APPENDIX I

Traffic Study

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TRAFFIC IMPACT STUDY

KAISER PERMANENTE IRWINDALE

MEDICAL OFFICE BUILDING PROJECT

City of Irwindale, California
March 28, 2016

Prepared for:

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TRAFFIC IMPACT STUDY

KAISER PERMANENTE IRWINDALE MEDICAL OFFICE BUILDING PROJECT

City of Irwindale, California
March 28, 2016

1.0 INTRODUCTION

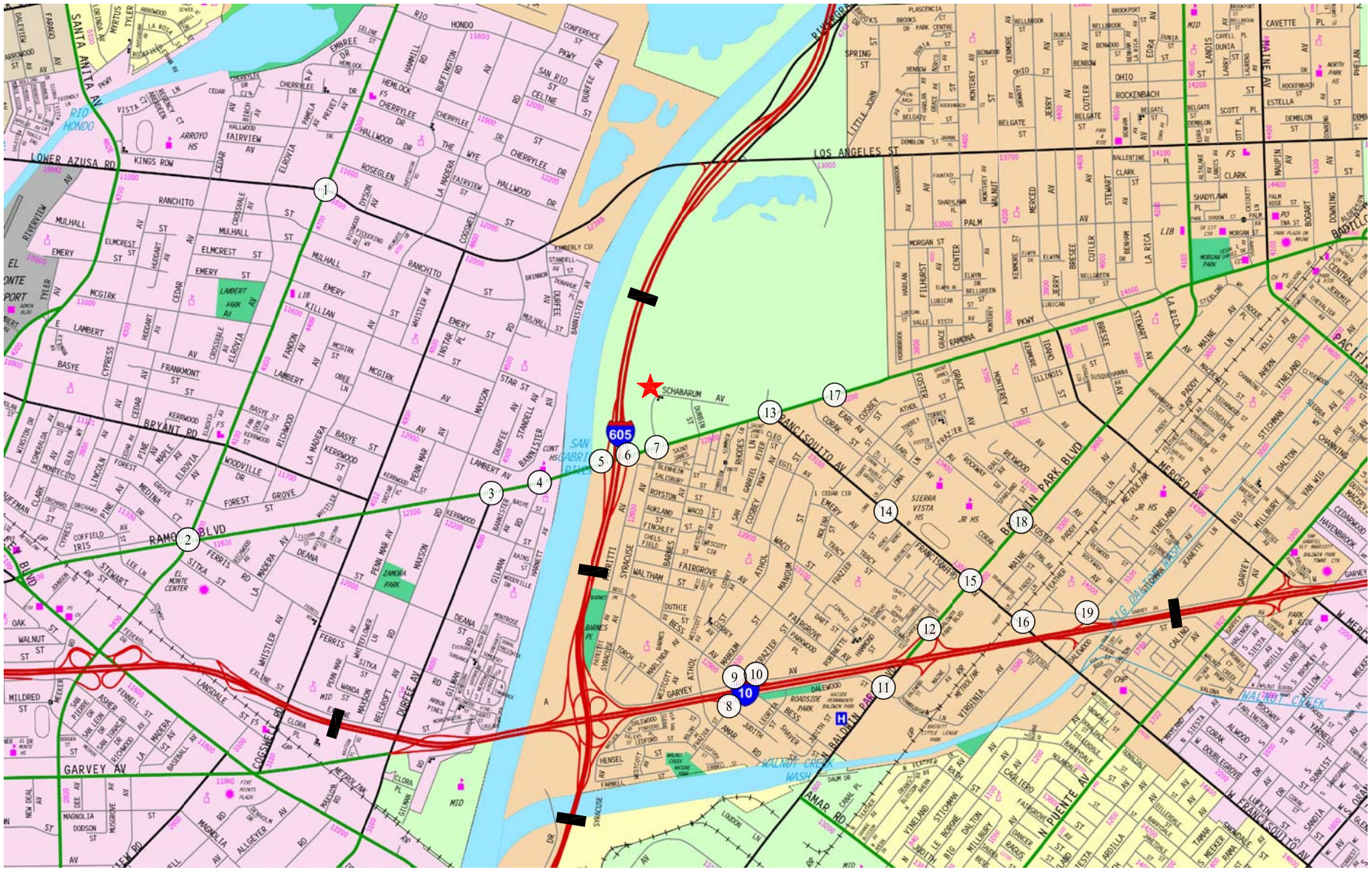
This traffic analysis has been conducted to identify and evaluate the potential traffic impacts of the proposed Kaiser Permanente Irwindale Medical Office Building (MOB) project ("proposed project" herein) on the surrounding street system. The project site is located at 12761 Schabarum Avenue in the City of Irwindale. The project site is generally bounded by industrial and commercial uses to the north and south, Schabarum Avenue to the east and the Interstate 605 (I-605) Freeway to the west. The proposed Kaiser Permanente Irwindale MOB project and general vicinity are shown in ***Figure 1-1***.

1.1 Traffic Study Overview

The traffic analysis follows City of Irwindale traffic study guidelines[1] and is consistent with the traffic impact assessment guidelines set forth in the Los Angeles County Congestion Management Program[2]. This traffic analysis evaluates potential project-related impacts at 19 key intersections in the vicinity of the project site. The study intersections were determined in consultation with City of Irwindale Public Works Department staff with input from City of Baldwin Park, City of El Monte and the State of California Department of Transportation (Caltrans). The Intersection Capacity Utilization method was used to determine Volume-to-Capacity ratios and corresponding Levels of Service for the signalized study intersections. The *Highway Capacity Manual*[3] (HCM2010) was utilized to determine intersection delay values and corresponding Levels of Service for the unsignalized study intersections. A review was also conducted of Los Angeles County Metropolitan Transportation Authority freeway and intersection monitoring stations to determine if a Congestion Management Program transportation impact assessment analysis is required for the proposed project. In addition, potential traffic effects to the Caltrans highway system have been reviewed as part of this traffic study according to Caltrans analysis methodologies.

While the proposed project site is situated within the jurisdiction of the City of Irwindale, the traffic study also evaluates potential traffic impacts associated with the project at study intersections located in adjoining jurisdictions. Specifically, locations within the cities of Baldwin Park and El Monte have been included. Potential traffic impacts to these study intersections were determined

[1] *Policy Guidelines for Traffic Impact Reports*, City of Irwindale, December 30, 2014.
[2] *2010 Congestion Management Program*, Los Angeles County Metropolitan Transportation Authority, October 2010.
[3] *HCM2010 Highway Capacity Manual*, Transportation Research Board of the National Academies, 2010.



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MAP SOURCE: RAND MCNALLY & COMPANY

★ PROJECT SITE

(X) STUDY INTERSECTION

STUDY FREEWAY SEGMENT

FIGURE 1-1
VICINITY MAP

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using the impact criteria of the respective jurisdiction. The Intersection Capacity Utilization method was used to determine Volume-to-Capacity ratios and corresponding Levels of Service at the study intersections located in the above cities neighboring the City of Irwindale.

This study (i) presents existing traffic volumes, (ii) includes existing traffic volumes with the forecast traffic volumes from the proposed project, (iii) recommends mitigation measures, where necessary, (iv) forecasts future cumulative baseline traffic volumes, (v) forecasts future traffic volumes with the proposed project, (vi) determines future forecast with project-related impacts, and (vii) recommends mitigation measures, where necessary.

1.2 Study Area

Upon coordination with City staff, 19 study intersections have been identified for evaluation during the weekday morning and afternoon peak hours. The 19 study intersections provide local access to the study area and define the extent of the boundaries for this traffic impact analysis. Further discussion of the existing street system and study area is provided in Section 3.0.

The general location of the project in relation to the study locations and surrounding street system is presented in *Figure 1–1*. The traffic analysis study area is generally comprised of those locations which have the greatest potential to experience significant traffic impacts due to the proposed project as defined by the Lead Agency. In the traffic engineering practice, the study area generally includes those intersections that are:

a. Immediately adjacent or in close proximity to the project site;

b. In the vicinity of the project site that are documented to have current or projected future adverse operational issues; and

c. In the vicinity of the project site that are forecast to experience a relatively greater percentage of project-related vehicular turning movements (e.g., at freeway ramp intersections).

The locations selected for analysis were based on the above criteria, proposed project peak hour vehicle trip generation, the anticipated distribution of project vehicular trips and existing intersection/corridor operations.

1.3 Overview of Senate Bill 743[4]

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743 (Steinberg, 2013). Among other things, SB 743 creates a process to change analysis of transportation impacts under the California Environmental Quality Act (Public Resources Code section 21000 and following) (CEQA), which could include analysis based on project vehicle miles traveled (VMT) rather than impacts to intersection Level of Service. On December 30, 2013, the State of California Governor's

Office of Planning and Research (OPR) released a preliminary evaluation of alternative methods of transportation analysis. The intent of the original guidance documentation was geared towards projects within areas that are designated as transit priority areas first, to be followed by other areas of the State. OPR issued another draft discussion document in March, 2015, suggesting some new revisions to the formal CEQA guidelines. OPR has recently issued another guidance document (January 2016) and is requesting additional input.

[4] *An act to amend Sections 21181, 21186, 21187, 21189.1, and 21189.3 of, to repeal and add Section 21185 of, and to add and repeal Section 21186.6.6 of, the Public Resources Code, relating to environmental quality.*

2.0 PROJECT DESCRIPTION

2.1 Existing Site

The project site is located at 12761 Schabarum Avenue in the City of Irwindale. The project site is generally bounded by industrial and commercial uses to the north and south, Schabarum Avenue to the east and the Interstate 605 Freeway to the west. The project site is currently occupied by an 82,500 square-foot building formerly occupied by the Jacmar Food Service Distribution Center. The proposed project site and general vicinity are shown in *Figure 1-1*. An aerial photograph of the existing project site is contained in ***Figure 2-1***.

2.2 Proposed Project Description

Kaiser Permanente Health Plan seeks to obtain entitlements to construct a medical office building within the City of Irwindale. The proposed project consists of the development of a 3-story medical office building with a total of approximately 90,000 square feet of floor area. Based on information provided by Kaiser Permanente representatives, four existing specialty care departments at the Baldwin Park Medical Center campus are expected to be relocated to the proposed new medical office building: Podiatry, Ophthalmology, Gastroenterology (GI) and Outpatient Surgery. Additionally, the proposed project will include the construction of a 5-story parking structure with a total of approximately 339 parking spaces. A drop-off/pick up zone will be provided just south of the new parking structure, along the eastern portion the medical office building. Construction of the proposed project is expected to commence in year 2016 with occupancy in the year 2019. The site plan for the proposed project is illustrated in ***Figure 2-2***.

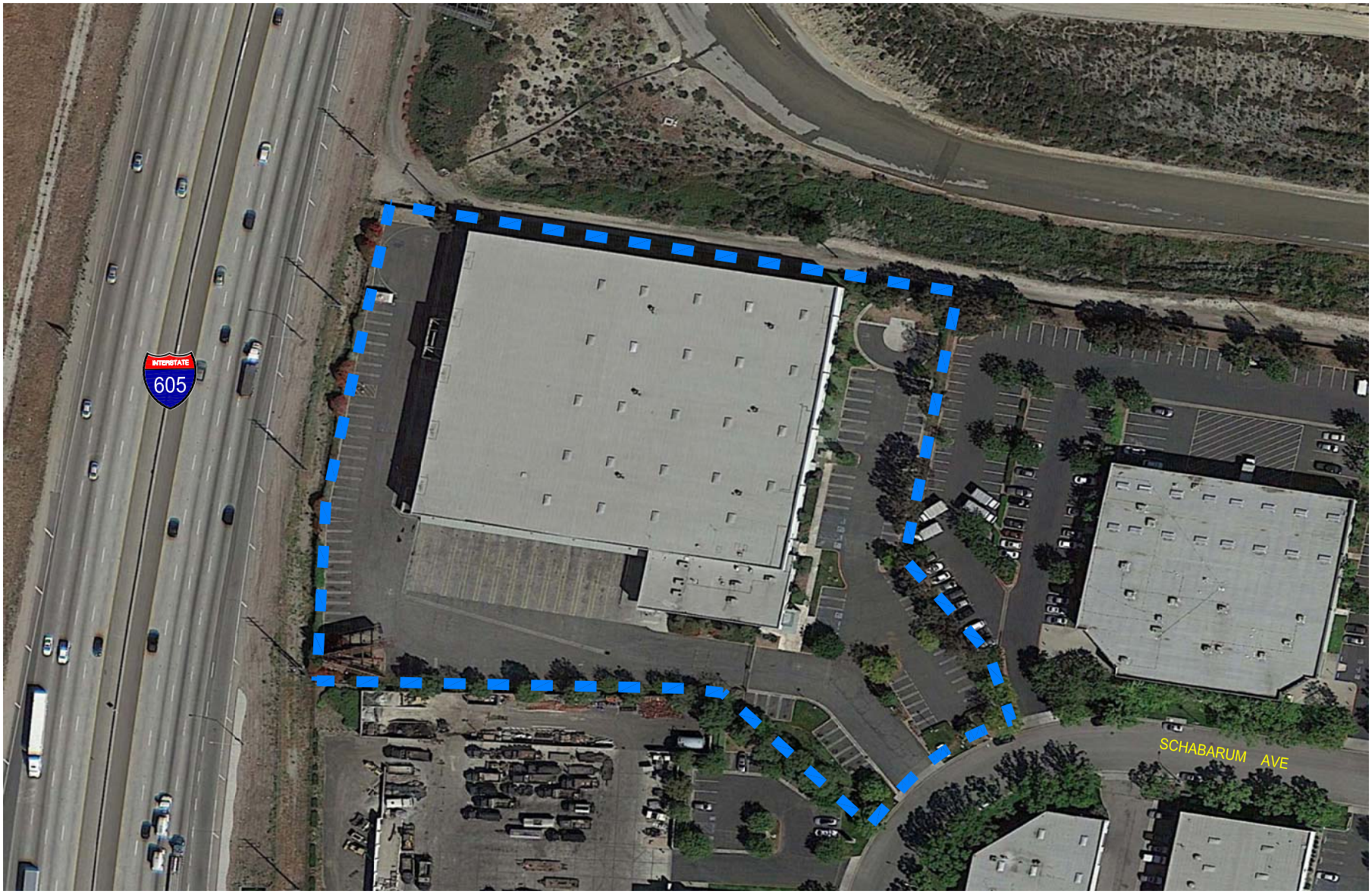
A total of 450 parking spaces will be provided on-site, including 293 standard parking spaces, 112 compact parking spaces and 45 accessible spaces. Of the 450 parking spaces, 111 spaces will be provided within the surface parking area while the remaining 339 spaces will be provided within the new parking garage.

Vehicular access to the proposed project site will be provided via a single driveway located on Schabarum Avenue. Further discussion of the project's site access and circulation scheme is provided in Section 3.0 herein.

2.3 Proposed Parking

The number of parking spaces required to support the proposed Kaiser Permanente Irwindale MOB project was calculated using the City's Municipal Code requirements as contained in Section 17.64, Off-Street Parking. Specifically, requirements identified in Section 17.64.030 apply to the proposed land use associated with the medical office building project. The City's Code parking requirements for the proposed land use are as follows:

- M. Medical or dental clinics and medical professional offices: 1.0 space for each 200 square feet of gross floor area.



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PROJECT SITE

FIGURE 2-1
AERIAL PHOTOGRAPH OF THE EXISTING PROJECT SITE

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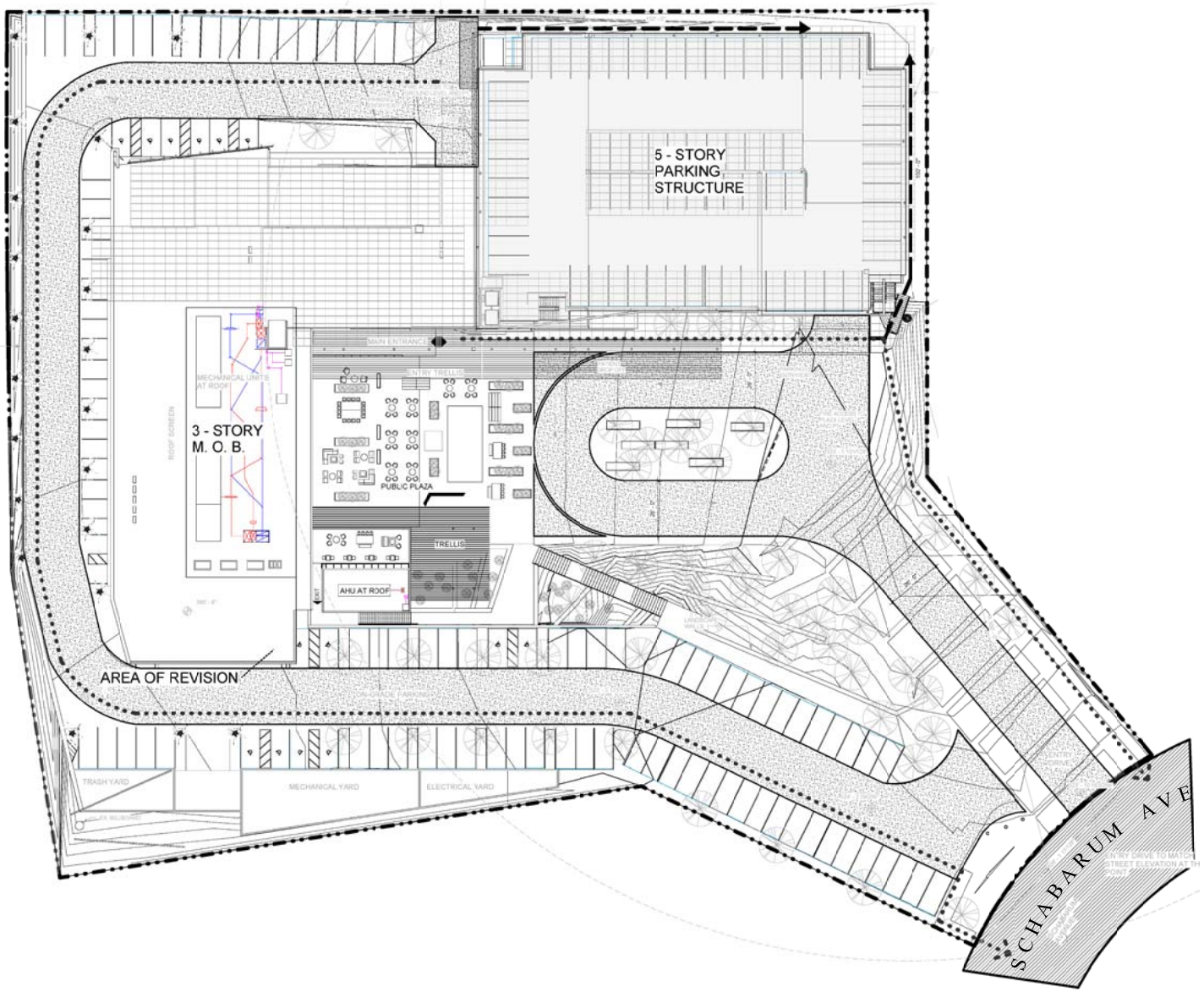

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FIGURE 2-2
SITE PLAN

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The City's Code parking requirement for the proposed Kaiser Permanente Irwindale MOB project is calculated as follows:

- 90,000 GSF ÷ 200 SF = 450 parking spaces

Direct application of the City Code parking requirements to the proposed project results in a Code requirement of 450 parking spaces. A total of approximately 450 parking spaces is planned to be provided as part of the proposed project. Thus, the planned project parking supply satisfies the City Code parking requirements.

As part of the parking supply, the project must also provide a minimum of 45 handicap accessible spaces. A total of approximately 45 handicap accessible parking spaces is planned to be provided as part of the proposed project. This complies with the American With Disabilities Act (ADA) requirement of a minimum of ten percent of the total parking supply provided to serve free-standing buildings providing outpatient clinical services, with one in every six handicap spaces being van accessible.

3.0 SITE ACCESS AND CIRCULATION

Descriptions of the existing site and proposed project site access and circulation schemes are provided in the following subsections.

3.1 Existing Site Access

Vehicular access to the project site is currently provided via one driveway on Schabarum Avenue. The site driveway is located on the north side of Schabarum Avenue and provides access to the existing building and associated surface parking area. The existing driveway currently accommodates full access (i.e., right-turn and left-turn ingress and egress movements).

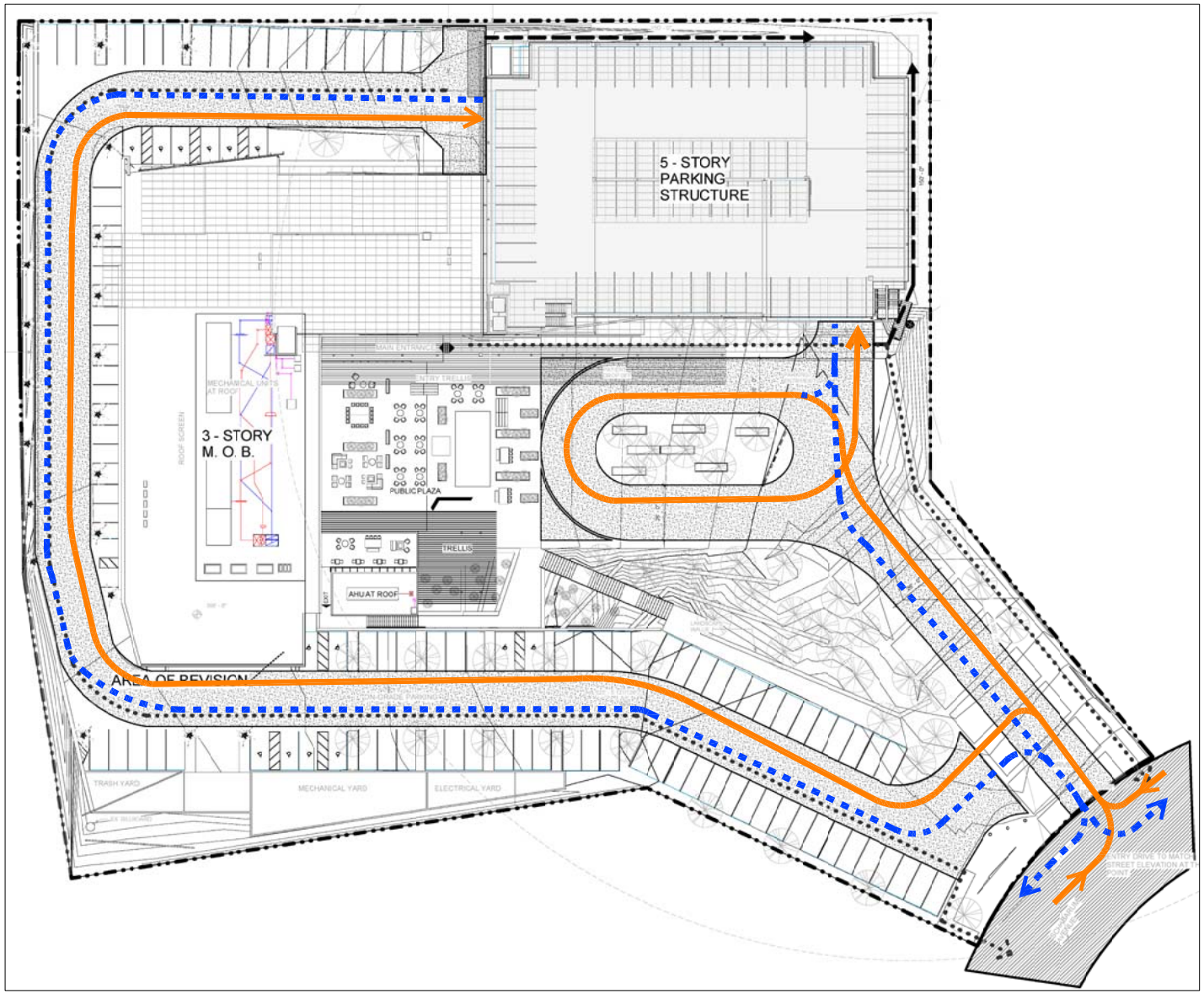
3.2 Proposed Project Site Access

Vehicular access to the proposed project site is planned to be provided via a single driveway on Schabarum Avenue. Vehicular circulation throughout the project site will be provided via an internal roadway system which will facilitate drop-off and pick-up operations near the medical office building entrance and access to/from the project's parking facilities. The proposed vehicular site access scheme for the Kaiser Permanente Irwindale MOB project is displayed in ***Figure 3-1***. A description of the planned project site access point is provided in the following paragraph.

- *Schabarum Avenue Project Driveway*

  The project driveway will be located along the west side of Schabarum Avenue at the southeast corner of the project site. The planned project site driveway will be located north of the existing site driveway near the bend (i.e, the point of curvature) of Schabarum Avenue. The project site driveway will provide direct access to the planned drop-off and pick-up area that will be provided for the medical office building as well as to the new parking structure. The project site driveway will also provide access to a new internal roadway surrounding the medical office building and the proposed service/loading dock located at the southern portion of the site. This driveway will accommodate full access (i.e., left-turn and right-turn ingress and egress turning movements), although it is noted that primary movements will be northbound left-turn inbound and eastbound right-turn outbound movements since Schabarum Avenue terminates to the east. The project site driveway will be constructed to City of Irwindale design standards.

Vehicular access to the parking structure will be provided via two access points: one access point located at the northwest corner of the parking structure and the other access point located at the southeast corner of the parking structure. The northerly parking structure entrance will provide access to Level P1 of the parking structure while the southerly parking structure entrance will provide access to the Plaza Level (Level P3) of the parking structure.



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INBOUND CIRCULATION

OUTBOUND CIRCULATION

FIGURE 3-1
PROPOSED SITE ACCESS AND CIRCULATION

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3.3 Vehicle Maneuvering Analysis

An analysis of vehicle maneuvering associated with the proposed medical office has been prepared using the AutoTURN software package. The turning movement analysis was prepared based on a single unit truck (i.e., 30-foot size vehicle [SU designation]) which is similar to the size of delivery vehicles experienced at other similar sites. ***Figure 3-2*** shows the envisioned delivery truck maneuvers for access to the site as well as the proposed loading space/areas. As demonstrated in *Figure 3-2*, vehicle turning maneuvers into and out of the project site can be accommodated given the current site design. It is important to note that the graphics illustrate a conservative path in that the software program does not entirely account for the full range of turns that trained drivers are able to maneuver.

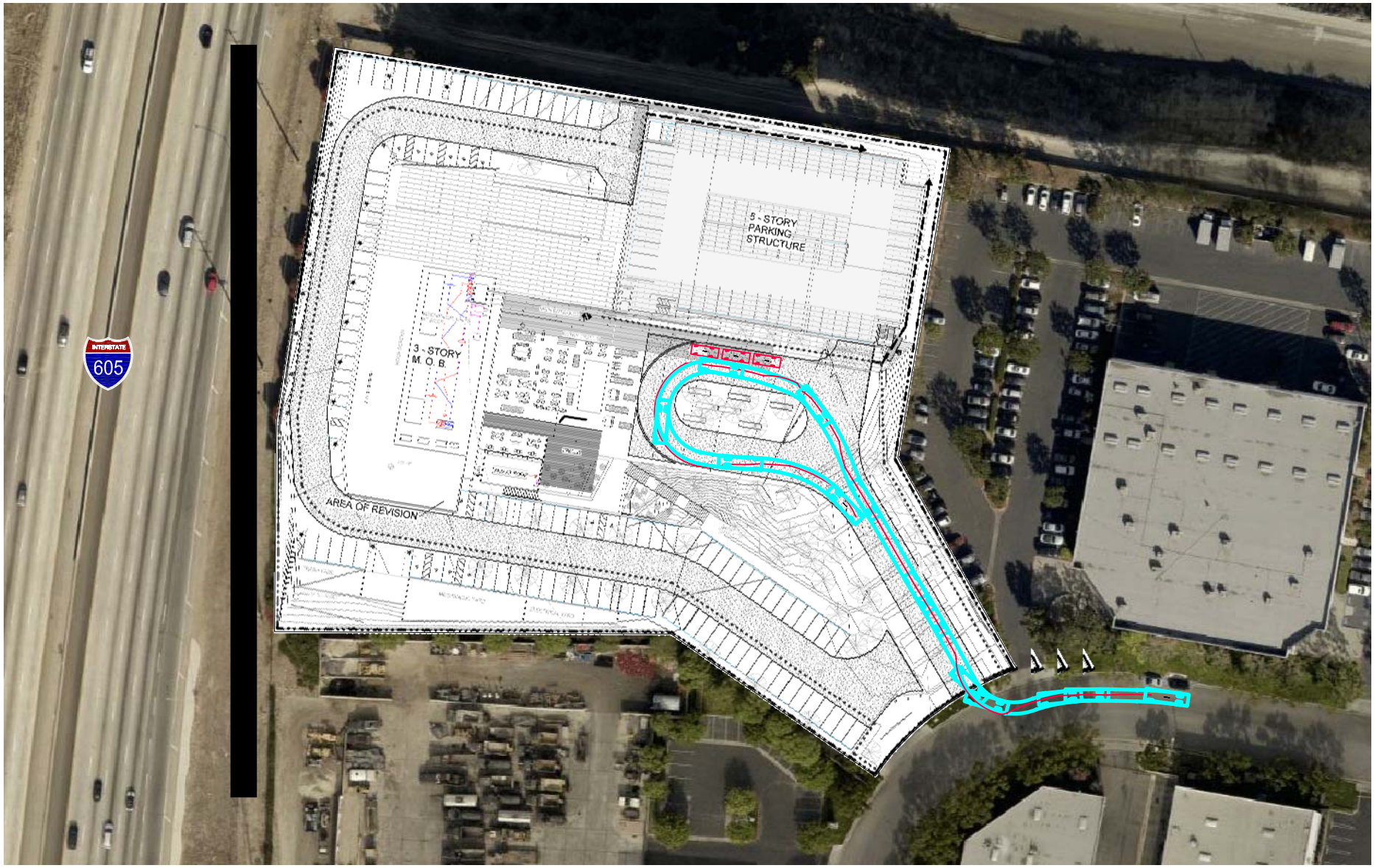
A general review of sight distance was conducted for the new project driveway location. Since there are no posted speed limit signs on Schabarum Avenue in the project vicinity, a prima facie speed limit of 25 miles per hour has been assumed and was used as a basis in determining the calculated intersection sight distance requirement for a stopped passenger car to turn left onto a two-lane roadway with no median. While an adequate intersection sight distance was determined, it is recommended that formal red curb be installed along Schabarum Avenue (i.e., from the project driveway to a point 20 feet to the west and from the project driveway to the east property line). Installation of double yellow striping in the middle of Schabarum Avenue is recommended to delineate motorist right-of-way. In addition, it is recommended that a formal stop sign and corresponding pavement legend be installed facing the exiting driveway approach.

3.4 Pedestrian Access

The project will be designed to encourage pedestrian activity and walking as a transportation mode.[5] As indicated in *Figure 2–2*, the proposed project will connect to adjacent sidewalks and will include site enhancements to promote walkability. Walkability is a term for the extent to which walking is readily available as a safe, connected, accessible and pleasant mode of transport. There are several criteria that are widely accepted as key aspects of the walkability of urban areas that should be satisfied. The underlying principle is that pedestrians should not be delayed, diverted, or placed in danger. The widely accepted characteristics of walkability are as follows:

- Connectivity: People can walk from one place to another without encountering major obstacles, obstructions, or loss of connectivity.
- Convivial: Pedestrian routes are friendly and attractive, and are perceived as such by pedestrians.
- Conspicuous: Suitable levels of lighting, visibility and surveillance over its entire length, with high quality delineation and signage.

[5] For example, refer to http://www.walkscore.com/, which generates a walkability score of approximately 46 (Car Dependent) out of 100 for the project site. Walk Score calculates the walkability of an address by locating nearby stores, restaurants, schools, parks, etc. Walk Score measures how easy it is to live a car-lite lifestyle—not how pretty the area is for walking.



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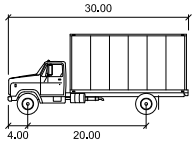

SU	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

FIGURE 3-2
VEHICLE MANEUVERING ANALYSIS

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- Comfortable: High quality and well-maintained footpaths of suitable widths, attractive landscaping and architecture, shelter and rest spaces, and a suitable allocation of roadspace to pedestrians.

- Convenient: Walking is a realistic travel choice, partly because of the impact of the other criteria set forth above, but also because walking routes are of a suitable length as a result of land use planning with minimal delays.

A review of the project site location and pedestrian walkway network indicates that these five primary characteristics are accommodated as part of the proposed project. The project site is accessible from nearby public bus stops as well as other amenities along nearby major corridors. The majority of pedestrian access to the project site is envisioned to occur via the existing public sidewalks provided along streets in the study area.

In addition, the site's internal pedestrian walkways and adjacent sidewalks will be appropriately landscaped and adorned to provide a friendly walking environment. Primary accessible path of travel from Schabarum Avenue to the main entrance of the building will be provided along the easterly property boundary. An accessible path of travel is also provided along the southerly property frontage for emergency use only.

4.0 EXISTING STREET SYSTEM

4.1 Local Street System

Immediate access to the proposed project site is provided via Schabarum Avenue, Ramona Boulevard, Francisquito Avenue, and the I-605 Freeway. The list of 19 study intersections selected in consultation with staff from the City of Irwindale Public Works Department, City of Baldwin Park, City of El Monte and Caltrans for analysis of potential impacts related to the proposed project is presented in ***Table 4-1***. A total of 15 of the 19 study intersections selected for analysis are presently controlled by traffic signals, with the remaining four study intersections currently stop sign controlled. The existing lane configurations at the 19 study intersections are displayed in ***Figure 4-1***.

4.2 Roadway Classifications

The City of Irwindale utilizes the roadway categories recognized by regional, state and federal transportation agencies. There are four categories in the roadway hierarchy, ranging from freeways with the highest capacity to two-lane undivided roadways with the lowest capacity. The roadway categories are summarized as follows:

- *Freeways* are limited-access and high speed travel ways included in the state and federal highway systems. Their purpose is to carry regional through-traffic. Access is provided by interchanges with typical spacing of one mile or greater. No local access is provided to adjacent land uses.

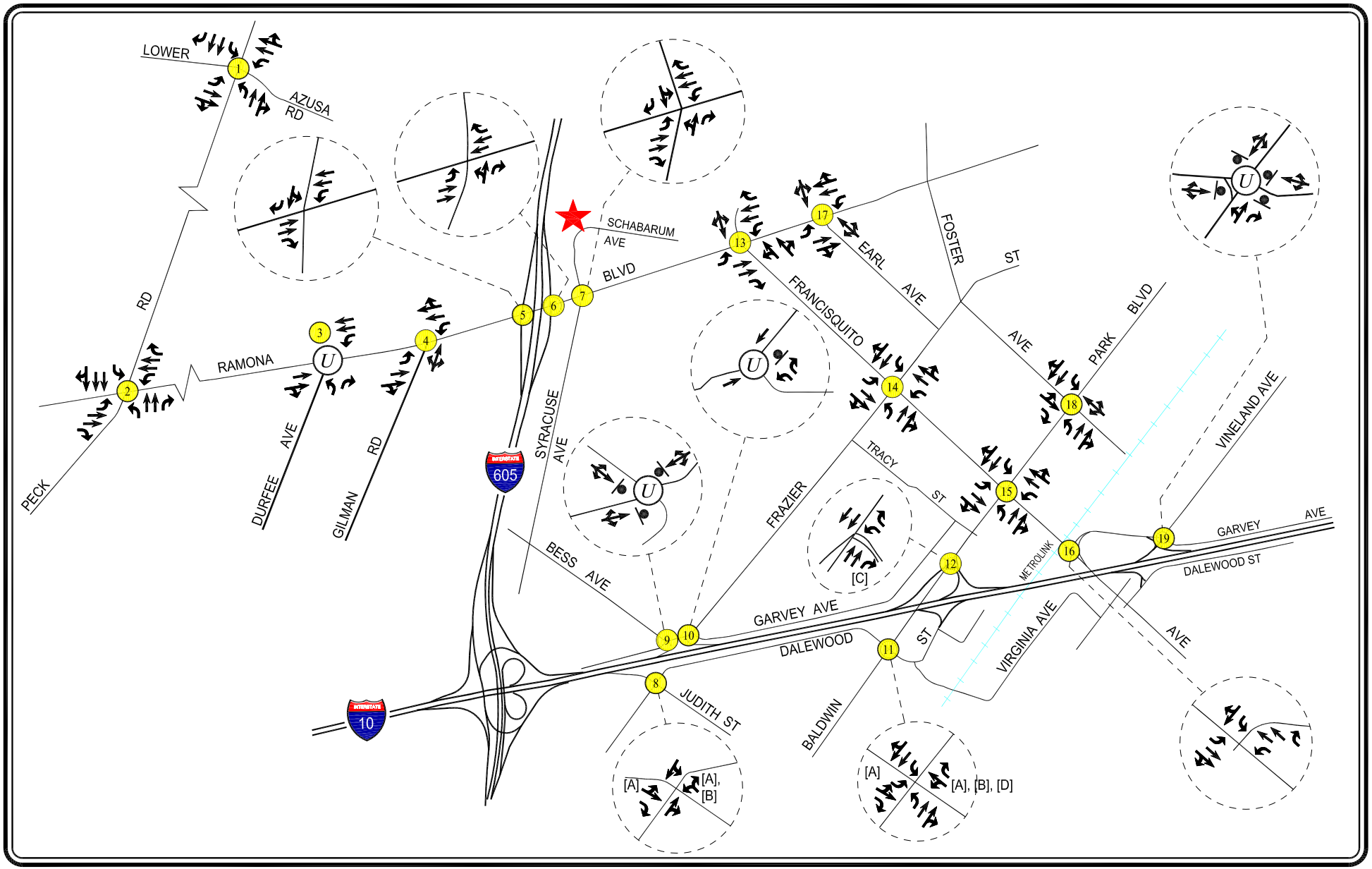
- *Arterial* roadways are major streets that primarily serve through-traffic and provide access to abutting properties as a secondary function. Arterials are generally designed with two to six travel lanes and their major intersections are signalized. This roadway type is divided into two categories: principal and minor arterials. Principal arterials are typically four-or-more lane roadways and serve both local and regional through-traffic. Minor arterials are typically two-to-four lane streets that service local and commute traffic.

- *Collector* roadways are streets that provide access and traffic circulation within residential and non-residential (e.g., commercial and industrial) areas. Collector roadways connect local streets to arterials and are typically designed with two through travel lanes (i.e., one through travel lane in each direction) that may accommodate on-street parking. They may also provide access to abutting properties.

- *Local* roadways distribute traffic within a neighborhood, or similar adjacent neighborhoods, and are not intended for use as a through-street or a link between higher capacity facilities such as collector or arterial roadways. Local streets are fronted by residential uses and do not typically serve commercial uses.

Table 4-1
LIST OF STUDY INTERSECTIONS

NO.	INTERSECTION	TRAFFIC CONTROL	JURISDICTION(S)
1	Peck Road/Lower Azusa Road	Signalized	City of El Monte
2	Peck Road/Ramona Boulevard	Signalized	City of El Monte
3	Durfee Avenue/Ramona Boulevard	Unsignalized	City of El Monte
4	Gilman Road/Ramona Boulevard	Signalized	City of El Monte
5	I-605 Freeway Southbound Ramps/Ramona Boulevard	Signalized	City of Irwindale/ Baldwin Park/Caltrans
6	I-605 Freeway Northbound Ramps/Ramona Boulevard	Signalized	City of Irwindale/ Baldwin Park/Caltrans
7	Syracuse Avenue-Schabarum Avenue/Ramona Boulevard	Signalized	City of Irwindale/Baldwin Park
8	Frazier Street/I-10 Freeway Eastbound (EB) Off-Ramp-Judith Street	Signalized	City of Baldwin Park/ Caltrans
9	Bess Avenue-I-10 Freeway Westbound (WB) On-Ramp/Garvey Avenue	Unsignalized	City of Baldwin Park/ Caltrans
10	I-10 Freeway Westbound (WB) Off-Ramp- Frazier Avenue/Garvey Avenue	Unsignalized	City of Baldwin Park/ Caltrans
11	Baldwin Park Boulevard/Dalewood Street	Signalized	City of Baldwin Park
12	Baldwin Park Boulevard/I-10 Freeway WB Ramps	Signalized	City of Baldwin Park/ Caltrans
13	Francisquito Avenue/Ramona Boulevard	Signalized	City of Irwindale/Baldwin Park
14	Francisquito Avenue/Frazier Street	Signalized	City of Baldwin Park
15	Baldwin Park Boulevard/Francisquito Avenue	Signalized	City of Baldwin Park
16	Francisquito Avenue/Garvey Avenue	Signalized	City of Baldwin Park
17	Earl Avenue/Ramona Boulevard	Signalized	City of Irwindale/Baldwin Park
18	Baldwin Park Boulevard/Foster Avenue	Signalized	City of Baldwin Park
19	I-10 Freeway WB On/Off-Ramps-Vineland Boulevard/Garvey Avenue	Unsignalized	City of Baldwin Park/ Caltrans



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- PROJECT SITE
- (U) UNSIGNALIZED INTERSECTION
- STOP SIGN
- [A] SPLIT PHASE
- [B] NO RIGHT-TURN ON RED
- [C] FREE-FLOW MOVEMENT
- [D] OVERLAP PHASE

FIGURE 4-1
EXISTING LANE CONFIGURATIONS

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4.3 Roadway Descriptions

A review of the important roadways in the project site vicinity and study area is summarized in ***Table 4-2***. As indicated in *Table 4-2*, the important roadways within the project study area were reviewed in terms of the number of lanes provided, parking restrictions, posted speed limits, etc. Additionally, the roadway classifications of key roads in the project study area also are presented in *Table 4-2*.

