	12.7	8.3
Prop In Lane	1.00		1.00	1.00		0.43	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	226	176	75	409	291	270	345	1015	480	326	1456	626
V/C Ratio(X)	0.84	0.41	0.00	0.37	0.79	0.81	0.25	0.59	0.60	0.24	0.60	0.62
Avail Cap(c_a), veh/h	317	838	356	409	353	328	345	1015	480	326	1456	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	33.4	36.9	0.0	24.4	32.1	32.2	25.9	24.5	24.5	31.4	32.2	24.7
Incr Delay (d2), s/veh	13.0	1.5	0.0	0.6	9.6	11.6	0.4	2.6	5.4	0.4	1.8	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.8	0.0	2.8	5.6	5.5	1.7	6.1	6.2	1.7	6.5	4.2
LnGrp Delay(d),s/veh	46.4	38.4	0.0	24.9	41.7	43.8	26.3	27.1	30.0	31.7	33.9	29.2
LnGrp LOS	D	D		C	D	D	C	C	C	C	C	C
Approach Vol, veh/h		262			599			979			1345	
Approach Delay, s/veh		44.2			38.2			27.8			32.4	
Approach LOS		D			D			C			C	

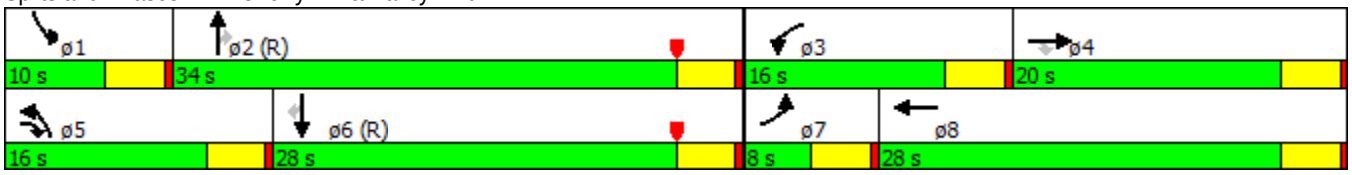
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	27.0	24.6	8.0	21.4	26.0	15.4	17.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	23.0	13.0	19.0	10.0	22.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	5.7	13.9	8.2	3.6	5.7	14.7	11.3	12.2
Green Ext Time (p_c), s	0.1	3.5	0.5	0.3	0.1	3.8	0.3	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	33.1
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	133	188	424	284	65	424	890	350	69	985	91
Ideal Flow (vphpl)	1600	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Storage Length (ft)	250		160	250		0	420		220	170		0
Storage Lanes	2		1	2		0	2		0	1		1
Taper Length (ft)	120			120			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		845			1019			968			718	
Travel Time (s)		19.2			23.2			13.2			9.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	5	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0		8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	8.0	20.0	16.0	16.0	28.0		16.0	34.0	34.0	10.0	28.0	28.0
Total Split (%)	10.0%	25.0%	20.0%	20.0%	35.0%		20.0%	42.5%	42.5%	12.5%	35.0%	35.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Cherry Av. & Valley Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	133	188	424	284	65	424	890	350	69	985	91
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	1569	1765	1765	1569	1765	1800	1569	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	67	139	196	442	296	68	442	927	365	72	1026	95
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	541	455	448	737	167	448	1557	662	89	1224	520
Arrive On Green	0.04	0.15	0.15	0.15	0.26	0.26	0.30	0.88	0.88	0.06	0.35	0.35
Sat Flow, veh/h	2988	3529	1500	2988	2788	630	2988	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	67	139	196	442	186	178	442	927	365	72	1026	95
Grp Sat Flow(s),veh/h/ln	1494	1765	1500	1494	1765	1653	1494	1765	1500	1587	1765	1500
Q Serve(g_s), s	1.8	2.8	8.4	11.8	6.9	7.1	11.8	5.2	4.5	3.6	21.4	3.5
Cycle Q Clear(g_c), s	1.8	2.8	8.4	11.8	6.9	7.1	11.8	5.2	4.5	3.6	21.4	3.5
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	541	455	448	467	437	448	1557	662	89	1224	520
V/C Ratio(X)	0.58	0.26	0.43	0.99	0.40	0.41	0.99	0.60	0.55	0.81	0.84	0.18
Avail Cap(c_a), veh/h	149	706	525	448	529	496	448	1557	662	119	1224	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	29.9	22.3	33.9	24.2	24.3	27.9	2.9	2.9	37.4	24.1	18.2
Incr Delay (d2), s/veh	4.5	0.2	0.6	38.8	0.5	0.6	34.1	1.3	2.6	25.7	7.0	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	0.8	1.4	3.6	7.3	3.4	3.3	6.9	2.3	2.0	2.2	11.6	1.6
LnGrp Delay(d),s/veh	42.3	30.1	23.0	72.7	24.7	24.9	62.0	4.3	5.5	63.1	31.0	19.0
LnGrp LOS	D	C	C	E	C	C	E	A	A	E	C	B
Approach Vol, veh/h		402			806			1734			1193	
Approach Delay, s/veh		28.7			51.1			19.3			32.0	
Approach LOS		C			D			B			C	