4.4 Transit Services

Public bus and rail transit service within the project study area is currently provided by the Los Angeles County Metropolitan Transportation Authority (Metro), El Monte Transit (E.M.T.), Baldwin Park Transit (B.P.T.), Foothill Transit (F.T.), and Metrolink. A summary of the existing transit service, including the transit route, destinations and peak hour headways is presented in ***Table 4–3***. The existing public transit routes in the project site vicinity are illustrated in ***Figure 4–2***. Also, it is noted that the nearest Metrolink station is the Baldwin Park station which is located approximately two miles from the project site.

Table 4-2
EXISTING ROADWAY DESCRIPTIONS

Roadway	Classification [1]	Travel Lanes		Median	Speed
		Direction [2]	No. Lanes [3]	Types [4]	Limit [5]
Peck Road	Major Arterial	NB-SB	4	RMI/2WLT	35
Durfee Avenue	Collector Street	NB-SB	4 [6]	2WLT	35
Gilman Road	Local Street	NB-SB	2	N/A	35
Syracuse Avenue- Schabarum Avenue	Local Street	NB-SB	2	N/A	30
Francisquito Avenue (Ramona Blvd to Baldwin Park Blvd)	Collector Street	NB-SB	4	N/A	35
Francisquito Avenue Baldwin Park Blvd to I-10 Fwy)	Collector Street	NB-SB	4	2WLT	35
Earl Avenue	Local Street	NB-SB	2	N/A	
Baldwin Park Boulevard	Arterial Street	NB-SB	4	RMI	40
Bess Avenue	Local Street	NB-SB	2	N/A	25
Frazier Street	Collector Street	NB-SB	4	2WLT	25
Foster Avenue	Local Street	NB-SB	2	N/A	25
Vineland Avenue	Local Street	NB-SB	2	N/A	25
Judith Street	Local Street	NB-SB	2	N/A	
Lower Azusa Road (Elrovia Ave to Peck Rd)	Secondary Arterial	EB-WB	4 [7]	2WLT	35
Lower Azusa Road (Peck Rd to Dyson Ave)	Secondary Arterial	EB-WB	4 [7]	N/A	35
Ramona Boulevard (Valley Blvd to Peck Rd)	Secondary Arterial	EB-WB	4	RMI/2WLT	35
Ramona Boulevard (Peck Rd to Gilman Rd)	Secondary Arterial	EB-WB	4	2WLT	35
Ramona Boulevard (Gilman Rd to 605 Fwy NB Ramps)	Secondary Arterial	EB-WB	4	RMI/2WLT	35
Ramona Boulevard (605 Fwy NB Ramps to Earl Ave)	Arterial	EB-WB	4 [6]	RMI	40
Garvey Avenue	Local Street	EB-WB	2	N/A	25
Dalewood Street	Local Street	EB-WB	2	N/A	25

Notes:
[1] Roadway classifications obtained from the City of Irwindale 2020 General Plan, City of Baldwin Park 2020 General Plan and City of El Monte 2011 General Plan.
[2] Direction of roadways in the project area: NB-SB - northbound and southbound; and EB-WB - eastbound and westbound.
[3] Number of lanes in both directions of the roadway.
[4] Median type of the road: RMI - Raised Median Island; 2WLT - 2-Way Left-Turn Lane; and N/A-Not Applicable.
[5] Roadways with no reported Speed Limit did not have posted speed limits in the vicinity of the project study locations.
[6] Class II Bikeway (Bike Lane)
[7] Class III Bikeway (Bike Routes)

Table 4-3
EXISTING TRANSIT ROUTES [1]

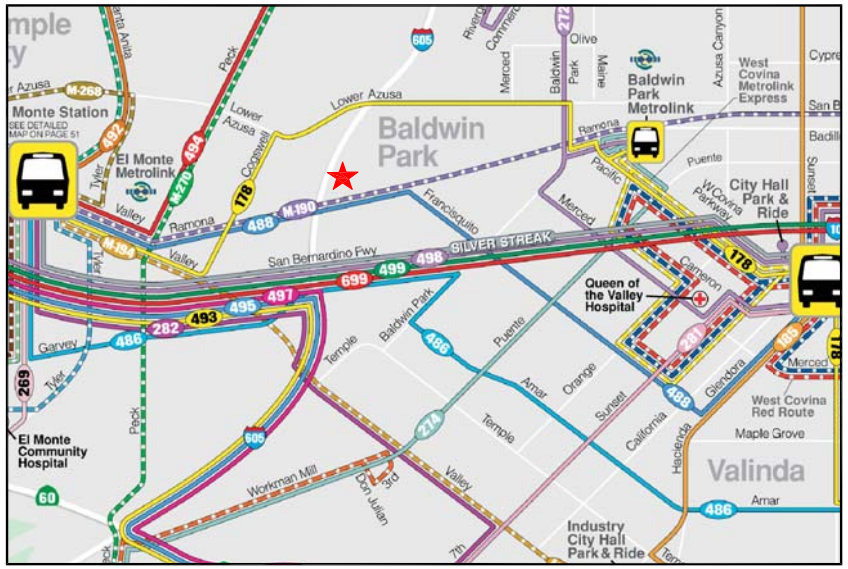
ROUTE	DESTINATIONS	ROADWAY(S) NEAR SITE	NO. OF BUSES/TRAINS DURING PEAK HOUR		
			DIR	AM	PM
Metro 190	El Monte to Cal Poly Pomona via Baldwin Park, Covina, West Covina, La Puente, Walnut, and Mt. Sac College	Ramona Boulevard, Gilman Road, Syracuse Avenue, Francisquito Avenue and Earl Avenue	EB WB	3 5	4 3
Metro 270	Norwalk to Monrovia via Santa Fe Springs, Whittier, Rio Hondo College and El Monte	Peck Road, Ramona Boulevard, and Lower Azusa Road	NB SB	1 1	1 1
F.T. 488	Glendora to El Monte via Covina, West Covina and Baldwin Park	Peck Road, Ramona Boulevard, Gilman Road, Syracuse Avenue, Francisquito Avenue, and Baldwin Park Boulevard	EB WB	3 3	2 2
F.T. 494	San Dimas to El Monte via Glendora, Azusa, Duarte, Monrovia and Arcadia	Ramona Boulevard, Francisquito Avenue and Peck Road	EB WB	0 2	1 0
E.M.T. Blue Line	City of El Monte	Peck Road, Ramona Boulevard and Durfee Avenue	EB WB	0 2	0 2
E.M.T. Red Line	City of El Monte	Peck Road and Lower Azusa Road	EB WB	0 2	0 2
B.P.T. Teal Line	City of Baldwin Park via El Monte and Irwindale	Syracuse Avenue, Ramona Boulevard, Earl Avenue and Francisquito Avenue	EB WB	1 0	2 0

[1] Sources: Los Angeles County Metropolitan Transportation Authority (Metro), El Monte Transit (E.M.T.), Baldwin Park Transit (B.P.T.), Foothill Transit (F.T.) and Metrolink websites, 2015.

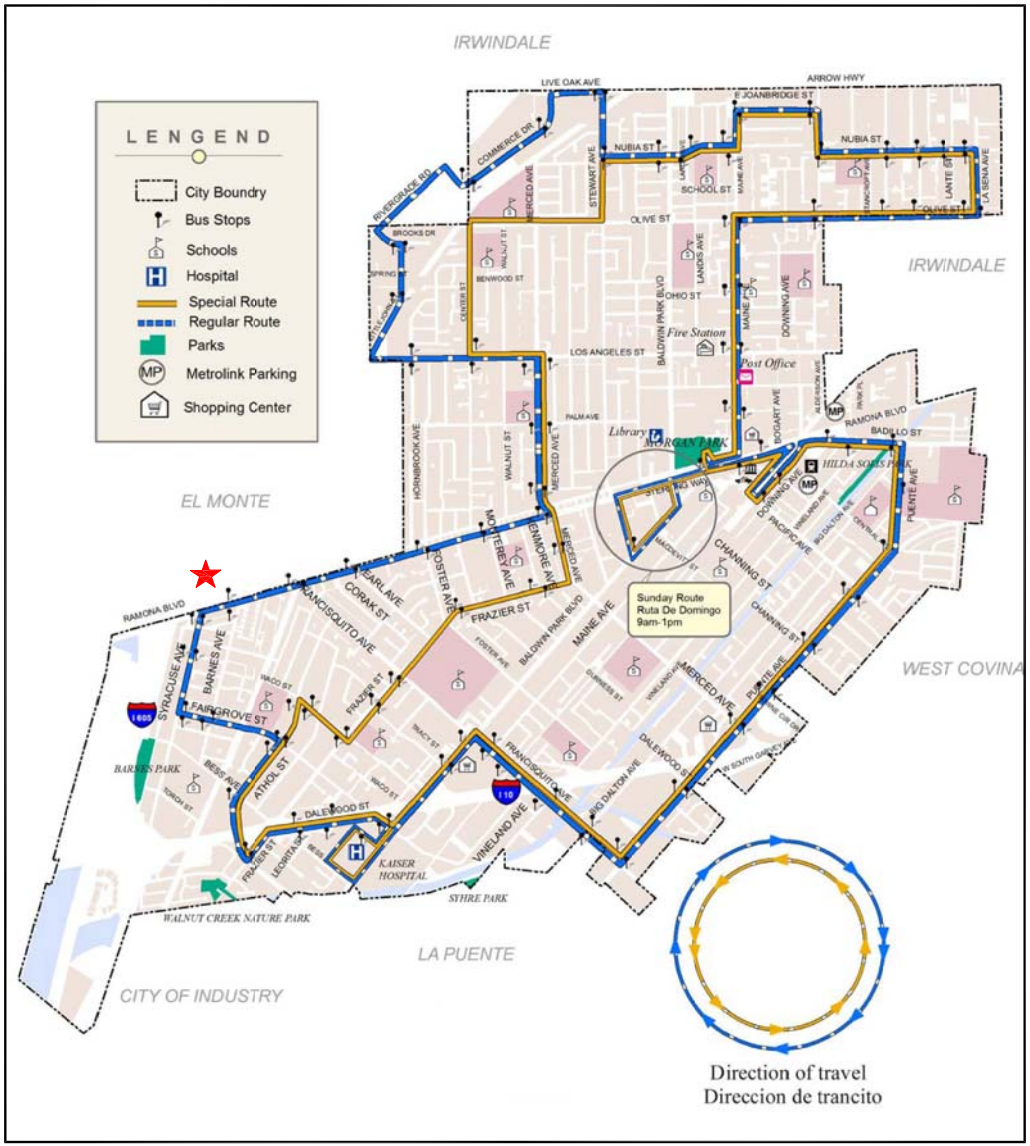
Table 4-3 (Continued)
EXISTING TRANSIT ROUTES [1]

ROUTE	DESTINATIONS	ROADWAY(S) NEAR SITE	NO. OF BUSES/TRAINS DURING PEAK HOUR		
			DIR	AM	PM
B.P.T. Pumpkin Line	City of Baldwin Park	Baldwin Park Boulevard, Francisquito Avenue, and Frazier Street	EB WB	0 2	0 1
Metrolink San Bernardino Line	San Bernardino to Los Angeles Union Station via Rialto, Fontana, Rancho Cucamonga, Upland, Montclair, Claremont, Pomona (North), Covina, Baldwin Park, El Monte, California State University Los Angeles	Baldwin Park Station	EB WB	1 3	3 1
			Total	29	25

[1] Sources: Los Angeles County Metropolitan Transportation Authority (Metro), El Monte Transit (E.M.T.), Baldwin Park Transit (B.P.T.), Foothill Transit (F.T.) and Metrolink websites, 2015.



MAP SOURCE: FOOTHILL TRANSIT



MAP SOURCE: CITY OF BALDWIN PARK TRANSIT

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FIGURE 4-2
EXISTING PUBLIC TRANSIT ROUTES

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KAISER PERMANENTE IRWINDALE MOB PROJECT

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5.0 TRAFFIC COUNTS

Due to the ongoing Caltrans construction of the I-10 Freeway/I-605 Freeway Direct Connector project which includes nearby roadway and ramp closures, traffic count data for the study intersections were researched from City of Irwindale, City of Baldwin Park and LLG files. The researched manual counts of vehicular turning movements were conducted at the study intersections during the weekday morning (AM) and afternoon (PM) commute periods to determine the peak hour traffic volumes. For those locations where no data were available, new manual counts of vehicular turning movements were conducted at the study intersections during the weekday AM and PM commute periods to determine the peak hour traffic volumes. All of the manual counts were conducted by independent traffic count subconsultants from 7:00 to 9:00 AM to determine the AM peak commute hour, and from 4:00 to 6:00 PM to determine the PM peak commute hour. Additionally, the available manual traffic count data were adjusted by one percent (1.0%) per year to reflect existing conditions and, where necessary, manually adjusted to provide balance between study locations. Traffic volumes at the study intersections show the typical peak periods between 7:00 to 9:00 AM and 4:00 to 6:00 PM generally associated with metropolitan Los Angeles commute periods.

The weekday AM and PM peak hour manual counts of vehicle movements at the study intersections are summarized in ***Table 5-1***. The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are shown in ***Figures 5-1*** and ***5-2***, respectively. Summary data worksheets of the manual traffic counts at the study intersections are contained in ***Appendix A***.

Table 5-1
EXISTING TRAFFIC VOLUMES

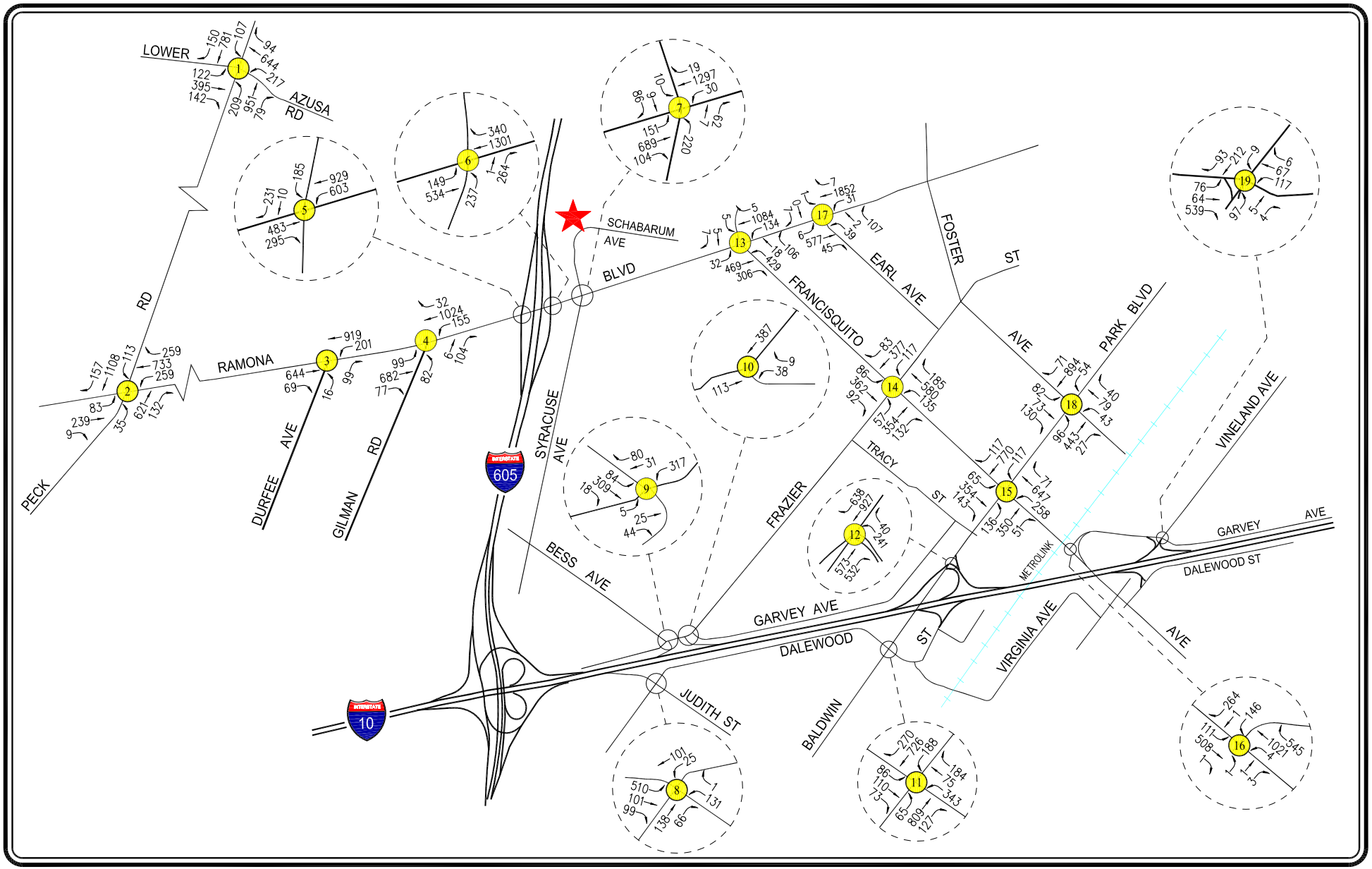
NO.	INTERSECTION	DATE	DIR	AM PEAK HOUR BEGAN	AM PEAK HOUR VOLUME	PM PEAK HOUR BEGAN	PM PEAK HOUR VOLUME
1	Peck Road/ Lower Azusa Road	06/05/2014	NB	7:15	1,239	5:00	1,270
			SB		1,038		913
			EB		660		1,157
			WB		955		799
2	Peck Road/ Ramona Boulevard	05/19/2015	NB	7:15	788	5:00	1,367
			SB		1,378		1,059
			EB		331		841
			WB		1,251		664
3	Durfee Avenue/ Ramona Boulevard	05/19/2015	NB	7:15	115	4:30	159
			SB		0		0
			EB		713		1,017
			WB		1,120		678
4	Gilman Road/ Ramona Boulevard	09/09/2014	NB	7:15	192	4:30	232
			SB		0		0
			EB		857		1,023
			WB		1,211		717
5	I-605 Freeway SB Ramps/ Ramona Boulevard	05/19/2015	NB	7:15	0	4:30	0
			SB		426		571
			EB		778		1,117
			WB		1,531		925
6	I-605 Freeway NB Ramps/ Ramona Boulevard	05/19/2015	NB	7:15	502	5:00	1,028
			SB		0		0
			EB		682		1,367
			WB		1,641		824
7	Syracuse Avenue-Schabarum Avenue/ Ramona Boulevard	03/17/2015	NB	7:30	289	4:45	158
			SB		105		181
			EB		943		2,022
			WB		1,345		715
8	Frazier Street/ I-10 Freeway EB Off-Ramp- Judith Street	05/21/2014	NB	7:30	204	5:00	156
			SB		126		113
			EB		710		590
			WB		132		207
9	Bess Avenue-I10 Freeway WB On-Ramp/ Garvey Avenue	06/23/2015	NB	7:00	0	4:45	0
			SB		411		387
			EB		74		61
			WB		428		276
10	I-10 Freeway WB Off-Ramp/ Garvey Avenue-Frazier Avenue	06/23/2015	NB	7:00	47	4:45	143
			SB		0		0
			EB		113		238
			WB		387		172
11	Baldwin Park Boulevard/ Dalewood Street	03/06/2007	NB	7:45	1,001	4:45	1,166
			SB		1,184		802
			EB		270		580
			WB		602		563

[1] Counts conducted by City Traffic Counters, Accutek Traffic Data, and The Traffic Solution.

Table 5-1 (Continued)
EXISTING TRAFFIC VOLUMES

NO.	INTERSECTION	DATE	DIR	AM PEAK HOUR BEGAN	AM PEAK HOUR VOLUME	PM PEAK HOUR BEGAN	PM PEAK HOUR VOLUME
12	Baldwin Park Boulevard/ I-10 Freeway WB Ramps	02/15/2007	NB	7:15	1,106	5:00	1,449
			SB		1,565		856
			EB		0		0
			WB		281		274
13	Francisquito Avenue/ Ramona Boulevard	05/15/2015	NB	7:15	552	4:45	266
			SB		17		85
			EB		807		1,812
			WB		1,223		614
14	Francisquito Avenue/ Frazier Street	01/24/2007	NB	7:30	900	5:00	592
			SB		540		765
			EB		543		278
			WB		577		287
15	Baldwin Park Boulevard/ Francisquito Avenue	01/17/2007	NB	7:15	537	5:00	1,115
			SB		1,003		792
			EB		562		786
			WB		976		823
16	Francisquito Avenue/ Garvey Avenue	01/17/2007	NB	7:15	1,570	4:45	1,291
			SB		620		1,147
			EB		5		9
			WB		410		337
17	Earl Avenue/ Ramona Boulevard	05/19/2015	NB	7:15	148	5:00	41
			SB		8		17
			EB		627		1,402
			WB		1,890		664
18	Baldwin Park Boulevard/ Foster Avenue	01/17/2007	NB	7:45	566	5:00	974
			SB		1,020		771
			EB		285		154
			WB		162		94
19	I-10 Freeway EB Ramps- Vineland Avenue/ Garvey Avenue	06/11/2015	NB	7:15	106	4:15	219
			SB		314		164
			EB		678		740
			WB		189		173

[1] Counts conducted by City Traffic Counters, Accutek Traffic Data, and The Traffic Solution.



PROJECT SITE

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FIGURE 5-1
EXISTING TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

KAISER PERMANENTE IRWINDALE MOB PROJECT

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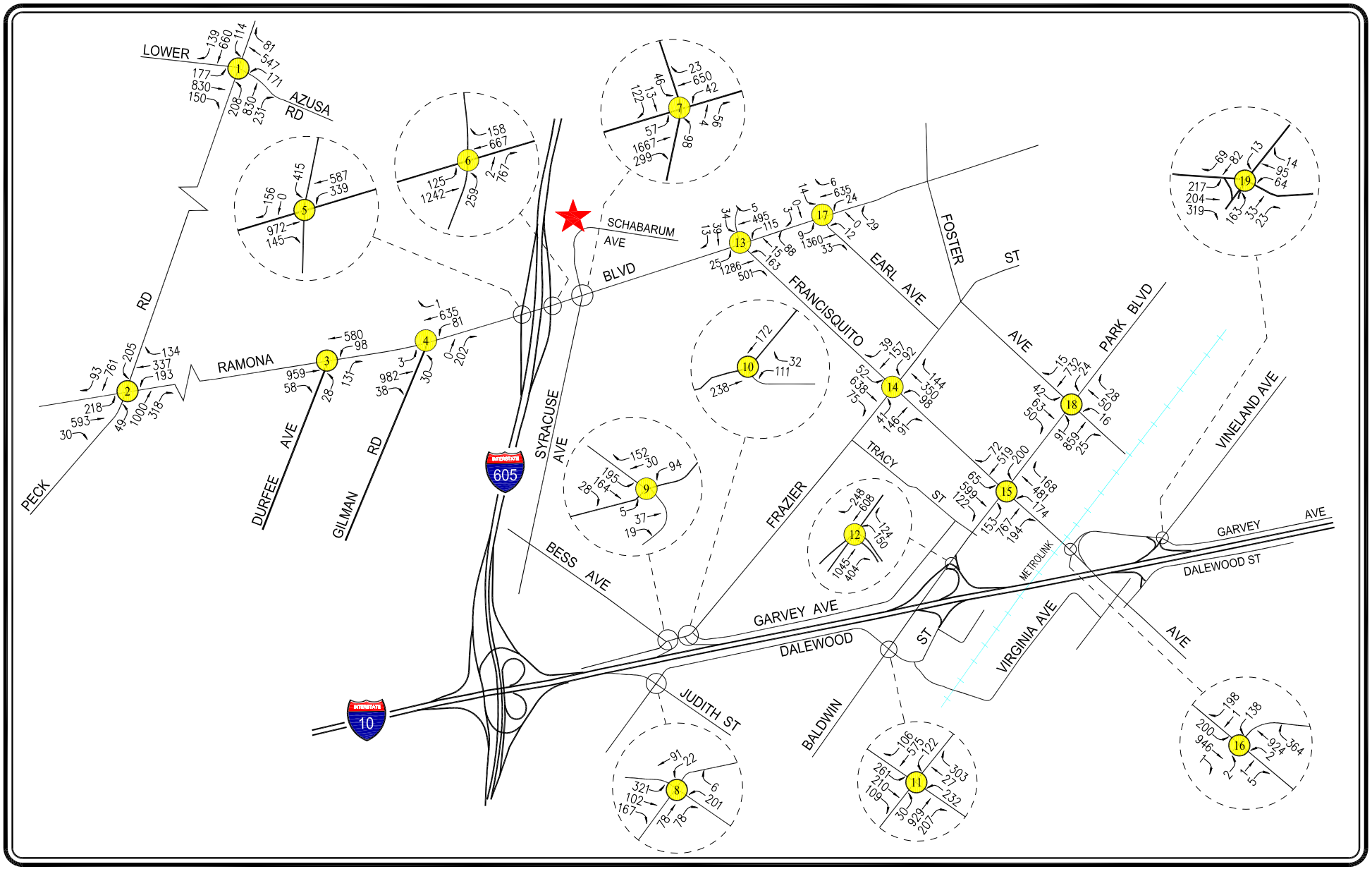

PROJECT SITE

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FIGURE 5-2
EXISTING TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR

KAISER PERMANENTE IRWINDALE MOB PROJECT

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6.0 CUMULATIVE DEVELOPMENT PROJECTS

The forecast of future pre-project conditions was prepared in accordance with procedures outlined in Section 15130 of the CEQA Guidelines. Specifically, the CEQA Guidelines provide two options for developing the future traffic volume forecast:

> "(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the [lead] agency, or
>
> (B) A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency."

Accordingly, the traffic analysis provides a highly conservative estimate of future pre-project traffic volumes as it incorporates both the "A" and "B" options outlined in the CEQA Guidelines for purposes of developing the forecast.

6.1 Related Projects

A forecast of on-street traffic conditions prior to occupancy of the proposed project was prepared by incorporating the potential trips associated with other known development projects (related projects) in the area. With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impact of all ongoing development. The related projects research was based on information on file at the Cities of Irwindale, Baldwin Park and El Monte, County of Los Angeles, as well as Caltrans. The list of related projects in the project site area is presented in ***Table 6-1***. The location of the related projects is shown in ***Figure 6-1***.

Traffic volumes expected to be generated by the related projects were calculated using rates provided in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*[6]. The related projects' respective traffic generation for the weekday AM and PM peak hours, as well as on a daily basis for a typical weekday, is summarized in *Table 6-1*. The distribution of the related projects traffic volumes to the study intersections during the weekday AM and PM peak hours are displayed in ***Figures 6-2*** and ***6-3***, respectively.

[6] Institute of Transportation Engineers *Trip Generation Manual*, 9th Edition, Washington, D.C., 2012.

Table 6-1
RELATED PROJECTS LIST AND TRIP GENERATION [1]

MAP NO.	PROJECT STATUS	PROJECT NAME/NUMBER ADDRESS/LOCATION	LAND USE DATA		PROJECT DATA SOURCE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2]			PM PEAK HOUR VOLUMES [2]		
			LAND-USE	SIZE			IN	OUT	TOTAL	IN	OUT	TOTAL
				City of Irwindale								
I1	Proposed	Irwindale Regional Shopping Center 500 Speedway Drive	Factory Outlet Center	700,000 SF	[3]	17,788	342	127	469	341	438	779
I2	Proposed	Olive Pit Mining and Reclamation Project Northwest corner Azusa Canyon Road and Los Angeles Street	Mining and Reclamation	32 Acres	[4]	866	72	61	133	45	47	92
I3	Proposed	Arrow Highway Business Park 16203-16223 Arrow Highway	Warehouse Manufacturing Office	20,000 SF 88,000 SF 25,000 SF	[5]	1,000	119	29	148	47	103	150
I4	Proposed	Irwindale Materials Recovery Facility and Transfer Station Project 2200 Arrow Highway	Materials Recovery Facility Fueling Facility Convenience Store	17.22 Acres	[6]	8,333	350	314	664	336	328	664
I5	Existing	Jacmar Food Distribution 12761 Schabarum Avenue	Food Distribution Center	82,500 SF	[7]	210	10	5	15	5	11	16
				City of Baldwin Park								
B1	Proposed	Kaiser Permanente Baldwin Park MOB 1011 Baldwin Park Boulevard	Medical Office Building	60,000 GSF	[8]	2,167	114	30	144	38	99	137
B2	Proposed	LA Fitness 13822 Garvey Avenue	Health/Fitness Club Restaurant	45,000 GSF 9,000 GSF	[9]	2,788	94	92	186	130	100	230
B3	Proposed	3513 Barnes Avenue	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B4	Proposed	3142 Athol Street	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B5	Proposed	3146 Athol Street	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B6	Proposed	3202 Baldwin Park Boulevard	Gasoline Station	6 VFP	[11]	1,011	37	36	73	42	41	83
B7	Proposed	13128 Corak Street	Single-Family Detached Housing	2 DU	[10]	19	1	1	2	1	1	2
B8	Proposed	3353 Athol Street	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B9	Proposed	3346 Vineland Avenue	Single-Family Detached Housing	15 DU	[10]	143	3	8	11	9	6	15
B10	Completed	13732 Monterey Avenue	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B11	Completed	13734 Monterey Avenue	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1

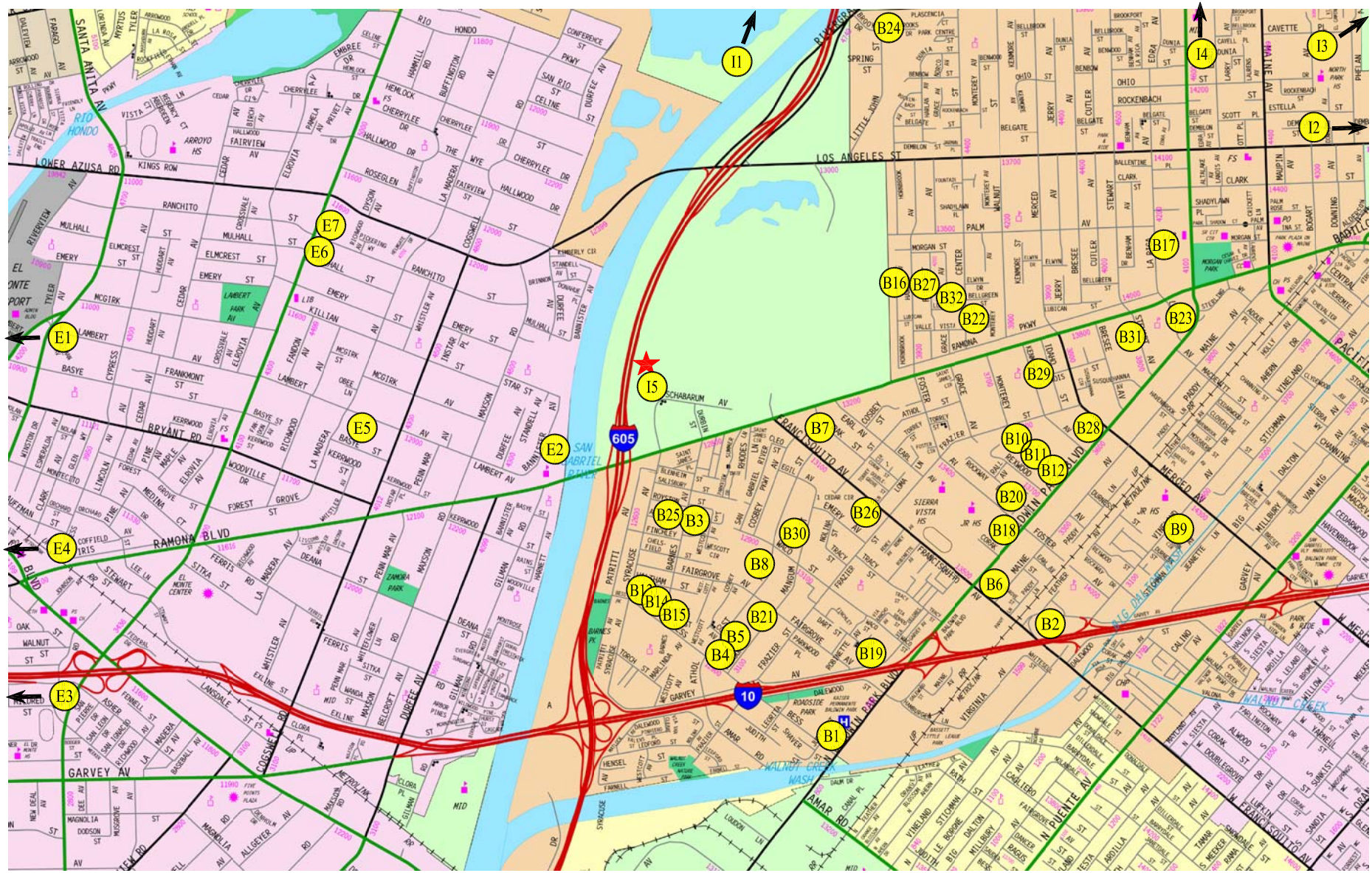
Table 6-1 (Continued)
RELATED PROJECTS LIST AND TRIP GENERATION [1]

MAP NO.	PROJECT STATUS	PROJECT NAME/NUMBER ADDRESS/LOCATION	LAND USE DATA		PROJECT DATA SOURCE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2]			PM PEAK HOUR VOLUMES [2]		
			LAND-USE	SIZE			IN	OUT	TOTAL	IN	OUT	TOTAL
B12	Completed	13736 Monterey Avenue	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B13	Completed	12723 Bess Avenue	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B14	Completed	12725 Bess Avenue	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B15	Completed	12727 Bess Avenue	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B16	Completed	4143 Hornbrook Avenue	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B17	Under Construction	4142-4144 La Rica Avenue	Condominium	8 DU	[12]	46	1	3	4	3	1	4
B18	Completed	3323 Baldwin Park Boulevard	Office	4,950 GSF	[13]	55	7	1	8	1	6	7
B19	Under Construction	13329 Garvey Avenue	Office/Warehouse	13,620 GSF	[13]	48	3	1	4	1	3	4
B20	Completed	13655 Foster Avenue	Townhome	10 DU	[12]	58	1	3	4	3	2	5
B21	Under Construction	3247 Mangum Street	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B22	Under Construction	4022 Center Street (A) & (B)	Single-Family Detached Housing	2 DU	[10]	19	1	1	2	1	1	2
B23	In Review	3932 La Rica Avenue	Apartment	3 DU	[14]	20	0	2	2	1	1	2
B24	Under Construction	4723 Little John Street	Warehouse	16,133 GSF	[15]	57	4	1	5	1	4	5
B25	In Review	12755 Aukland Avenue	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B26	In Review	13276 Francisquito Avenue	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B27	Under Construction	4112 Harlan Avenue	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
B28	In Review	Kenan Center Specific Plan 3825 Baldwin Park Boulevard	Single-Family Detached Housing	50 DU	[10]	476	10	28	38	32	18	50
B29	In Review	13825 Kenmore Avenue	Single-Family Detached Housing	1 DU	[9]	10	0	1	1	1	0	1
B30	In Review	3465 Mangum Street	Single-Family Detached Housing	1 DU	[9]	10	0	1	1	1	0	1

Table 6-1 (Continued)
RELATED PROJECTS LIST AND TRIP GENERATION [1]

MAP NO.	PROJECT STATUS	PROJECT NAME/NUMBER ADDRESS/LOCATION	LAND USE DATA LAND-USE	LAND USE DATA SIZE	PROJECT DATA SOURCE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2] IN	AM PEAK HOUR VOLUMES [2] OUT	AM PEAK HOUR VOLUMES [2] TOTAL	PM PEAK HOUR VOLUMES [2] IN	PM PEAK HOUR VOLUMES [2] OUT	PM PEAK HOUR VOLUMES [2] TOTAL
B31	In Review	3913 Stewart Avenue	Apartment	4 DU	[14]	27	0	2	2	1	1	2
B32	In Review	13506 Elwyn Drive	Single-Family Detached Housing	1 DU	[10]	10	0	1	1	1	0	1
City of El Monte												
E1	In Review	Walmart Superstore 4000 Arden Drive	Commercial	182,429 GLSF	[16]	7,595	155	122	277	280	292	572
E2	In Review	4422-4436 Bannister Street	Single-Family Detached Housing	22 DU	[6]	209	4	13	17	14	8	22
E3	Approved	Flair Spectrum 9600 Flair Drive	Hotel Factory Outlet Center Quality Restaurant Condominium	250 Rooms 64,000 GSF 50,000 GSF 600 DU	[17]	21,317	377	348	725	757	659	1,416
E4	Under Construction	Gateway TOD 3527 Santa Anita Avenue	Apartment Retail	485 DU 25,000 GLSF	[14] [18]	3,225 1,068	49 15	198 9	247 24	196 45	105 48	301 93
E5	In Review	11830 & 11842 Lambert Avenue	Single-Family Detached Housing	6 DU	[10]	57	1	4	5	4	2	6
E6	Approved	4610 Peck Road	Apartment	23 DU	[14]	153	2	10	12	9	5	14
E7	Submitted	4704-4716 Peck Road	Apartment	49 DU	[14]	326	5	20	25	20	10	30
TOTAL						**69,261**	**1,777**	**1,487**	**3,264**	**2,381**	**2,340**	**4,721**

[1] Sources: City of Irwindale, City of Baldwin Park, Planning Division, City of El Monte and Los Angeles County Department of Regional Planning. Trip generation forecasts for the related projects are based on ITE "Trip Generation Manual", 9th Edition, 2012 (as referenced in the Project Data Source column).
[2] Trips are one-way traffic movements, entering or leaving.
[3] Source: "Irwindale Regional Shopping Center Traffic Impact Analysis", prepared by LSA Associates, Inc., November 2014.
[4] Source: "Olive Pit Mining and Reclamation Project Traffic Impact Analysis", prepared by Urban Crossroads, July 24, 2014.
[5] Source: "Arrow Highway Business Park Mitigated Negative Declaration", prepared by Environmental Impact Sciences, August 2014.
[6] Source: "Athens-Irwindale Materials Recovery Facility and Transfer Station Traffic Impact Analysis", prepared by Urban Crossroads, August 29, 2013.
[7] Accounts for the re-occupancy of the former food distribution center located on the project site.
[8] Source: "Kaiser Permanente BPMC MOB Project Traffic Impact Analysis", prepared by LLG Engineers, December 2015.
[9] Source: "Baldwin Park LA Fitness Project Traffic Impact Analysis", prepared by LLG Engineers, March 2015.
[10] ITE Land Use Code 210 (Single-Family Detached Housing) trip generation average rates.
[11] ITE Land Use Code 944 (Gasoline/Service Station) trip generation average rates.
[12] ITE Land Use Code 230 (Residential Condominium/Townhouse) trip generation average rates.
[13] ITE Land Use Code 710 (General Office Building) trip generation average rates.
[14] ITE Land Use Code 220 (Apartment) trip generation average rates.
[15] ITE Land Use Code 150 (Warehouse) trip generation average rates.
[16] Trip generation forecasts and traffic assignment provided by the City of El Monte.
[17] Source: "Flair Spectrum Specific Plan Traffic Impact Study", prepared by LLG Engineers, October 22, 2014. Based on the anticipated build-out of the proposed project (year 2018), only Phase I of the Flair Spectrum project has been included in the forecast of future conditions.
[18] ITE Land Use Code 820 (Shopping Center) trip generation average rates.



MAP SOURCE: RAND MCNALLY & COMPANY

★ PROJECT SITE

(I) CITY OF IRWINDALE RELATED PROJECT

(B) CITY OF BALDWIN PARK RELATED PROJECT

(E) CITY OF EL MONTE RELATED PROJECT

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FIGURE 6-1
LOCATION OF RELATED PROJECTS

LINSCOTT, LAW & GREENSPAN, engineers

KAISER PERMANENTE IRWINDALE MOB PROJECT

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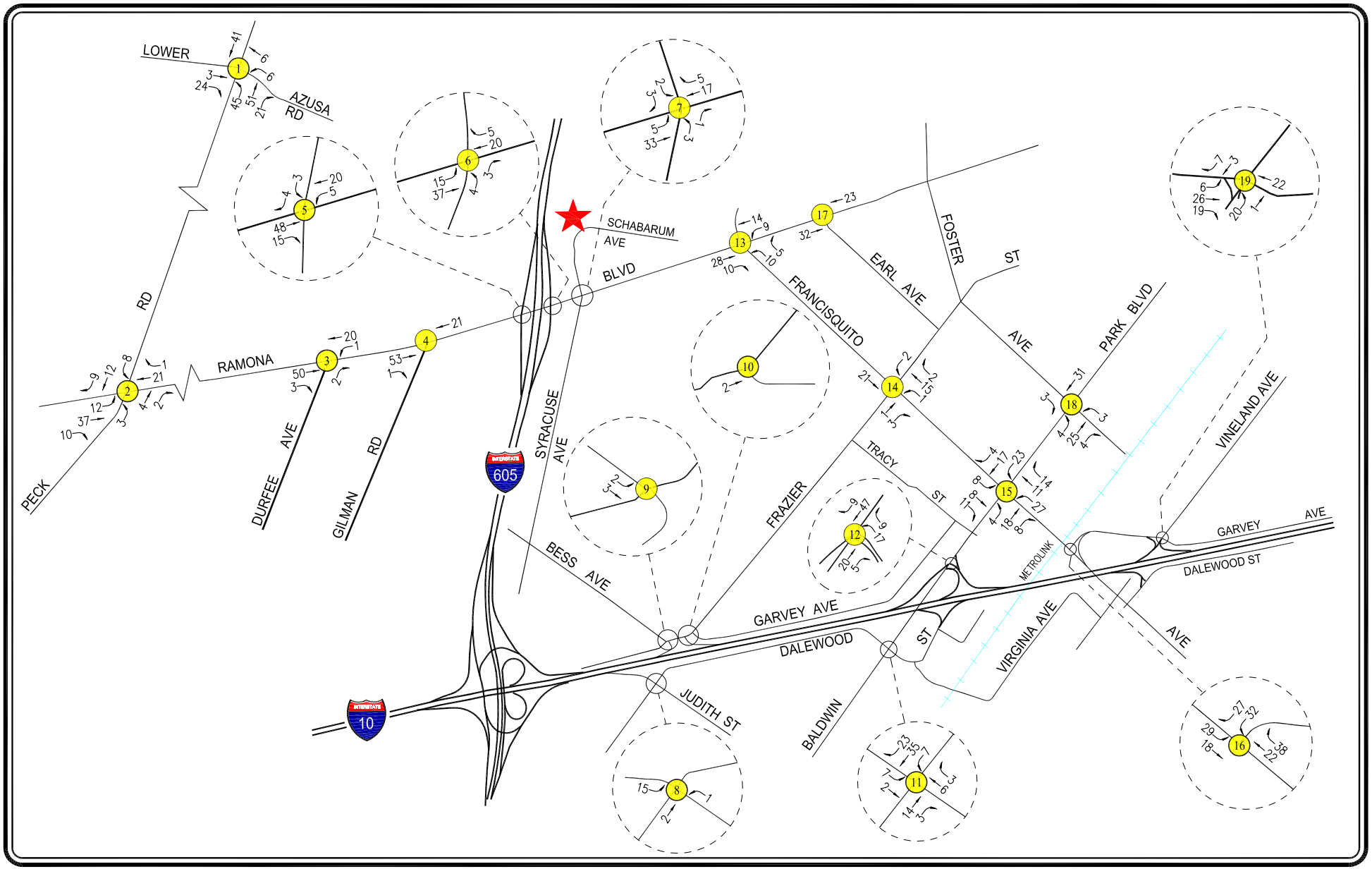

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FIGURE 6-2
RELATED PROJECTS TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

KAISER PERMANENTE IRWINDALE MOB PROJECT

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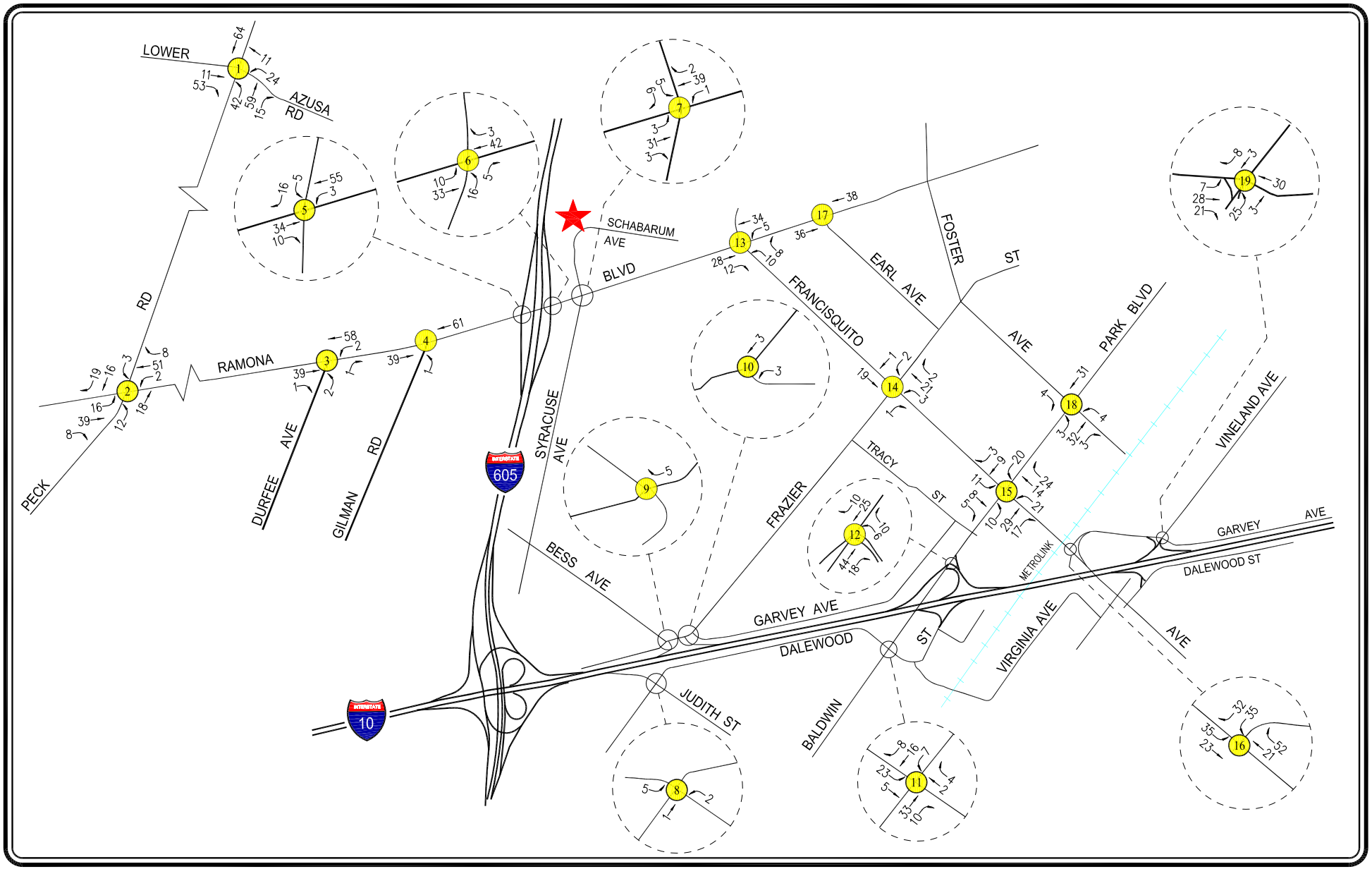

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FIGURE 6-3
RELATED PROJECTS TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR

KAISER PERMANENTE IRWINDALE MOB PROJECT

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6.2 Ambient Traffic Growth Factor

Horizon year, background traffic growth estimates also have been calculated by using an ambient traffic growth factor. The ambient traffic growth factor is intended to include unknown related projects in the study area, as well as account for typical growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at one percent (1.0%) per year. The ambient growth factor was based on review of the background traffic growth estimates for the Irwindale area (RSA 26, San Gabriel Valley) published in the *2010 Congestion Management Program for Los Angeles County*, which indicate that existing traffic volumes would be expected to increase at an annual rate of less than one percent (approximately 0.46% per year) between years 2010 and 2020. However, a one percent (1.0%) ambient traffic growth factor has been employed in this analysis in order to provide a conservative, worst case forecast of future traffic volumes in the area. Application of the ambient traffic growth factor to existing year traffic volumes results in a four percent (4.0%) increase in existing traffic volumes to horizon year 2019. Further, it is noted that the CMP manual's traffic growth rate is intended to anticipate future traffic generated by development projects in the project vicinity. Thus, the inclusion in this traffic analysis of both a forecast of traffic generated by known related projects plus the use of an ambient traffic growth factor based on CMP travel demand model data results in a conservative estimate of future traffic volumes at the study intersections.

7.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the Kaiser Permanente Irwindale MOB project, a multi-step process has been utilized. The first step is trip generation, which estimates the total arriving and departing traffic volumes on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

The second step of the forecasting process is trip distribution, which identifies the origins and destinations of inbound and outbound project traffic volumes. These origins and destinations are typically based on demographics and existing/anticipated travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the proposed project is isolated by comparing operational (i.e., Levels of Service) conditions at the selected key intersections using existing and expected future traffic volumes without and with forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated and the significance of the project's impacts identified.

7.1 Project Traffic Generation

Traffic volumes expected to be generated by the proposed project during the weekday AM and PM peak hours, as well as on a daily basis, were estimated using rates published in the ITE *Trip Generation Manual*. Traffic volumes expected to be generated by the proposed project were based upon rates per 1,000 gross square feet for the project. ITE Land Use Code 720 (Medical-Dental Office) trip generation rates were used to forecast the traffic volumes expected to be generated by the proposed project.

In addition to the trip generation forecasts for the proposed project, traffic volumes expected to be generated by the prior site use (i.e., food distribution center) also were forecast during the weekday AM and PM peak hours, as well as on a daily basis. The prior site use forecasts were based on information contained in the *Trip Generation Analysis for High-Cube Warehouse Distribution Center Land Use for the National Association of Industrial and Office Properties (NAIOP) Inland Empire Chapter*, prepared by Kunzman Associates, Inc., July 2010. The study included specific data in terms of the distribution of vehicle trips associated with warehouse distribution centers (e.g., percentages of passenger cars, 2-axle trucks, 3-axle trucks, and 4 or more axle trucks). While the more conservative ITE trip generation rates were utilized in this review, the breakdown of vehicle trip types have been employed in this analysis for purposes of applying the appropriate passenger car

equivalent (PCE) factors. A passenger car equivalency (PCE) factor of 1.5 was applied to all 2-axle trucks, while a PCE factor of 2.0 was applied to all 3-axle trucks and a PCE of 3.0 was applied to all 4 or more axle trucks.

The trip generation forecast for the proposed project is summarized in ***Table 7-1***. The trip generation forecast for the proposed project was submitted for review and approval by City of Irwindale staff. As presented in *Table 7-1*, the proposed project is expected to generate 200 net new vehicle trips (160 inbound trips and 40 outbound trips) during the weekday AM peak hour. During the weekday PM peak hour, the proposed project is expected to generate 249 net new vehicle trips (69 inbound trips and 180 outbound trips). Over a 24-hour period, the proposed project is forecast to generate 3,042 net new daily trip ends during a typical weekday (1,521 inbound trips and 1,521 outbound trips).

It should be noted that although the site was vacated prior to conduct of the traffic counts at the study intersections, a prior use trip credit for the former food distribution center on the project site has been applied for the project. The re-occupancy of the food distribution center has been accounted for in the future pre-project conditions analysis as a related project.

7.2 Project Traffic Distribution and Assignment

Project traffic volumes both entering and exiting the site have been distributed and assigned to the adjacent street system based on the following considerations:

- The site's proximity to major traffic corridors (i.e., I-605 Freeway, Ramona Boulevard, Francisquito Avenue, etc.);
- Expected localized traffic flow patterns based on adjacent roadway channelization and presence of traffic signals;
- Existing intersection traffic volumes;
- Existing site access ingress/egress schemes;
- Ingress/egress scheme planned for the MOB drop-off and pick-up area; and
- Nearby population and employment centers.

The project traffic volume distribution percentages during weekday AM and PM peak hours at the study intersections are illustrated in ***Figure 7-1***. The forecast traffic volumes for the proposed project at the study intersections for the weekday AM and PM peak hours are displayed in ***Figures 7-2*** and ***7-3***, respectively. The traffic volume assignments presented in *Figures 7-2* and *7-3* reflect the traffic distribution characteristics shown in *Figure 7-1* and the project traffic generation forecast presented in *Table 7-1*.

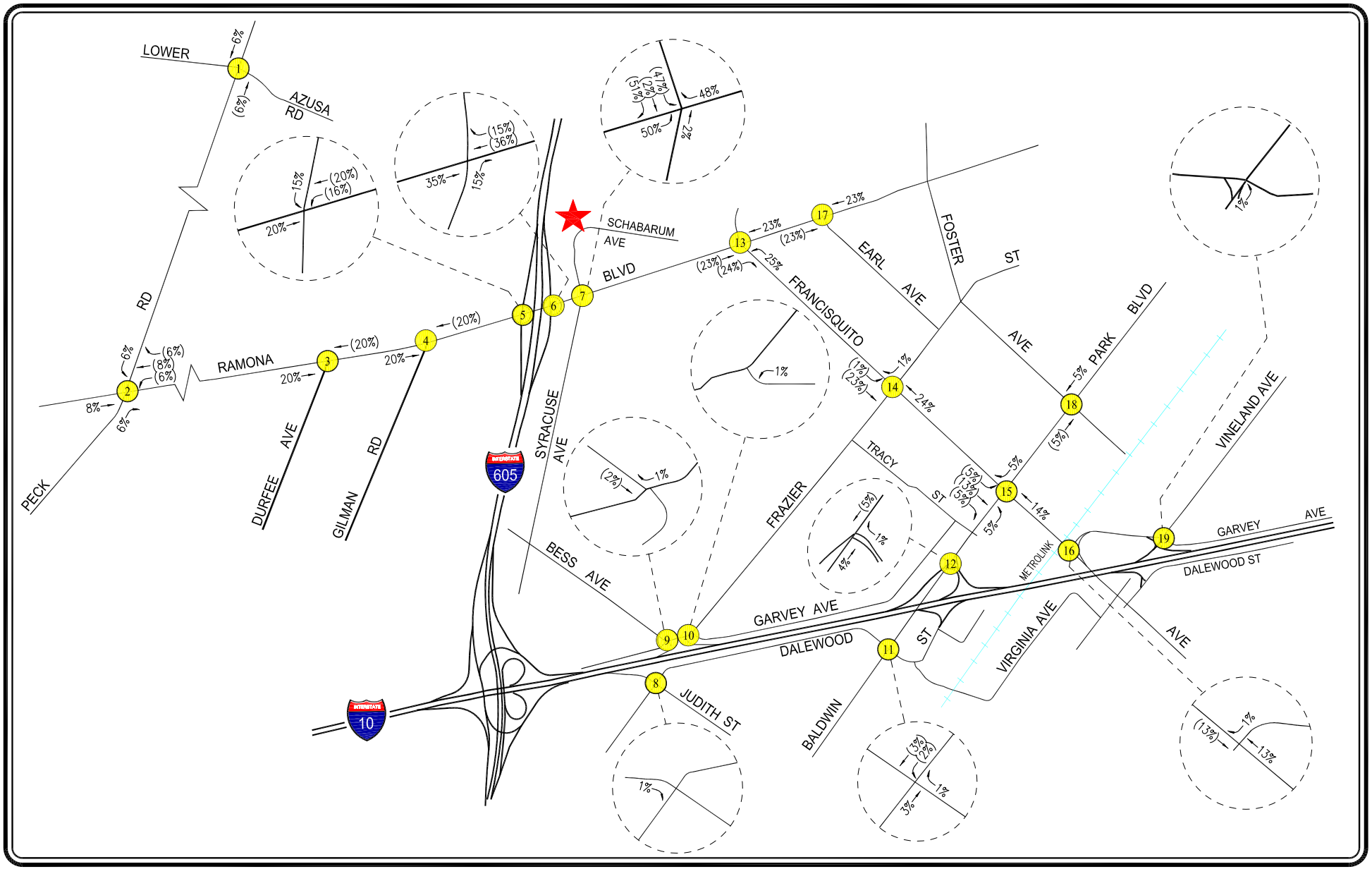
Table 7-1
PROJECT TRIP GENERATION [1]

LAND USE	SIZE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2]			PM PEAK HOUR VOLUMES [2]		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Proposed Project								
Medical Office [3]	90,000 GSF	3,252	170	45	215	74	191	265
Subtotal Proposed		**3,252**	**170**	**45**	**215**	**74**	**191**	**265**
Existing Use								
Food Distribution Center	82,500 GSF							
Total Vehicles [4]		138	6	3	9	3	7	10
- Total Passenger Cars (69.51% Daily) [5]		96	4	2	6	2	5	7
- Total Trucks (30.49% Daily) [5]		42	2	1	3	1	2	3
- 2-Axle (10.47% of All Trucks)		4	0	0	0	0	0	0
- 3-Axle (13.36% of All Trucks)		6	0	0	0	0	0	0
- 4+-Axle (76.17% of All Trucks)		32	2	1	3	1	2	3
- 2-Axle (1.5 PCE)		6	0	0	0	0	0	0
- 3-Axle (2.0 PCE)		12	0	0	0	0	0	0
- 4+-Axle (3.0 PCE)		96	6	3	9	3	6	9
Subtotal Trucks (PCE Adjusted)		114	6	3	9	3	6	9
Subtotal Existing		**210**	**10**	**5**	**15**	**5**	**11**	**16**
NET INCREASE		**3,042**	**160**	**40**	**200**	**69**	**180**	**249**

[1] Source: ITE "Trip Generation Manual", 9th Edition, 2012.
[2] Trips are one-way traffic movements, entering or leaving.
[3] ITE Land Use Code 720 (Medical-Dental Office Building) trip generation average and equation rates.
- Daily Trip Rate: 36.13 trips/1,000 GSF of floor area; 50% inbound/50% outbound
- AM Peak Hour Trip Rate: 2.39 trips/1,000 GSF of floor area; 79% inbound/21% outbound
- PM Peak Hour Trip Rate: Ln(T) = 0.90 Ln(X)+1.53 trips/1,000 SF of floor area; 28% inbound/72% outbound

[4] ITE Land Use Code 152 (High-Cube Warehouse) trip generation average rates.
- Daily Trip Rate: 1.68 trips/1,000 SF of floor area; 50% inbound/50% outbound
- AM Peak Hour Trip Rate: 0.11 trips/1,000 SF of floor area; 69% inbound/31% outbound
- PM Peak Hour Trip Rate: 0.12 trips/1,000 SF of floor area; 31% inbound/69% outbound

[5] Based on information contained in the "Trip Generation Analysis for High-Cube Warehouse Distribution Center Land Use for the National Association of Industrial and Office Properties (NAIOP) Inland Empire Chapter", prepared by Kunzman Associates, Inc., July 19, 2010.
A PCE factor of 1.5 was applied to all 2-axle trucks, while a PCE factor of 2.0 was applied to all 3-axle trucks and a PCE factor of 3.0 was applied to all 4 or more axle trucks.



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XX = INBOUND PERCENTAGE

(XX) = OUTBOUND PERCENTAGE

FIGURE 7-1
PROJECT TRIP DISTRIBUTION

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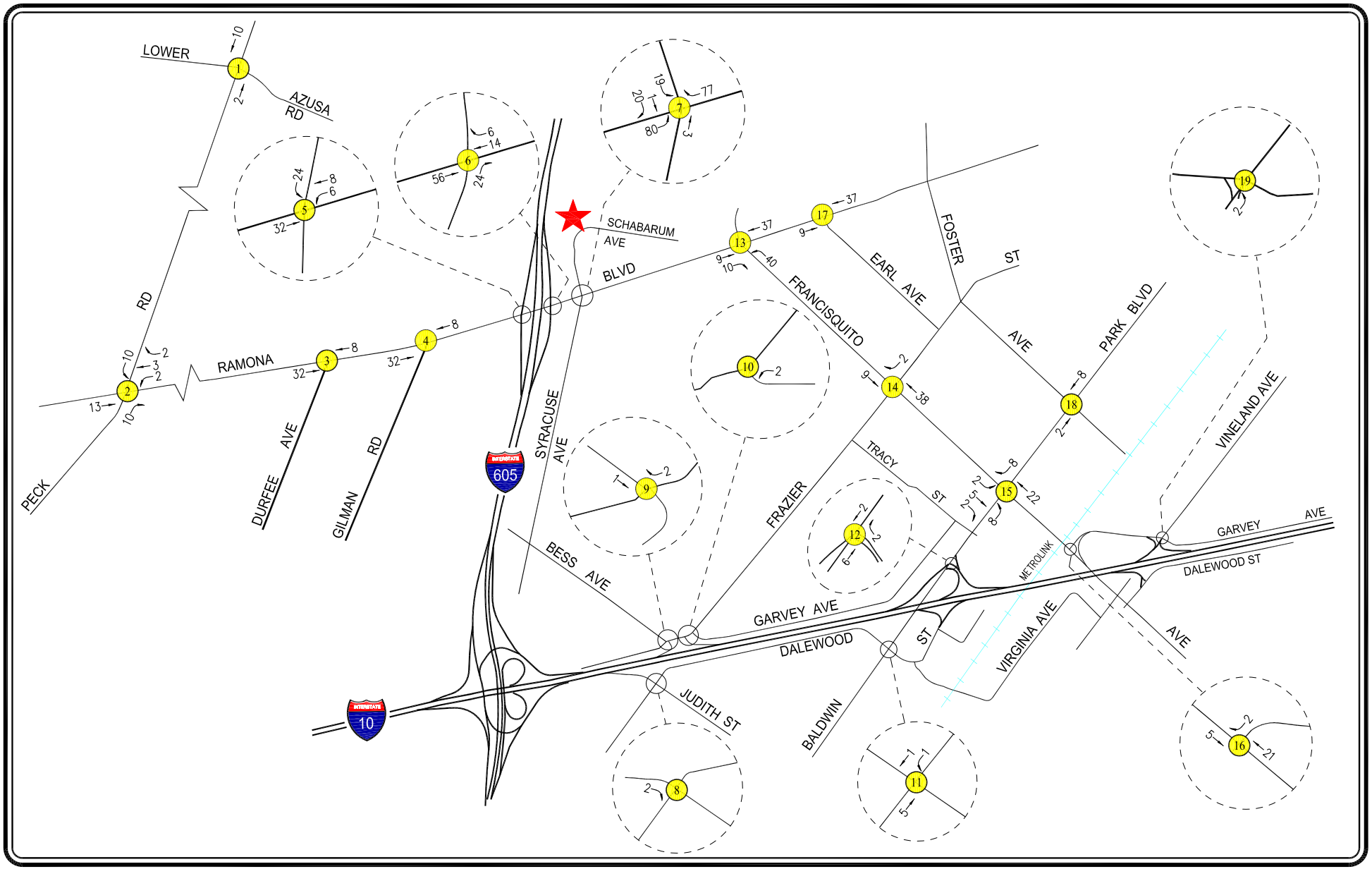

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FIGURE 7-2
NET NEW PROJECT TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

KAISER PERMANENTE IRWINDALE MOB PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

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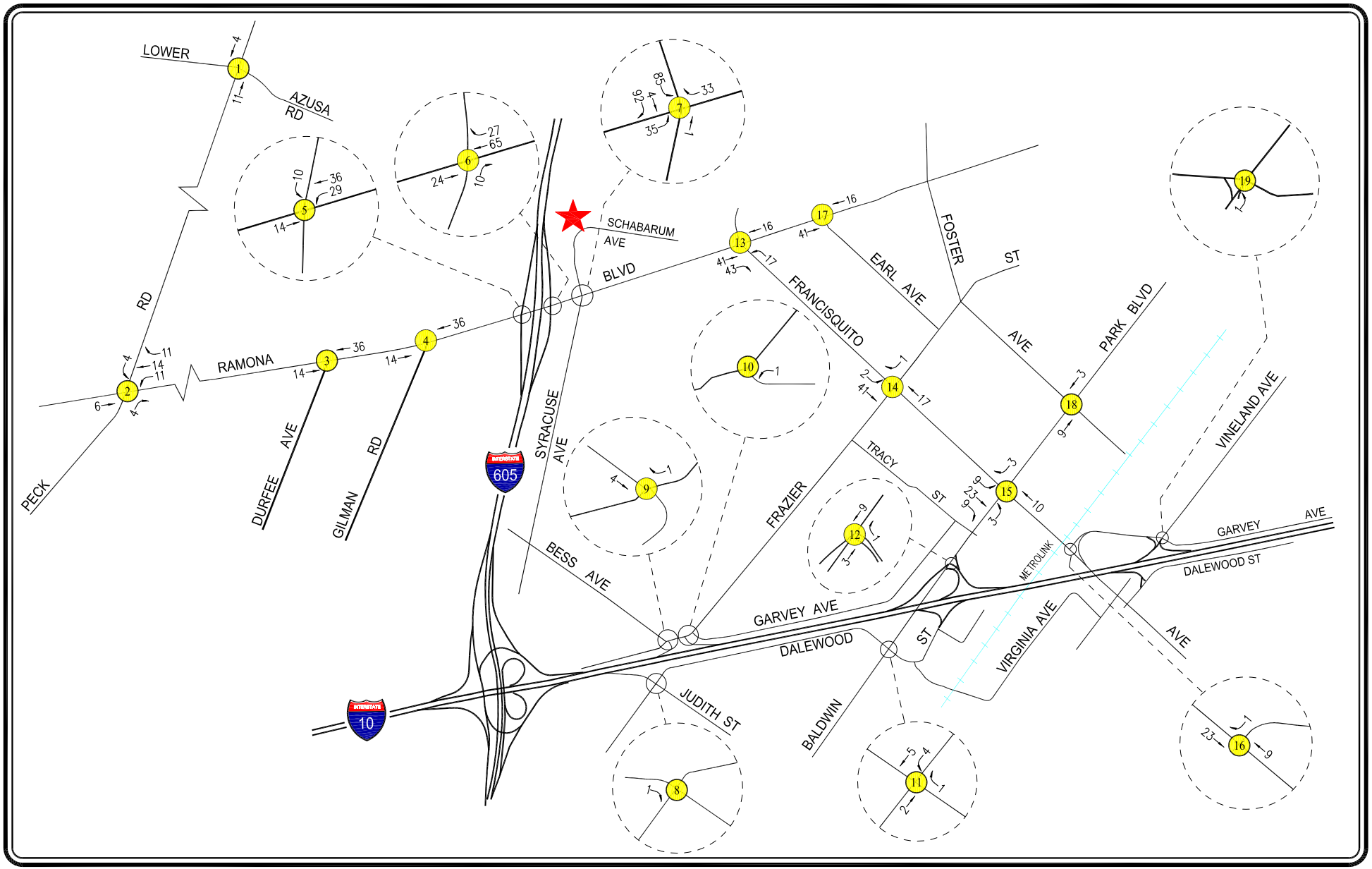

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FIGURE 7-3
NET NEW PROJECT TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR

KAISER PERMANENTE IRWINDALE MOB PROJECT

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8.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY

The signalized study intersections were evaluated using the Intersection Capacity Utilization (ICU) method of analysis which determines Volume-to-Capacity (*v/c*) ratios on a critical lane basis. The overall intersection *v/c* ratio is subsequently assigned a Level of Service (LOS) value to describe intersection operations. Level of Service varies from LOS A (free flow) to LOS F (jammed condition). A description of the ICU method and corresponding Level of Service is provided in ***Appendix B***.

The respective *Highway Capacity Manual* (HCM 2010) methodologies outlined in Chapter 19 for unsignalized/two-way stop-controlled (TWSC) intersections and Chapter 20 for unsignalized/all-way stop-controlled (AWSC) intersections were utilized for the analysis of the unsignalized locations. The TWSC methodology estimates the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns and determines the LOS for each constrained movement. The AWSC methodology estimates the average control delay for each of the subject movements and determines the LOS for each constrained movement. Average control delay for any particular movement is a function of the capacity of the approach and the degree of saturation. The average control delay is measured in seconds per vehicle, and includes delay due to deceleration to a stop at the back of the queue from free-flow speed, move-up time within the queue, stopped delay at the front of the queue, and delay due to acceleration back to free-flow speed. A description of the HCM method and corresponding Level of Service also is provided in *Appendix B*.

8.1 Impact Criteria and Thresholds

The relative impact of the added (i.e., net new) project traffic volumes to be generated by the proposed project was evaluated based on analysis of existing and future operating conditions at the study intersections without and with the proposed project. The previously discussed capacity analysis procedures were utilized to evaluate the future *v/c* relationships and service level characteristics at each study intersection.

As indicated in *Table 4-1*, the five City of Irwindale study intersections are shared with the City of Baldwin Park. Of these five intersections, two study intersections are also shared with Caltrans jurisdiction. A total of 10 study intersections are located within the City of Baldwin Park, of which five study intersections are shared with Caltrans. The four remaining study intersections are located within the City of El Monte. Each study intersection was evaluated for potential traffic impacts using the significant traffic impact criteria utilized in the jurisdiction of the intersection (e.g., study intersections in the City of Irwindale were evaluated for potential traffic impacts using the criteria of the City of Irwindale, etc.). Additionally, it should be noted that the more stringent City of Baldwin Park impact criteria was employed for the five study intersections shared with the City of Irwindale.

8.1.1 *City of Irwindale Impact Criteria and Thresholds*

The significance of the potential impacts of project-generated traffic at the City of Irwindale study intersections were identified using criteria set forth in the City of Irwindale's traffic study guidelines. The City of Irwindale utilizes the following threshold of significance for signalized intersections:

- When a signalized intersection operates at LOS D or better under existing or future conditions, and the addition of the project trips degrades the intersection operations to LOS E or F.
- When a signalized intersection operates at LOS E or better under existing or future baseline conditions, and the addition of the project trips degrades the intersection operations to LOS F or increases the V/C ratio by 0.02 or greater.
- When a signalized intersection operates at LOS F under existing or future baseline conditions, and the addition of more than 50 peak hour project trips increases the V/C ratio by 0.02 or greater.

8.1.2 *City of Baldwin Park Impact Criteria and Thresholds*

The significance of the potential impacts of project-generated traffic at the City of Baldwin Park study intersections were identified using criteria set forth in the City of Baldwin Park's traffic study guidelines. According to the City's traffic study guidelines, a significant transportation impact is determined based on the criteria presented in ***Table 8-1***.

Table 8-1
CITY OF BALDWIN PARK
INTERSECTION IMPACT THRESHOLD CRITERIA

Final *v/c*	**Level of Service**	**Project-Related Increase in *v/c* is Significant if**
>0.900	LOS E or F	equal to or greater than 0.010

As presented in *Table 8-1*, for those intersections that operate at LOS E or F after the addition of project traffic and the incremental change in the *v/c* ratio is 0.010 or greater, the project would be considered to have a significant impact.

The ICU calculations use a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes, and a dual-lane capacity of 2,880 vph. A clearance interval of 0.10 also is included in the ICU calculations.

8.1.3 *City of El Monte Impact Criteria and Thresholds*

The City of El Monte utilizes the following threshold of significance for signalized intersections:

- A significant impact occurs when a proposed project increases traffic demand at a signalized study intersection by two percent or more of capacity (V/C / 0.02), causing or worsening LOS F (V/C > 1.00) for all intersections on major corridors, truck routes, commercial corridors at, or adjacent to freeway ramps (in this case, all intersections along Lower Azusa Road and Ramona Boulevard and at intersections at, or adjacent to freeway ramps).

- A significant impact occurs when a proposed project increases traffic demand at a signalized study intersection by two percent or more of capacity (V/C / 0.02), causing or worsening LOS E (V/C > 0.90) for all intersections which are not on major corridors, truck routes, commercial corridors at or adjacent to freeway ramps.

The City of El Monte does not have established thresholds of significance for unsignalized intersections. However, based on coordination with City of El Monte staff, the following threshold of significance has been employed in the City's General Plan Traffic Impact Study and other traffic studies conducted in the City of El Monte:

- A significant impact occurs when a proposed Project increases traffic delay at an unsignalized intersection by two (2) percent or more of capacity, causing or worsening LOS E (control delay > 35 seconds) for those intersections.

8.2 Traffic Impact Analysis Scenarios

Traffic impacts at the study intersections were analyzed for the following conditions:

[a] Existing conditions.

[b] Existing with project conditions.

[c] Condition [b] with implementation of project mitigation measures, where necessary.

[d] Condition [a] plus one percent (1.0%) annual ambient traffic growth through year 2019 and with completion and occupancy of the related projects (i.e., future without project conditions).

[e] Condition [d] with completion and occupancy of the proposed project.

[f] Condition [e] with implementation of project mitigation measures, where necessary.

The traffic volumes for each new condition were added to the volumes in the prior condition to determine the change in capacity utilization at the study intersections.

9.0 CITY OF IRWINDALE TRAFFIC ANALYSIS

The traffic impact analysis prepared for the study intersections for the proposed project development program using the ICU methodology and application of the City of Irwindale significant traffic impact criteria is summarized in ***Table 9-1***. The ICU data worksheets for the five analyzed City of Irwindale intersections are contained in *Appendix B*.

9.1 Existing Conditions

9.1.1 *Existing Conditions*

As indicated in column [1] of *Table 9–1*, four of the five City of Irwindale study intersections are presently operating at LOS D or better during the weekday AM and PM peak hours under existing conditions. The following study intersection is expected to operate at LOS E during the peak hour shown below under existing conditions:

- Int. No. 6: I-605 Fwy. NB Ramps/Ramona Blvd. PM Peak Hour: *v/c*=0.968, LOS E

The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are displayed in *Figures 5–1* and *5–2*, respectively.

9.1.2 *Existing With Project Conditions*

As shown in column [2] of *Table 9–1,* application of the City's threshold criteria to the "With Proposed Project" scenario indicates that the proposed project is expected to create a significant impact at one of the five City of Irwindale study intersections. Incremental, but not significant, impacts are noted at the remaining City of Irwindale study intersections. As presented in column [2] of *Table 9-1*, application of the City of Irwindale's threshold criteria to the "Existing With Proposed Project" scenario indicates that the project is expected to create a significant impact at the following study intersection:

- <u>Intersection No. 5: I-605 Freeway SB Ramps/Ramona Boulevard</u>
  PM peak hour *v/c* ratio increase of 0.029 [to 0.903 (LOS E) from 0.874 (LOS D)]

The existing with project traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in ***Figures 9–1*** and ***9–2***, respectively.

9.2 Future Conditions

9.2.1 *Future Without Project Conditions*

The future cumulative baseline conditions were forecast based on the addition of traffic generated by the completion and occupancy of the related projects, as well as the growth in traffic due to the combined effects of continuing development, intensification of existing developments and other factors (i.e., ambient growth). The *v/c* ratios at all of the study intersections are incrementally increased with the addition of ambient traffic and traffic generated by the related projects listed in *Table 6–1*. As presented in column [3] of *Table 9–1*, three of the five City of Irwindale study

Table 9-1
CITY OF IRWINDALE SUMMARY OF VOLUME TO CAPACITY RATIOS [1]
AND LEVELS OF SERVICE
WEEKDAY AM AND PM PEAK HOURS

NO.	INTERSECTION	PEAK HOUR	[1] EXISTING V/C	[1] EXISTING LOS	[2] EXISTING WITH PROJECT V/C	[2] EXISTING WITH PROJECT LOS	[2] CHANGE V/C [(2)-(1)]	[2] SIGNIF. IMPACT [a]	[3] YEAR 2019 FUTURE PRE-PROJECT W/ AG & REL. PROJECTS V/C	[3] YEAR 2019 FUTURE PRE-PROJECT W/ AG & REL. PROJECTS LOS	[4] YEAR 2019 FUTURE WITH PROPOSED PROJECT V/C	[4] YEAR 2019 FUTURE WITH PROPOSED PROJECT LOS	[4] CHANGE V/C [(4)-(3)]	[4] SIGNIF. IMPACT [a]	[5] YEAR 2019 FUTURE WITH PROJECT MITIGATION V/C	[5] YEAR 2019 FUTURE WITH PROJECT MITIGATION LOS	[5] CHANGE V/C [(5)-(3)]	[5] 'MITIGATED [a]
5	I-605 Freeway SB Ramps/	AM	0.805	D	0.809	D	0.004	NO	0.849	D	0.852	D	0.003	NO	0.848	D	-0.001	---
	Ramona Boulevard	PM	0.874	D	0.903	E	0.029	YES	0.921	E	0.950	E	0.029	YES	0.866	D	-0.055	YES
6	I-605 Freeway NB Ramps/	AM	0.870	D	0.892	D	0.022	NO	0.920	E	0.942	E	0.022	YES	0.926	E	0.006	YES
	Ramona Boulevard	PM	0.968	E	0.981	E	0.013	NO	1.016	F	1.029	F	0.013	NO	0.865	D	-0.151	---
7	Syracuse Avenue-Schabarum Avenue/	AM	0.748	C	0.811	D	0.063	NO	0.786	C	0.848	D	0.062	NO	---	---	---	---
	Ramona Boulevard	PM	0.785	C	0.842	D	0.057	NO	0.826	D	0.883	D	0.057	NO	---	---	---	---
13	Francisquito Avenue/	AM	0.634	B	0.658	B	0.024	NO	0.664	B	0.689	B	0.025	NO	---	---	---	---
	Ramona Boulevard	PM	0.678	B	0.696	B	0.018	NO	0.718	C	0.736	C	0.018	NO	---	---	---	---
17	Earl Avenue/	AM	0.777	C	0.789	C	0.012	NO	0.812	D	0.823	D	0.011	NO	---	---	---	---
	Ramona Boulevard	PM	0.585	A	0.597	A	0.012	NO	0.615	B	0.628	B	0.013	NO	---	---	---	---

[a] City of Irwindale intersection impact threshold criteria is as follows:

Pre-Project v/c	LOS	Project Related Increase in v/c
≤ 0.900	D	intersection operating at LOS D degrades to LOS E or F
≥ 0.901 - 1.000	E	equal to or greater than 0.02
> 1.000	F	equal to or greater than 0.02, resulting from 50 or more peak hour project trips

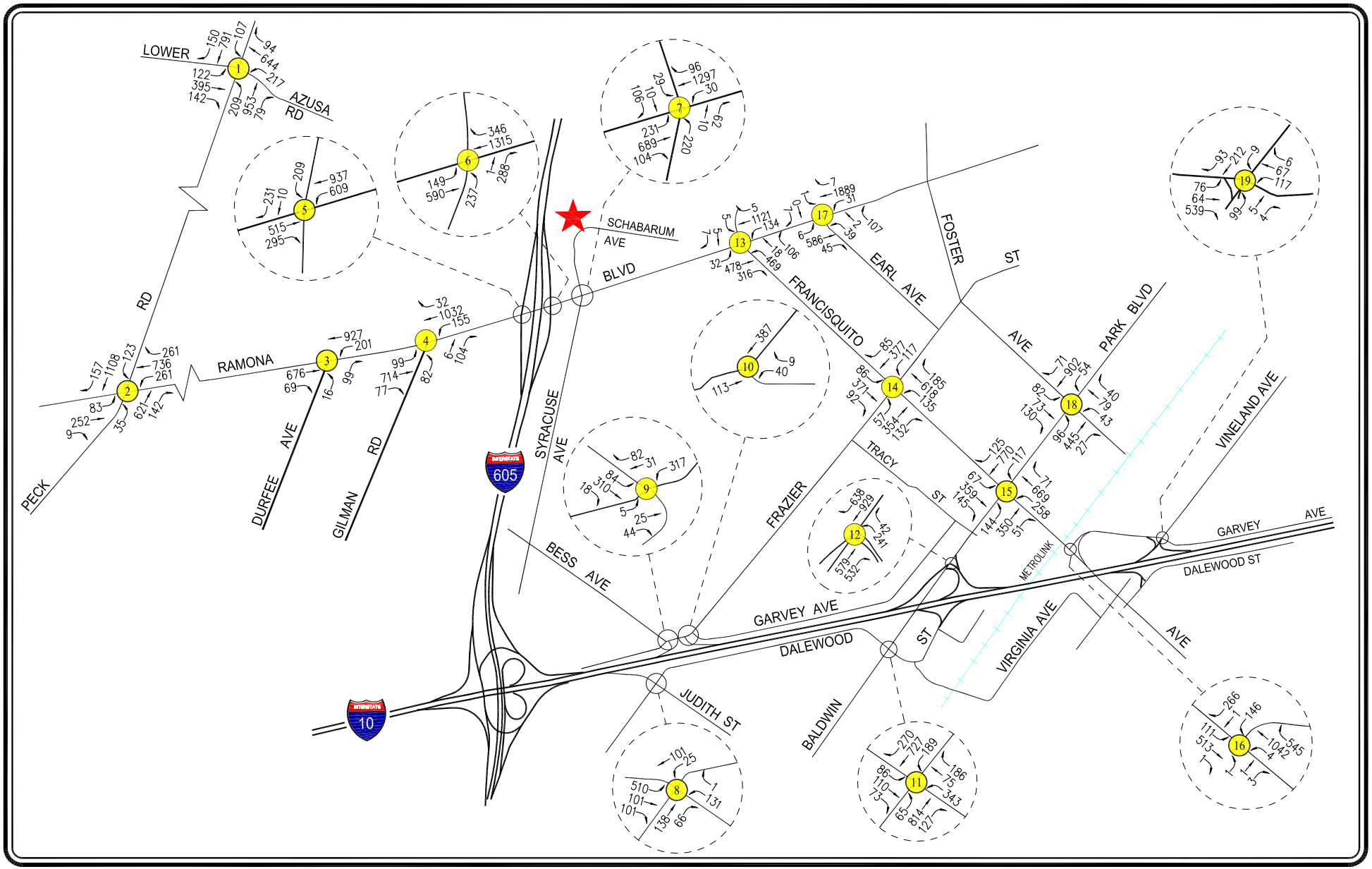

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FIGURE 9-1
EXISTING WITH PROJECT TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

KAISER PERMANENTE IRWINDALE MOB PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