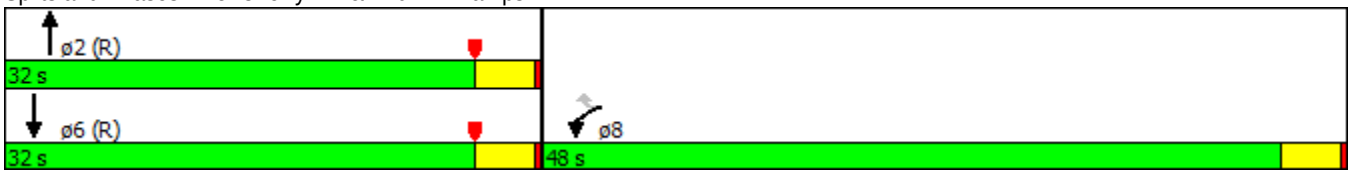
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	39.3	16.0	16.3	16.0	31.7	7.1	25.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	30.0	12.0	16.0	12.0	24.0	4.0	24.0
Max Q Clear Time (g_c+I1), s	5.6	7.2	13.8	10.4	13.8	23.4	3.8	9.1
Green Ext Time (p_c), s	0.0	15.3	0.0	1.9	0.0	0.5	0.0	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	536	596	1108	523	0	1604
Ideal Flow (vphpl)	1600	1800	1800	1800	1800	1800
Storage Length (ft)	0	0		200	0	
Storage Lanes	2	1		1	0	
Taper Length (ft)	60				60	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		45			45
Link Distance (ft)	252		337			968
Travel Time (s)	5.7		5.1			14.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	NA	Free		NA
Protected Phases	8		2			6
Permitted Phases		8		Free		
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0			4.0
Minimum Split (s)	20.0	20.0	20.0			20.0
Total Split (s)	48.0	48.0	32.0			32.0
Total Split (%)	60.0%	60.0%	40.0%			40.0%
Yellow Time (s)	3.5	3.5	3.5			3.5
All-Red Time (s)	0.5	0.5	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.0	4.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max			C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Cherry Av. & I-10 WB Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	536	596	1108	523	0	1604
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1765	1765	1765	0	1765
Adj Flow Rate, veh/h	564	627	1166	0	0	1688
Adj No. of Lanes	2	1	3	1	0	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1375	691	2328	659	0	3104
Arrive On Green	0.46	0.46	0.88	0.00	0.00	0.88
Sat Flow, veh/h	2988	1500	5294	1500	0	7059
Grp Volume(v), veh/h	564	627	1166	0	0	1688
Grp Sat Flow(s),veh/h/ln	1494	1500	1765	1500	0	1765
Q Serve(g_s), s	10.0	31.0	3.8	0.0	0.0	4.4
Cycle Q Clear(g_c), s	10.0	31.0	3.8	0.0	0.0	4.4
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1375	691	2328	659	0	3104
V/C Ratio(X)	0.41	0.91	0.50	0.00	0.00	0.54
Avail Cap(c_a), veh/h	1643	825	2328	659	0	3104
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.50
Uniform Delay (d), s/veh	14.4	20.0	2.9	0.0	0.0	3.0
Incr Delay (d2), s/veh	0.2	12.4	0.8	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	15.1	1.7	0.0	0.0	1.9
LnGrp Delay(d),s/veh	14.6	32.4	3.7	0.0	0.0	3.3
LnGrp LOS	B	C	A			A
Approach Vol, veh/h	1191		1166			1688
Approach Delay, s/veh	23.9		3.7			3.3
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		39.2				39.2		40.8
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		28.0				28.0		44.0
Max Q Clear Time (g_c+I1), s		5.8				6.4		33.0
Green Ext Time (p_c), s		18.6				18.1		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	363	0	580	0	0	0	0	1269	423	396	1255	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Storage Length (ft)	0		350	0		0	0		0	300		0
Storage Lanes	1		1	0		0	0		1	2		0
Taper Length (ft)	120			60			60			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		722			861			873			429	
Travel Time (s)		16.4			19.6			13.2			6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	10%		47%									
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0					20.0	20.0	8.0	20.0	
Total Split (s)	30.0	30.0	30.0					30.0	30.0	20.0	50.0	
Total Split (%)	37.5%	37.5%	37.5%					37.5%	37.5%	25.0%	62.5%	
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5					0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 6: Cherry Av. & I-10 EB Ramps

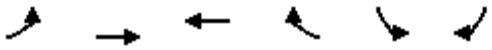
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	363	0	580	0	0	0	0	1269	423	396	1255	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1667	1765	1765				0	1765	1765	1569	1765	0
Adj Flow Rate, veh/h	255	0	747				0	1336	445	417	1321	0
Adj No. of Lanes	1	0	2				0	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	455	0	860				0	1721	488	712	3246	0
Arrive On Green	0.29	0.00	0.29				0.00	0.32	0.32	0.48	1.00	0.00
Sat Flow, veh/h	1587	0	3000				0	5294	1500	2988	5294	0
Grp Volume(v), veh/h	255	0	747				0	1336	445	417	1321	0
Grp Sat Flow(s),veh/h/ln	1587	0	1500				0	1765	1500	1494	1765	0
Q Serve(g_s), s	10.9	0.0	18.9				0.0	18.2	22.8	8.1	0.0	0.0
Cycle Q Clear(g_c), s	10.9	0.0	18.9				0.0	18.2	22.8	8.1	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	455	0	860				0	1721	488	712	3246	0
V/C Ratio(X)	0.56	0.00	0.87				0.00	0.78	0.91	0.59	0.41	0.00
Avail Cap(c_a), veh/h	516	0	975				0	1721	488	712	3246	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.2	0.0	27.1				0.0	24.4	25.9	18.1	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	7.7				0.0	3.5	24.0	1.2	0.4	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
%ile BackOfQ(50%),veh/ln	4.9	0.0	8.7				0.0	9.3	12.6	3.4	0.1	0.0
LnGrp Delay(d),s/veh	25.3	0.0	34.8				0.0	27.9	49.9	19.3	0.4	0.0
LnGrp LOS	C		C					C	D	B	A	
Approach Vol, veh/h		1002						1781			1738	
Approach Delay, s/veh		32.4						33.4			4.9	
Approach LOS		C						C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	23.1	30.0		26.9		53.1		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	16.0	26.0		26.0		46.0		
Max Q Clear Time (g_c+I1), s	10.1	24.8		20.9		2.0		
Green Ext Time (p_c), s	4.3	1.0		2.0		14.5		

Intersection Summary	
HCM 2010 Ctrl Delay	22.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	32	199	321	0	0	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		30	
Link Distance (ft)		331	684		288	
Travel Time (s)		7.5	15.5		6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

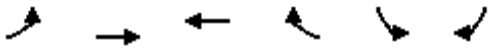
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	32	199	321	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	209	338	0	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	338	0	-	0	615	338
Stage 1	-	-	-	-	338	-
Stage 2	-	-	-	-	277	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1221	-	-	-	455	704
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	770	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1221	-	-	-	440	704
Mov Cap-2 Maneuver	-	-	-	-	440	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	745	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1221	-	-	-	704
HCM Lane V/C Ratio	0.028	-	-	-	0.006
HCM Control Delay (s)	8	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	188	320	2	0	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		30	
Link Distance (ft)		684	436		304	
Travel Time (s)		15.5	9.9		6.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	11	188	320	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	198	337	2	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	339	0	-	0	559	338
Stage 1	-	-	-	-	338	-
Stage 2	-	-	-	-	221	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1220	-	-	-	490	704
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	816	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1220	-	-	-	485	704
Mov Cap-2 Maneuver	-	-	-	-	485	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	807	-

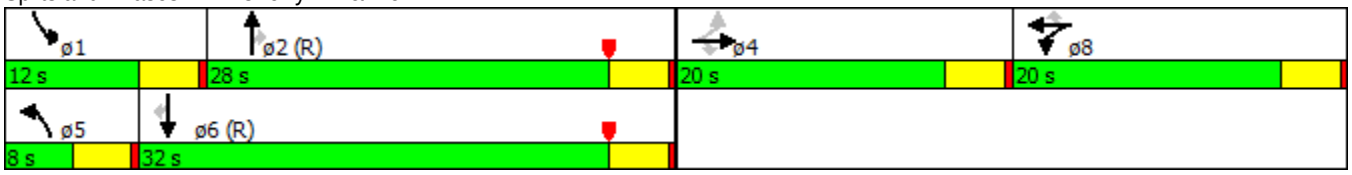
Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.1
HCM LOS			B

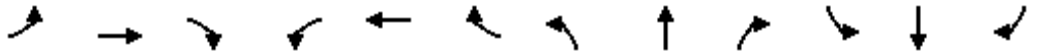
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1220	-	-	-	704
HCM Lane V/C Ratio	0.009	-	-	-	0.001
HCM Control Delay (s)	8	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	101	0	176	0	1271	169	213	820	0
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		130	270		0	60		275
Storage Lanes	0		1	0		0	1		1	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			40			50			40	
Link Distance (ft)		506			600			1582			1080	
Travel Time (s)		13.8			10.2			21.6			18.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type			Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	28.0	28.0	12.0	32.0	32.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	10.0%	35.0%	35.0%	15.0%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Cherry Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	101	0	176	0	1271	169	213	820	0
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	1800	1765	1765	1700	1765	1765	1667	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	0	0	0	107	0	187	0	1352	180	227	872	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	2	2	254	0	227	2	2113	898	159	2642	1123
Arrive On Green	0.00	0.00	0.00	0.15	0.00	0.15	0.00	0.60	0.60	0.10	0.75	0.00
Sat Flow, veh/h	0	1765	1500	1681	0	1500	1587	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	0	0	0	107	0	187	0	1352	180	227	872	0
Grp Sat Flow(s),veh/h/ln	0	1765	1500	1681	0	1500	1587	1765	1500	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	0.0	4.6	0.0	9.7	0.0	19.9	4.4	8.0	6.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	4.6	0.0	9.7	0.0	19.9	4.4	8.0	6.6	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	2	2	254	0	227	2	2113	898	159	2642	1123
V/C Ratio(X)	0.00	0.00	0.00	0.42	0.00	0.82	0.00	0.64	0.20	1.43	0.33	0.00
Avail Cap(c_a), veh/h	0	353	300	336	0	300	79	2113	898	159	2642	1123
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)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	30.8	0.0	32.9	0.0	10.4	7.3	36.0	3.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.1	0.0	13.0	0.0	1.5	0.5	225.9	0.3	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	0.0	0.0	0.0	2.2	0.0	4.8	0.0	10.0	1.9	13.4	3.3	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	31.9	0.0	45.9	0.0	11.9	7.8	261.9	3.7	0.0
LnGrp LOS				C		D		B	A	F	A	
Approach Vol, veh/h		0			294			1532			1099	
Approach Delay, s/veh		0.0			40.8			11.5			57.0	
Approach LOS					D			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	12.0	51.9		0.0	0.0	63.9		16.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	24.0		16.0	4.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	10.0	21.9		0.0	0.0	8.6		11.7
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	14.6		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	4	23	176	0	113	9	1354	159	113	848	4
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	0		0	0		50	260		0	70		200
Storage Lanes	0		1	0		1	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		589			331			2702			1062	
Travel Time (s)		13.4			7.5			36.8			14.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	8.0	41.0		17.0	50.0	50.0
Total Split (%)	27.5%	27.5%	27.5%	27.5%	27.5%	27.5%	10.0%	51.3%		21.3%	62.5%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 23 (29%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Cherry Av. & Randall Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	4	23	176	0	113	9	1354	159	113	848	4
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	1700	1765	1765	1800	1765	1765	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	12	4	25	193	0	124	10	1488	175	124	932	4
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	15	338	90	0	338	16	2459	289	153	3256	923
Arrive On Green	0.22	0.22	0.22	0.22	0.00	0.22	0.02	1.00	1.00	0.10	0.62	0.62
Sat Flow, veh/h	0	65	1500	0	0	1500	1587	4651	547	1587	5294	1500
Grp Volume(v), veh/h	16	0	25	193	0	124	10	1129	534	124	932	4
Grp Sat Flow(s),veh/h/ln	65	0	1500	0	0	1500	1587	1765	1668	1587	1765	1500
Q Serve(g_s), s	0.0	0.0	1.1	0.0	0.0	5.6	0.5	0.0	0.0	6.1	6.6	0.1
Cycle Q Clear(g_c), s	18.0	0.0	1.1	18.0	0.0	5.6	0.5	0.0	0.0	6.1	6.6	0.1
Prop In Lane	0.75		1.00	1.00		1.00	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	93	0	338	90	0	338	16	1866	882	153	3256	923
V/C Ratio(X)	0.17	0.00	0.07	2.14	0.00	0.37	0.63	0.61	0.61	0.81	0.29	0.00
Avail Cap(c_a), veh/h	93	0	338	90	0	338	79	1866	882	258	3256	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.66	0.66	0.66	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	24.4	40.0	0.0	26.2	39.1	0.0	0.0	35.4	7.2	5.9
Incr Delay (d2), s/veh	0.9	0.0	0.1	550.1	0.0	0.7	24.5	1.0	2.1	9.8	0.2	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	0.3	0.0	0.4	15.7	0.0	2.4	0.3	0.3	0.5	3.1	3.3	0.0
LnGrp Delay(d),s/veh	27.0	0.0	24.5	590.1	0.0	26.9	63.5	1.0	2.1	45.2	7.4	6.0
LnGrp LOS	C		C	F		C	E	A	A	D	A	A
Approach Vol, veh/h		41			317			1673			1060	
Approach Delay, s/veh		25.5			369.8			1.7			11.8	
Approach LOS		C			F			A			B	