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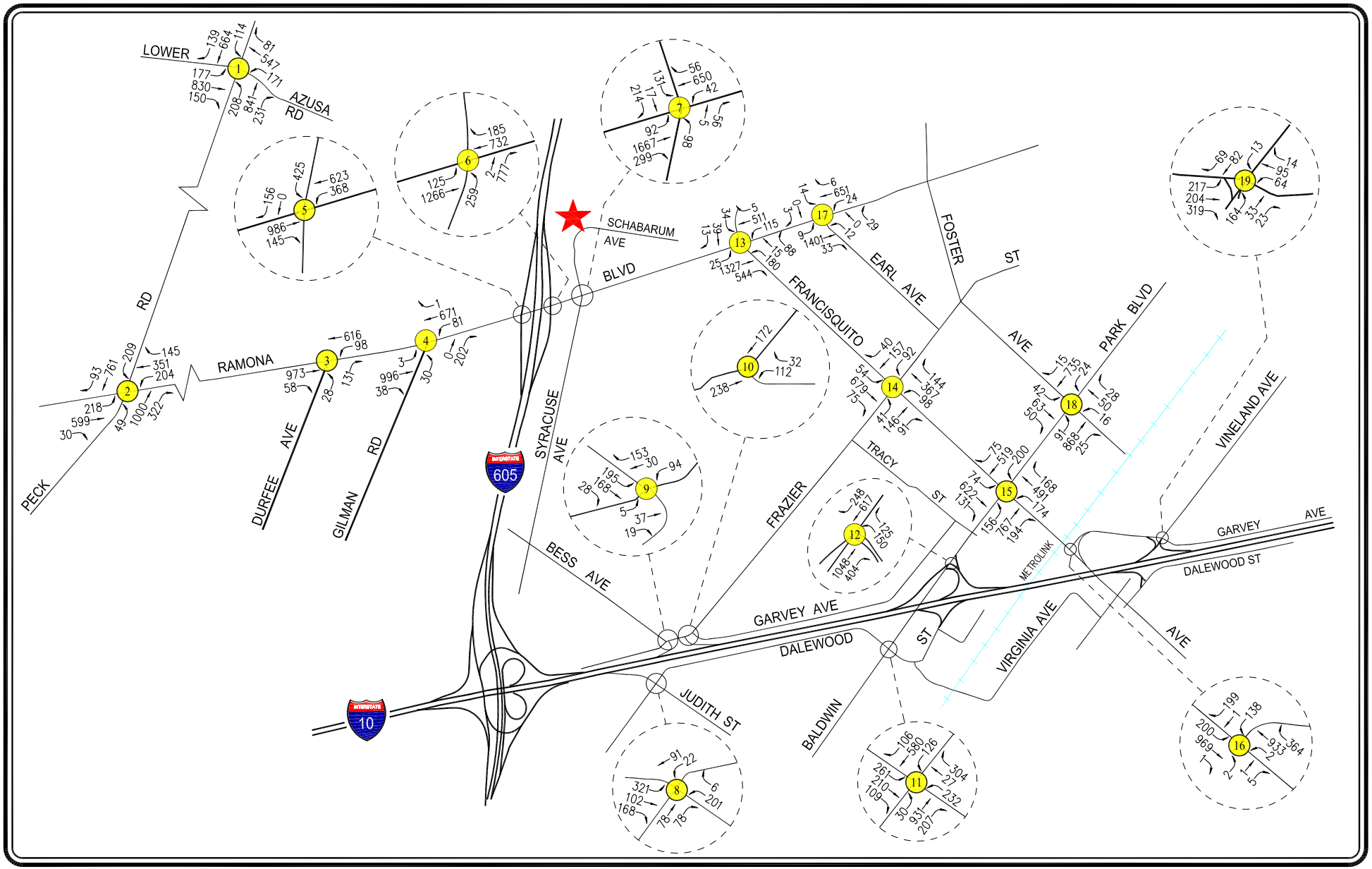

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FIGURE 9-2
EXISTING WITH PROJECT TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR

KAISER PERMANENTE IRWINDALE MOB PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

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intersections are expected to continue to operate at LOS D or better during the weekday AM and PM peak hours with the addition of growth in ambient traffic and related projects traffic under the future without project conditions. The following two study intersections are expected to operate at LOS E or F during the peak hours shown below with the addition of growth in ambient traffic and related projects traffic under the future without project conditions:

- Int. No. 5: I-605 Fwy. SB Ramps/Ramona Blvd. PM Peak Hour: *v/c*=0.921, LOS E
- Int. No. 6: I-605 Fwy. NB Ramps/Ramona Blvd. AM Peak Hour: *v/c*=0.920, LOS E

  PM Peak Hour: *v/c*=1.016, LOS F

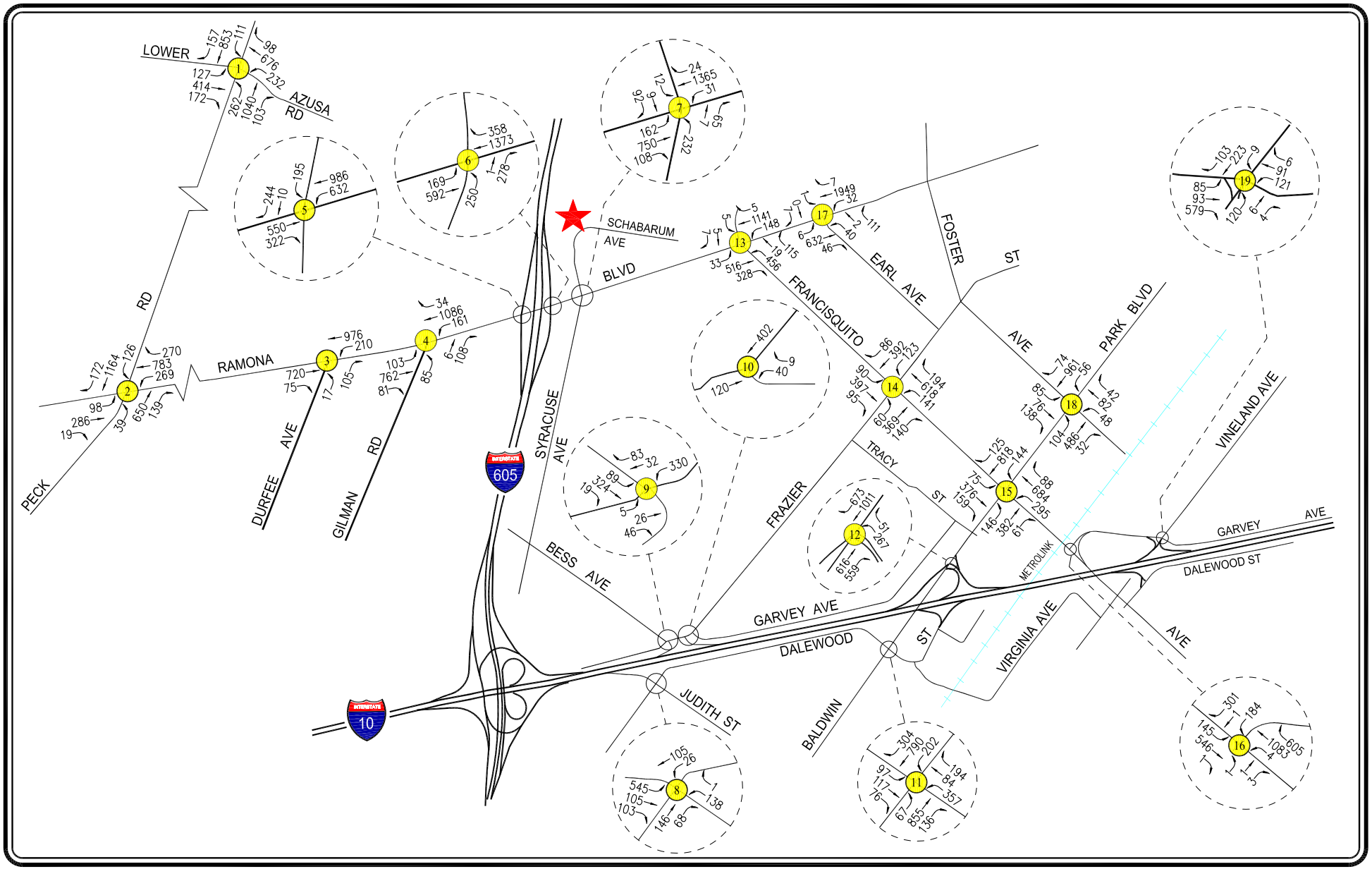
The future without project (existing, ambient growth and related projects) traffic volumes at the study intersections during the weekday AM and PM peak hours are presented in ***Figures 9–3*** and ***9–4***, respectively.

9.2.2 *Future With Project Conditions*

As shown in column [4] of *Table 9–1,* application of the City Irwindale's threshold criteria to the "With Proposed Project" scenario indicates that the proposed project is expected to create a significant impact at two of the five City of Irwindale study intersections. Incremental, but not significant, impacts are noted at the remaining City of Irwindale study intersections. As presented in column [4] of *Table 9-1*, application of the City of Irwindale's threshold criteria to the "Future With Proposed Project" scenario indicates that the project is expected to create a significant impact at the following study intersections:

- <u>Intersection No. 5: I-605 Freeway SB Ramps/Ramona Boulevard</u>
  PM peak hour *v/c* ratio increase of 0.029 [to 0.950 (LOS E) from 0.921 (LOS E)]
- <u>Intersection No. 6: I-605 Freeway NB Ramps/Ramona Boulevard</u>
  AM peak hour *v/c* ratio increase of 0.022 [to 0.942 (LOS E) from 0.920 (LOS E)]

The future with project (existing, ambient growth, related projects and project) traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in ***Figures 9–5*** and ***9–6***, respectively.



N

NOT TO SCALE

★ PROJECT SITE

FIGURE 9-3
FUTURE WITHOUT PROJECT TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

KAISER PERMANENTE IRWINDALE MOB PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

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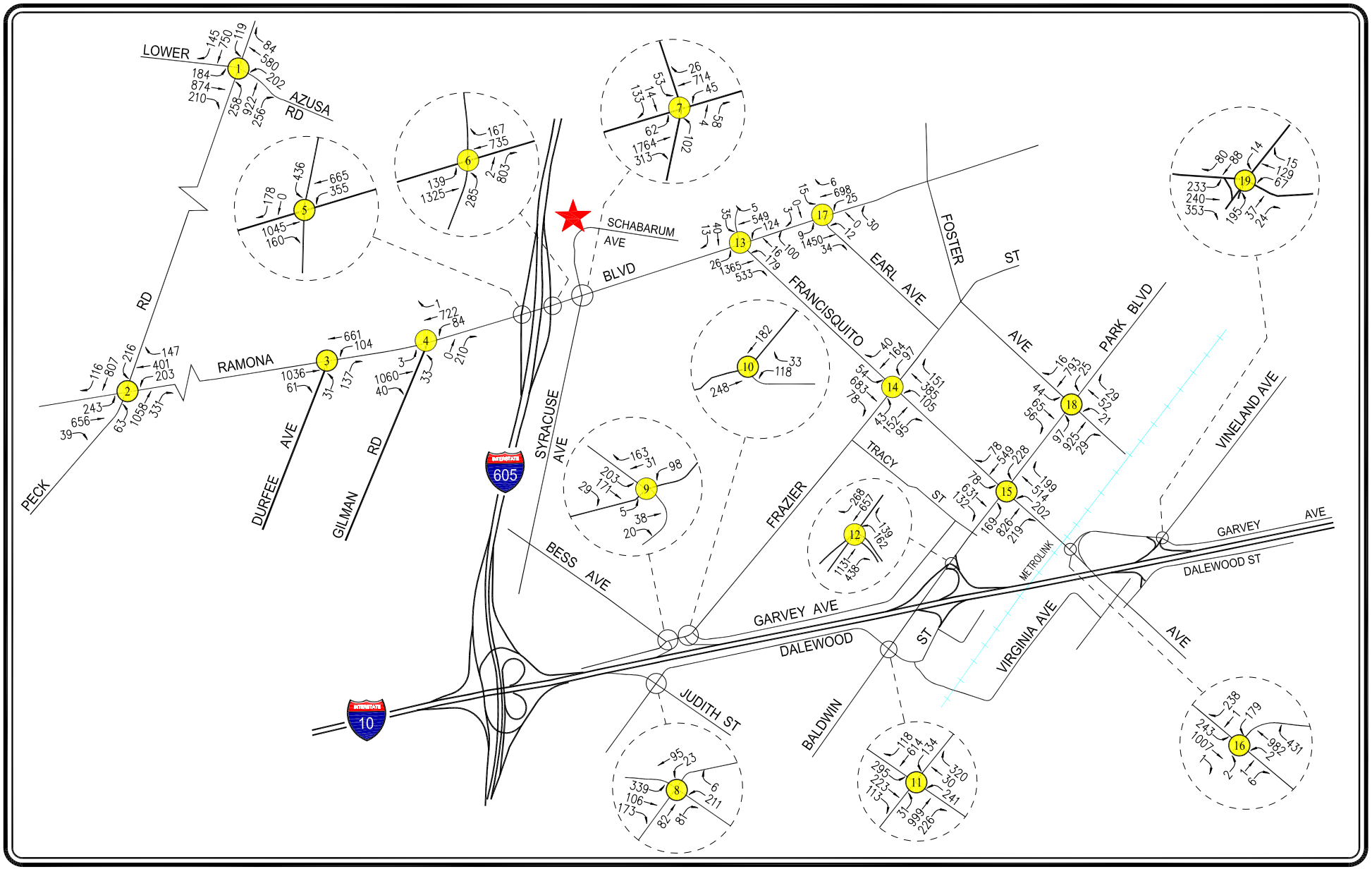

PROJECT SITE

NOT TO SCALE

LINSCOTT, LAW & GREENSPAN, engineers

FIGURE 9-4
FUTURE WITHOUT PROJECT TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR

KAISER PERMANENTE IRWINDALE MOB PROJECT

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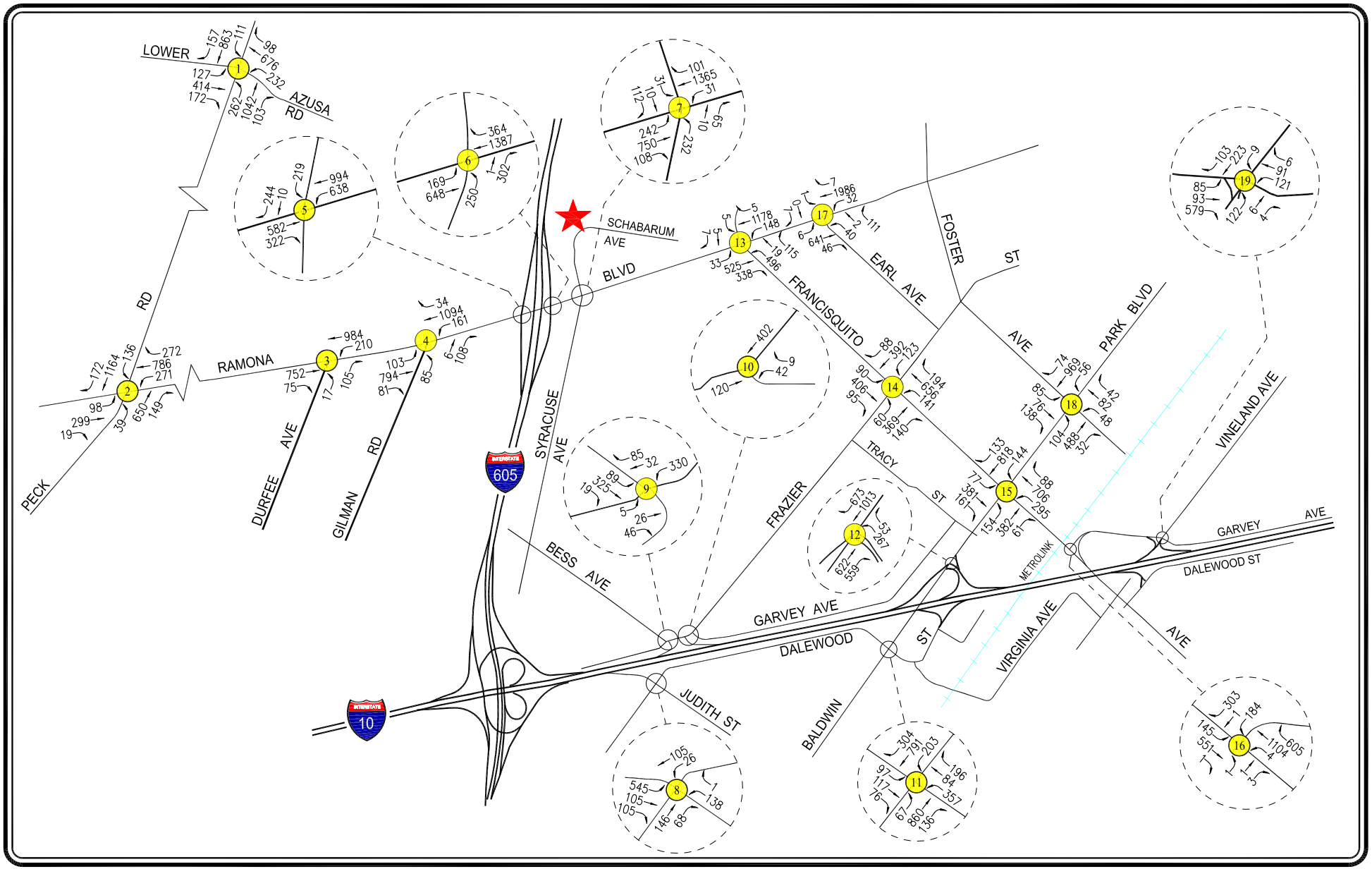

N

NOT TO SCALE

PROJECT SITE

FIGURE 9-5
FUTURE WITH PROJECT TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

KAISER PERMANENTE IRWINDALE MOB PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

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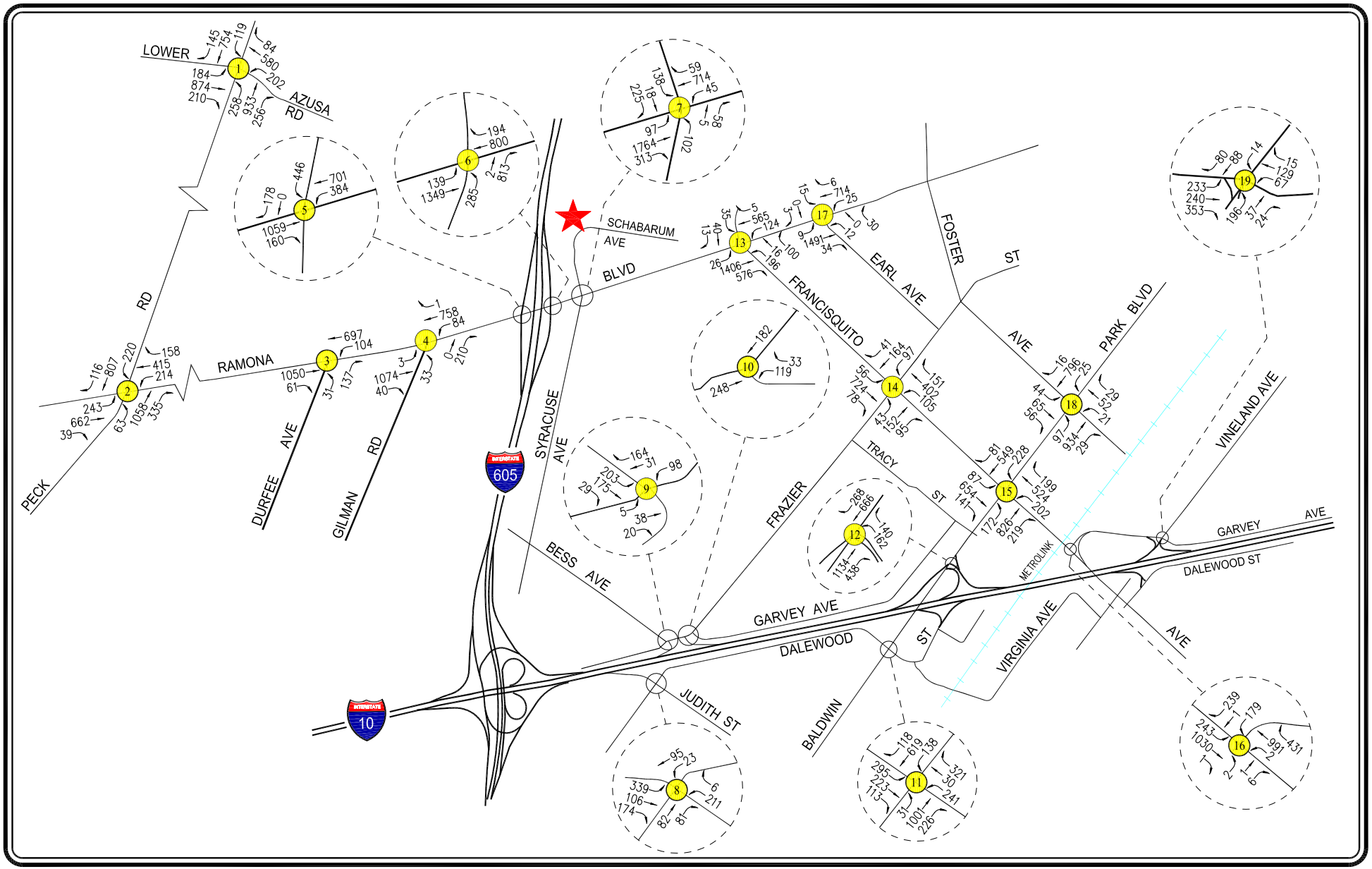

N

NOT TO SCALE

★ PROJECT SITE

FIGURE 9-6
FUTURE WITH PROJECT TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR

KAISER PERMANENTE IRWINDALE MOB PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

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10.0 CITY OF BALDWIN PARK TRAFFIC ANALYSIS

The traffic impact analysis prepared for the study intersections for the proposed project development program using the ICU methodology and application of the City of Baldwin Park significant traffic impact criteria is summarized in ***Table 10-1***. The ICU data worksheets for the ten City of Baldwin Park analyzed intersections associated with the proposed project are contained in *Appendix B*. Additionally, as noted previously, the more stringent City of Baldwin Park impact criteria was utilized for the five study intersections shared with the City of Irwindale. Thus, a total of 15 combined jurisdictions study intersections (i.e., 10 City of Baldwin Park intersections and five City of Irwindale intersections) were evaluated based on application of the City of Baldwin Park significant traffic impact criteria.

10.1 Existing Conditions

10.1.1 *Existing Conditions*

As indicated in column [1] of *Table 10–1*, 14 of the 15 combined jurisdictions study intersections are presently operating at LOS D or better during the weekday AM and PM peak hours under existing conditions. The following study intersection is expected to operate at LOS E during the peak hour shown below under existing conditions:

- Int. No. 6: I-605 Fwy. NB Ramps/Ramona Blvd. PM Peak Hour: *v/c*=0.968, LOS E

The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are displayed in *Figures 5–1* and *5–2*, respectively.

10.1.2 *Existing With Project Conditions*

As shown in column [2] of *Table 10–1,* application of the City's threshold criteria to the "With Proposed Project" scenario indicates that the proposed project is expected to create a significant impact at two of the combined jurisdictions study intersections based on City of Baldwin Park significant traffic impact criteria. Incremental, but not significant, impacts are noted at the remaining combined jurisdictions study intersections. As presented in column [2] of *Table 10-1*, application of the City of Baldwin Park's threshold criteria to the "Existing With Proposed Project" scenario indicates that the project is expected to create a significant impact at the following study intersections:

- <u>Intersection No. 5: I-605 Freeway SB Ramps/Ramona Boulevard</u>
  PM peak hour *v/c* ratio increase of 0.029 [to 0.903 (LOS E) from 0.874 (LOS D)]

- <u>Intersection No. 6: I-605 Freeway NB Ramps/Ramona Boulevard</u>
  PM peak hour *v/c* ratio increase of 0.013 [to 0.981 (LOS E) from 0.968 (LOS E)]

The existing with project traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in *Figures 9–1* and *9–2*, respectively.

Table 10-1
CITY OF BALDWIN PARK SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE [1]
WEEKDAY AM AND PM PEAK HOURS

NO.	INTERSECTION	PEAK HOUR	[1] EXISTING DELAY or LOS V/C	[a]	[2] EXISTING WITH PROJECT DELAY or LOS V/C	[a]	CHANGE in V/C or DELAY [(2)-(1)]	SIGNIF. IMPACT [d]	[3] YEAR 2019 FUTURE PRE-PROJECT W/ AG & REL. PROJECTS DELAY or LOS V/C	[4]	[4] YEAR 2019 FUTURE WITH PROPOSED PROJECT DELAY or LOS V/C	[a]	CHANGE in V/C or DELAY [(4)-(3)]	SIGNIF. IMPACT [d]	[5] YEAR 2019 FUTURE WITH PROJECT MITIGATION DELAY or LOS V/C	[a]	CHANGE V/C [(5)-(3)]	MITIGATED [d]
5	I-605 Freeway SB Ramps/	AM	0.805	D	0.809	D	0.004	NO	0.849	D	0.852	D	0.003	NO	0.848	D	-0.001	---
	Ramona Boulevard	PM	0.874	D	0.903	E	0.029	YES	0.921	E	0.950	E	0.029	YES	0.866	D	-0.055	YES
6	I-605 Freeway NB Ramps/	AM	0.870	D	0.892	D	0.022	NO	0.920	E	0.942	E	0.022	YES	0.926	E	0.006	YES
	Ramona Boulevard	PM	0.968	E	0.981	E	0.013	YES	1.016	F	1.029	F	0.013	YES	0.865	D	-0.151	YES
7	Syracuse Avenue-Schabarum Avenue/	AM	0.748	C	0.811	D	0.063	NO	0.786	C	0.848	D	0.062	NO	---	---	---	---
	Ramona Boulevard	PM	0.785	C	0.842	D	0.057	NO	0.826	D	0.883	D	0.057	NO	---	---	---	---
8	Frazier Street/	AM	0.708	C	0.708	C	0.000	NO	0.743	C	0.743	C	0.000	NO	---	---	---	---
	I-10 Freeway EB Off-Ramp-Judith Street	PM	0.605	B	0.605	B	0.000	NO	0.630	B	0.630	B	0.000	NO	---	---	---	---
9	Bess Avenue/	AM	18.0	C	18.1	C	0.1	NO	20.0	C	20.2	C	0.2	NO	---	---	---	---
	I-10 WB On-Ramp-Garvey Avenue [b]	PM	12.3	B	12.4	B	0.1	NO	13.0	B	13.1	B	0.1	NO	---	---	---	---
10	I-10 WB Off-Ramp/	AM	12.7	B	12.8	B	0.1	NO	13.1	B	13.2	B	0.1	NO	---	---	---	---
	Garvey Avenue [c]	PM	12.5	B	12.5	B	0.0	NO	13.0	B	13.0	B	0.0	NO	---	---	---	---
11	Baldwin Park Boulevard/	AM	0.833	D	0.835	D	0.002	NO	0.878	D	0.880	D	0.002	NO	---	---	---	---
	Dalewood Street	PM	0.840	D	0.844	D	0.004	NO	0.898	D	0.901	E	0.003	NO	---	---	---	---
12	Baldwin Park Boulevard/	AM	0.740	C	0.740	C	0.000	NO	0.793	C	0.794	C	0.001	NO	---	---	---	---
	I-10 Freeway WB Ramps	PM	0.647	B	0.648	B	0.001	NO	0.692	B	0.693	B	0.001	NO	---	---	---	---
13	Francisquito Avenue/	AM	0.634	B	0.658	B	0.024	NO	0.664	B	0.689	B	0.025	NO	---	---	---	---
	Ramona Boulevard	PM	0.678	B	0.696	B	0.018	NO	0.718	C	0.736	C	0.018	NO	---	---	---	---
14	Francisquito Avenue/	AM	0.618	B	0.630	B	0.012	NO	0.646	B	0.658	B	0.012	NO	---	---	---	---
	Frazier Street	PM	0.515	A	0.528	A	0.013	NO	0.541	A	0.554	A	0.013	NO	---	---	---	---
15	Baldwin Park Boulevard/	AM	0.779	C	0.788	C	0.009	NO	0.838	D	0.847	D	0.009	NO	0.847	D	0.009	---
	Francisquito Avenue	PM	0.859	D	0.869	D	0.010	NO	0.934	E	0.944	E	0.010	YES	0.875	D	-0.059	YES

Table 10-1 (Continued)
CITY OF BALDWIN PARK SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE [1]
WEEKDAY AM AND PM PEAK HOURS

NO.	INTERSECTION	PEAK HOUR	[1] EXISTING DELAY or LOS V/C	[a]	[2] EXISTING WITH PROJECT DELAY or LOS V/C	[a]	CHANGE in V/C or DELAY [(2)-(1)]	SIGNIF. IMPACT [d]	[3] YEAR 2019 FUTURE PRE-PROJECT W/ AG & REL. PROJECTS DELAY or LOS V/C	[a]	[4] YEAR 2019 FUTURE WITH PROPOSED PROJECT DELAY or LOS V/C	[a]	CHANGE in V/C or DELAY [(4)-(3)]	SIGNIF. IMPACT [d]	[5] YEAR 2019 FUTURE WITH PROJECT MITIGATION DELAY or LOS V/C	[a]	CHANGE V/C [(5)-(3)]	MITIGATED [d]
16	Francisquito Avenue/	AM	0.655	B	0.662	B	0.007	NO	0.719	C	0.726	C	0.007	NO	---	---	---	---
	Garvey Avenue	PM	0.639	B	0.643	B	0.004	NO	0.709	C	0.713	C	0.004	NO	---	---	---	---
17	Earl Avenue/	AM	0.777	C	0.789	C	0.012	NO	0.812	D	0.823	D	0.011	NO	---	---	---	---
	Ramona Boulevard	PM	0.585	A	0.597	A	0.012	NO	0.615	B	0.628	B	0.013	NO	---	---	---	---
18	Baldwin Park Boulevard/	AM	0.614	B	0.617	B	0.003	NO	0.649	B	0.651	B	0.002	NO	---	---	---	---
	Foster Avenue	PM	0.476	A	0.479	A	0.003	NO	0.504	A	0.507	A	0.003	NO	---	---	---	---
19	I-10 WB Ramps-Vineland Avenue/	AM	10.9	B	10.9	B	0.0	NO	12.1	B	12.1	B	0.0	NO	---	---	---	---
	Garvey Avenue [b]	PM	13.5	B	13.6	B	0.1	NO	18.7	C	18.8	C	0.1	NO	---	---	---	---

[a] Level of Service (LOS) is based on the reported ICU value for signalized intersections and on the delay for unsignalized intersections.
[b] All-Way Stop-Controlled Intersection.
[c] Two-Way Stop-Controlled Intersection. Reported values represent the delays associated with the most constrained approach of the intersection.
[d] According to City of Baldwin Park, a transportation impact on an intersection shall be deemed significant in accordance with the following table:

Final v/c	LOS	Project Related Increase in v/c
>=0.901	E or F - signalized	equal to or greater than 0.010
>35 seconds	E or F - unsignalized	equal to or greater than 1 second

10.2 Future Conditions

10.2.1 *Future Without Project Conditions*

The future cumulative baseline conditions were forecast based on the addition of traffic generated by the completion and occupancy of the related projects, as well as the growth in traffic due to the combined effects of continuing development, intensification of existing developments and other factors (i.e., ambient growth). The *v/c* and delay ratios at all of the study intersections are incrementally increased with the addition of ambient traffic and traffic generated by the related projects listed in *Table 6–1*. As presented in column [3] of *Table 10–1*, 12 of the 15 combined jurisdictions study intersections are expected to continue to operate at LOS D or better during the weekday AM and PM peak hours with the addition of growth in ambient traffic and related projects traffic under the future without project conditions. The following three study intersections are expected to operate at LOS E or F during the peak hours shown below with the addition of growth in ambient traffic and related projects traffic under the future without project conditions:

- Int. No. 5: I-605 Fwy. SB Ramps/Ramona Blvd. PM Peak Hour: *v/c*=0.921, LOS E
- Int. No. 6: I-605 Fwy. NB Ramps/Ramona Blvd. AM Peak Hour: *v/c*=0.920, LOS E
  PM Peak Hour: *v/c*=1.016, LOS F
- Int. No. 15: Baldwin Park Bl./Francisquito Ave. PM Peak Hour: *v/c*=0.934, LOS E

The future without project (existing, ambient growth and related projects) traffic volumes at the study intersections during the weekday AM and PM peak hours are presented in *Figures 9–3* and *9–4*, respectively.

10.2.2 *Future With Project Conditions*

As shown in column [4] of *Table 10–1,* application of the City of Baldwin Park's threshold criteria to the "With Proposed Project" scenario indicates that the proposed project is expected to create a significant impact at three of the combined jurisdictions study intersections. Incremental, but not significant, impacts are noted at the remaining combined jurisdictions study intersections. As presented in column [4] of *Table 10-1*, application of the City of Baldwin Park's threshold criteria to the "Future With Proposed Project" scenario indicates that the project is expected to create a significant impact at the following study intersections:

- <u>Intersection No. 5: I-605 Freeway SB Ramps/Ramona Boulevard</u>
  PM peak hour *v/c* ratio increase of 0.029 [to 0.950 (LOS E) from 0.921 (LOS E)]
- <u>Intersection No. 6: I-605 Freeway NB Ramps/Ramona Boulevard</u>
  AM peak hour *v/c* ratio increase of 0.022 [to 0.942 (LOS E) from 0.920 (LOS E)]
  PM peak hour *v/c* ratio increase of 0.013 [to 1.029 (LOS F) from 1.016 (LOS F)]

- <u>Intersection No. 15: Baldwin Park Boulevard/Fransicquito Avenue</u>
  PM peak hour *v/c* ratio increase of 0.010 [to 0.944 (LOS E) from 0.934 (LOS E)]

The future with project (existing, ambient growth, related projects and project) traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in *Figures 9–5* and *9–6*, respectively.

11.0 CITY OF EL MONTE TRAFFIC ANALYSIS

The traffic impact analysis prepared for the study intersections for the proposed project development program using the ICU methodology and application of the City of City of El Monte significant traffic impact criteria is summarized in ***Table 11-1***. The ICU data worksheets for the four City of El Monte analyzed intersections associated with the proposed project are contained in *Appendix B*.

11.1 Existing Conditions

11.1.1 *Existing Conditions*

As indicated in column [1] of *Table 11–1*, three of the four City of El Monte study intersections are presently operating at LOS D or better during the weekday AM and PM peak hours under existing conditions The following study intersection is expected to operate at LOS E during the peak hour shown below under existing conditions:

- Int. No. 1: Peck Road/Lower Azusa Road PM Peak Hour: *v/c*=0.916, LOS E

The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are displayed in *Figures 5–1* and *5–2*, respectively.

11.1.2 *Existing With Project Conditions*

As shown in column [2] of *Table 11–1,* application of the City of El Monte's threshold criteria to the "With Proposed Project" scenario indicates that the proposed project is not expected to create significant impacts at any of the four City of El Monte study intersections. Incremental, but not significant, impacts are noted at the City of El Monte study intersections. The existing with project traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in *Figures 9–1* and *9–2*, respectively.

11.2 Future Conditions

11.2.1 *Future Without Project Conditions*

The future cumulative baseline conditions were forecast based on the addition of traffic generated by the completion and occupancy of the related projects, as well as the growth in traffic due to the combined effects of continuing development, intensification of existing developments and other factors (i.e., ambient growth). The *v/c* ratios at all of the study intersections are incrementally increased with the addition of ambient traffic and traffic generated by the related projects listed in *Table 6–1*. As presented in column [3] of *Table 11–1*, three of the four City of El Monte study intersections are expected to continue to operate at LOS D or better during the weekday AM and PM peak hours with the addition of growth in ambient traffic and related projects traffic under the future without project conditions. The following study intersection is expected to operate at LOS F during the peak hours shown below with the addition of growth in ambient traffic and related projects traffic under the future without project conditions:

- Int. No. 1: Peck Road/Lower Azusa Road PM Peak Hour: *v/c*=1.007, LOS F

Table 11-1
CITY OF EL MONTE SUMMARY OF VOLUME TO CAPACITY RATIOS [1]
AND LEVELS OF SERVICE
WEEKDAY AM AND PM PEAK HOURS

NO.	INTERSECTION	PEAK HOUR	[1] EXISTING DELAY or LOS V/C	[a]	[2] EXISTING WITH PROJECT DELAY or LOS V/C	[a]	CHANGE in V/C or DELAY [(2)-(1)]	SIGNIF. IMPACT [c]	[3] YEAR 2019 FUTURE PRE-PROJECT W/ AG & REL. PROJECTS DELAY or LOS V/C	[a]	[4] YEAR 2019 FUTURE WITH PROPOSED PROJECT DELAY or LOS V/C	[a]	CHANGE in V/C or DELAY [(4)-(3)]	SIGNIF. IMPACT [c]
1	Peck Road/	AM	0.796	C	0.797	C	0.001	NO	0.859	D	0.862	D	0.003	NO
	Lower Azusa Road	PM	0.916	E	0.920	E	0.004	NO	1.007	F	1.010	F	0.003	NO
2	Peck Road/	AM	0.666	B	0.667	B	0.001	NO	0.709	C	0.710	C	0.001	NO
	Ramona Boulevard	PM	0.847	D	0.858	D	0.011	NO	0.897	D	0.909	E	0.012	NO
3	Durfee Avenue/	AM	22.1	C	23.4	C	1.3	NO	27.9	D	29.7	D	1.8	NO
	Ramona Boulevard [b]	PM	24.4	C	25.5	D	1.1	NO	32.1	D	33.7	D	1.6	NO
4	Gilman Road/	AM	0.612	B	0.614	B	0.002	NO	0.639	B	0.641	B	0.002	NO
	Ramona Boulevard	PM	0.614	B	0.619	B	0.005	NO	0.648	B	0.652	B	0.004	NO

[a] Level of Service (LOS) is based on the reported ICU value for signalized intersections and on the delay for unsignalized intersections.

[b] Two-Way Stop-Controlled Intersection. Reported values represent the delays associated with the most constrained approach of the intersection.

[c] The City of El Monte intersection impact threshold criteria for signalized and unsignalized intersections are as follows:

Signalized Intersections

Final v/c	LOS	Project Related Increase in v/c
> =1.001	F	equal to or greater than 0.020

Unsignalized Intersections

Final delay (s/Veh)	LOS	Project Related Increase
> = 35	E	Increase in delay by 2% or more of capacity

The future without project (existing, ambient growth and related projects) traffic volumes at the study intersections during the weekday AM and PM peak hours are presented in *Figures 9–3* and *9–4*, respectively.

11.2.2 *Future With Project Conditions*

As shown in column [4] of *Table 11–1,* application of the City of El Monte's threshold criteria to the "With Proposed Project" scenario indicates that the proposed project is not expected to create a significant impact at the four City of El Monte study intersections. Incremental, but not significant, impacts are noted at the City of El Monte study intersections. The future with project (existing, ambient growth, related projects and project) traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in *Figures 9–5* and *9–6*, respectively.

12.0 TRANSPORTATION IMPROVEMENT MEASURES

As summarized in Section 9.0, City of Irwindale Traffic Analysis, Section 10.0, City of Baldwin Park Traffic Analysis and Section 11.0, City of El Monte Traffic Analysis, the proposed project development program (i.e., 90,000 square-foot MOB) is forecast to create significant impacts at the following study intersections:

- Intersection No. 5: I-605 Freeway SB Ramps/Ramona Boulevard
- Intersection No. 6: I-605 Freeway NB Ramps/Ramona Boulevard
- Intersection No. 15: Baldwin Park Boulevard/Francisquito Avenue

Transportation improvement mitigation measures typically consist of transportation demand management (TDM) measures, improvements such as roadway and/or intersection restriping and roadway widening to accommodate additional travel lanes, and/or traffic signal modifications. For the forecast significant project-related impacts, roadway restriping mitigation measures are recommended to reduce the forecast significant impacts to less than significant levels. Modification to an existing freeway on-ramp metering scheme will also be required. The following paragraphs summarize the recommended transportation mitigation measures for the subject study intersections.

12.1 City of Irwindale Transportation Mitigation Measures

Intersection No. 5: I-605 Freeway SB Ramps/Ramona Boulevard

The recommended mitigation consists of the conversion of the shared left-turn/though lane on the I-605 Freeway Southbound Off-Ramp to Ramona Boulevard to an exclusive left-turn lane and the conversion of the exterior off-ramp right-turn only lane to a shared left-turn/through/right-turn lane. To accommodate what in essence becomes dual left-turn lanes, the existing off-ramp would need to be restriped and the existing raised median island on Ramona Boulevard (easterly of the off-ramp) may also require a minor modification. The resultant southbound lane configuration would provide one left-turn lane and one shared left/through/right-turn lane. In addition, the I-605 Freeway Southbound On-Ramp would be restriped to reflect the relocation of the High Occupancy vehicle (HOV) lane from the exterior on-ramp lane to the interior on-ramp lane (i.e., the lane closest to and adjacent to the freeway mainline, as is typical of many HOV on-ramp lanes). In addition, the ramp metering equipment would also need to be relocated to the west side of the on-ramp from its current location along the east side of the on-ramp. This measure would result in greater clarity associated with more typical designs in that HOV motorists would subsequently be passing any stopped motorist at the ramp meter on the left-hand side rather than on the right-hand side. The recommended mitigation measure is anticipated to reduce the forecast Kaiser Permanente Irwindale MOB project impact to less than significant levels.