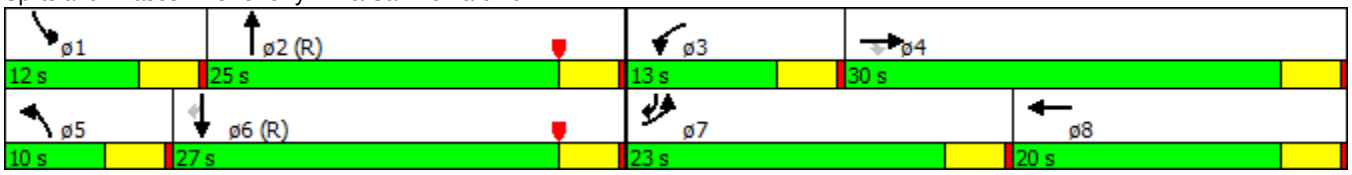
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	46.3		22.0	4.8	53.2		22.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	13.0	37.0		18.0	4.0	46.0		18.0
Max Q Clear Time (g_c+I1), s	8.1	2.0		20.0	2.5	8.6		20.0
Green Ext Time (p_c), s	0.1	23.5		0.0	0.0	24.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	43.2
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	297	613	155	73	150	85	59	984	128	101	864	269
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	300		285	50		0	220		0	210		300
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	60			60			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		555			705			459			2702	
Travel Time (s)		12.6			16.0			6.3			36.8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Detector Phase	7	4	4	3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0		8.0	20.0		8.0	20.0	8.0
Total Split (s)	23.0	30.0	30.0	13.0	20.0		10.0	25.0		12.0	27.0	23.0
Total Split (%)	28.8%	37.5%	37.5%	16.3%	25.0%		12.5%	31.3%		15.0%	33.8%	28.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 46 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Cherry Av. & San Bernardino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	297	613	155	73	150	85	59	984	128	101	864	269
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	1667	1765	1765	1667	1765	1800	1667	1765	1800	1667	1765	1765
Adj Flow Rate, veh/h	326	674	0	80	165	93	65	1081	141	111	949	296
Adj No. of Lanes	1	2	1	1	2	0	1	3	0	1	3	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1094	465	99	317	169	80	1570	205	136	1998	906
Arrive On Green	0.23	0.31	0.00	0.06	0.15	0.15	0.05	0.34	0.34	0.11	0.50	0.50
Sat Flow, veh/h	1587	3529	1500	1587	2166	1159	1587	4591	598	1587	5294	1500
Grp Volume(v), veh/h	326	674	0	80	133	125	65	831	391	111	949	296
Grp Sat Flow(s),veh/h/ln	1587	1765	1500	1587	1765	1560	1587	1765	1659	1587	1765	1500
Q Serve(g_s), s	16.0	13.0	0.0	4.0	5.6	6.0	3.2	16.2	16.2	5.5	9.4	6.8
Cycle Q Clear(g_c), s	16.0	13.0	0.0	4.0	5.6	6.0	3.2	16.2	16.2	5.5	9.4	6.8
Prop In Lane	1.00		1.00	1.00		0.74	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	359	1094	465	99	258	228	80	1207	567	136	1998	906
V/C Ratio(X)	0.91	0.62	0.00	0.81	0.51	0.55	0.82	0.69	0.69	0.82	0.47	0.33
Avail Cap(c_a), veh/h	377	1147	488	179	353	312	119	1207	567	159	1998	906
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	30.1	23.5	0.0	37.0	31.5	31.7	37.6	22.6	22.7	34.8	14.7	6.1
Incr Delay (d2), s/veh	24.4	0.9	0.0	14.0	1.6	2.1	22.7	3.2	6.7	23.8	0.8	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	9.4	6.5	0.0	2.1	2.8	2.7	1.9	8.4	8.4	3.3	4.6	3.0
LnGrp Delay(d),s/veh	54.6	24.5	0.0	51.1	33.1	33.8	60.4	25.9	29.4	58.7	15.5	7.0
LnGrp LOS	D	C		D	C	C	E	C	C	E	B	A
Approach Vol, veh/h		1000			338			1287			1356	
Approach Delay, s/veh		34.3			37.6			28.7			17.2	
Approach LOS		C			D			C			B	

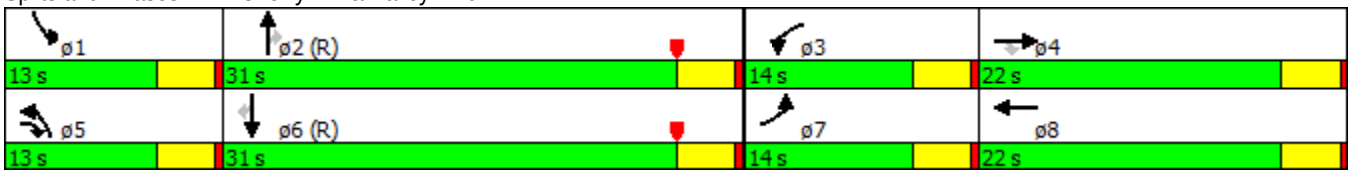
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	31.4	9.0	28.8	8.0	34.2	22.1	15.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	21.0	9.0	26.0	6.0	23.0	19.0	16.0
Max Q Clear Time (g_c+I1), s	7.5	18.2	6.0	15.0	5.2	11.4	18.0	8.0
Green Ext Time (p_c), s	0.0	2.5	0.0	4.6	0.0	9.3	0.1	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	204	725	330	362	270	99	307	939	498	144	1006	70
Ideal Flow (vphpl)	1600	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Storage Length (ft)	250		160	250		0	420		220	170		0
Storage Lanes	2		1	2		0	2		0	1		1
Taper Length (ft)	120			120			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		845			1019			968			718	
Travel Time (s)		19.2			23.2			13.2			9.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	5	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0		8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	14.0	22.0	13.0	14.0	22.0		13.0	31.0	31.0	13.0	31.0	31.0
Total Split (%)	17.5%	27.5%	16.3%	17.5%	27.5%		16.3%	38.8%	38.8%	16.3%	38.8%	38.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Cherry Av. & Valley Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	204	725	330	362	270	99	307	939	498	144	1006	70
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	1569	1765	1765	1569	1765	1800	1569	1765	1765	1667	1765	1765
Adj Flow Rate, veh/h	212	755	344	377	281	103	320	978	519	150	1048	73
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	794	506	373	633	226	336	1191	506	179	1191	506
Arrive On Green	0.10	0.22	0.22	0.13	0.25	0.25	0.04	0.11	0.11	0.11	0.34	0.34
Sat Flow, veh/h	2988	3529	1500	2988	2483	889	2988	3529	1500	1587	3529	1500
Grp Volume(v), veh/h	212	755	344	377	198	186	320	978	519	150	1048	73
Grp Sat Flow(s),veh/h/ln	1494	1765	1500	1494	1765	1608	1494	1765	1500	1587	1765	1500
Q Serve(g_s), s	5.5	16.9	15.8	10.0	7.5	7.8	8.6	21.7	27.0	7.4	22.4	2.7
Cycle Q Clear(g_c), s	5.5	16.9	15.8	10.0	7.5	7.8	8.6	21.7	27.0	7.4	22.4	2.7
Prop In Lane	1.00		1.00	1.00		0.55	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	794	506	373	449	410	336	1191	506	179	1191	506
V/C Ratio(X)	0.74	0.95	0.68	1.01	0.44	0.45	0.95	0.82	1.03	0.84	0.88	0.14
Avail Cap(c_a), veh/h	373	794	506	373	449	410	336	1191	506	179	1191	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	30.6	22.8	35.0	25.0	25.1	38.3	33.2	35.5	34.8	25.0	18.5
Incr Delay (d2), s/veh	5.7	20.8	3.7	49.0	0.7	0.8	32.0	5.3	42.5	28.4	9.4	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	2.5	10.5	7.0	6.6	3.8	3.6	5.0	11.5	17.2	4.7	12.3	1.2
LnGrp Delay(d),s/veh	40.9	51.4	26.4	84.0	25.7	25.9	70.3	38.4	78.0	63.2	34.4	19.1
LnGrp LOS	D	D	C	F	C	C	E	D	F	E	C	B
Approach Vol, veh/h		1311			761			1817			1271	
Approach Delay, s/veh		43.1			54.6			55.3			36.9	
Approach LOS		D			D			E			D	

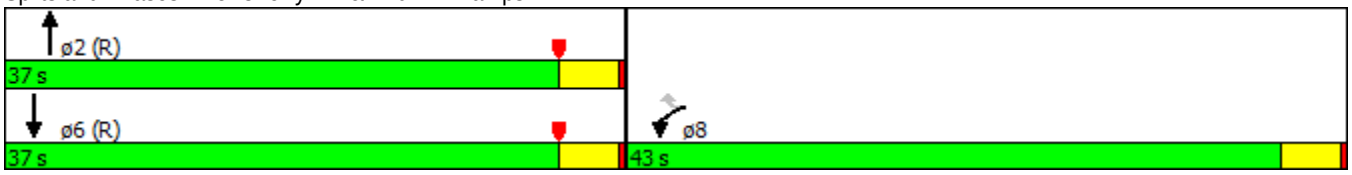
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	31.0	14.0	22.0	13.0	31.0	11.6	24.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	27.0	10.0	18.0	9.0	27.0	10.0	18.0
Max Q Clear Time (g_c+I1), s	9.4	29.0	12.0	18.9	10.6	24.4	7.5	9.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.4	0.2	5.1

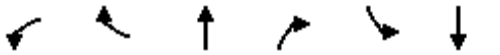
Intersection Summary	
HCM 2010 Ctrl Delay	47.6
HCM 2010 LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	401	492	1311	407	0	1712
Ideal Flow (vphpl)	1600	1800	1800	1800	1800	1800
Storage Length (ft)	0	0		200	0	
Storage Lanes	2	1		1	0	
Taper Length (ft)	60				60	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		45			45
Link Distance (ft)	252		337			968
Travel Time (s)	5.7		5.1			14.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	NA	Free		NA
Protected Phases	8		2			6
Permitted Phases		8		Free		
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0			4.0
Minimum Split (s)	20.0	20.0	20.0			20.0
Total Split (s)	43.0	43.0	37.0			37.0
Total Split (%)	53.8%	53.8%	46.3%			46.3%
Yellow Time (s)	3.5	3.5	3.5			3.5
All-Red Time (s)	0.5	0.5	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.0	4.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max			C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 39 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Cherry Av. & I-10 WB Ramps





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	401	492	1311	407	0	1712
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1765	1765	1765	0	1765
Adj Flow Rate, veh/h	422	518	1380	0	0	1802
Adj No. of Lanes	2	1	3	1	0	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1152	579	2723	771	0	3631
Arrive On Green	0.39	0.39	1.00	0.00	0.00	0.17
Sat Flow, veh/h	2988	1500	5294	1500	0	7059
Grp Volume(v), veh/h	422	518	1380	0	0	1802
Grp Sat Flow(s),veh/h/ln	1494	1500	1765	1500	0	1765
Q Serve(g_s), s	8.1	25.9	0.0	0.0	0.0	18.5
Cycle Q Clear(g_c), s	8.1	25.9	0.0	0.0	0.0	18.5
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1152	579	2723	771	0	3631
V/C Ratio(X)	0.37	0.90	0.51	0.00	0.00	0.50
Avail Cap(c_a), veh/h	1457	731	2723	771	0	3631
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.50
Uniform Delay (d), s/veh	17.6	23.1	0.0	0.0	0.0	23.8
Incr Delay (d2), s/veh	0.2	11.6	0.7	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	12.5	0.2	0.0	0.0	9.1
LnGrp Delay(d),s/veh	17.8	34.7	0.7	0.0	0.0	24.1
LnGrp LOS	B	C	A			C
Approach Vol, veh/h	940		1380			1802
Approach Delay, s/veh	27.1		0.7			24.1
Approach LOS	C		A			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		45.1				45.1		34.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		33.0				33.0		39.0
Max Q Clear Time (g_c+I1), s		2.0				20.5		27.9
Green Ext Time (p_c), s		26.5				11.6		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	433	0	552	0	0	0	0	1283	508	542	1096	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Storage Length (ft)	0		350	0		0	0		0	300		0
Storage Lanes	1		1	0		0	0		1	2		0
Taper Length (ft)	120			60			60			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		722			861			873			429	
Travel Time (s)		16.4			19.6			13.2			6.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)	21%		43%									
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0					20.0	20.0	8.0	20.0	
Total Split (s)	28.0	28.0	28.0					29.0	29.0	23.0	52.0	
Total Split (%)	35.0%	35.0%	35.0%					36.3%	36.3%	28.8%	65.0%	
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5					0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 28 (35%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Cherry Av. & I-10 EB Ramps