It is important to note that the intersection is also under joint jurisdiction with City of Baldwin Park and Caltrans and therefore, the construction of the improvement is not entirely within the City of Irwindale's control. It is recommended that the project Applicant contribute to the associated Caltrans-required Permit Engineering and Evaluation Report (PEER), subsequent traffic engineering design plan preparation and the eventual construction on a fair-share basis. In addition, the timing of Caltrans review and approval is not yet determined. Therefore, while this improvement is expected to reduce the project's traffic impacts to less than significant levels, due to the multi-jurisdictional and timing issues and fair-share contribution, it has been conservatively concluded that the project's significant traffic impacts at this location would remain significant and unavoidable (until such time as the improvement is completed).

Intersection No. 6: I-605 Freeway NB Ramps/Ramona Boulevard

The recommended mitigation consists of the conversion of the shared left-turn/though lane on the I-605 Freeway Northbound Off-Ramp to Ramona Boulevard to a shared left-turn/through/right-turn lane. To accommodate the proposed shared left-turn/through/right-turn lane (i.e., in essence the dual right-turn lane operation), the existing off-ramp would be restriped. In addition, Ramona Boulevard may need to be widened (i.e., possible curb widening along the south side of Ramona Boulevard and/or a minor modification to the existing raised median island) due to the existence of the bike lanes on Ramona Boulevard and the likely opposition to any proposed removal of the bike lanes. The resultant northbound lane configuration would provide one shared left-turn/through/right-turn lane and one right-turn lane. As shown in *Table 9-1*, the recommended mitigation measure is anticipated to reduce the forecast Kaiser Permanente Irwindale MOB project impact to less than significant levels.

It is important to note that the intersection is also under joint jurisdiction with City of Baldwin Park and Caltrans and therefore, the construction of the improvement is not entirely within the City of Irwindale's control. It is recommended that the project Applicant contribute to the associated Caltrans-required Permit Engineering and Evaluation Report (PEER), subsequent traffic engineering design plan preparation and the eventual construction on a fair-share basis. In addition, the timing of Caltrans review and approval is not yet determined. Therefore, while this improvement is expected to reduce the project's traffic impacts to less than significant levels, due to the multi-jurisdictional and timing issues and fair-share contribution, it has been conservatively concluded that the project's significant traffic impacts at this location would remain significant and unavoidable (until such time as the improvement is completed).

12.2 City of Baldwin Park Transportation Mitigation Measures

Intersection No. 15: Baldwin Park Boulevard/Francisquito Avenue

The recommended mitigation consists of modifying the northbound approach on Baldwin Park Boulevard at Francisquito Avenue to accommodate the installation of a right-turn only lane. To accommodate the proposed right-turn only lane, the existing roadway striping would be adjusted as

needed. The resulting lane configuration at the northbound approach would provide one left-turn lane, two through lanes, and one right-turn lane. In addition, it is noted that the existing raised median islands on Baldwin Park Boulevard, both north and south of Francisquito Avenue, may need to be modified to accommodate the recommended improvement measures. The recommended mitigation measure is anticipated to reduce the forecast Kaiser Permanente Irwindale MOB project impact to less than significant levels. The project Applicant would be required to fully fund this improvement.

13.0 CONGESTION MANAGEMENT PROGRAM TRAFFIC IMPACT ASSESSMENT

The Congestion Management Program (CMP) is a state-mandated program that was enacted by the California State Legislature with the passage of Proposition 111 in 1990. The program is intended to address the impact of local growth on the regional transportation system.

As required by the 2010 Congestion Management Program, a Traffic Impact Assessment (TIA) has been prepared to determine the potential impacts on designated monitoring locations on the CMP highway system. The analysis has been prepared in accordance with procedures outlined in the *2010 Congestion Management Program*, Los Angeles County Metropolitan Transportation Authority, October 2010.

According to Section D.9.1 (Appendix D, Guidelines for CMP Transportation Impact Analysis, page D-6) of the 2010 CMP manual, the criteria for determining a significant transportation impact is listed below:

> "A significant transportation impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C $\geq$ 0.02), causing or worsening LOS F (V/C > 1.00); if the facility is already at LOS F, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C $\geq$ 0.02)."

The CMP impact criteria apply for analysis of both intersection and freeway monitoring locations.

13.1 Intersections

There are no CMP intersection monitoring locations in the project vicinity. The CMP TIA guidelines require that intersection monitoring locations must be examined if the proposed project will add 50 or more trips during either the weekday AM or PM peak hours. The proposed project will not add 50 or more trips during either the weekday AM or PM peak hours (i.e., of adjacent street traffic) at CMP monitoring intersections, as stated in the CMP manual as the threshold criteria for a traffic impact assessment. Therefore, no further review of potential impacts to intersection monitoring locations that are part of the CMP highway system is required.

13.2 Freeways

The following CMP freeway monitoring locations in the project vicinity have been identified:

- <u>CMP Station</u> <u>Location</u>

  Seg. No. 1017 I-10 Freeway east of Peck Road

  Seg. No. 1018 I-10 Freeway east of Puente Avenue

The CMP TIA guidelines require that freeway monitoring locations must be examined if the proposed project will add 150 or more trips (in either direction) during either the weekday AM or PM peak hours. The proposed project will not add 150 or more trips (in either direction) to CMP freeway monitoring locations during either the weekday AM or PM peak hours which is the threshold for preparing a traffic impact assessment, as stated in the CMP manual. Therefore, no further review of potential impacts to freeway monitoring locations that are part of the CMP highway system is required.

13.3 Transit Impact Review

As required by the *2010 Congestion Management Program*, a review has been made of the potential impacts of the project on transit service. As discussed in Subsection 4.5 herein, existing transit service is provided in the vicinity of the proposed project.

The project trip generation, as shown in *Table 7–1*, was adjusted by values set forth in the 2010 CMP manual to estimate transit trip generation for each time period. According to Section D.8.4 (Appendix, page D-5) of the CMP manual, trips assigned to transit may be calculated by multiplying the total project trips by 1.4 to convert from vehicle trips to person trips and multiplying the result by a factor of 3.5 percent (3.5%) for project sites not located within 0.25 mile of a CMP transit center, corridor or multi-modal transportation center. Pursuant to the CMP guidelines, the proposed project is forecast to generate demand for 10 transit trips during the weekday AM peak hour and 13 transit trips during the weekday PM peak hour. Over a 24-hour period, the proposed project is forecast to generate demand for 149 daily transit trips. Therefore, the calculations are as follows:

- Weekday AM Peak Hour = 200 × 1.4 × 0.035 = 10 Transit Trips
- Weekday PM Peak Hour = 249 × 1.4 × 0.035 = 13 Transit Trips
- Weekday Daily Trips = 3,042 × 1.4 × 0.035 = 149 Transit Trips

As shown in *Table 4–3,* nine bus/rail transit lines and routes are provided adjacent to or in close proximity the project site. As outlined in *Table 4–3*, under the "No. of Buses/Trains During Peak Hour" column, these nine transit lines provide services for an average of (i.e., average of the directional number of buses during the peak hours) roughly 29 and 25 buses/trains during the weekday AM and PM peak hours, respectively. Therefore, based on the above calculated weekday AM and PM peak hour trips, this would correspond to less than one additional transit rider per bus/train. It is anticipated that the existing transit service in the project area will adequately accommodate the increase of project-generated transit trips. Thus, given the number of project-generated transit trips per bus/train, no project impacts on existing or future transit services in the project area are expected to occur as a result of the proposed project.

14.0 CALIFORNIA DEPARTMENT OF TRANSPORTATION ANALYSIS

In addition to the intersection analyses, which utilize the respective Cities of Irwindale, Baldwin Park, and El Monte methodologies, a supplemental analysis was prepared based on the latest edition of the *Highway Capacity Manual* (HCM 2010) operational analysis methodologies pursuant to the California Department of Transportation's (Caltrans) *Guide for the Preparation of Traffic Impact Studies*[7]. According to the Caltrans document, the LOS for operating State highway facilities is based upon measures of effectiveness (MOEs). Caltrans "endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities"; it does not require that LOS "D" (shall) be maintained. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE should be maintained. Based on recent coordination with Caltrans, analyses of Caltrans facilities should be conducted when and if a proposed project is expected to add 50 or more peak hour trips in either direction on a freeway mainline segment or 10 or more peak hour trips to a freeway off-ramp location.

14.1 Freeway Analysis

For mainline freeway segments, the MOE is determined based on density in passenger cars per mile per lane (pc/mi/ln). Furthermore, based on coordination with Caltrans, when a mainline freeway segment is operating near capacities under existing conditions (i.e., LOS E or LOS F), the corresponding LOS is also determined based on speed in miles per hour.

The following mainline freeway segments along the I-605 and I-10 Freeways have been identified for analysis based on their proximity to the project site and the expected level of project-generated traffic. These segments are forecast to experience a relatively greater percentage of project-related traffic than other mainline freeway segment locations:

- I-605 Freeway north of Ramona Boulevard
- I-605 Freeway north of the I-10 Freeway
- I-605 Freeway south of the I-10 Freeway
- I-10 Freeway west of the I-605 Freeway
- I-10 Freeway east of Baldwin Park Boulevard

The proposed project's effect on the regional mainline freeway system has been determined based on a review of available traffic volume data for existing weekday peak hour conditions. A review was undertaken of traffic volume data published in the *Traffic Volumes on the California State Highway System*[8], the Caltrans' Traffic Data Branch – California Freeway Performance Measurement System

[7] *Guide for the Preparation of Traffic Impact Studies*, State of California Department of Transportation, December 2002.
[8] *2014 Traffic Volumes on the California State Highway System*, California State Transportation Agency, Department of Transportation Division of Traffic Operations, 2014.

(PeMS), and the *2010 Congestion Management Program*. The existing traffic volumes were increased by the CMP annual average growth rate of 1.0% per year so as to reflect the future year 2019 cumulative without project analysis condition.

The selected freeway segment lane configurations used in the analysis are based on information obtained from field reviews. The freeway analysis is based on the number of mainline freeway lanes only. Along some freeway segments, auxiliary lanes are provided to facilitate entering and exiting freeway traffic to and from the freeway mainline. Although some of the freeway auxiliary lanes accommodate through traffic, these have not been considered so as to provide a conservative analysis to determine the effects of the proposed project. The HCM operational analysis for freeway segments is based on density (i.e., passenger cars per mile per lane [pc/mi/ln]). The Caltrans freeway mainline traffic analysis is summarized in ***Table 14-1*** for all traffic analysis conditions. Copies of the HCM freeway analysis data worksheets are provided in the ***Appendix C***.

14.1.1 *Existing and Existing With Project Conditions*

As shown in *Table 14-1*, all five study freeway segments are presently operating at LOS E or LOS F during either the weekday AM and/or PM peak hours under existing conditions. With the addition of the proposed project traffic, all study freeway segments are expected to continue to operate at LOS E or LOS F during the weekday AM and/or PM peak hours. As stated previously based on recent coordination with Caltrans, analyses of Caltrans facilities should be conducted when and if a proposed project is expected to add 50 or more peak hour trips in either direction on a freeway mainline segment. As shown in *Table 14-1*, the proposed project will not add 50 or more trips in either direction on any of the freeway mainline analysis segments during the weekday AM and PM peak hours. Therefore, no freeway impacts are noted at the study freeway segments and no further review is required.

14.1.2 *Future Without and Future With Project Conditions*

Growth in traffic due to the combined effects of continuing development, intensification of existing development, and other factors, were assumed to be one percent (1.0%) per year through year 2019 resulting in a four percent (4.0%) increase in background ambient traffic growth. All five study freeway segments are expected to continue to operate at LOS E or LOS F during either the weekday AM and/or PM peak hours under the future without project and future with project conditions. As stated previously based on recent coordination with Caltrans, analyses of Caltrans facilities should be conducted when and if a proposed project is expected to add 50 or more peak hour trips in either direction on a freeway mainline segment. As shown in *Table 14-1*, the proposed project will not add 50 or more trips in either direction on any of the freeway mainline analysis segments during the weekday AM and PM peak hours. Therefore, no freeway impacts are noted at the study freeway segments and no further review is required.

Table 14-1
CALTRANS FREEWAY IMPACT ANALYSIS [1]
WEEKDAY AM AND PM PEAK HOURS

Freeway Segment	Peak Hour	Direction	Existing Year Traffic Volumes [2]	Existing Year Density (pc/mi/ln) [3]	Existing Year LOS [4]	Existing Year LOS [5]	Project Trip Ends [6]	Existing Year With Project Traffic Volumes [7]	Existing Year With Project Density (pc/mi/ln) [3]	Existing Year With Project LOS [4]	Density Increase With Project [8]	Impact	Future Year 2019 Pre-Project Traffic Volumes [9]	Future Year 2019 Pre-Project Density (pc/mi/ln) [3]	Future Year 2019 Pre-Project LOS [4]	Project Trip Ends [5]	Future Year 2019 With Project Traffic Volumes [10]	Future Year 2019 With Project Density (pc/mi/ln) [3]	Future Year 2019 With Project LOS [4]	Density Increase With Project [11]	Impact
I-605 Freeway																					
North of Ramona Boulevard	AM	NB	4,536	17.8	B	E	6	4,542	17.9	B	0.1	No	4,717	18.6	C	6	4,723	18.6	C	0.0	No
		SB	7,241	31.8	D	F	24	7,265	32.0	D	0.2	No	7,531	33.9	D	24	7,555	34.1	D	0.2	No
	PM	NB	5,189	20.6	C	D	27	5,216	20.7	C	0.1	No	5,397	21.5	C	27	5,424	21.6	C	0.1	No
		SB	5,901	23.9	C	D	10	5,911	24.0	C	0.1	No	6,137	25.1	C	10	6,147	25.2	C	0.1	No
North of I-10 Freeway	AM	NB	5,433	21.7	C	C	24	5,457	21.8	C	0.1	No	5,650	22.7	C	24	5,674	22.8	C	0.1	No
		SB	7,663	34.9	D	F	6	7,669	35.0	D	0.1	No	7,970	37.5	E	6	7,976	37.5	E	0.0	No
	PM	NB	6,105	25.0	C	--	10	6,115	25.0	C	0.0	No	6,349	26.3	D	10	6,359	26.3	D	0.0	No
		SB	6,397	26.5	D	E	29	6,426	26.7	D	0.2	No	6,653	28.0	D	29	6,682	28.2	D	0.2	No
South of I-10 Freeway	AM	NB	6,057	25.2	C	D	13	6,070	25.2	C	0.0	No	6,299	26.5	D	13	6,312	26.6	D	0.1	No
		SB	6,382	27.0	D	--	3	6,385	27.0	D	0.0	No	6,637	28.5	D	3	6,640	28.5	D	0.0	No
	PM	NB	6,281	26.4	D	F	6	6,287	26.4	D	0.0	No	6,532	27.9	D	6	6,538	27.9	D	0.0	No
		SB	6,000	24.9	C	--	14	6,014	24.9	C	0.0	No	6,240	26.2	D	14	6,254	26.2	D	0.0	No
I-10 Freeway																					
West of I-605 Freeway	AM	EB	5,729	23.9	C	D	10	5,739	23.9	C	0.0	No	5,958	25.0	C	10	5,968	25.0	C	0.0	No
		WB	7,125	31.5	D	F	2	7,127	31.5	D	0.0	No	7,410	33.4	D	2	7,412	33.4	D	0.0	No
	PM	EB	5,772	24.1	C	F	4	5,776	24.1	C	0.0	No	6,003	25.2	C	4	6,007	25.2	C	0.0	No
		WB	6,007	25.2	C	E	11	6,018	25.3	C	0.1	No	6,247	26.4	D	11	6,258	26.5	D	0.1	No
East of Baldwin Park Boulevard	AM	EB	4,790	18.8	C	C	2	4,792	18.8	C	0.0	No	4,982	19.6	C	2	4,984	19.6	C	0.0	No
		WB	5,884	25.0	C	F	8	5,892	25.1	C	0.1	No	6,119	26.2	D	8	6,127	26.3	D	0.1	No
	PM	EB	3,747	14.7	B	F	11	3,758	14.7	B	0.0	No	3,897	15.3	B	11	3,908	15.3	B	0.0	No
		WB	5,887	25.1	C	--	3	5,890	25.1	C	0.0	No	6,122	26.2	D	3	6,125	26.3	D	0.1	No

[1] Freeway analysis based on the Highway Capacity Manual 2010, operational analysis methodologies, per the Caltrans' *Guide for the Preparation of Traffic Impact Studies*, December 2002.
[2] Source: Caltrans PeMS website, 2015. Data reflects the 85th percentile volumes and speeds for weekday AM and PM peak period volumes from May 2015.
[3] pc/mi/ln: passenger cars per mile per lane.
[4] Freeway mainline Levels of Service by density were based on the following criteria:

Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
≤ 11	A	> 26-35	D
> 11-18	B	> 35-45	E
> 18-26	C	> 45	F

[5] Freeway mainline Levels of Service by minimum speeds were based on the following criteria:

Speed (mph)	LOS	Speed (mph)	LOS
≥ 65.0	A	<64.6-59.7	D
≥ 65.0	B	<59.7-52.2	E
<65.0-64.6	C	<52.2	F

[6] Based on the project trip generation and trip distribution for the project.
[7] Derived by combining the existing traffic volumes and the proposed project volumes.
[8] Derived by subtracting the density of the existing with project conditions with the existing conditions pursuant to the Highway Capacity Software (HCS) worksheets which report density results to one decimal place.
[9] Derived by combining the existing traffic volumes increased by an ambient growth rate of 1.00% per year to the year 2019.
[10] Derived by combining the year 2019 without project traffic volumes and the proposed project volumes.
[11] Derived by subtracting the density of the year 2019 with project conditions with the year 2019 without project conditions pursuant to the Highway Capacity Software (HCS) worksheets which report density results to one decimal place.

14.2 Intersection Analysis

Supplemental intersection analyses were also prepared for the State facility intersections within the project study area pursuant to Caltrans' *Guide for the Preparation of Traffic Impact Studies*. According to the Caltrans document for state-controlled study intersections, the MOE is determined based on control delay in seconds per vehicle (sec/veh). The intersection analyses were prepared utilizing the *Synchro 9* software package which implements the Highway Capacity Manual operational methods. A *Synchro* network was created based on current traffic signal timing charts and field review of existing conditions at the Caltrans study intersections. In addition, specifics such as lane configurations, lane widths, storage lengths, crosswalk locations, posted speed limits, traffic signal phasing and cycle length, traffic volumes, etc., were coded to complete the existing network.

The following six intersections have been identified for analysis based on their proximity to the project site and consultation with both Caltrans and City of Irwindale staff:

- Intersection No. 5: I-605 Freeway Southbound Ramps/Ramona Boulevard
- Intersection No. 6: I-605 Freeway Northbound Ramps/Ramona Boulevard
- Intersection No. 10: I-10 Freeway Westbound Off-Ramp-Frazier Street/Garvey Avenue
- Intersection No. 11: Baldwin Park Boulevard/Dalewood Street-I-10 Freeway Eastbound Ramps
- Intersection No. 12: Baldwin Park Boulevard/I-10 Freeway Westbound Ramps
- Intersection No. 19: I-10 Freeway Westbound Ramps-Vineland Boulevard/Garvey Avenue

Table 14-2 summarizes the intersection analyses for the existing, existing with project, and Year 2019 future conditions both without and with the proposed project. The first column [1] of *Table 14-2* presents a summary of existing traffic conditions. The second column [2] presents existing with project traffic conditions based on existing intersection geometry. The third column [3] presents Year 2019 traffic conditions based on existing intersection geometry, but without any project-generated traffic. The fourth column [4] presents future forecast traffic conditions with the addition of project traffic.

As shown in *Table 14-2,* application of the Caltrans LOS standards and guidelines to the "Existing With Project" and "Year 2019 With Project" scenarios indicates that the proposed project could be expected to result in one impact at the I-605 Freeway Northbound Ramps/Ramona Boulevard intersection during the weekday PM peak hour. The remaining five Caltrans study intersections are not expected to be impacted by the proposed project. Refer to Section 12.0, Transportation Improvement Measures, for a full discussion of measures previously proposed to address forecast impacts due to the development of the proposed project. As shown in column [5] of *Table 14-2,* the proposed improvement (if approved by Caltrans and the City of Irwindale as Lead Agency) is expected to mitigate the impact at the I-605 Freeway Northbound Ramps/Ramona Boulevard

Table 14-2
CALTRANS INTERSECTION IMPACT ANALYSIS [a]
WEEKDAY AM AND PM PEAK HOURS

NO.	INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	[1] EXISTING DELAY [b]	[1] EXISTING LOS [c]	[2] EXISTING WITH PROJECT DELAY [b]	[2] EXISTING WITH PROJECT LOS [c]	CHANGE IN DELAY [(2)-(1)]	IMPACT	[3] YEAR 2019 FUTURE W/O PROJECT DELAY [b]	[3] YEAR 2019 FUTURE W/O PROJECT LOS [c]	[4] YEAR 2019 FUTURE WITH PROJECT DELAY [b]	[4] YEAR 2019 FUTURE WITH PROJECT LOS [c]	CHANGE IN DELAY [(4)-(3)]	IMPACT	[5] YEAR 2019 FUTURE WITH PROJECT MITIGATION Delay [b]	[5] YEAR 2019 FUTURE WITH PROJECT MITIGATION LOS [c]	CHANGE IN DELAY [(5)-(3)]	MITIGATED ?
5	I-605 Freeway SB Ramps/	Signalized	AM	29.4	C	30.6	C	1.2	No	35.8	D	37.7	D	1.9	No	35.8	D	0.0	---
	Ramona Boulevard		PM	31.3	C	34.2	C	2.9	No	35.9	D	37.3	D	1.4	No	32.2	C	-3.7	---
6	I-605 Freeway NB Ramps/	Signalized	AM	38.2	D	40.6	D	2.4	No	45.5	D	50.2	D	4.7	No	48.7	D	3.2	---
	Ramona Boulevard		PM	59.6	E	61.3	E	1.7	Yes	65.8	E	68.0	E	2.2	Yes	41.2	D	-24.6	Yes
10	I-10 Freeway WB Off-Ramp-Frazier Street/	Two-Way	AM	12.7	B	12.8	B	0.1	No	13.1	B	13.2	B	0.1	No	--	--	--	---
	Garvey Avenue	Stop Control	PM	12.5	B	12.5	B	0.0	No	13.0	B	13.0	B	0.0	No	--	--	--	---
11	Baldwin Park Boulevard/	Signalized	AM	58.6	E	58.8	E	0.2	No	70.1	E	70.6	E	0.5	No	--	--	--	---
	Dalewood Street-I-10 Freeway EB Ramps		PM	66.7	E	67.2	E	0.5	No	>80.0	F	>80.0	F	0.5	No	--	--	--	---
12	Baldwin Park Boulevard/	Signalized	AM	24.7	C	24.8	C	0.1	No	32.0	C	32.5	C	0.5	No	--	--	--	---
	I-10 Freeway WB Ramps		PM	21.2	C	21.2	C	0.0	No	24.7	C	24.8	C	0.1	No	--	--	--	---
19	I-10 Freeway WB Ramps-Vineland Boulevard/	All-Way	AM	10.9	B	10.9	B	0.0	No	12.1	B	12.1	B	0.0	No	--	--	--	---
	Garvey Avenue	Stop Control	PM	13.5	B	13.6	B	0.1	No	18.7	C	18.8	C	0.1	No	--	--	--	---

[a] Intersection analysis based on the Highway Capacity Manual operational analysis methodologies, per the Caltrans' *Guide for the Preparation of Traffic Impact Studies,* December 2002.
[b] Reported control delay values in seconds per vehicle. For Two-Way Stop-Controlled intersections, reported values represent the delays associated with the most constrained approach of the intersection.
[c] Level of Service (LOS) is based on the reported control delay for the intersection. When LOS F is reached, the intersection becomes unstable and the calculated delay values become unreliable/unrealistic. Small increases in traffic volumes may result in very large increases in the calculated delay values which is not representative of actual conditions. Therefore, where calculated delay values are over 80.0 seconds for signalized intersections or 50.0 seconds for unsignalized intersections (i.e., LOS F conditions by HCM definitions), over-saturated conditions are expected and delay values of ">80.0" or ">50.0" seconds are reported in this table.
Levels of Service are based on the following criteria:

Signalized Intersections

Control Delay (s/veh)	LOS
<= 10	A
> 10-20	B
> 20-35	C
> 35-55	D
> 55-80	E
> 80	F

Unsignalized Intersections

Control Delay (s/veh)	LOS
<= 10	A
> 10-15	B
> 15-25	C
> 25-35	D
> 35-50	E
> 50	F

intersection. The corresponding weekday AM and PM peak hour HCM worksheets are contained in *Appendix C*.

It is important to note that the intersection is under joint jurisdiction with City of Irwindale and Baldwin Park and therefore, the construction of the improvement is not entirely within the City's of Irwindale's control. It is recommended that the project Applicant contribute to the associated Caltrans-required Permit Engineering and Evaluation Report (PEER), subsequent traffic engineering design plan preparation and the eventual construction on a fair-share basis. In addition, the timing of Caltrans review and approval is not yet determined. Therefore, while this improvement is expected to reduce the project's traffic impacts to less than significant levels, due to the multi-jurisdictional and timing issues and fair-share contribution, it has been conservatively concluded that the project's significant traffic impacts at this location would remain significant and unavoidable (until such time as the improvement or an alternate improvement is completed).

14.3 Ramp Vehicle Queuing Analysis

The proposed project is expected to add 10 or more vehicle trips during the weekday AM peak hour to some of the adjacent freeway off-ramp locations, which is the threshold for preparation of a Caltrans ramp analysis. Therefore, a detailed review was undertaken with respect to vehicle queuing on the freeway off-ramp approaches at six locations. The queuing analysis was prepared utilizing the *Synchro 9* software package which implements the HCM 2010 operational analysis methodologies. In forecasting vehicle queuing, the *Synchro* software considers traffic volume data, lane configurations, traffic signal timing and phasing for signalized locations, and available vehicle storage lengths for the respective traffic movements. The vehicle queuing review has been prepared using the respective weekday AM and PM peak hour traffic volume forecasts for existing, existing with project, and Year 2019 conditions both without and with the proposed project.

Each of the six analyzed freeway ramp intersection approaches were reviewed in terms of expected maximum vehicle queues (i.e., 95th percentile queues) which represent the maximum back of vehicle queues with 95th percentile traffic volumes. The corresponding maximum vehicle queue lengths were then compared with the 85th percentile available ramp storage lengths pursuant to Caltrans recommendation.

As presented in ***Table 14-3***, adequate 85th percentile storage areas are provided to accommodate the forecast 95th percentile queues at five of the six subject off-ramp locations under all analysis conditions. The 95th percentile queue at the I-605 Freeway Northbound Off-Ramp at Ramona Boulevard currently exceeds the 85th percentile storage area under the existing weekday PM peak hour conditions. Refer to Section 12.0, Transportation Improvement Measures, for a full discussion of measures previously proposed to address forecast impacts due to the development of the proposed project. As shown in *Table 14-3,* the proposed improvement (if approved by Caltrans and the City of Irwindale) is expected to result in adequate storage area to accommodate the forecast 95th percentile queue at the I-605 Freeway Northbound Ramps/Ramona Boulevard intersection. Therefore, vehicle queuing back onto the I-605 Freeway mainline travel lanes is not expected. The

Table 14-3
SUMMARY OF POTENTIAL FREEWAY OFF-RAMP VEHICLE QUEUING [1]
WEEKDAY AM AND PM PEAK HOURS

INTERSECTION	PEAK HOUR	85TH PERCENTILE AVAILABLE OFF-RAMP STORAGE [2] (FEET)	EXISTING YEAR		EXISTING YEAR WITH PROJECT		FUTURE YEAR 2019 WITHOUT PROJECT		FUTURE YEAR 2019 WITH PROJECT		FUTURE YEAR 2019 WITH PROJECT AND MITIGATION	
			95th PERCENTILE QUEUE [3] (FEET)	EXCEEDS 85th PERCENTILE STORAGE? (YES/NO)	95th PERCENTILE QUEUE [3] (FEET)	EXCEEDS 85th PERCENTILE STORAGE? (YES/NO)	95th PERCENTILE QUEUE [3] (FEET)	EXCEEDS 85th PERCENTILE STORAGE? (YES/NO)	95th PERCENTILE QUEUE [3] (FEET)	EXCEEDS 85th PERCENTILE STORAGE? (YES/NO)	95th PERCENTILE QUEUE [3] (FEET)	EXCEEDS 85th PERCENTILE STORAGE? (YES/NO)
5 I-605 Freeway SB Ramps/ Ramona Boulevard	AM	1,280	738	No	789	No	810	No	861	No	1,017	No
	PM	1,280	873	No	912	No	1,197	No	1,242	No	981	No
6 I-605 Freeway NB Ramps/ Ramona Boulevard	AM	1,690	1,095	No	1,221	No	1,206	No	1,353	No	1,299	No
	PM	1,690	2,310	Yes	2,373	Yes	2,562	Yes	2,634	Yes	1,635	No
10 I-10 Freeway WB Off-Ramp-Frazier Street/ Garvey Avenue	AM	740	30	No	30	No	30	No	30	No	--	--
	PM	740	30	No	30	No	33	No	36	No	--	--
11 Baldwin Park Boulevard/ Dalewood Street-I-10 Freeway EB Ramps	AM	1,500	912	No	915	No	1,245	No	1,248	No	--	--
	PM	1,500	741	No	741	No	798	No	798	No	--	--
12 Baldwin Park Boulevard/ I-10 Freeway WB Ramps	AM	600	400	No	402	No	445	No	448	No	--	--
	PM	600	350	No	350	No	365	No	364	No	--	--
19 I-10 Freeway WB Ramps-Vineland Avenue/ Garvey Avenue	AM	520	33	No	33	No	45	No	45	No	--	--
	PM	520	69	No	69	No	105	No	105	No	--	--

[1] Intersection queuing analysis based on the Highway Capacity Manual (HCM) methodologies. Refer to calculation worksheets in Appendix C.
[2] Available storage represents 85% of existing storage space, as measured via Google Earth, 2015.
[3] The 95th percentile queue is the maximum back of queue with 95th percentile traffic volumes. An average vehicle length of 30 feet (including vehicle separation) was assumed for analysis purposes.

corresponding weekday AM peak hour and PM peak hour HCM worksheets for purposes of determining the 95th percentile vehicle queues also are contained in *Appendix C*.

15.0 CONCLUSIONS

This traffic study has been prepared for the proposed Irwindale MOB project. The project site is located at 12761 Schabarum Avenue in the City of Irwindale. The project site is generally bounded by industrial and commercial uses to the north and south, Schabarum Avenue to the east and the Interstate 605 Freeway to the west.

The proposed project consists of the construction of a new medical office building with a total of approximately 90,000 square feet of floor area. A 339-space parking structure is planned to be provided as part of the proposed project, for a total on-site parking supply of 450 spaces. The completion and occupancy of the proposed project was assumed to be by the year 2019.

In order to evaluate the potential impacts to the local street system, 19 study intersections were analyzed to determine changes in operations following occupancy and utilization of the proposed project. The study intersections were evaluated using the respective City of Irwindale, City of Baldwin Park, and City of El Monte analysis methodologies and significant traffic impact thresholds. It is concluded that the proposed project is expected to result in a significant impact at three of the study intersections. The mitigation measures proposed for the two significant impacts projected at the northbound and southbound Caltrans I-605 Freeway On/Off-ramp intersections with Ramona Boulevard will require fair-share contributions from the project Applicant. The significant impact at the third location (Intersection No. 15: Baldwin Park Boulevard/Francisquito Avenue) will require full funding by the project Applicant. Incremental but not significant impacts are noted at the remaining study intersections with the completion of the proposed project.

The results of the Los Angeles County Congestion Management Program (CMP) traffic assessment indicated that the proposed Kaiser Permanente Irwindale MOB project will not adversely affect any CMP freeway monitoring locations or arterial monitoring intersections. Therefore, no improvements/mitigation measures are required of this project for the CMP facilities.

The proposed project at build-out is not expected to generate 50 or more vehicle trips, during either the AM or PM peak commuter hours, at any freeway mainline locations. Thus, no freeway impacts are noted at the study freeway segments and no further review is required. However, the proposed project is expected to add 10 or more vehicle trips during the AM and/or PM commuter peak hours to some of the adjacent freeway ramp locations, which is the threshold for preparation of a Caltrans ramp analysis. Therefore, intersection analyses were prepared for the six Caltrans ramp study intersections in the project vicinity pursuant to Caltrans analysis methodologies. It was concluded based on application of the Caltrans LOS standards and guidelines that the proposed project would impact one of the six Caltrans ramp study intersections. With the proposed improvement (if approved by Caltrans and the City of Irwindale as Lead Agency), the impact at the subject I-605 Freeway Northbound Ramps/Ramona Boulevard intersection is expected to be mitigated.

Additionally, each of the six analyzed freeway off-ramp intersection approaches were reviewed in terms of expected maximum vehicle queues (i.e., 95th percentile queues) and the corresponding maximum vehicle queue lengths were then compared with the 85th percentile available ramp storage

lengths pursuant to Caltrans recommendation. Based on this assessment, it was determined that adequate storage areas are provided to accommodate the forecast 95th percentile queues at five of the six off-ramp locations under all analysis conditions. The 95th percentile queue at the I-605 Freeway Northbound Off-Ramp at Ramona Boulevard currently exceeds the 85th percentile storage area under the existing weekday PM peak hour conditions. With the proposed improvement (if approved by Caltrans and the City of Irwindale), adequate storage areas are expected to accommodate the forecast 95th percentile queue at the subject off-ramp location. Therefore, vehicle queuing back onto the I-605 Freeway mainline travel lanes is not expected.

APPENDIX A

MANUAL TRAFFIC COUNT DATA

CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Peck_LAzusa
Site Code : 00000000
Start Date : 6/5/2014
Page No : 1

Groups Printed- Unshifted

	Peck Rd Southbound			Lower Azusa Rd Westbound			Peck Rd Northbound			Lower Azusa Rd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	13	156	35	55	171	13	51	229	25	19	72	20	859
07:15 AM	27	185	40	67	191	16	55	238	21	25	83	24	972
07:30 AM	21	215	36	63	198	29	66	249	14	33	88	35	1047
07:45 AM	36	208	36	40	140	29	42	226	22	30	118	43	970
Total	97	764	147	225	700	87	214	942	82	107	361	122	3848
08:00 AM	22	165	37	45	109	19	44	229	21	33	102	39	865
08:15 AM	22	153	32	40	119	23	43	196	27	42	113	37	847
08:30 AM	17	145	27	35	109	21	49	203	27	34	102	32	801
08:45 AM	18	130	26	43	134	21	48	198	26	41	102	22	809
Total	79	593	122	163	471	84	184	826	101	150	419	130	3322
04:00 PM	34	125	18	39	115	17	47	142	27	52	194	38	848
04:15 PM	35	148	11	45	123	12	43	170	33	45	208	28	901
04:30 PM	36	143	36	37	126	14	51	161	48	45	189	32	918
04:45 PM	30	163	44	40	117	10	53	169	46	39	190	34	935
Total	135	579	109	161	481	53	194	642	154	181	781	132	3602
05:00 PM	29	173	31	50	114	18	56	209	70	38	184	33	1005
05:15 PM	27	184	34	39	143	19	48	189	67	43	235	35	1063
05:30 PM	32	165	37	44	132	18	50	209	52	46	183	42	1010
05:45 PM	25	131	36	36	153	25	52	215	40	48	220	39	1020
Total	113	653	138	169	542	80	206	822	229	175	822	149	4098
Grand Total	424	2589	516	718	2194	304	798	3232	566	613	2383	533	14870
Apprch %	12	73.4	14.6	22.3	68.2	9.5	17.4	70.3	12.3	17.4	67.5	15.1	
Total %	2.9	17.4	3.5	4.8	14.8	2	5.4	21.7	3.8	4.1	16	3.6	

CITY TRAFFIC COUNTERS

626.991.7522

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File Name : Peck_LAzusa
Site Code : 00000000
Start Date : 6/5/2014
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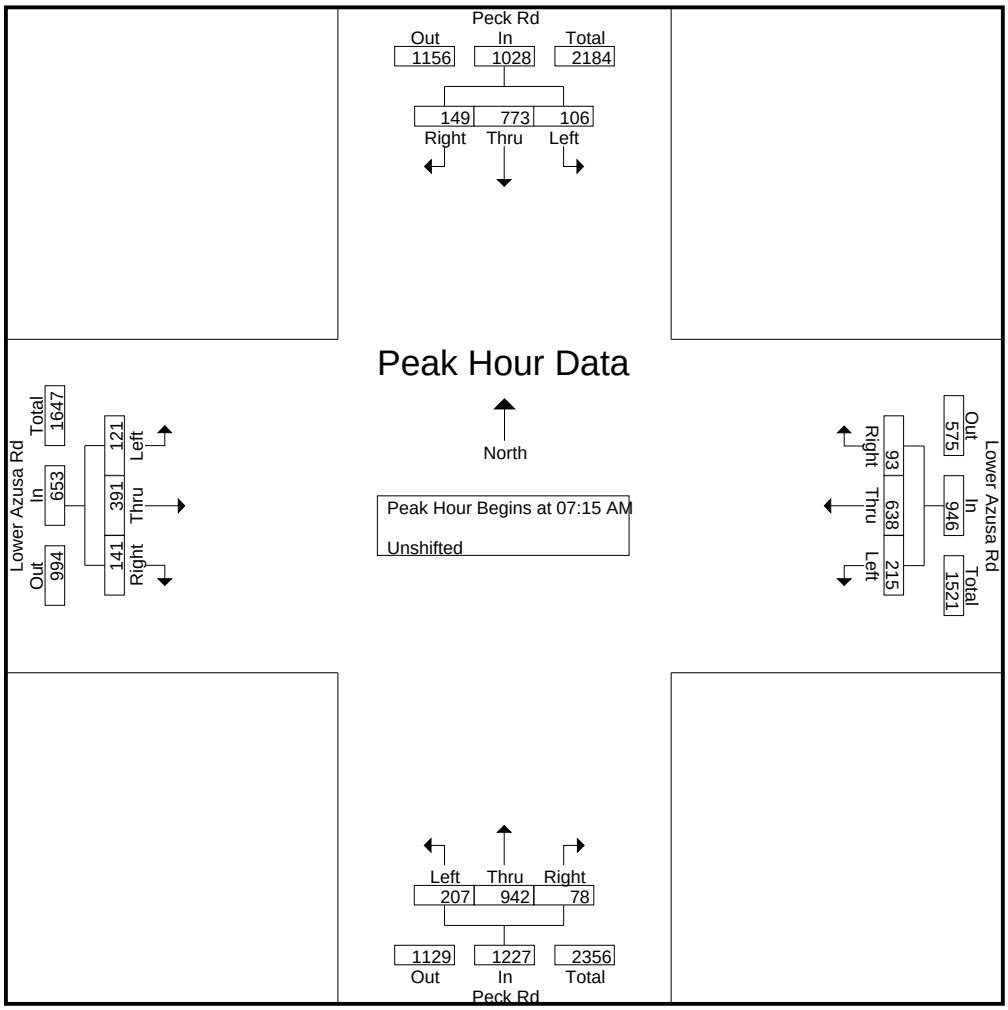
	Peck Rd Southbound				Lower Azusa Rd Westbound				Peck Rd Northbound				Lower Azusa Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	27	185	**40**	252	**67**	191	16	274	55	238	21	314	25	83	24	132	972
07:30 AM	21	**215**	36	272	63	**198**	**29**	**290**	**66**	**249**	14	**329**	**33**	88	35	156	**1047**
07:45 AM	**36**	208	36	**280**	40	140	29	209	42	226	**22**	290	30	**118**	**43**	**191**	970
08:00 AM	22	165	37	224	45	109	19	173	44	229	21	294	33	102	39	174	865
Total Volume	106	773	149	1028	215	638	93	946	207	942	78	1227	121	391	141	653	3854
% App. Total	10.3	75.2	14.5		22.7	67.4	9.8		16.9	76.8	6.4		18.5	59.9	21.6		
PHF	.736	.899	.931	.918	.802	.806	.802	.816	.784	.946	.886	.932	.917	.828	.820	.855	.920