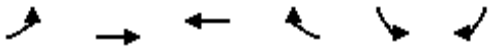
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	433	0	552	0	0	0	0	1283	508	542	1096	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1667	1765	1765				0	1765	1765	1569	1765	0
Adj Flow Rate, veh/h	649	0	363				0	1336	529	565	1142	0
Adj No. of Lanes	2	0	1				0	3	1	2	3	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	872	0	412				0	1654	469	785	3310	0
Arrive On Green	0.27	0.00	0.27				0.00	0.31	0.31	0.53	1.00	0.00
Sat Flow, veh/h	3175	0	1500				0	5294	1500	2988	5294	0
Grp Volume(v), veh/h	649	0	363				0	1336	529	565	1142	0
Grp Sat Flow(s),veh/h/ln	1587	0	1500				0	1765	1500	1494	1765	0
Q Serve(g_s), s	14.9	0.0	18.5				0.0	18.6	25.0	11.5	0.0	0.0
Cycle Q Clear(g_c), s	14.9	0.0	18.5				0.0	18.6	25.0	11.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	872	0	412				0	1654	469	785	3310	0
V/C Ratio(X)	0.74	0.00	0.88				0.00	0.81	1.13	0.72	0.35	0.00
Avail Cap(c_a), veh/h	952	0	450				0	1654	469	785	3310	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.4	0.0	27.8				0.0	25.3	27.5	16.7	0.0	0.0
Incr Delay (d2), s/veh	2.9	0.0	17.0				0.0	4.3	81.7	3.2	0.3	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
%ile BackOfQ(50%),veh/ln	6.8	0.0	9.6				0.0	9.7	20.9	4.9	0.1	0.0
LnGrp Delay(d),s/veh	29.4	0.0	44.8				0.0	29.6	109.2	20.0	0.3	0.0
LnGrp LOS	C		D					C	F	B	A	
Approach Vol, veh/h		1012						1865			1707	
Approach Delay, s/veh		34.9						52.2			6.8	
Approach LOS		C						D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	25.0	29.0		26.0		54.0		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	19.0	25.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	13.5	27.0		20.5		2.0		
Green Ext Time (p_c), s	3.9	0.0		1.5		13.2		

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	5	272	211	0	0	78
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		30	
Link Distance (ft)		331	684		288	
Travel Time (s)		7.5	15.5		6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

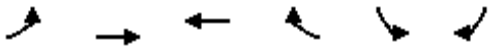
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	272	211	0	0	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	286	222	0	0	82

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	222	0	-	0	519	222
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	297	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1347	-	-	-	517	818
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	754	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1347	-	-	-	515	818
Mov Cap-2 Maneuver	-	-	-	-	515	-
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	751	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1347	-	-	-	818
HCM Lane V/C Ratio	0.004	-	-	-	0.1
HCM Control Delay (s)	7.7	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	2	270	183	0	6	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		30	
Link Distance (ft)		684	436		304	
Travel Time (s)		15.5	9.9		6.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	2	270	183	0	6	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	284	193	0	6	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	193	0	-	0	481	193
Stage 1	-	-	-	-	193	-
Stage 2	-	-	-	-	288	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1380	-	-	-	544	849
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	761	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1380	-	-	-	543	849
Mov Cap-2 Maneuver	-	-	-	-	543	-
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	759	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1380	-	-	-	772
HCM Lane V/C Ratio	0.002	-	-	-	0.046
HCM Control Delay (s)	7.6	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

APPENDIX 5.5

EXISTING PLUS AMBIENT PLUS PROJECT PLUS CUMULATIVE
(EAPC 2017) CONDITIONS
FREEWAY RAMP ANALYSIS WORKSHEETS

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst		Freeway/Dir of Travel	I-10 WB
Agency or Company	Trames Solutions, Inc.	Junction	Cherry Ave. Off-Ramp
Date Performed	2/3/16	Jurisdiction	Caltrans
Analysis Time Period	AM Peak Hour	Analysis Year	EAPC (2017)

Project Description TEC Traffic Impact Analysis

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	150
Freeway Volume, V_F	5307
Ramp Volume, V_R	1132
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 2500 ft
V_D = 523 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5307	0.92	Level	10	0	0.952	1.00	6057
Ramp	1132	0.92	Level	2	0	0.990	1.00	1243
UpStream								
DownStream	523	0.92	Level	2	0	0.990	1.00	574

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 13-6 or 13-7)
P_{FM} = using Equation (Exhibit 13-6)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$
D_R = (pc/mi/ln)
LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)
S_R= mph (Exhibit 13-11)
S_0= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 13-12 or 13-13)
P_{FD} = 0.260 using Equation (Exhibit 13-7)
V_{12} = 2495 pc/h
V_3 or V_{av34} 1781 pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6057	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4814	Exhibit 13-8	9400	No
V_R	1243	Exhibit 13-10	4000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2495	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$
D_R = 14.0 (pc/mi/ln)
LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.540 (Exhibit 13-12)
S_R= 52.6 mph (Exhibit 13-12)
S_0= 68.3 mph (Exhibit 13-12)
S = 60.8 mph (Exhibit 13-13)