CITY TRAFFIC COUNTERS

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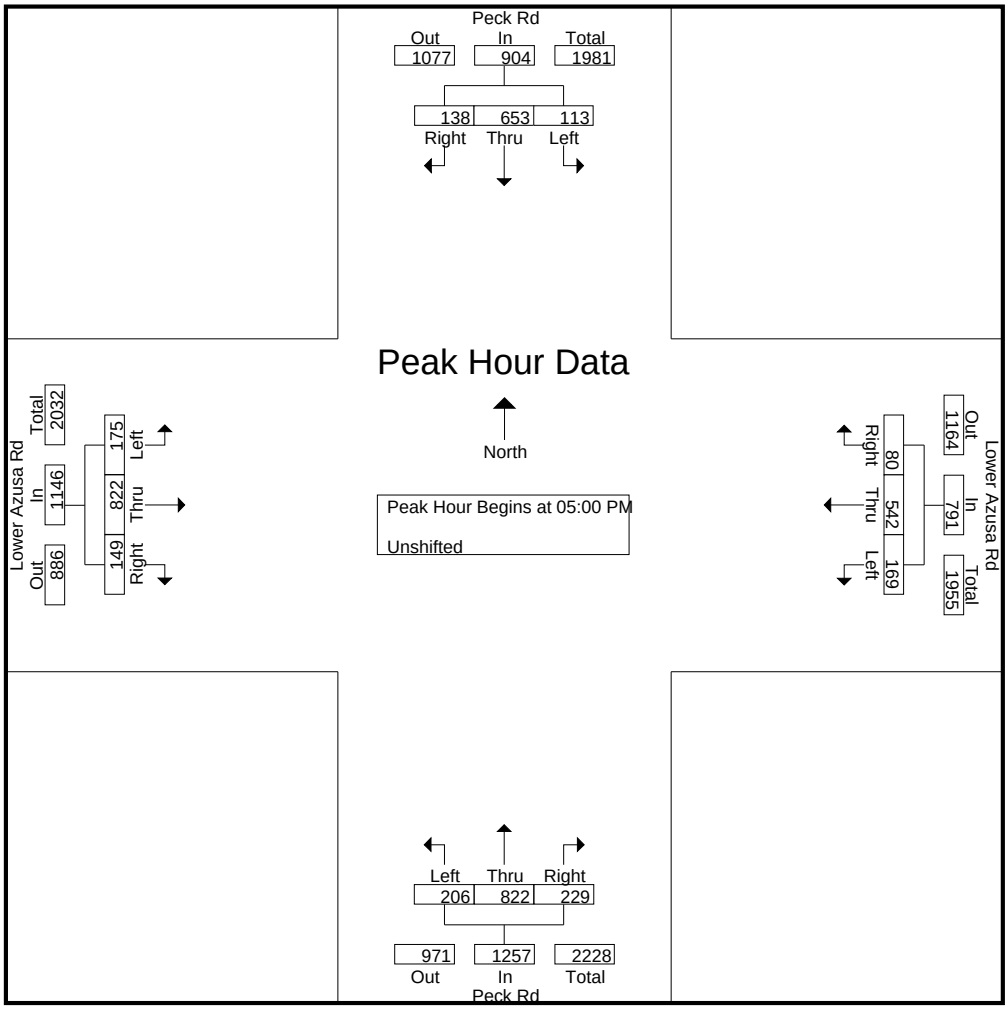
File Name : Peck_LAzusa
Site Code : 00000000
Start Date : 6/5/2014
Page No : 3

	Peck Rd Southbound				Lower Azusa Rd Westbound				Peck Rd Northbound				Lower Azusa Rd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	29	173	31	233	**50**	114	18	182	**56**	209	**70**	**335**	38	184	33	255	1005
05:15 PM	27	**184**	34	**245**	39	143	19	201	48	189	67	304	43	**235**	35	**313**	**1063**
05:30 PM	**32**	165	**37**	234	44	132	18	194	50	209	52	311	46	183	**42**	271	1010
05:45 PM	25	131	36	192	36	**153**	**25**	**214**	52	**215**	40	307	**48**	220	39	307	1020
Total Volume	113	653	138	904	169	542	80	791	206	822	229	1257	175	822	149	1146	4098
% App. Total	12.5	72.2	15.3		21.4	68.5	10.1		16.4	65.4	18.2		15.3	71.7	13		
PHF	.883	.887	.932	.922	.845	.886	.800	.924	.920	.956	.818	.938	.911	.874	.887	.915	.964



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : Peck_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Unshifted

	Peck Rd Southbound			Ramona Blvd Westbound			Peck Rd Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	25	237	22	59	138	27	11	111	23	15	37	2	707
07:15 AM	23	283	39	59	171	19	14	143	28	10	43	2	834
07:30 AM	19	278	35	68	171	46	8	159	36	23	55	1	899
07:45 AM	39	320	54	62	177	26	7	182	40	16	63	1	987
Total	106	1118	150	248	657	118	40	595	127	64	198	6	3427
08:00 AM	32	227	29	70	214	46	6	137	28	34	78	5	906
08:15 AM	30	258	38	65	116	27	8	160	41	27	40	6	816
08:30 AM	32	215	33	66	130	34	7	131	29	23	57	2	759
08:45 AM	23	209	37	73	146	26	10	203	37	30	40	2	836
Total	117	909	137	274	606	133	31	631	135	114	215	15	3317
04:00 PM	64	199	32	48	75	29	16	254	109	42	126	5	999
04:15 PM	61	153	27	49	67	31	15	206	94	45	130	4	882
04:30 PM	43	186	28	47	89	43	17	259	64	49	119	4	948
04:45 PM	33	163	30	40	67	27	16	260	73	45	169	7	930
Total	201	701	117	184	298	130	64	979	340	181	544	20	3759
05:00 PM	52	157	21	51	92	37	14	238	80	61	176	4	983
05:15 PM	38	235	34	43	74	24	18	283	85	53	144	14	1045
05:30 PM	53	169	16	50	94	36	10	223	74	56	150	5	936
05:45 PM	62	200	22	49	77	37	7	256	79	48	123	7	967
Total	205	761	93	193	337	134	49	1000	318	218	593	30	3931
Grand Total	629	3489	497	899	1898	515	184	3205	920	577	1550	71	14434
Apprch %	13.6	75.6	10.8	27.1	57.3	15.5	4.3	74.4	21.4	26.3	70.5	3.2	
Total %	4.4	24.2	3.4	6.2	13.1	3.6	1.3	22.2	6.4	4	10.7	0.5	

CITY TRAFFIC COUNTERS

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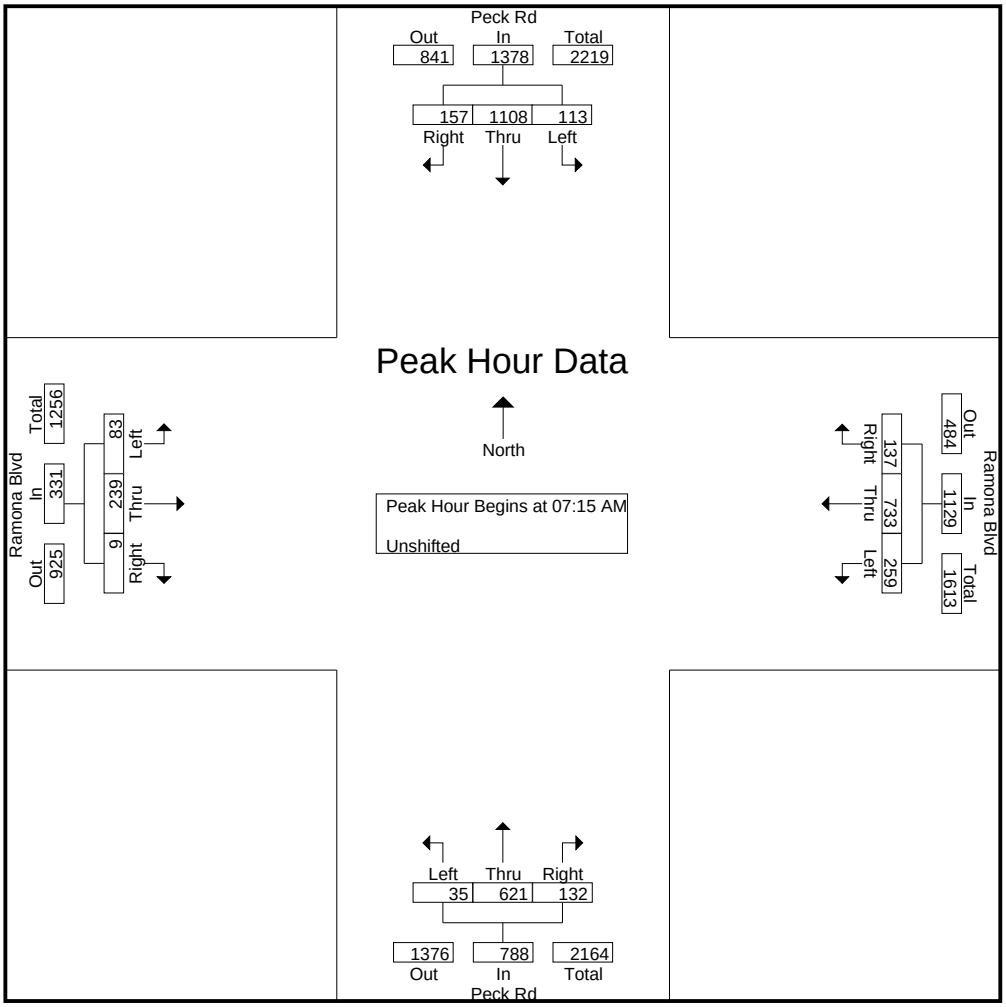
File Name : Peck_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Peck Rd Southbound				Ramona Blvd Westbound				Peck Rd Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	23	283	39	345	59	171	19	249	**14**	143	28	185	10	43	2	55	834
07:30 AM	19	278	35	332	68	171	**46**	285	8	159	36	203	23	55	1	79	899
07:45 AM	**39**	**320**	**54**	**413**	62	177	26	265	7	**182**	**40**	**229**	16	63	1	80	**987**
08:00 AM	32	227	29	288	**70**	**214**	46	**330**	6	137	28	171	**34**	**78**	**5**	**117**	906
Total Volume	113	1108	157	1378	259	733	137	1129	35	621	132	788	83	239	9	331	3626
% App. Total	8.2	80.4	11.4		22.9	64.9	12.1		4.4	78.8	16.8		25.1	72.2	2.7		
PHF	.724	.866	.727	.834	.925	.856	.745	.855	.625	.853	.825	.860	.610	.766	.450	.707	.918



CITY TRAFFIC COUNTERS

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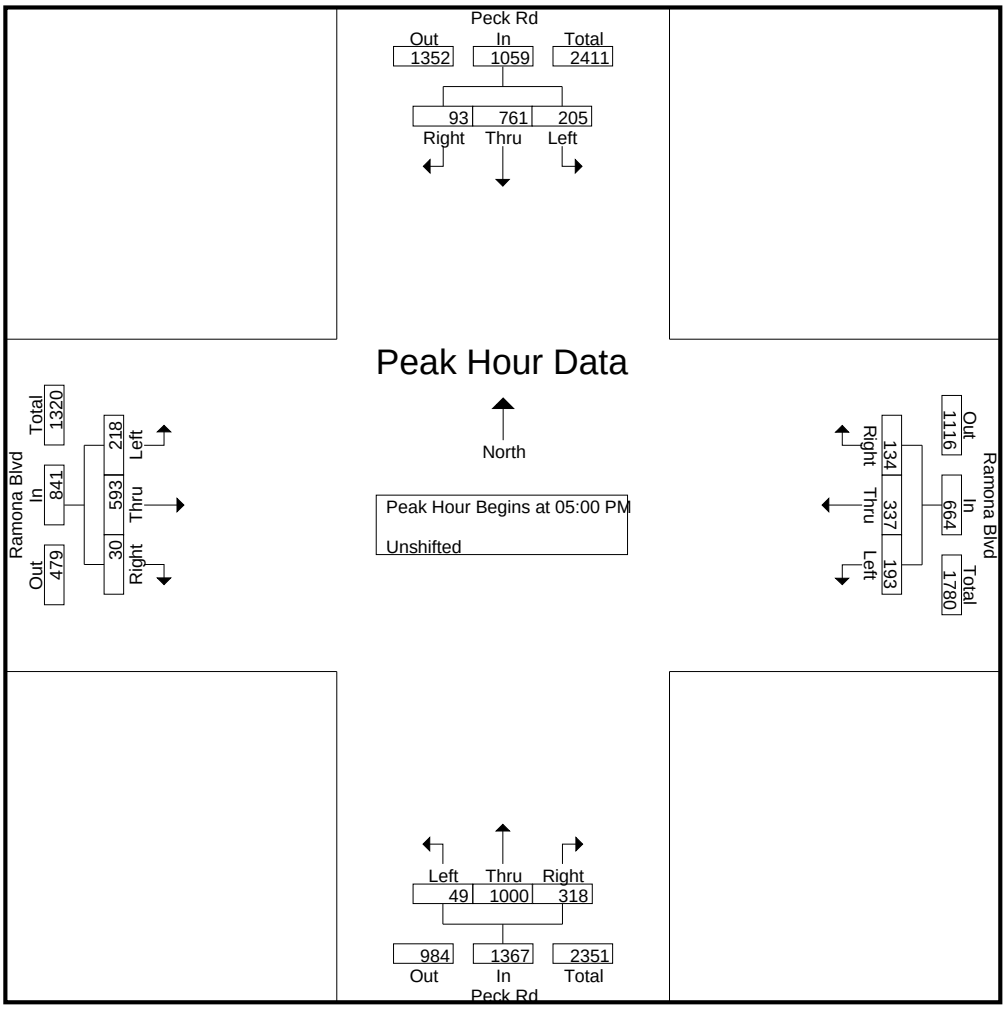
File Name : Peck_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Peck Rd Southbound				Ramona Blvd Westbound				Peck Rd Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	52	157	21	230	**51**	92	**37**	**180**	14	238	80	332	**61**	**176**	4	**241**	983
05:15 PM	38	**235**	**34**	**307**	43	74	24	141	**18**	**283**	**85**	**386**	53	144	**14**	211	**1045**
05:30 PM	53	169	16	238	50	**94**	36	180	10	223	74	307	56	150	5	211	936
05:45 PM	**62**	200	22	284	49	77	37	163	7	256	79	342	48	123	7	178	967
Total Volume	205	761	93	1059	193	337	134	664	49	1000	318	1367	218	593	30	841	3931
% App. Total	19.4	71.9	8.8		29.1	50.8	20.2		3.6	73.2	23.3		25.9	70.5	3.6		
PHF	.827	.810	.684	.862	.946	.896	.905	.922	.681	.883	.935	.885	.893	.842	.536	.872	.940



CITY TRAFFIC COUNTERS

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File Name : Peck_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	Peck Rd Southbound		Ramona Blvd Westbound		Peck Rd Northbound		Ramona Blvd Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:00 AM	0	9	1	6	0	4	1	8	29
07:15 AM	3	7	0	3	2	11	1	6	33
07:30 AM	1	2	0	0	0	10	1	5	19
07:45 AM	0	1	0	0	1	8	1	5	16
Total	4	19	1	9	3	33	4	24	97
08:00 AM	1	6	1	3	2	5	0	6	24
08:15 AM	0	5	0	6	1	1	0	4	17
08:30 AM	1	5	0	2	1	5	0	8	22
08:45 AM	0	2	0	0	1	4	3	6	16
Total	2	18	1	11	5	15	3	24	79
04:00 PM	0	10	1	5	0	8	1	5	30
04:15 PM	2	4	0	2	2	13	3	15	41
04:30 PM	3	7	0	0	1	8	1	9	29
04:45 PM	6	7	1	4	2	8	1	11	40
Total	11	28	2	11	5	37	6	40	140
05:00 PM	6	8	0	5	3	6	2	8	38
05:15 PM	4	6	0	4	1	7	3	10	35
05:30 PM	2	13	2	4	6	13	3	11	54
05:45 PM	3	18	0	7	0	11	3	21	63
Total	15	45	2	20	10	37	11	50	190
Grand Total	32	110	6	51	23	122	24	138	506
Apprch %	22.5	77.5	10.5	89.5	15.9	84.1	14.8	85.2	
Total %	6.3	21.7	1.2	10.1	4.5	24.1	4.7	27.3	

CITY TRAFFIC COUNTERS

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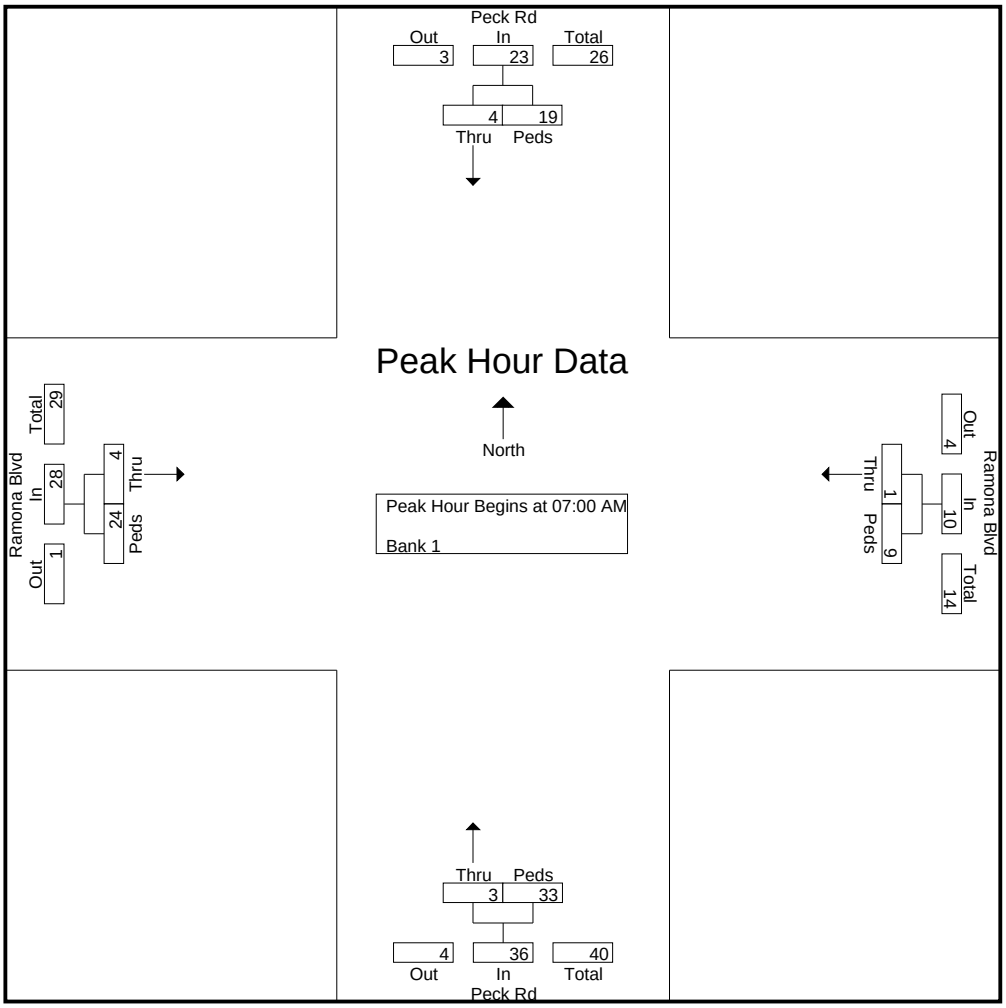
File Name : Peck_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Peck Rd Southbound			Ramona Blvd Westbound			Peck Rd Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	**9**	9	**1**	**6**	**7**	0	4	4	**1**	**8**	**9**	29
07:15 AM	**3**	7	**10**	0	3	3	**2**	**11**	**13**	1	6	7	**33**
07:30 AM	1	2	3	0	0	0	0	10	10	1	5	6	19
07:45 AM	0	1	1	0	0	0	1	8	9	1	5	6	16
Total Volume	4	19	23	1	9	10	3	33	36	4	24	28	97
% App. Total	17.4	82.6		10	90		8.3	91.7		14.3	85.7		
PHF	.333	.528	.575	.250	.375	.357	.375	.750	.692	1.00	.750	.778	.735



CITY TRAFFIC COUNTERS

626.991.7522

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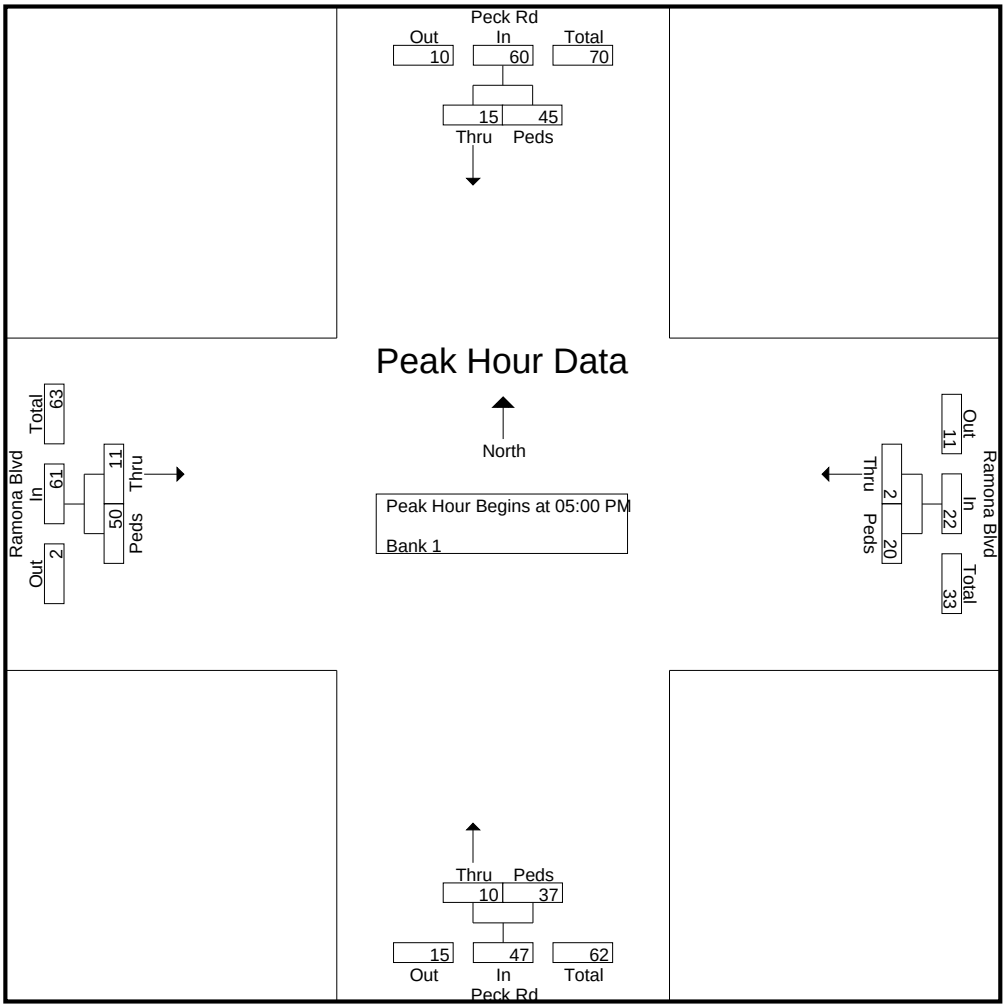
File Name : Peck_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Peck Rd Southbound			Ramona Blvd Westbound			Peck Rd Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	**6**	8	14	0	5	5	3	6	9	2	8	10	38
05:15 PM	4	6	10	0	4	4	1	7	8	**3**	10	13	35
05:30 PM	2	13	15	**2**	4	6	**6**	**13**	**19**	3	11	14	54
05:45 PM	3	**18**	**21**	0	**7**	**7**	0	11	11	3	**21**	**24**	**63**
Total Volume	15	45	60	2	20	22	10	37	47	11	50	61	190
% App. Total	25	75		9.1	90.9		21.3	78.7		18	82		
PHF	.625	.625	.714	.250	.714	.786	.417	.712	.618	.917	.595	.635	.754



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : Durfee_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Unshifted

	Southbound			Ramona Blvd Westbound			Durfee Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	40	213	0	4	0	17	0	118	11	403
07:15 AM	0	0	0	38	205	0	2	0	13	0	157	8	423
07:30 AM	0	0	0	52	240	0	4	0	37	0	173	26	532
07:45 AM	0	0	0	54	250	0	4	0	22	0	172	21	523
Total	0	0	0	184	908	0	14	0	89	0	620	66	1881
08:00 AM	0	0	0	57	224	0	6	0	27	0	142	14	470
08:15 AM	0	0	0	37	198	0	4	0	29	0	129	21	418
08:30 AM	0	0	0	48	174	0	11	0	24	0	143	14	414
08:45 AM	0	0	0	64	190	0	9	0	42	0	101	17	423
Total	0	0	0	206	786	0	30	0	122	0	515	66	1725
04:00 PM	0	0	0	15	123	0	10	0	40	0	226	13	427
04:15 PM	0	0	0	14	130	0	8	0	41	0	229	10	432
04:30 PM	0	0	0	25	138	0	7	0	31	0	247	13	461
04:45 PM	0	0	0	21	136	0	5	0	35	0	249	10	456
Total	0	0	0	75	527	0	30	0	147	0	951	46	1776
05:00 PM	0	0	0	23	152	0	5	0	28	0	230	13	451
05:15 PM	0	0	0	29	154	0	11	0	37	0	233	22	486
05:30 PM	0	0	0	23	141	0	10	0	35	0	217	11	437
05:45 PM	0	0	0	21	146	0	10	0	29	0	219	10	435
Total	0	0	0	96	593	0	36	0	129	0	899	56	1809
Grand Total	0	0	0	561	2814	0	110	0	487	0	2985	234	7191
Apprch %	0	0	0	16.6	83.4	0	18.4	0	81.6	0	92.7	7.3	
Total %	0	0	0	7.8	39.1	0	1.5	0	6.8	0	41.5	3.3	

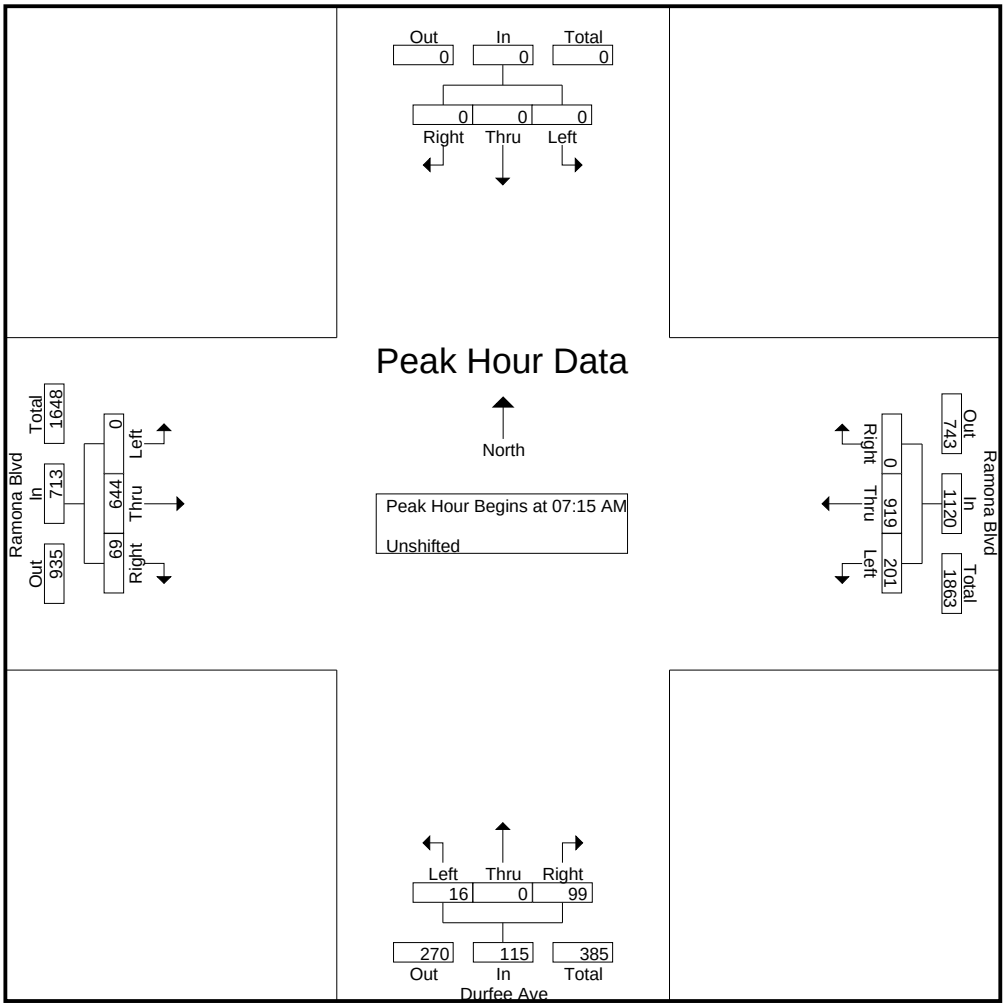
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Durfee_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Southbound				Ramona Blvd Westbound				Durfee Ave Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	38	205	0	243	2	0	13	15	0	157	8	165	423
07:30 AM	0	0	0	0	52	240	0	292	4	0	**37**	**41**	0	**173**	**26**	**199**	**532**
07:45 AM	0	0	0	0	54	**250**	0	**304**	4	0	22	26	0	172	21	193	523
08:00 AM	0	0	0	0	**57**	224	0	281	**6**	0	27	33	0	142	14	156	470
Total Volume	0	0	0	0	201	919	0	1120	16	0	99	115	0	644	69	713	1948
% App. Total	0	0	0		17.9	82.1	0		13.9	0	86.1		0	90.3	9.7		
PHF	.000	.000	.000	.000	.882	.919	.000	.921	.667	.000	.669	.701	.000	.931	.663	.896	.915



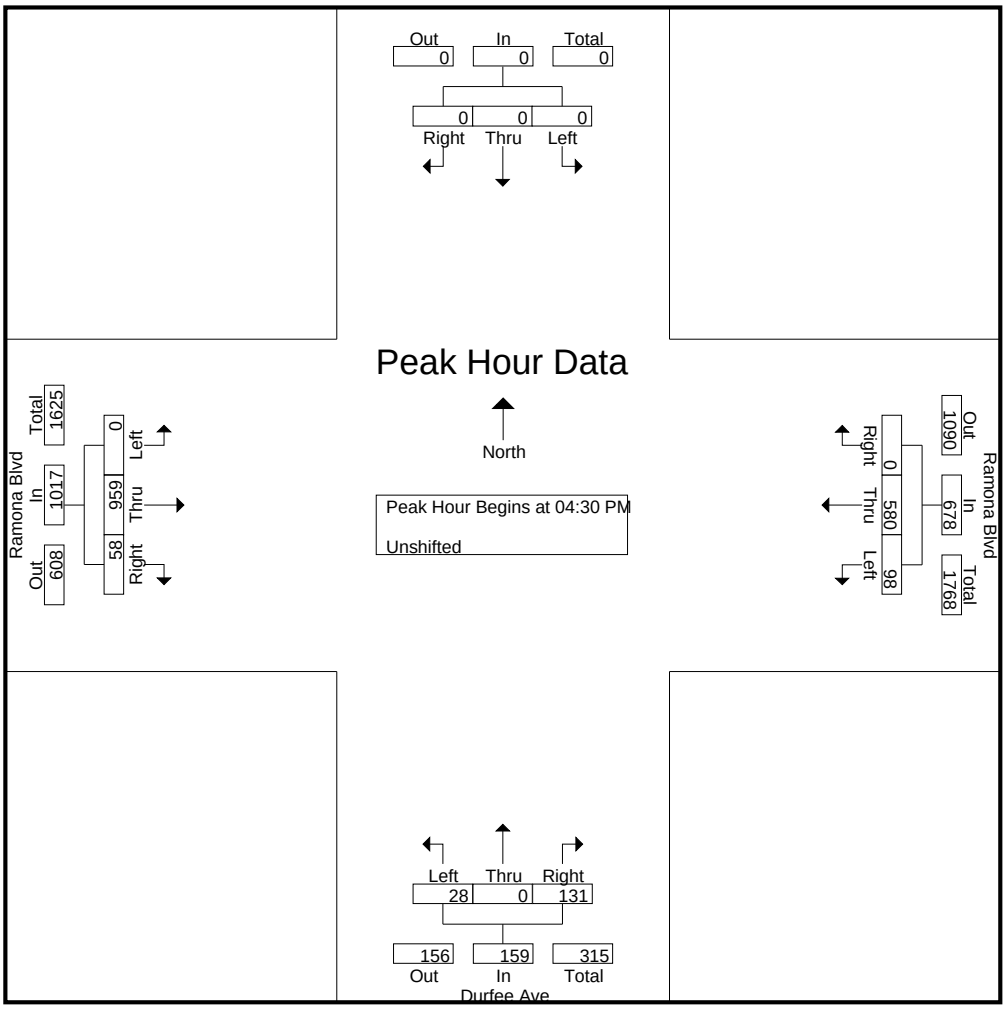
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Durfee_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Southbound				Ramona Blvd Westbound				Durfee Ave Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	25	138	0	163	7	0	31	38	0	247	13	**260**	461
04:45 PM	0	0	0	0	21	136	0	157	5	0	35	40	0	**249**	10	259	456
05:00 PM	0	0	0	0	23	152	0	175	5	0	28	33	0	230	13	243	451
05:15 PM	0	0	0	0	**29**	**154**	0	**183**	**11**	0	**37**	**48**	0	233	**22**	255	**486**
Total Volume	0	0	0	0	98	580	0	678	28	0	131	159	0	959	58	1017	1854
% App. Total	0	0	0		14.5	85.5	0		17.6	0	82.4		0	94.3	5.7		
PHF	.000	.000	.000	.000	.845	.942	.000	.926	.636	.000	.885	.828	.000	.963	.659	.978	.954



CITY TRAFFIC COUNTERS

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File Name : Durfee_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	Southbound		Ramona Blvd Westbound		Durfee Ave Northbound		Ramona Blvd Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:00 AM	4	2	0	0	0	0	0	0	6
07:15 AM	2	3	0	0	0	0	0	0	5
07:30 AM	0	17	0	0	0	0	0	0	17
07:45 AM	3	19	0	0	0	0	0	0	22
Total	9	41	0	0	0	0	0	0	50
08:00 AM	8	5	0	0	0	0	0	0	13
08:15 AM	1	7	0	0	0	0	0	0	8
08:30 AM	4	2	0	0	0	0	0	0	6
08:45 AM	1	8	0	0	0	0	0	0	9
Total	14	22	0	0	0	0	0	0	36
04:00 PM	3	2	0	0	0	0	0	0	5
04:15 PM	3	7	0	0	0	0	0	0	10
04:30 PM	5	4	0	0	0	0	0	0	9
04:45 PM	10	8	0	0	0	0	0	0	18
Total	21	21	0	0	0	0	0	0	42
05:00 PM	5	3	0	0	0	0	0	0	8
05:15 PM	7	5	0	0	0	0	0	0	12
05:30 PM	6	5	0	0	0	0	0	0	11
05:45 PM	4	6	0	0	0	0	0	0	10
Total	22	19	0	0	0	0	0	0	41
Grand Total	66	103	0	0	0	0	0	0	169
Apprch %	39.1	60.9	0	0	0	0	0	0	
Total %	39.1	60.9	0	0	0	0	0	0	

CITY TRAFFIC COUNTERS

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File Name : Durfee_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
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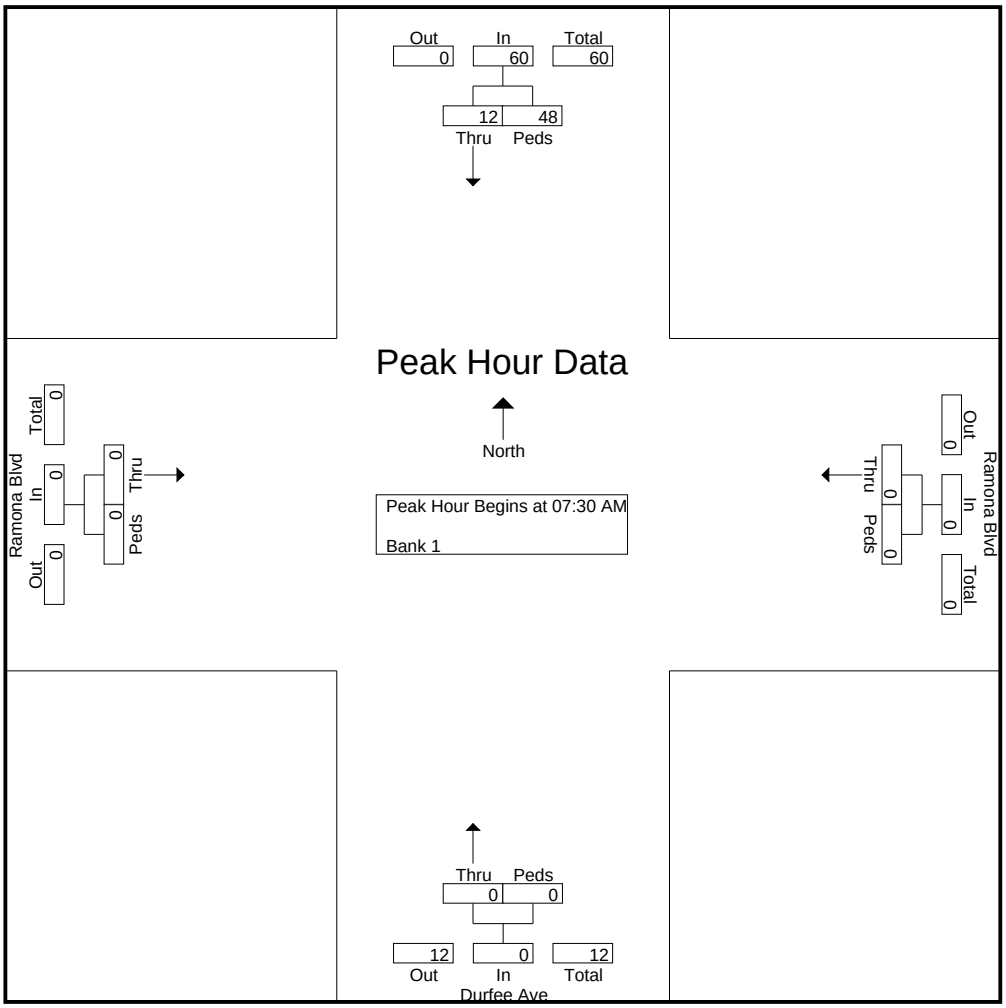
	Southbound			Ramona Blvd Westbound			Durfee Ave Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	17	17	0	0	0	0	0	0	0	0	0	17
07:45 AM	3	**19**	**22**	0	0	0	0	0	0	0	0	0	**22**
08:00 AM	**8**	5	13	0	0	0	0	0	0	0	0	0	13
08:15 AM	1	7	8	0	0	0	0	0	0	0	0	0	8
Total Volume	12	48	60	0	0	0	0	0	0	0	0	0	60
% App. Total	20	80		0	0		0	0		0	0		
PHF	.375	.632	.682	.000	.000	.000	.000	.000	.000	.000	.000	.000	.682



CITY TRAFFIC COUNTERS

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File Name : Durfee_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
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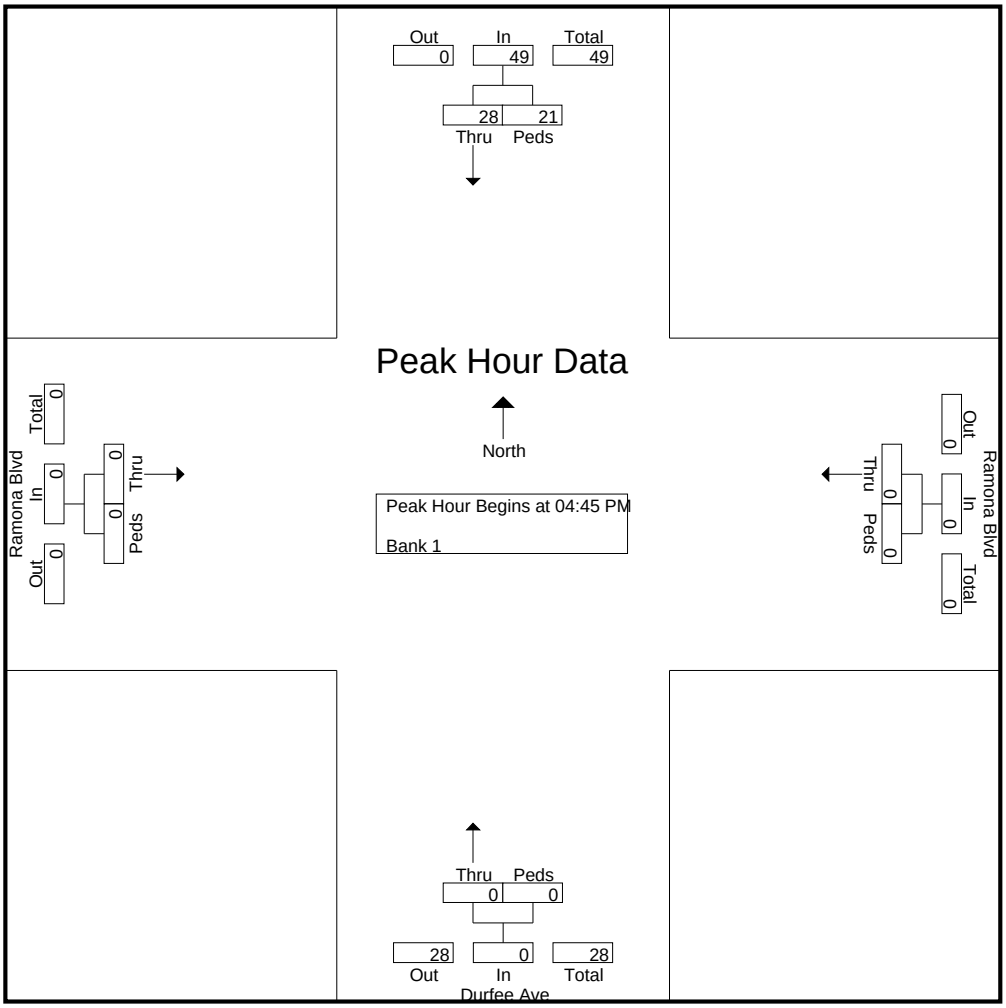
	Southbound			Ramona Blvd Westbound			Durfee Ave Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	**10**	**8**	**18**	0	0	0	0	0	0	0	0	0	**18**
05:00 PM	5	3	8	0	0	0	0	0	0	0	0	0	8
05:15 PM	7	5	12	0	0	0	0	0	0	0	0	0	12
05:30 PM	6	5	11	0	0	0	0	0	0	0	0	0	11
Total Volume	28	21	49	0	0	0	0	0	0	0	0	0	49
% App. Total	57.1	42.9		0	0		0	0		0	0		
PHF	.700	.656	.681	.000	.000	.000	.000	.000	.000	.000	.000	.000	.681