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst		Freeway/Dir of Travel	I-10 WB
Agency or Company	Trames Solutions, Inc.	Junction	Cherry Ave. Loop On-Ramp
Date Performed	2/3/16	Jurisdiction	Caltrans
Analysis Time Period	AM Peak Hour	Analysis Year	EAPC (2017)

Project Description TEC Traffic Impact Analysis

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	4	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☑ Yes	☑ On
☑ No	☐ Off	Acceleration Lane Length, L_A	300	☐ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D		L_{down} =	2000 ft
V_u =	veh/h	Freeway Volume, V_F	4175	V_D =	491 veh/h
		Ramp Volume, V_R	523		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4175	0.92	Level	10	0	0.952	1.00	4765
Ramp	523	0.92	Level	2	0	0.990	1.00	574
UpStream								
DownStream	491	0.92	Level	2	0	0.990	1.00	539

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.146 using Equation (Exhibit 13-6)

V_{12} = 696 pc/h

V_3 or V_{av34} = 2034 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1906 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5339	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2480	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 22.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.347 (Exibit 13-11)

S_R = 57.0 mph (Exhibit 13-11)

S_0 = 61.7 mph (Exhibit 13-11)

S = 59.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} = pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R = mph (Exhibit 13-12)

S_0 = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

HCS2010™ Version 6.60 Generated: 2/7/2016 3:21 PM

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst		Freeway/Dir of Travel	I-10 WB
Agency or Company	Trames Solutions, Inc.	Junction	Cherry Ave. Slip On-Ramp
Date Performed	2/3/16	Jurisdiction	Caltrans
Analysis Time Period	AM Peak Hour	Analysis Year	EAPC (2017)

Project Description TEC Traffic Impact Analysis

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	4	Downstream Adj Ramp	
☑ Yes	☑ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☐ No	☐ Off	Acceleration Lane Length, L_A	1000	☑ No	☐ Off
L_{up} =	2000 ft	Deceleration Lane Length L_D		L_{down} =	ft
V_u =	523 veh/h	Freeway Volume, V_F	4698	V_D =	veh/h
		Ramp Volume, V_R	491		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4698	0.92	Level	10	0	0.952	1.00	5362
Ramp	491	0.92	Level	2	0	0.990	1.00	539
UpStream	523	0.92	Level	2	0	0.990	1.00	574
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.150 using Equation (Exhibit 13-6)

V_{12} = 807 pc/h

V_3 or V_{av34} = 2277 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2144 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5901	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2683	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 19.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.308 (Exibit 13-11)

S_R = 57.9 mph (Exhibit 13-11)

S_0 = 61.0 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} = pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R = mph (Exhibit 13-12)

S_0 = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst		Freeway/Dir of Travel	I-10 EB
Agency or Company	Trames Solutions, Inc.	Junction	Cherry Ave. Off-Ramp
Date Performed	2/3/16	Jurisdiction	Caltrans
Analysis Time Period	AM Peak Hour	Analysis Year	EAPC (2017)

Project Description TEC Traffic Impact Analysis

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	1000
Freeway Volume, V_F	5464
Ramp Volume, V_R	943
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 2600 ft
V_D = 819 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5464	0.92	Level	10	0	0.952	1.00	6236
Ramp	943	0.92	Level	2	0	0.990	1.00	1035
UpStream								
DownStream	819	0.92	Level	2	0	0.990	1.00	899

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)
P_{FM} = using Equation (Exhibit 13-6)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)
S_R= mph (Exhibit 13-11)
S_0= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)
P_{FD} = 0.260 using Equation (Exhibit 13-7)
V_{12} = 2387 pc/h
V_3 or V_{av34} 1924 pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2494 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6236	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5201	Exhibit 13-8	9400	No
V_R	1035	Exhibit 13-10	4000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2387	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = 5.9 (pc/mi/ln)
LOS = A (Exhibit 13-2)

Speed Determination

D_s = 0.521 (Exhibit 13-12)
S_R= 53.0 mph (Exhibit 13-12)
S_0= 67.9 mph (Exhibit 13-12)
S = 61.0 mph (Exhibit 13-13)

HCS2010™ Version 6.60 Generated: 2/7/2016 3:22 PM

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst		Freeway/Dir of Travel	I-10 NB
Agency or Company	Trames Solutions, Inc.	Junction	Cherry Ave. On-Ramp
Date Performed	2/3/16	Jurisdiction	Caltrans
Analysis Time Period	AM Peak Hour	Analysis Year	EAPC (2017)

Project Description TEC Traffic Impact Analysis

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	4	Downstream Adj Ramp	
☑ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☐ No	☑ Off	Acceleration Lane Length, L_A	600	☑ No	☐ Off
L_{up} =	2600 ft	Deceleration Lane Length L_D		L_{down} =	ft
V_u =	943 veh/h	Freeway Volume, V_F	4521	V_D =	veh/h
		Ramp Volume, V_R	819		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4521	0.92	Level	10	0	0.952	1.00	5160
Ramp	819	0.92	Level	2	0	0.990	1.00	899
UpStream	943	0.92	Level	2	0	0.990	1.00	1035
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.105 using Equation (Exhibit 13-6)

V_{12} = 544 pc/h

V_3 or V_{av34} 2308 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2064 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6059	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2963	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 24.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.354 (Exibit 13-11)

S_R= 56.8 mph (Exhibit 13-11)

S_0= 61.2 mph (Exhibit 13-11)

S = 59.0 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

HCS2010™ Version 6.60 Generated: 2/7/2016 3:22 PM

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst		Freeway/Dir of Travel	I-10 WB
Agency or Company	Trames Solutions, Inc.	Junction	Cherry Ave. Off-Ramp
Date Performed	2/3/16	Jurisdiction	Caltrans
Analysis Time Period	PM Peak Hour	Analysis Year	EAPC (2017)

Project Description TEC Traffic Impact Analysis

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☑ Yes ☑ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☐ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A:	L_{down} = 2500 ft
V_u = veh/h	Deceleration Lane Length L_D: 150	V_D = 407 veh/h
	Freeway Volume, V_F: 4343	
	Ramp Volume, V_R: 893	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4343	0.92	Level	10	0	0.952	1.00	4957
Ramp	893	0.92	Level	2	0	0.990	1.00	980
UpStream								
DownStream	407	0.92	Level	2	0	0.990	1.00	447