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : Gilman_Ramona
Site Code : 00000000
Start Date : 9/9/2014
Page No : 1

Groups Printed- Unshifted

	Gilman Rd Southbound			Ramona Blvd Westbound			Gilman Rd Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	11	216	1	2	0	15	5	149	8	407
07:15 AM	0	0	0	31	250	9	17	3	26	8	140	6	490
07:30 AM	0	0	0	52	266	7	19	1	23	17	182	19	586
07:45 AM	0	0	0	34	254	13	22	2	32	34	164	32	587
Total	0	0	0	128	986	30	60	6	96	64	635	65	2070
08:00 AM	0	0	0	36	244	3	23	0	22	39	189	19	575
08:15 AM	0	0	0	15	190	7	8	3	18	5	135	7	388
08:30 AM	0	0	0	19	207	2	10	1	18	2	135	7	401
08:45 AM	0	0	0	26	206	1	3	1	15	7	134	3	396
Total	0	0	0	96	847	13	44	5	73	53	593	36	1760
04:00 PM	0	0	0	13	151	2	6	0	23	0	257	6	458
04:15 PM	0	0	0	18	150	0	5	0	44	0	240	2	459
04:30 PM	0	0	0	15	162	0	12	0	48	0	256	10	503
04:45 PM	0	0	0	24	120	0	7	0	32	2	254	11	450
Total	0	0	0	70	583	2	30	0	147	2	1007	29	1870
05:00 PM	0	0	0	17	174	1	8	0	62	1	240	8	511
05:15 PM	0	0	0	24	173	0	3	0	58	0	222	9	489
05:30 PM	0	0	0	15	159	0	8	0	46	0	199	9	436
05:45 PM	0	0	0	15	144	1	11	0	91	1	185	5	453
Total	0	0	0	71	650	2	30	0	257	2	846	31	1889
Grand Total	0	0	0	365	3066	47	164	11	573	121	3081	161	7589
Apprch %	0	0	0	10.5	88.2	1.4	21.9	1.5	76.6	3.6	91.6	4.8	
Total %	0	0	0	4.8	40.4	0.6	2.2	0.1	7.6	1.6	40.6	2.1	

CITY TRAFFIC COUNTERS

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File Name : Gilman_Ramona
Site Code : 00000000
Start Date : 9/9/2014
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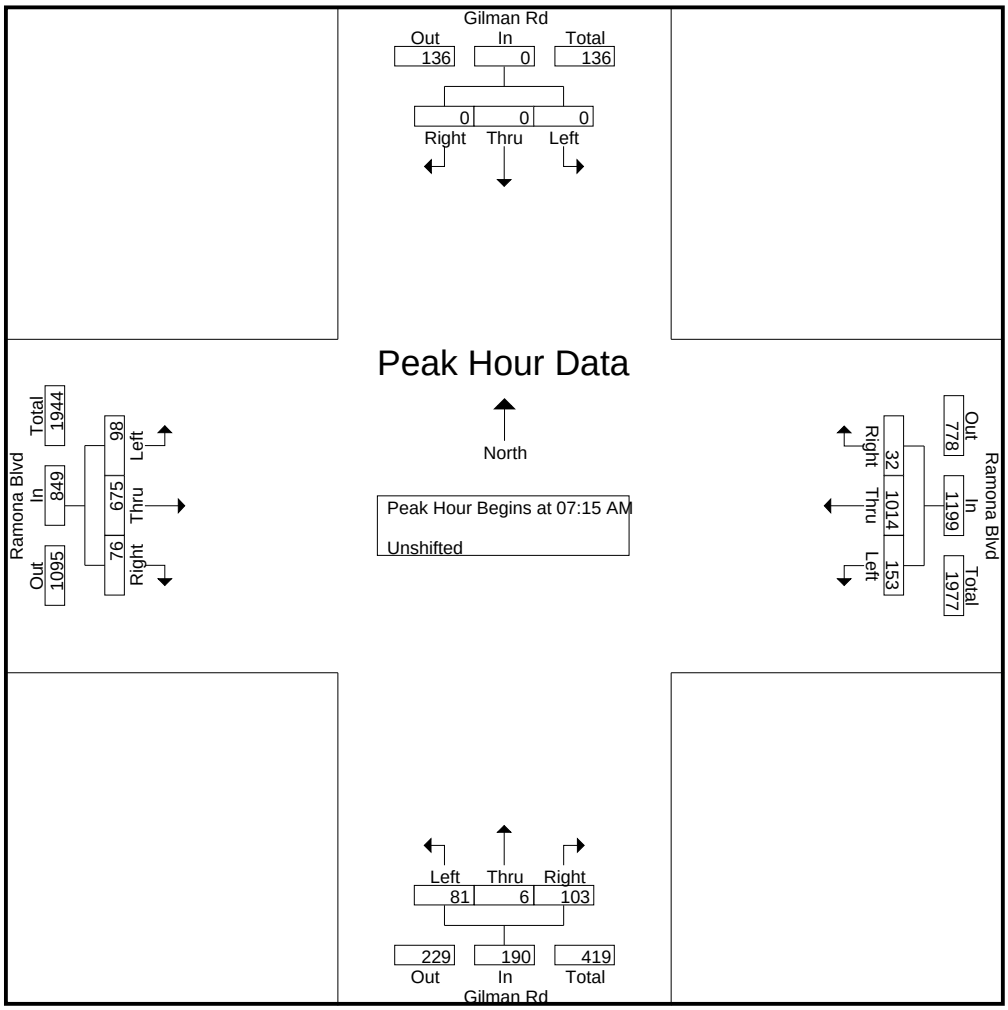
	Gilman Rd Southbound				Ramona Blvd Westbound				Gilman Rd Northbound				Ramona Blvd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	31	250	9	290	17	**3**	26	46	8	140	6	154	490
07:30 AM	0	0	0	0	**52**	**266**	7	**325**	19	1	23	43	17	182	19	218	586
07:45 AM	0	0	0	0	34	254	**13**	301	22	2	**32**	**56**	34	164	**32**	230	**587**
08:00 AM	0	0	0	0	36	244	3	283	**23**	0	22	45	**39**	**189**	19	**247**	575
Total Volume	0	0	0	0	153	1014	32	1199	81	6	103	190	98	675	76	849	2238
% App. Total	0	0	0		12.8	84.6	2.7		42.6	3.2	54.2		11.5	79.5	9		
PHF	.000	.000	.000	.000	.736	.953	.615	.922	.880	.500	.805	.848	.628	.893	.594	.859	.953



CITY TRAFFIC COUNTERS

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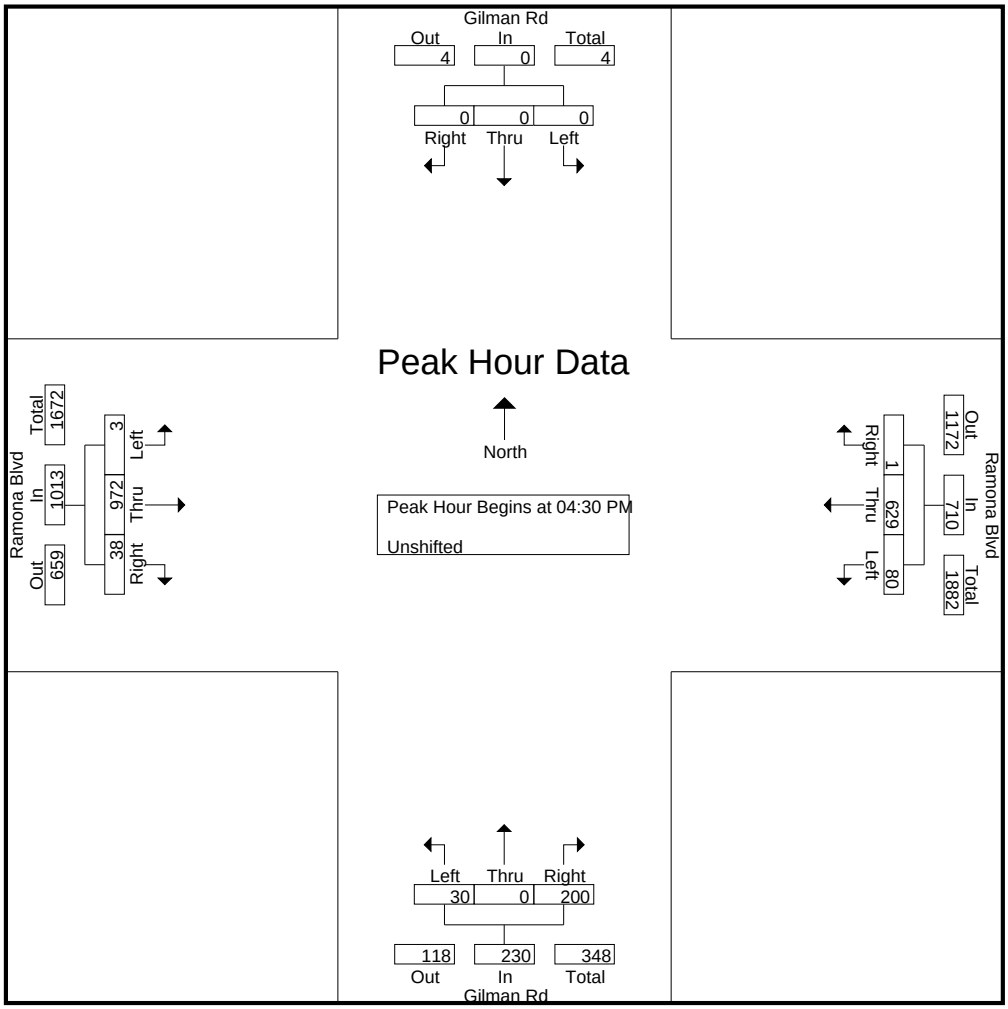
File Name : Gilman_Ramona
Site Code : 00000000
Start Date : 9/9/2014
Page No : 3

	Gilman Rd Southbound				Ramona Blvd Westbound				Gilman Rd Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	15	162	0	177	**12**	0	48	60	0	**256**	10	266	503
04:45 PM	0	0	0	0	**24**	120	0	144	7	0	32	39	**2**	254	**11**	**267**	450
05:00 PM	0	0	0	0	17	**174**	**1**	192	8	0	**62**	**70**	1	240	8	249	**511**
05:15 PM	0	0	0	0	24	173	0	**197**	3	0	58	61	0	222	9	231	489
Total Volume	0	0	0	0	80	629	1	710	30	0	200	230	3	972	38	1013	1953
% App. Total	0	0	0		11.3	88.6	0.1		13	0	87		0.3	96	3.8		
PHF	.000	.000	.000	.000	.833	.904	.250	.901	.625	.000	.806	.821	.375	.949	.864	.949	.955



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : I-605FrwySBRamps_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Unshifted

	I-605 Frwy SB Off-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy SB On-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	31	0	42	151	211	0	0	0	0	0	73	62	570
07:15 AM	43	0	45	144	204	0	0	0	0	0	85	86	607
07:30 AM	51	0	61	163	228	0	0	0	0	0	126	79	708
07:45 AM	46	1	69	134	241	0	0	0	0	0	131	69	691
Total	171	1	217	592	884	0	0	0	0	0	415	296	2576
08:00 AM	33	0	41	124	218	0	0	0	0	0	112	50	578
08:15 AM	45	1	47	127	180	0	0	0	0	0	101	47	548
08:30 AM	41	5	57	100	171	0	0	0	0	0	107	53	534
08:45 AM	34	7	51	88	194	0	0	0	0	0	112	67	553
Total	153	13	196	439	763	0	0	0	0	0	432	217	2213
04:00 PM	79	0	27	70	125	0	0	0	0	0	227	41	569
04:15 PM	82	2	27	61	124	0	0	0	0	0	267	44	607
04:30 PM	92	0	35	77	136	0	0	0	0	0	235	34	609
04:45 PM	105	0	38	59	133	0	0	0	0	0	241	31	607
Total	358	2	127	267	518	0	0	0	0	0	970	150	2392
05:00 PM	95	0	37	90	148	0	0	0	0	0	221	37	628
05:15 PM	104	0	40	74	147	0	0	0	0	0	239	38	642
05:30 PM	104	2	44	62	134	0	0	0	0	0	223	29	598
05:45 PM	103	1	30	71	143	0	0	0	0	0	222	30	600
Total	406	3	151	297	572	0	0	0	0	0	905	134	2468
Grand Total	1088	19	691	1595	2737	0	0	0	0	0	2722	797	9649
Apprch %	60.5	1.1	38.4	36.8	63.2	0	0	0	0	0	77.4	22.6	
Total %	11.3	0.2	7.2	16.5	28.4	0	0	0	0	0	28.2	8.3	

CITY TRAFFIC COUNTERS

626.991.7522

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File Name : I-605FrwySBRamps_Ramona
Site Code : 00000000
Start Date : 5/19/2015
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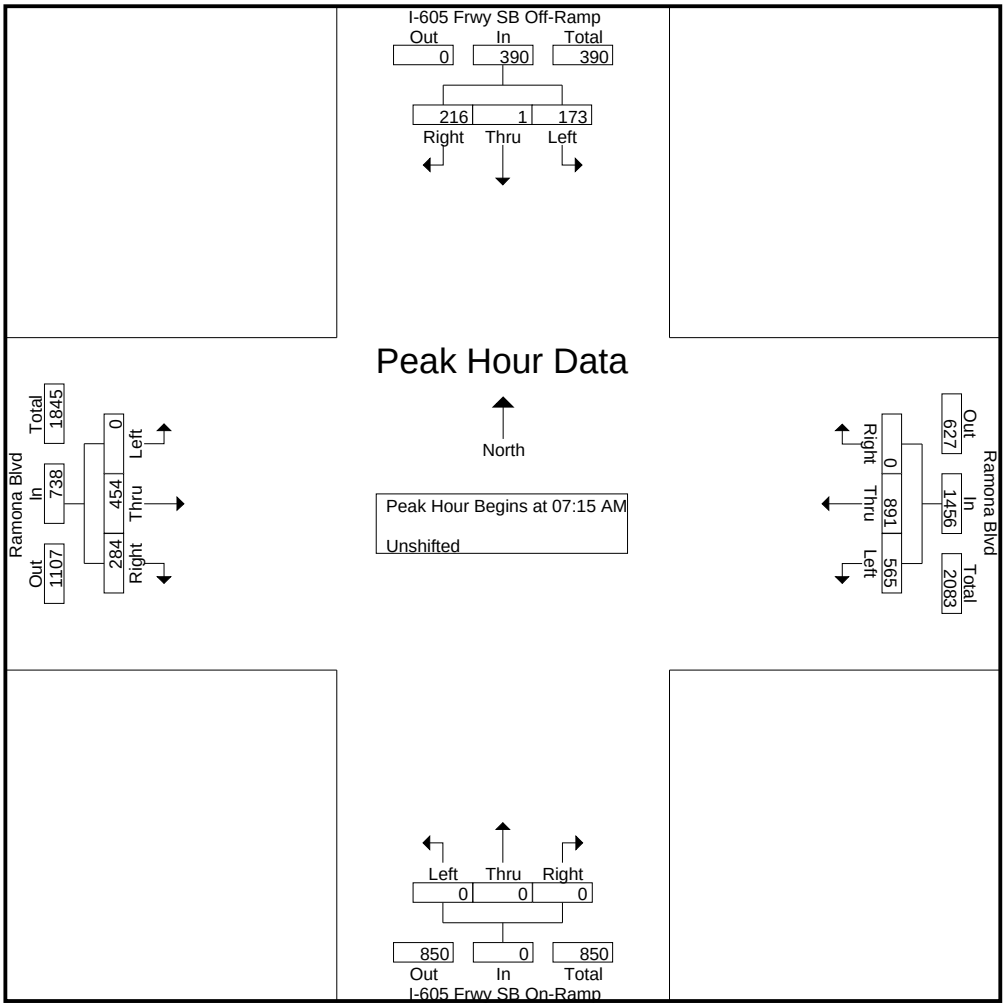
	I-605 Frwy SB Off-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy SB On-Ramp Northbound				Ramona Blvd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	43	0	45	88	144	204	0	348	0	0	0	0	0	85	**86**	171	607
07:30 AM	**51**	0	61	112	**163**	228	0	**391**	0	0	0	0	0	126	79	**205**	**708**
07:45 AM	46	**1**	**69**	**116**	134	**241**	0	375	0	0	0	0	0	**131**	69	200	691
08:00 AM	33	0	41	74	124	218	0	342	0	0	0	0	0	112	50	162	578
Total Volume	173	1	216	390	565	891	0	1456	0	0	0	0	0	454	284	738	2584
% App. Total	44.4	0.3	55.4		38.8	61.2	0		0	0	0		0	61.5	38.5		
PHF	.848	.250	.783	.841	.867	.924	.000	.931	.000	.000	.000	.000	.000	.866	.826	.900	.912



CITY TRAFFIC COUNTERS

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www.ctcounters.com

File Name : I-605FrwySBRamps_Ramona
Site Code : 00000000
Start Date : 5/19/2015
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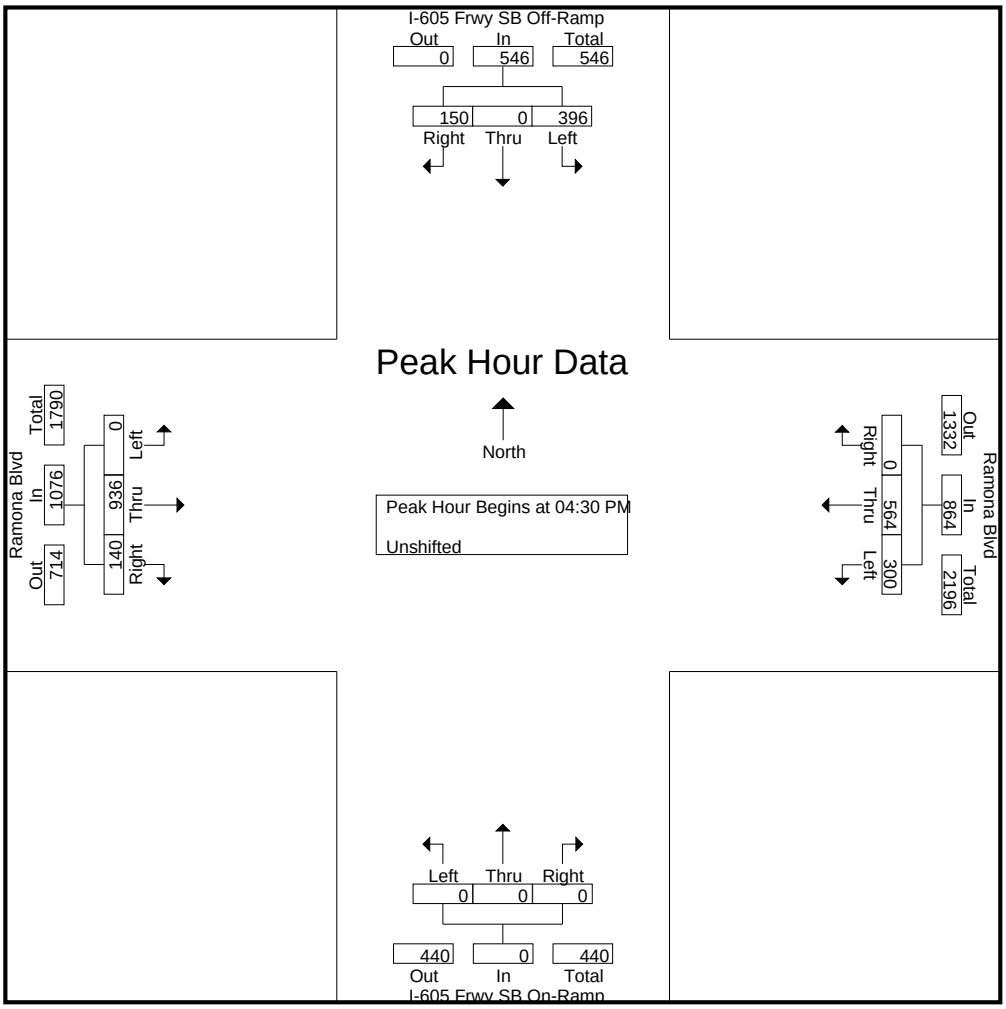
	I-605 Frwy SB Off-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy SB On-Ramp Northbound				Ramona Blvd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	92	0	35	127	77	136	0	213	0	0	0	0	0	235	34	269	609
04:45 PM	**105**	0	38	143	59	133	0	192	0	0	0	0	0	**241**	31	272	607
05:00 PM	95	0	37	132	**90**	**148**	0	**238**	0	0	0	0	0	221	37	258	628
05:15 PM	104	0	**40**	**144**	74	147	0	221	0	0	0	0	0	239	**38**	**277**	**642**
Total Volume	396	0	150	546	300	564	0	864	0	0	0	0	0	936	140	1076	2486
% App. Total	72.5	0	27.5		34.7	65.3	0		0	0	0		0	87	13		
PHF	.943	.000	.938	.948	.833	.953	.000	.908	.000	.000	.000	.000	.000	.971	.921	.971	.968



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : I-605FrwySBRamps_Ramona_Buses
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	I-605 Frwy SB Off-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy SB On-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	3	0	0	0	0	0	2	0	5
07:15 AM	0	0	1	0	1	0	0	0	0	0	2	0	4
07:30 AM	0	0	0	0	2	0	0	0	0	0	1	0	3
07:45 AM	0	0	0	1	1	0	0	0	0	0	1	0	3
Total	0	0	1	1	7	0	0	0	0	0	6	0	15
08:00 AM	0	0	0	0	3	0	0	0	0	0	2	0	5
08:15 AM	0	0	1	0	1	0	0	0	0	0	1	0	3
08:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
08:45 AM	0	0	1	0	2	0	0	0	0	0	0	0	3
Total	0	0	2	0	7	0	0	0	0	0	4	0	13
04:00 PM	0	0	0	0	2	0	0	0	0	0	2	0	4
04:15 PM	0	0	0	1	2	0	0	0	0	0	0	0	3
04:30 PM	1	0	0	0	0	0	0	0	0	0	3	0	4
04:45 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
Total	1	0	0	1	6	0	0	0	0	0	6	0	14
05:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
05:15 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
05:30 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
05:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
Total	0	0	0	0	3	0	0	0	0	0	6	0	9
Grand Total	1	0	3	2	23	0	0	0	0	0	22	0	51
Apprch %	25	0	75	8	92	0	0	0	0	0	100	0	
Total %	2	0	5.9	3.9	45.1	0	0	0	0	0	43.1	0	

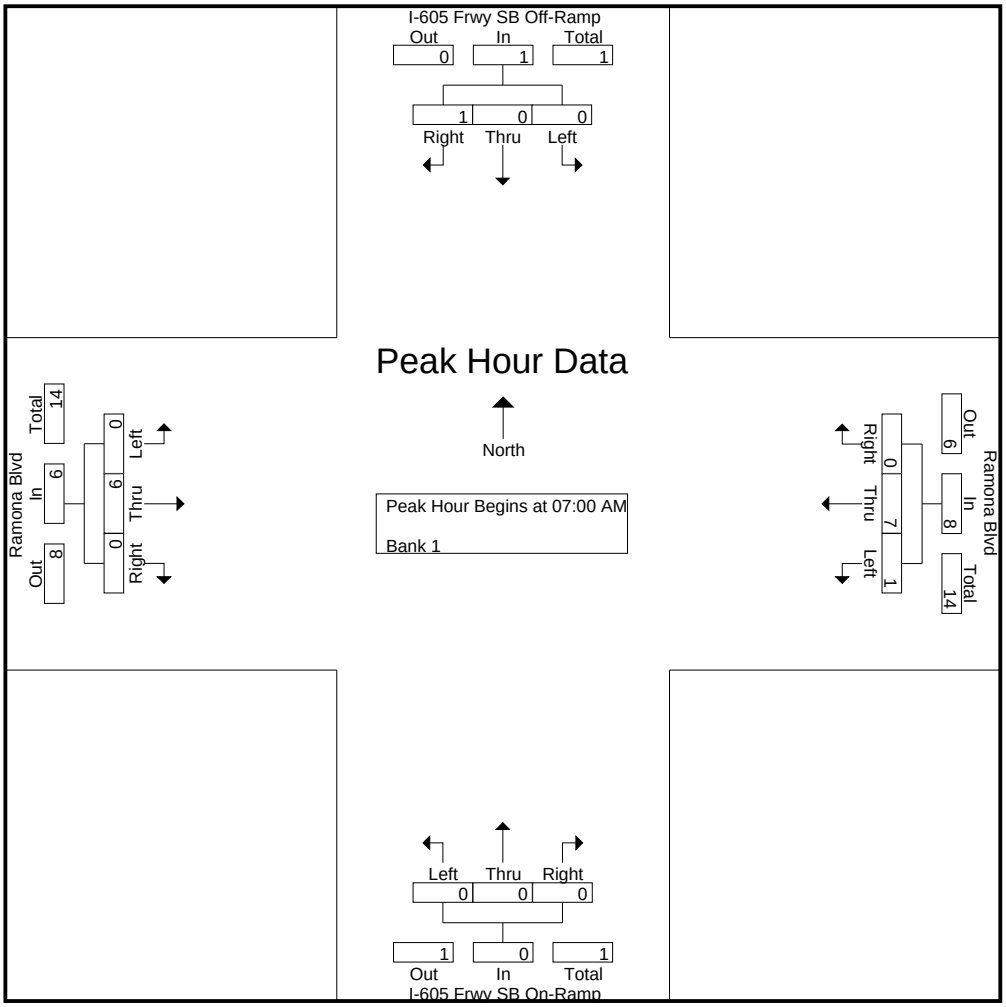
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : I-605FrwySBRamps_Ramona_Buses
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	I-605 Frwy SB Off-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy SB On-Ramp Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	**2**	0	**2**	**5**
07:15 AM	0	0	**1**	**1**	0	1	0	1	0	0	0	0	0	2	0	2	4
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
07:45 AM	0	0	0	0	**1**	1	0	2	0	0	0	0	0	1	0	1	3
Total Volume	0	0	1	1	1	7	0	8	0	0	0	0	0	6	0	6	15
% App. Total	0	0	100		12.5	87.5	0		0	0	0		0	100	0		
PHF	.000	.000	.250	.250	.250	.583	.000	.667	.000	.000	.000	.000	.000	.750	.000	.750	.750



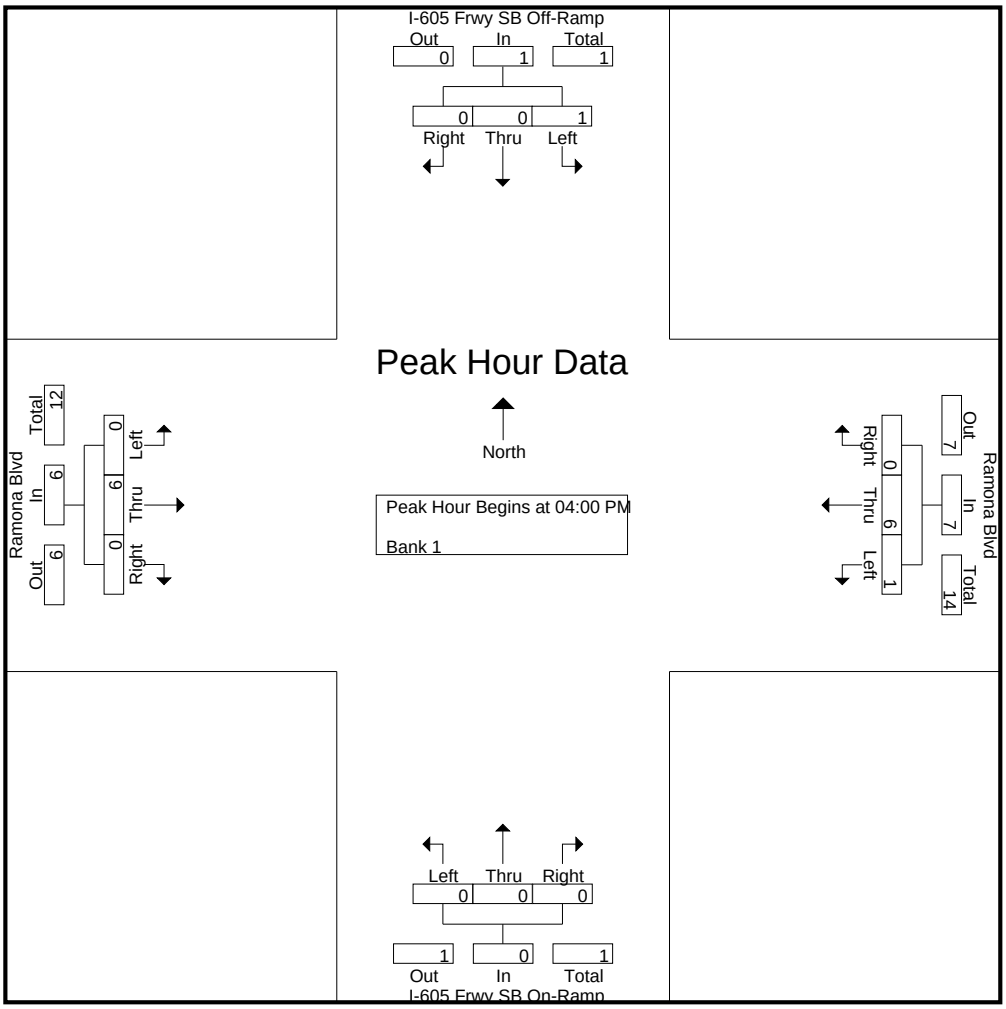
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : I-605FrwySBRamps_Ramona_Buses
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	I-605 Frwy SB Off-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy SB On-Ramp Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	**2**	0	2	0	0	0	0	0	2	0	2	**4**
04:15 PM	0	0	0	0	**1**	2	0	**3**	0	0	0	0	0	0	0	0	3
04:30 PM	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	**3**	0	**3**	4
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
Total Volume	1	0	0	1	1	6	0	7	0	0	0	0	0	6	0	6	14
% App. Total	100	0	0		14.3	85.7	0		0	0	0		0	100	0		
PHF	.250	.000	.000	.250	.250	.750	.000	.583	.000	.000	.000	.000	.000	.500	.000	.500	.875



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : I-605FrwySBRamps_Ramona_2-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Unshifted

	I-605 Frwy SB Off-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy SB On-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	1	0	2	1	2	0	0	0	0	0	1	2	9
07:15 AM	1	0	0	0	3	0	0	0	0	0	1	0	5
07:30 AM	1	0	1	2	1	0	0	0	0	0	1	1	7
07:45 AM	0	0	2	3	3	0	0	0	0	0	3	2	13
Total	3	0	5	6	9	0	0	0	0	0	6	5	34
08:00 AM	0	0	1	1	7	0	0	0	0	0	1	2	12
08:15 AM	1	0	1	4	2	0	0	0	0	0	1	2	11
08:30 AM	2	0	1	4	2	0	0	0	0	0	4	0	13
08:45 AM	2	0	4	3	4	0	0	0	0	0	0	0	13
Total	5	0	7	12	15	0	0	0	0	0	6	4	49
04:00 PM	3	0	1	1	3	0	0	0	0	0	4	0	12
04:15 PM	1	0	0	2	2	0	0	0	0	0	3	0	8
04:30 PM	2	0	1	4	4	0	0	0	0	0	6	1	18
04:45 PM	4	0	2	3	0	0	0	0	0	0	5	0	14
Total	10	0	4	10	9	0	0	0	0	0	18	1	52
05:00 PM	3	0	0	1	3	0	0	0	0	0	2	0	9
05:15 PM	1	0	1	2	3	0	0	0	0	0	1	0	8
05:30 PM	4	0	0	1	2	0	0	0	0	0	3	1	11
05:45 PM	3	0	0	1	0	0	0	0	0	0	2	0	6
Total	11	0	1	5	8	0	0	0	0	0	8	1	34
Grand Total	29	0	17	33	41	0	0	0	0	0	38	11	169
Apprch %	63	0	37	44.6	55.4	0	0	0	0	0	77.6	22.4	
Total %	17.2	0	10.1	19.5	24.3	0	0	0	0	0	22.5	6.5	

CITY TRAFFIC COUNTERS

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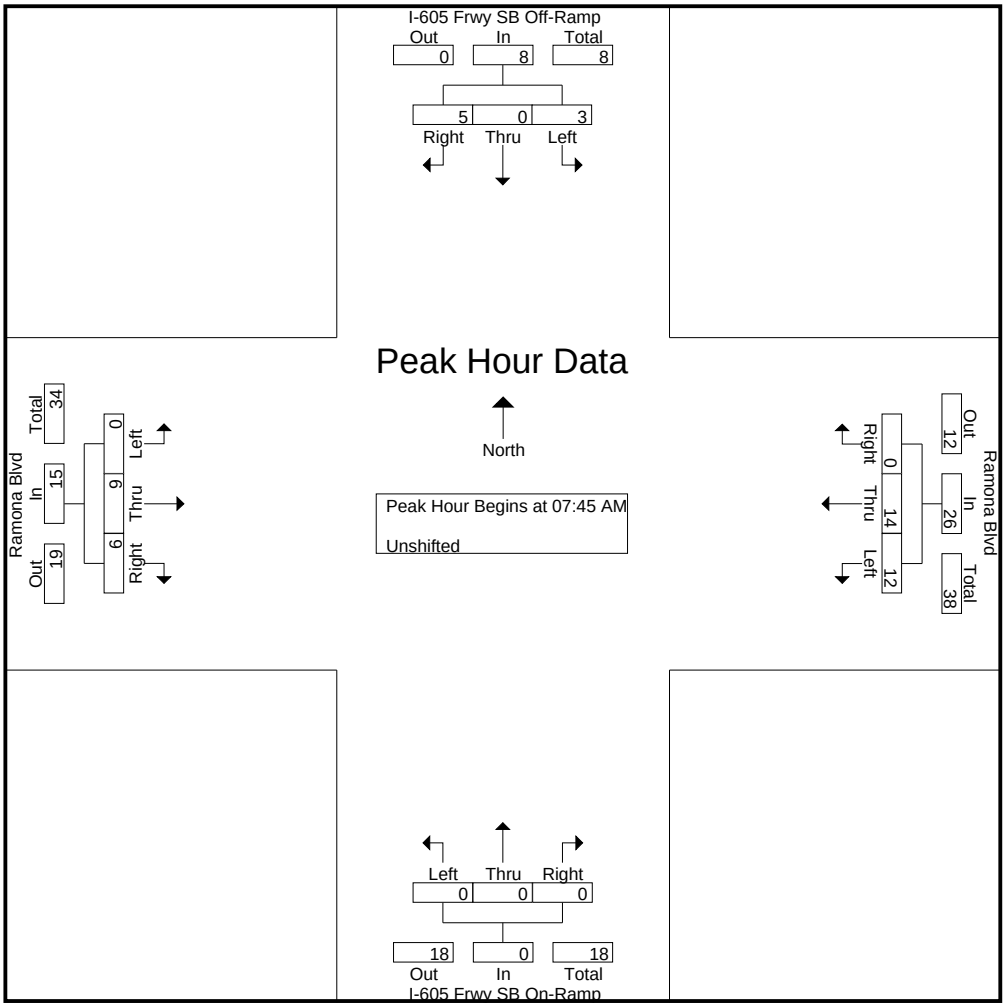
File Name : I-605FrwySBRamps_Ramona_2-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	I-605 Frwy SB Off-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy SB On-Ramp Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	**2**	2	3	3	0	6	0	0	0	0	0	3	**2**	**5**	**13**
08:00 AM	0	0	1	1	1	**7**	0	**8**	0	0	0	0	0	1	2	3	12
08:15 AM	1	0	1	2	**4**	2	0	6	0	0	0	0	0	1	2	3	11
08:30 AM	**2**	0	1	**3**	4	2	0	6	0	0	0	0	0	**4**	0	4	13
Total Volume	3	0	5	8	12	14	0	26	0	0	0	0	0	9	6	15	49
% App. Total	37.5	0	62.5		46.2	53.8	0		0	0	0		0	60	40		
PHF	.375	.000	.625	.667	.750	.500	.000	.813	.000	.000	.000	.000	.000	.563	.750	.750	.942



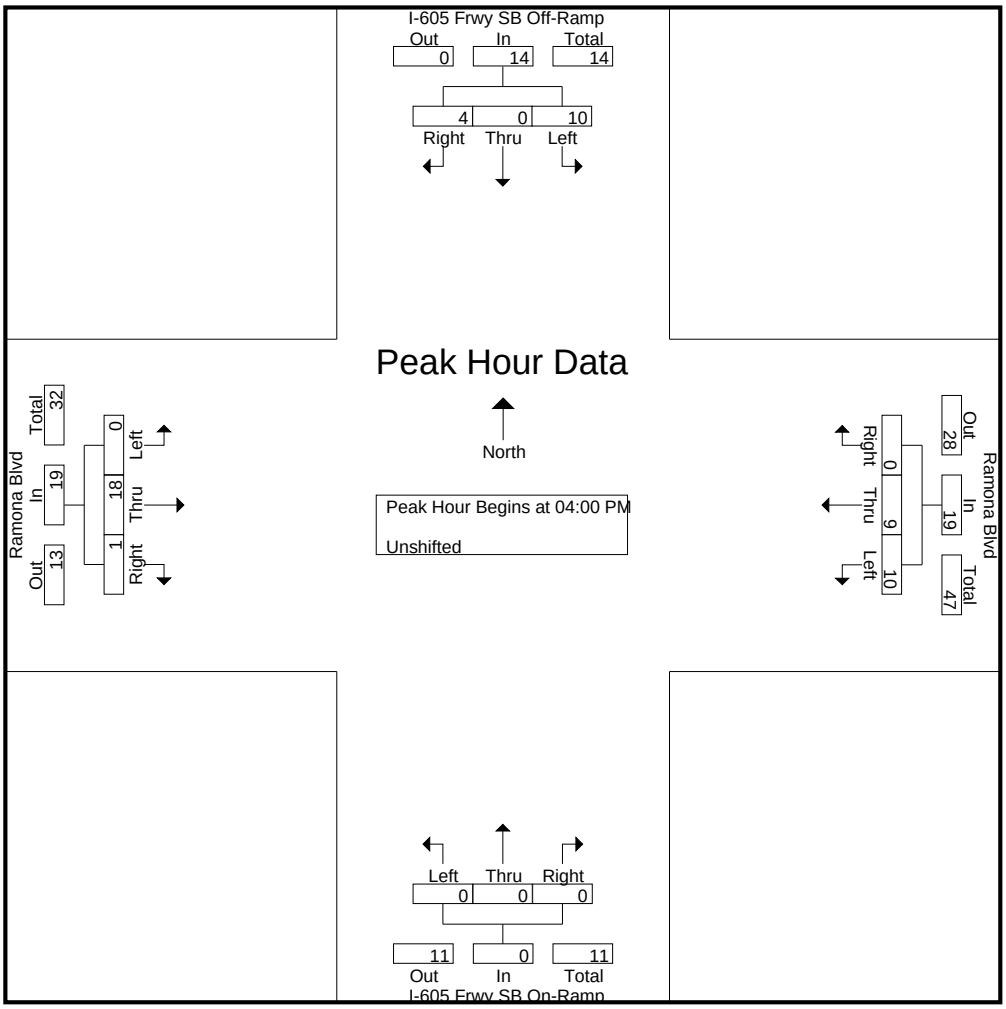
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : I-605FrwySBRamps_Ramona_2-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	I-605 Frwy SB Off-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy SB On-Ramp Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	3	0	1	4	1	3	0	4	0	0	0	0	0	4	0	4	12
04:15 PM	1	0	0	1	2	2	0	4	0	0	0	0	0	3	0	3	8
04:30 PM	2	0	1	3	**4**	**4**	0	**8**	0	0	0	0	0	**6**	**1**	**7**	**18**
04:45 PM	**4**	0	**2**	**6**	3	0	0	3	0	0	0	0	0	5	0	5	14
Total Volume	10	0	4	14	10	9	0	19	0	0	0	0	0	18	1	19	52
% App. Total	71.4	0	28.6		52.6	47.4	0		0	0	0		0	94.7	5.3		
PHF	.625	.000	.500	.583	.625	.563	.000	.594	.000	.000	.000	.000	.000	.750	.250	.679	.722



CITY TRAFFIC COUNTERS

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File Name : I-605FrwySBRamps_Ramona_3-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	I-605 Frwy SB Off-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy SB On-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	2
07:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
07:45 AM	1	0	0	1	0	0	0	0	0	0	0	1	3
Total	2	0	0	3	0	0	0	0	0	0	0	1	6
08:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	2
Total	2	0	0	1	0	0	0	0	0	0	0	0	3
04:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
Total	1	0	0	1	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	5	0	0	6	0	0	0	0	0	0	0	1	12
Apprch %	100	0	0	100	0	0	0	0	0	0	0	100	
Total %	41.7	0	0	50	0	0	0	0	0	0	0	8.3	