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation (Exhibit 13-7)

V_{12} = 2014 pc/h

V_3 or V_{av34} 1471 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4957	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3977	Exhibit 13-8	9400	No
V_R	980	Exhibit 13-10	4000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2014	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = 9.9 (pc/mi/ln)

LOS = A (Exhibit 13-2)

Speed Determination

D_s = 0.516 (Exhibit 13-12)

S_R= 53.1 mph (Exhibit 13-12)

S_0= 69.5 mph (Exhibit 13-12)

S = 61.8 mph (Exhibit 13-13)

HCS2010™ Version 6.60 Generated: 2/7/2016 3:22 PM

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst		Freeway/Dir of Travel	I-10 WB
Agency or Company	Trames Solutions, Inc.	Junction	Cherry Ave. Loop On-Ramp
Date Performed	2/3/16	Jurisdiction	Caltrans
Analysis Time Period	PM Peak Hour	Analysis Year	EAPC (2017)

Project Description TEC Traffic Impact Analysis

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	4	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☑ Yes	☑ On
☑ No	☐ Off	Acceleration Lane Length, L_A	300	☐ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D		L_{down} =	2000 ft
V_u =	veh/h	Freeway Volume, V_F	3450	V_D =	475 veh/h
		Ramp Volume, V_R	407		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3450	0.92	Level	10	0	0.952	1.00	3937
Ramp	407	0.92	Level	2	0	0.990	1.00	447
UpStream								
DownStream	475	0.92	Level	2	0	0.990	1.00	521

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.162 using Equation (Exhibit 13-6)

V_{12} = 637 pc/h

V_3 or V_{av34} 1650 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1574 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4384	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2021	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 19.2 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.329 (Exibit 13-11)

S_R= 57.4 mph (Exhibit 13-11)

S_0= 62.5 mph (Exhibit 13-11)

S = 60.1 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

HCS2010™ Version 6.60 Generated: 2/7/2016 3:22 PM

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst		Freeway/Dir of Travel	I-10 WB
Agency or Company	Trames Solutions, Inc.	Junction	Cherry Ave. Slip On-Ramp
Date Performed	2/3/16	Jurisdiction	Caltrans
Analysis Time Period	PM Peak Hour	Analysis Year	EAPC (2017)

Project Description TEC Traffic Impact Analysis

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☑ Yes ☑ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☐ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = 2000 ft	Acceleration Lane Length, L_A: 1000	L_{down} = ft
V_u = 893 veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3857	
	Ramp Volume, V_R: 475	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3857	0.92	Level	10	0	0.952	1.00	4402
Ramp	475	0.92	Level	2	0	0.990	1.00	521
UpStream	893	0.92	Level	2	0	0.990	1.00	980
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.153 using Equation (Exhibit 13-6)

V_{12} = 672 pc/h

V_3 or V_{av34} = 1865 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1760 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4923	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2281	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 16.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.289 (Exibit 13-11)

S_R = 58.3 mph (Exhibit 13-11)

S_0 = 62.0 mph (Exhibit 13-11)

S = 60.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} = pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R = mph (Exhibit 13-12)

S_0 = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst		Freeway/Dir of Travel	I-10 EB
Agency or Company	Trames Solutions, Inc.	Junction	Cherry Ave. Off-Ramp
Date Performed	2/3/16	Jurisdiction	Caltrans
Analysis Time Period	PM Peak Hour	Analysis Year	EAPC (2017)

Project Description TEC Traffic Impact Analysis

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☑ Yes ☑ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☐ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A:	L_{down} = 2600 ft
V_u = veh/h	Deceleration Lane Length L_D: 1000	V_D = 1050 veh/h
	Freeway Volume, V_F: 3685	
	Ramp Volume, V_R: 985	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3685	0.92	Level	10	0	0.952	1.00	4206
Ramp	985	0.92	Level	2	0	0.990	1.00	1081
UpStream								
DownStream	1050	0.92	Level	2	0	0.990	1.00	1153

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation (Exhibit 13-7)

V_{12} = 1893 pc/h

V_3 or V_{av34} 1156 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4206	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3125	Exhibit 13-8	9400	No
V_R	1081	Exhibit 13-10	4000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1893	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = 0.7 (pc/mi/ln)

LOS = A (Exhibit 13-2)

Speed Determination

D_s = 0.525 (Exhibit 13-12)

S_R= 52.9 mph (Exhibit 13-12)

S_0= 70.7 mph (Exhibit 13-12)

S = 61.4 mph (Exhibit 13-13)

HCS2010™ Version 6.60 Generated: 2/7/2016 3:23 PM

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst		Freeway/Dir of Travel	I-10 NB
Agency or Company	Trames Solutions, Inc.	Junction	Cherry Ave. On-Ramp
Date Performed	2/3/16	Jurisdiction	Caltrans
Analysis Time Period	PM Peak Hour	Analysis Year	EAPC (2017)

Project Description TEC Traffic Impact Analysis

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	4	Downstream Adj Ramp	
☑ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☐ No	☑ Off	Acceleration Lane Length, L_A	600	☑ No	☐ Off
L_{up} =	2600 ft	Deceleration Lane Length L_D		L_{down} =	ft
V_u =	985 veh/h	Freeway Volume, V_F	2700	V_D =	veh/h
		Ramp Volume, V_R	1050		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2700	0.92	Level	10	0	0.952	1.00	3082
Ramp	1050	0.92	Level	2	0	0.990	1.00	1153
UpStream	985	0.92	Level	2	0	0.990	1.00	1081
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.074 using Equation (Exhibit 13-6)

V_{12} = 227 pc/h

V_3 or V_{av34} = 1427 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1232 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4235	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2385	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 19.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.321 (Exibit 13-11)

S_R = 57.6 mph (Exhibit 13-11)

S_0 = 63.5 mph (Exhibit 13-11)

S = 60.0 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} = pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R = mph (Exhibit 13-12)

S_0 = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

HCS2010™ Version 6.60 Generated: 2/7/2016 3:23 PM