CITY TRAFFIC COUNTERS

626.991.7522

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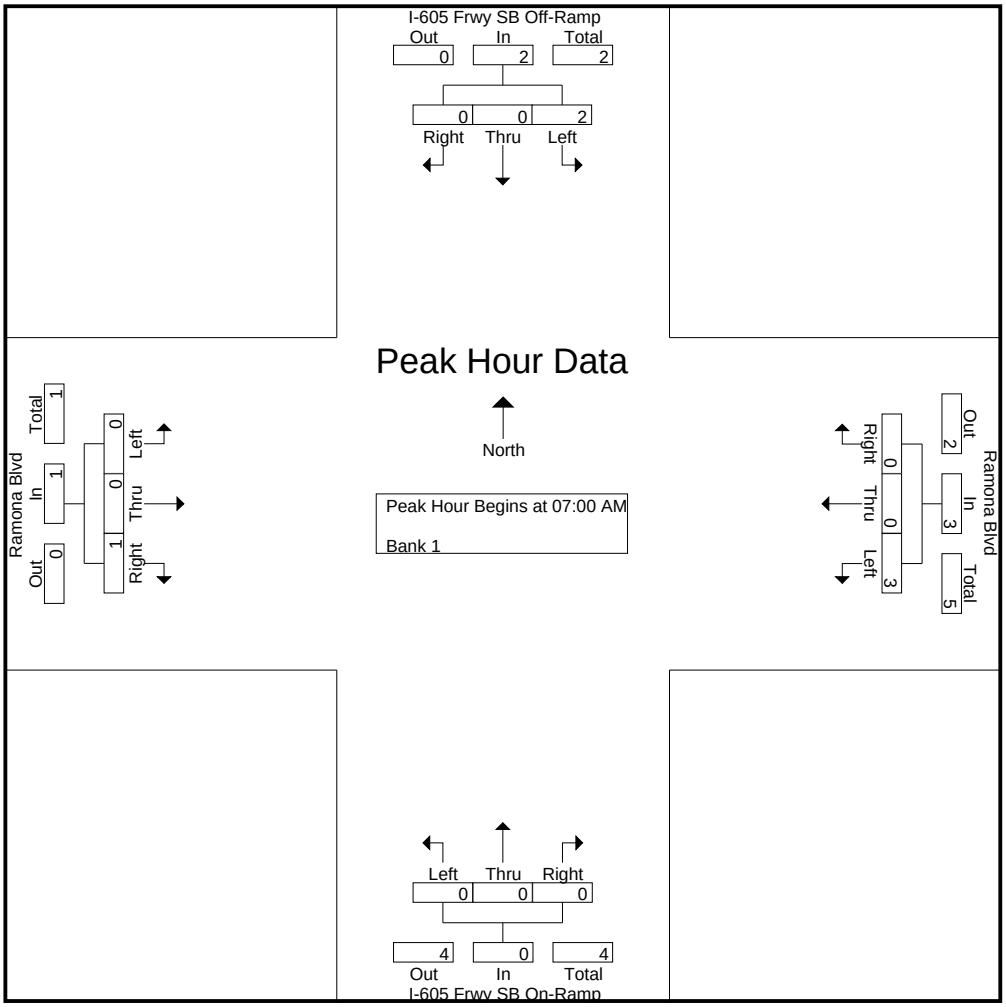
File Name : I-605FrwySBRamps_Ramona_3-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	I-605 Frwy SB Off-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy SB On-Ramp Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**1**	0	0	**1**	**1**	0	0	**1**	0	0	0	0	0	0	0	0	2
07:15 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	1	0	0	1	1	0	0	1	0	0	0	0	0	0	**1**	**1**	**3**
Total Volume	2	0	0	2	3	0	0	3	0	0	0	0	0	0	1	1	6
% App. Total	100	0	0		100	0	0		0	0	0		0	0	100		
PHF	.500	.000	.000	.500	.750	.000	.000	.750	.000	.000	.000	.000	.000	.000	.250	.250	.500



CITY TRAFFIC COUNTERS

626.991.7522

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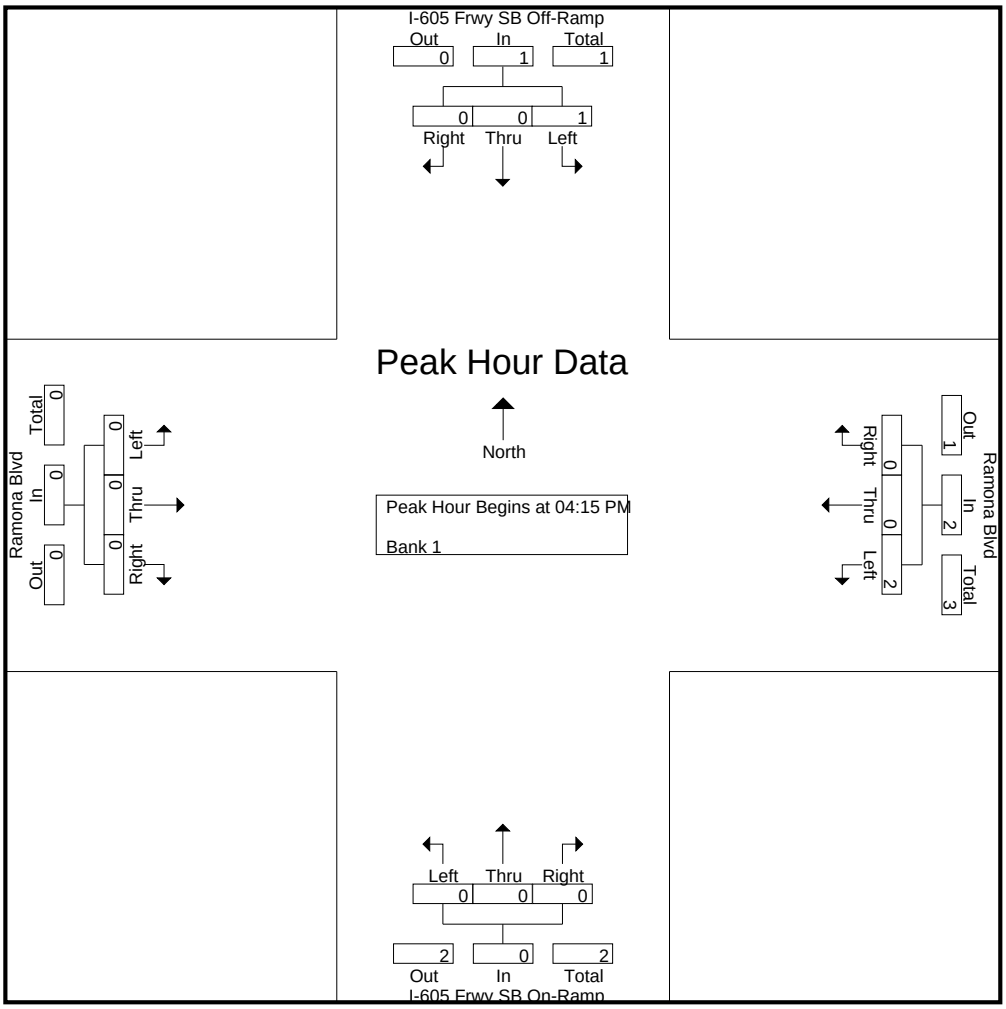
File Name : I-605FrwySBRamps_Ramona_3-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	I-605 Frwy SB Off-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy SB On-Ramp Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
04:30 PM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total Volume	1	0	0	1	2	0	0	2	0	0	0	0	0	0	0	0	3
% App. Total	100	0	0		100	0	0		0	0	0		0	0	0		
PHF	.250	.000	.000	.250	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.750



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : I-605FrwySBRamps_Ramona_4+-Axles
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 2

	I-605 Frwy SB Off-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy SB On-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
07:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
Total	1	0	1	1	1	0	0	0	0	0	2	0	6
08:15 AM	0	1	0	3	0	0	0	0	0	0	0	0	4
08:30 AM	1	0	0	0	0	0	0	0	0	0	1	0	2
08:45 AM	0	2	2	1	2	0	0	0	0	0	1	0	8
Total	1	3	2	4	2	0	0	0	0	0	2	0	14
04:00 PM	0	0	0	3	0	0	0	0	0	0	0	0	3
04:15 PM	0	0	0	2	0	0	0	0	0	0	0	1	3
04:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	6	0	0	0	0	0	0	0	1	7
05:00 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
05:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	2	0	0	0	0	0	0	1	1	4
Grand Total	2	3	3	13	3	0	0	0	0	0	5	2	31
Apprch %	25	37.5	37.5	81.2	18.8	0	0	0	0	0	71.4	28.6	
Total %	6.5	9.7	9.7	41.9	9.7	0	0	0	0	0	16.1	6.5	

CITY TRAFFIC COUNTERS

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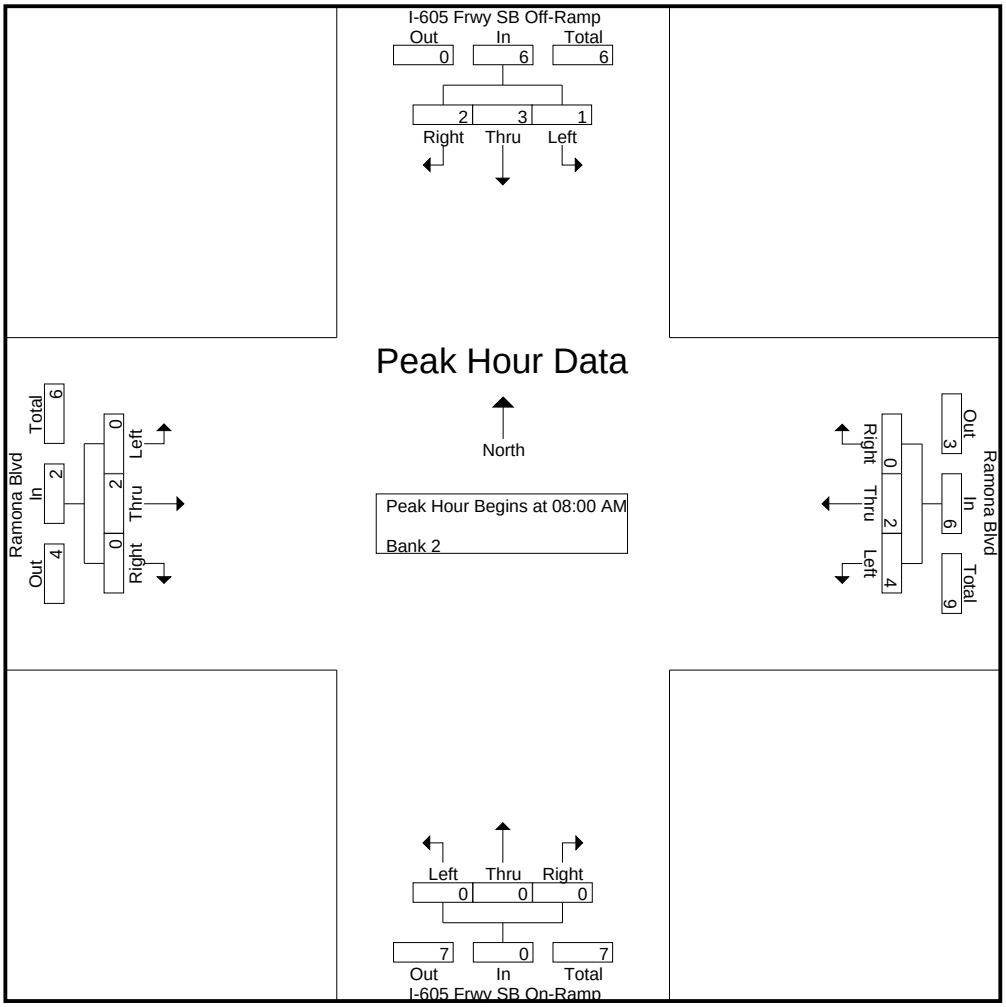
File Name : I-605FrwySBRamps_Ramona_4+-Axles
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	I-605 Frwy SB Off-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy SB On-Ramp Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	1	0	1	**3**	0	0	**3**	0	0	0	0	0	0	0	0	4
08:30 AM	**1**	0	0	1	0	0	0	0	0	0	0	0	0	**1**	0	**1**	2
08:45 AM	0	**2**	**2**	**4**	1	**2**	0	3	0	0	0	0	0	1	0	1	**8**
Total Volume	1	3	2	6	4	2	0	6	0	0	0	0	0	2	0	2	14
% App. Total	16.7	50	33.3		66.7	33.3	0		0	0	0		0	100	0		
PHF	.250	.375	.250	.375	.333	.250	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.438



CITY TRAFFIC COUNTERS

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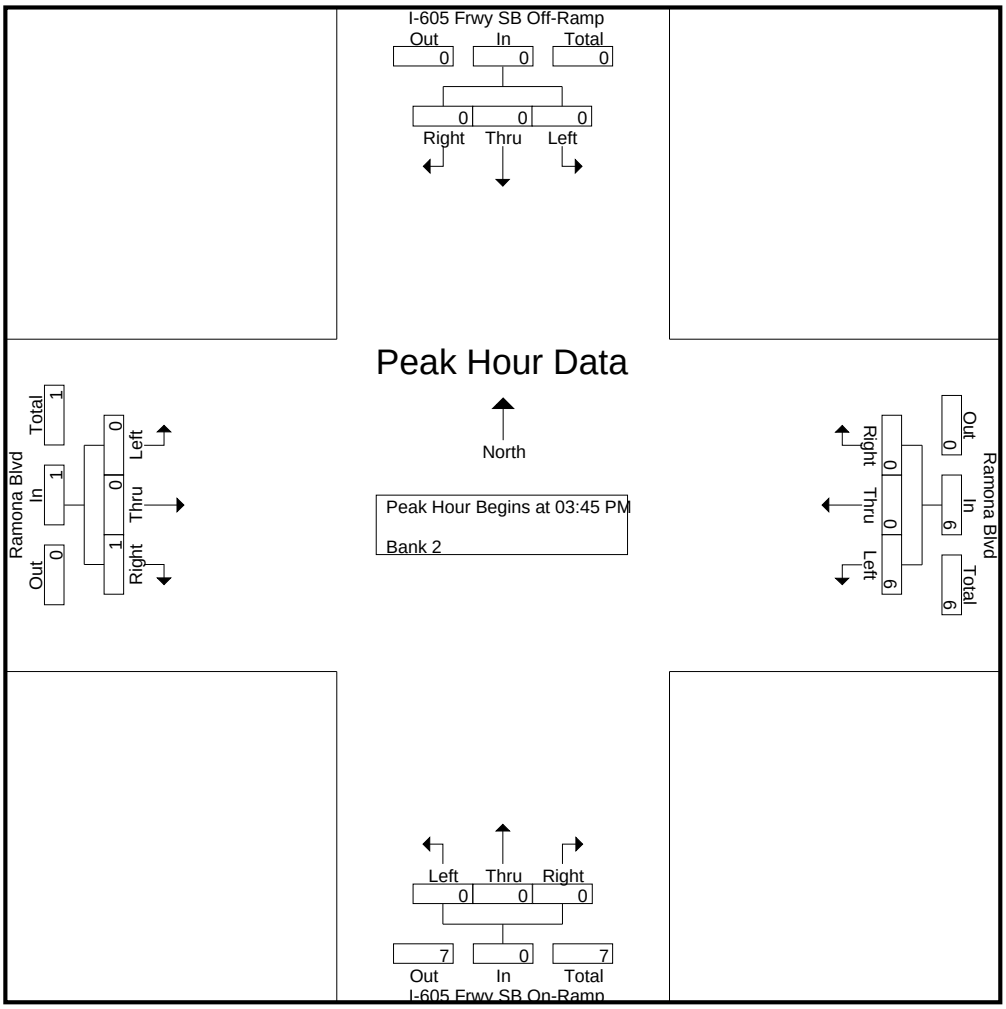
File Name : I-605FrwySBRamps_Ramona_4+-Axles
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	I-605 Frwy SB Off-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy SB On-Ramp Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:45 PM																	
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	**3**	0	0	**3**	0	0	0	0	0	0	0	0	**3**
04:15 PM	0	0	0	0	2	0	0	2	0	0	0	0	0	0	**1**	**1**	3
04:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	6	0	0	6	0	0	0	0	0	0	1	1	7
% App. Total	0	0	0		100	0	0		0	0	0		0	0	100		
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.250	.250	.583



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : I-605FrwySBRamps_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	I-605 Frwy SB Off-Ramp Southbound		Ramona Blvd Westbound		I-605 Frwy SB On-Ramp Northbound		Ramona Blvd Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
Grand Total	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	0	0	
Total %									

CITY TRAFFIC COUNTERS

626.991.7522

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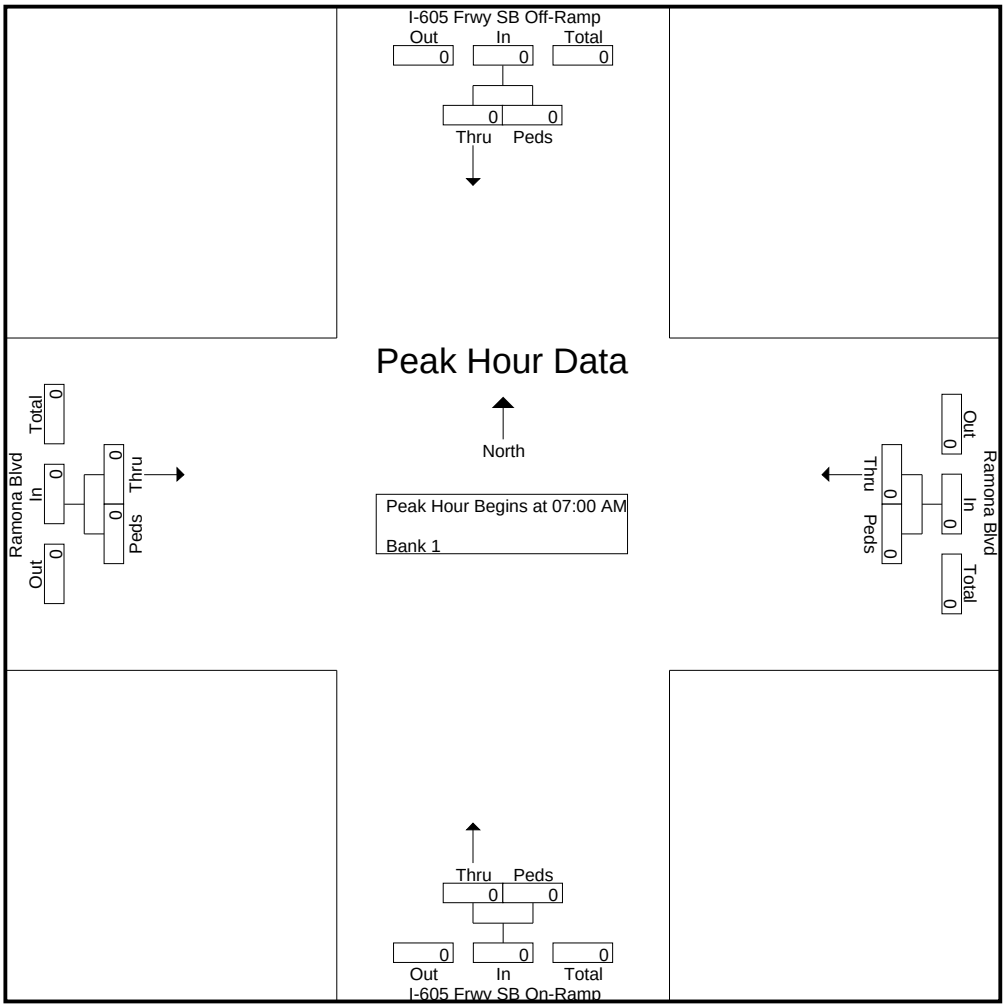
File Name : I-605FrwySBRamps_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	I-605 Frwy SB Off-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy SB On-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : I-605FrwySBRamps_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
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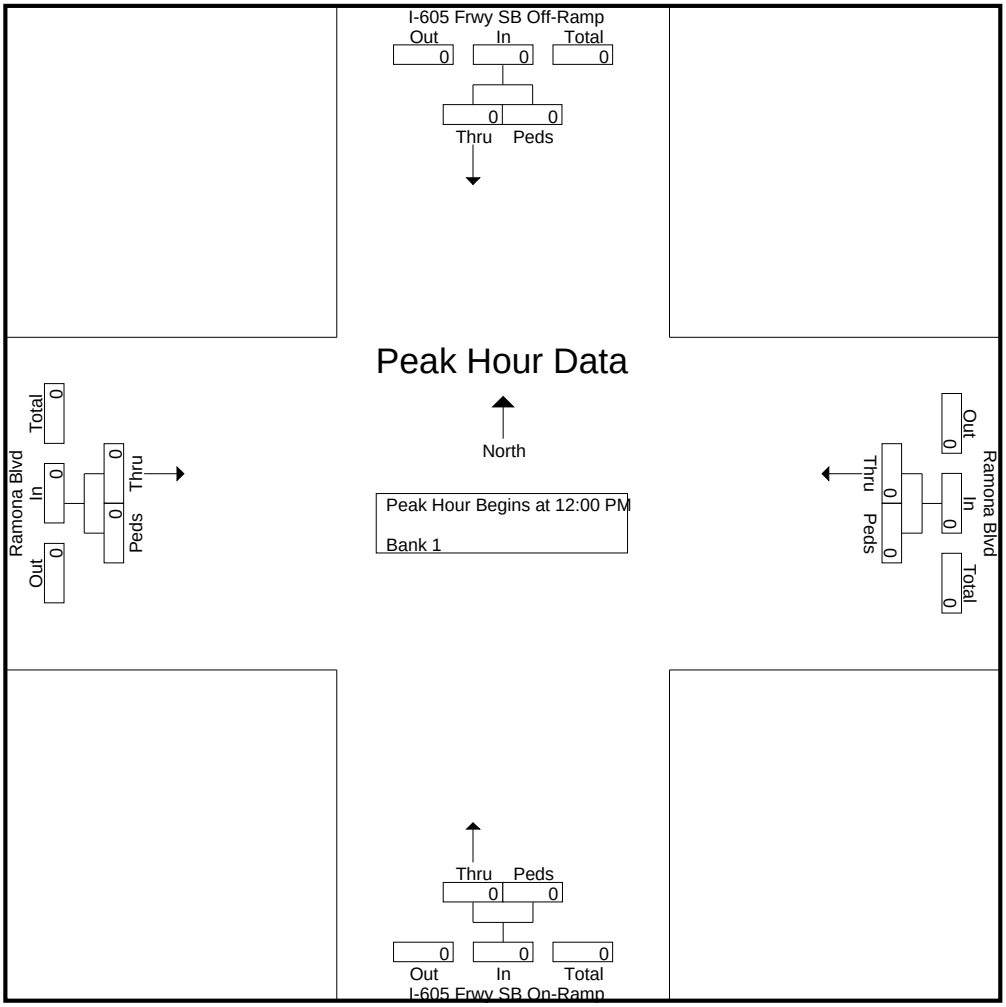
	I-605 Frwy SB Off-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy SB On-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 12:00 PM													
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : I-605FrwyNBRamps_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Unshifted

	I-605 Frwy NB Off-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy NB Off-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	339	80	26	0	41	22	85	0	593
07:15 AM	0	0	0	0	311	76	42	0	47	27	100	0	603
07:30 AM	0	0	0	0	319	88	70	0	69	34	140	0	720
07:45 AM	0	0	0	0	302	93	72	1	81	40	153	0	742
Total	0	0	0	0	1271	337	210	1	238	123	478	0	2658
08:00 AM	0	0	0	0	294	66	53	0	64	34	114	0	625
08:15 AM	0	0	0	0	287	77	21	2	50	33	117	0	587
08:30 AM	0	0	0	0	247	62	23	0	27	36	110	0	505
08:45 AM	0	0	0	0	265	73	13	0	41	45	100	0	537
Total	0	0	0	0	1093	278	110	2	182	148	441	0	2254
04:00 PM	0	0	0	0	143	41	47	1	167	42	269	0	710
04:15 PM	0	0	0	0	133	29	52	1	166	37	305	0	723
04:30 PM	0	0	0	0	146	49	61	1	166	39	284	0	746
04:45 PM	0	0	0	0	131	37	62	0	172	33	311	0	746
Total	0	0	0	0	553	156	222	3	671	151	1169	0	2925
05:00 PM	0	0	0	0	173	38	62	1	188	30	283	0	775
05:15 PM	0	0	0	0	156	44	63	0	173	31	315	0	782
05:30 PM	0	0	0	0	136	38	60	0	189	31	297	0	751
05:45 PM	0	0	0	0	145	33	69	1	190	31	294	0	763
Total	0	0	0	0	610	153	254	2	740	123	1189	0	3071
Grand Total	0	0	0	0	3527	924	796	8	1831	545	3277	0	10908
Apprch %	0	0	0	0	79.2	20.8	30.2	0.3	69.5	14.3	85.7	0	
Total %	0	0	0	0	32.3	8.5	7.3	0.1	16.8	5	30	0	

CITY TRAFFIC COUNTERS

626.991.7522

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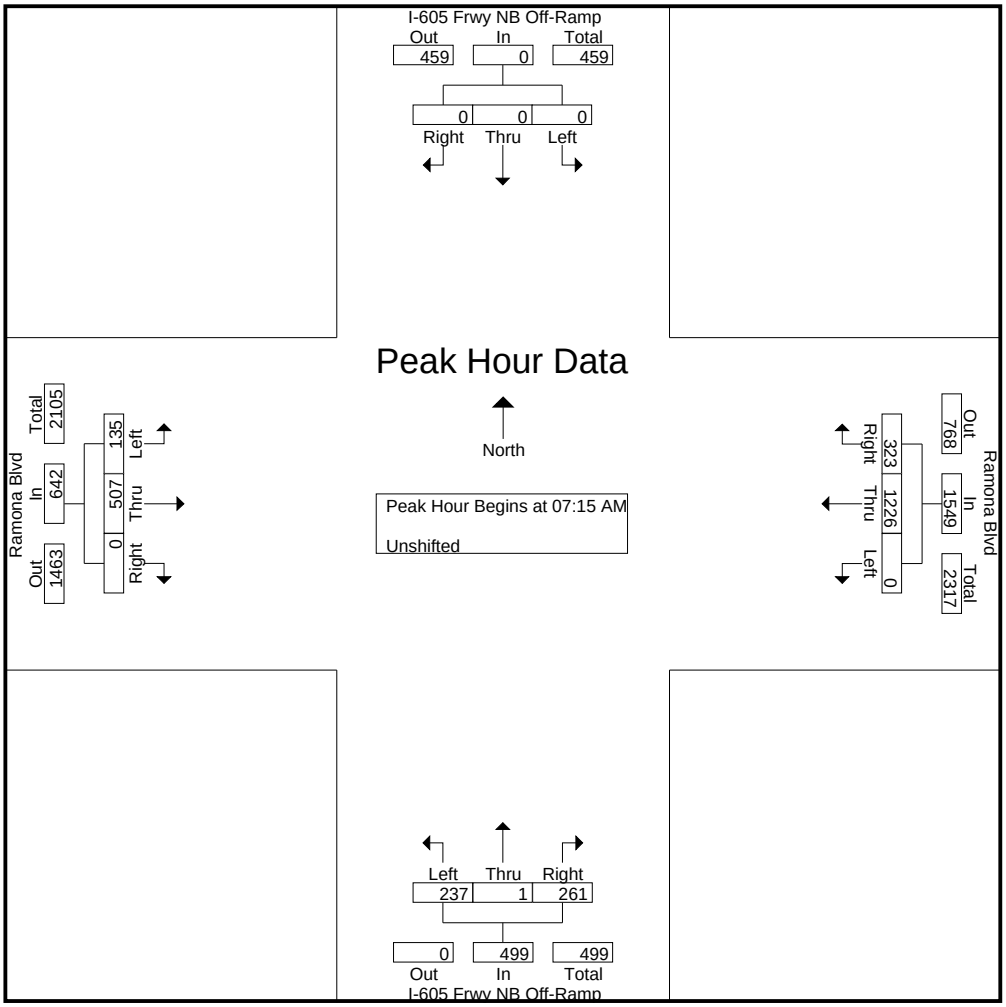
File Name : I-605FrwyNBRamps_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	I-605 Frwy NB Off-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy NB Off-Ramp Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	311	76	387	42	0	47	89	27	100	0	127	603
07:30 AM	0	0	0	0	0	**319**	88	**407**	70	0	69	139	34	140	0	174	720
07:45 AM	0	0	0	0	0	302	**93**	395	**72**	**1**	**81**	**154**	**40**	**153**	0	**193**	**742**
08:00 AM	0	0	0	0	0	294	66	360	53	0	64	117	34	114	0	148	625
Total Volume	0	0	0	0	0	1226	323	1549	237	1	261	499	135	507	0	642	2690
% App. Total	0	0	0		0	79.1	20.9		47.5	0.2	52.3		21	79	0		
PHF	.000	.000	.000	.000	.000	.961	.868	.951	.823	.250	.806	.810	.844	.828	.000	.832	.906



CITY TRAFFIC COUNTERS

626.991.7522

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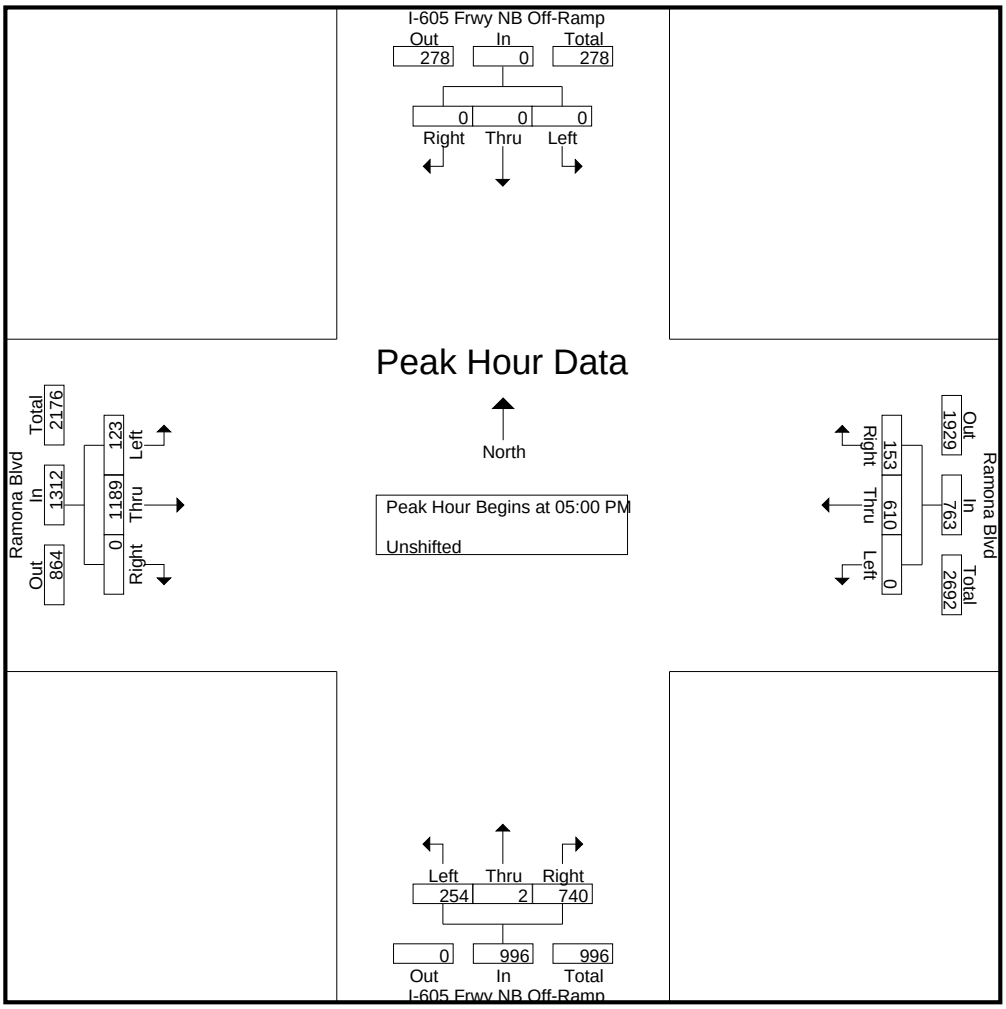
File Name : I-605FrwyNBRamps_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	I-605 Frwy NB Off-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy NB Off-Ramp Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	**173**	38	**211**	62	**1**	188	251	30	283	0	313	775
05:15 PM	0	0	0	0	0	156	**44**	200	63	0	173	236	**31**	**315**	0	**346**	**782**
05:30 PM	0	0	0	0	0	136	38	174	60	0	189	249	31	297	0	328	751
05:45 PM	0	0	0	0	0	145	33	178	**69**	1	**190**	**260**	31	294	0	325	763
Total Volume	0	0	0	0	0	610	153	763	254	2	740	996	123	1189	0	1312	3071
% App. Total	0	0	0		0	79.9	20.1		25.5	0.2	74.3		9.4	90.6	0		
PHF	.000	.000	.000	.000	.000	.882	.869	.904	.920	.500	.974	.958	.992	.944	.000	.948	.982



CITY TRAFFIC COUNTERS

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File Name : I-605FrwyNBRamps_Ramona_Buses
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	I-605 Frwy NB On-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy NB Off-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	3	0	0	0	0	0	2	0	5
07:15 AM	0	0	0	0	1	0	0	0	0	0	2	0	3
07:30 AM	0	0	0	0	2	0	0	0	0	0	1	0	3
07:45 AM	0	0	0	0	2	0	0	0	1	0	1	0	4
Total	0	0	0	0	8	0	0	0	1	0	6	0	15
08:00 AM	0	0	0	0	3	1	0	0	1	0	2	0	7
08:15 AM	0	0	0	0	1	0	0	0	1	0	1	0	3
08:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
08:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
Total	0	0	0	0	7	1	0	0	2	0	4	0	14
04:00 PM	0	0	0	0	2	0	0	0	0	0	2	0	4
04:15 PM	0	0	0	0	3	0	0	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	4
04:45 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
Total	0	0	0	0	7	0	0	0	0	0	7	0	14
05:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
05:15 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
05:30 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
05:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
Total	0	0	0	0	3	0	0	0	0	0	6	0	9
Grand Total	0	0	0	0	25	1	0	0	3	0	23	0	52
Apprch %	0	0	0	0	96.2	3.8	0	0	100	0	100	0	
Total %	0	0	0	0	48.1	1.9	0	0	5.8	0	44.2	0	

CITY TRAFFIC COUNTERS

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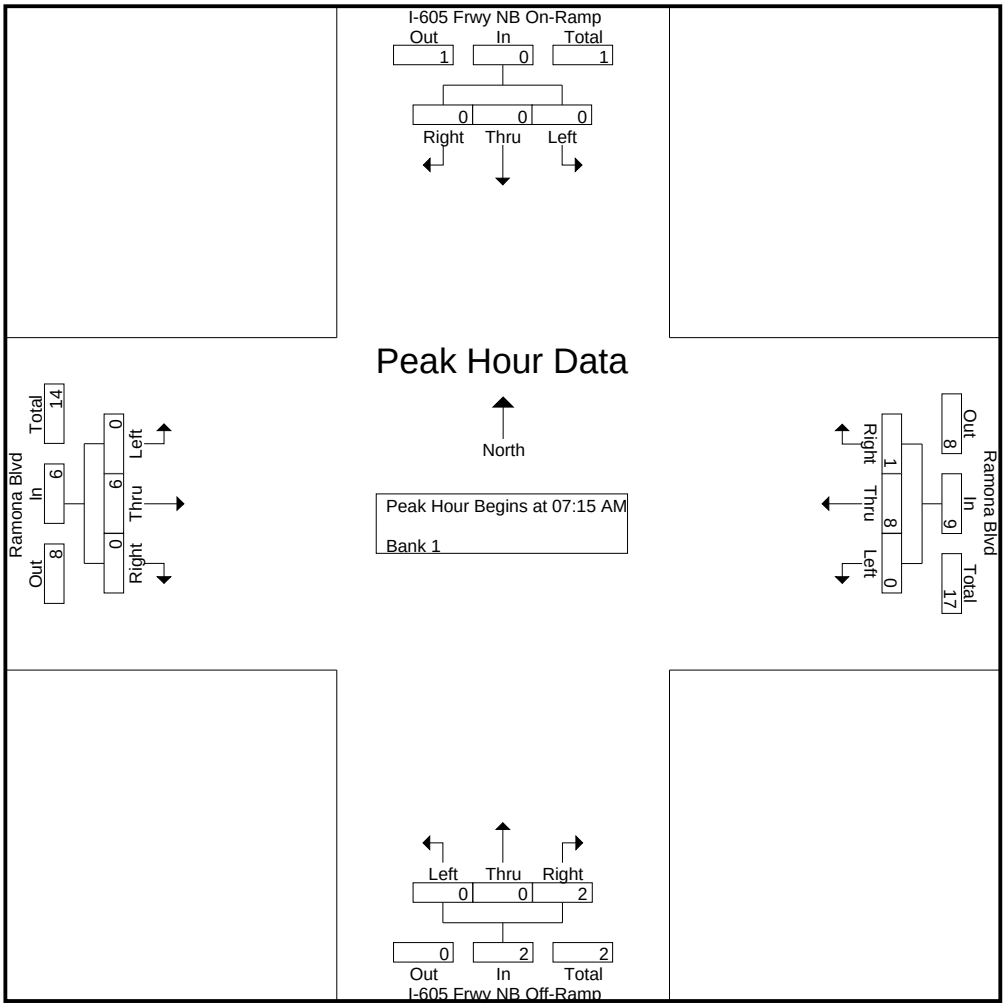
File Name : I-605FrwyNBRamps_Ramona_Buses
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	I-605 Frwy NB On-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy NB Off-Ramp Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	**2**	0	**2**	3
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
07:45 AM	0	0	0	0	0	2	0	2	0	0	**1**	**1**	0	1	0	1	4
08:00 AM	0	0	0	0	0	**3**	**1**	**4**	0	0	1	1	0	2	0	2	**7**
Total Volume	0	0	0	0	0	8	1	9	0	0	2	2	0	6	0	6	17
% App. Total	0	0	0		0	88.9	11.1		0	0	100		0	100	0		
PHF	.000	.000	.000	.000	.000	.667	.250	.563	.000	.000	.500	.500	.000	.750	.000	.750	.607



CITY TRAFFIC COUNTERS

626.991.7522

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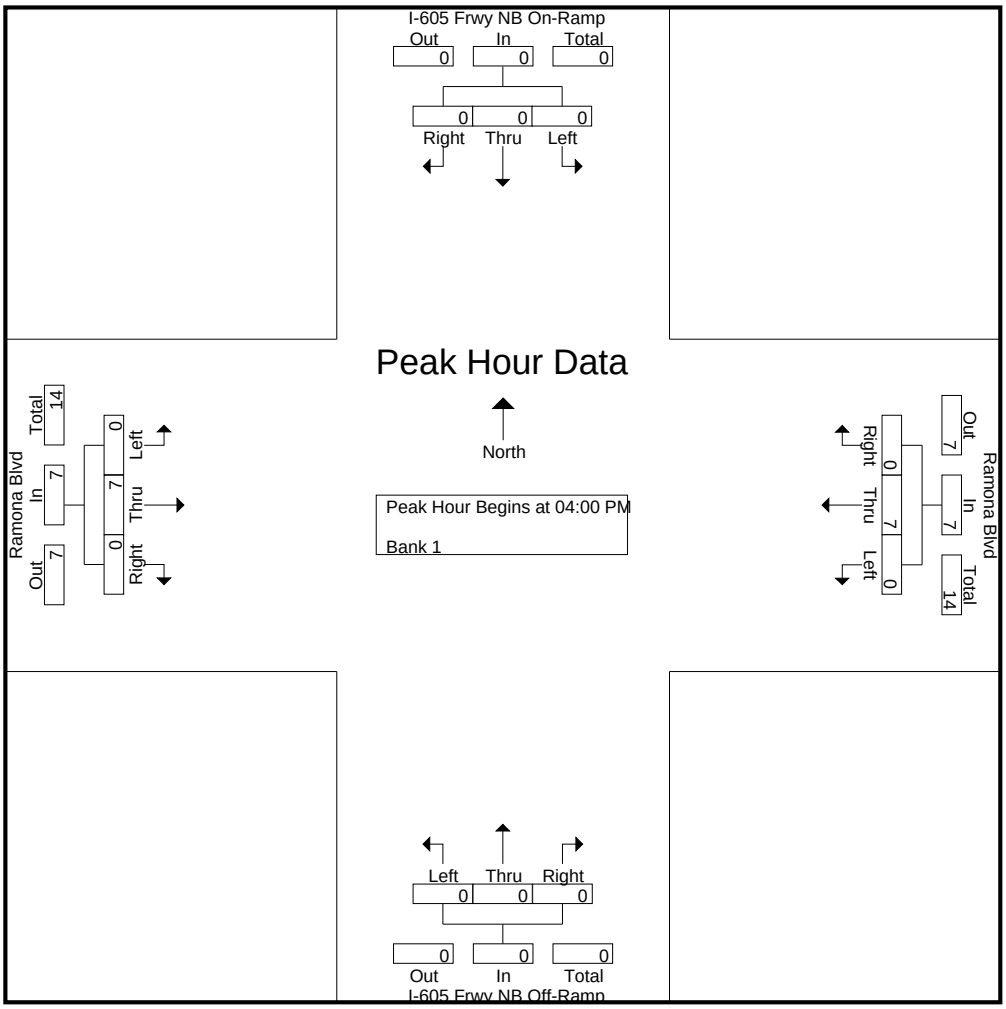
File Name : I-605FrwyNBRamps_Ramona_Buses
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	I-605 Frwy NB On-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy NB Off-Ramp Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	**4**
04:15 PM	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**	0	**4**	4
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
Total Volume	0	0	0	0	0	7	0	7	0	0	0	0	0	7	0	7	14
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.583	.000	.583	.000	.000	.000	.000	.000	.438	.000	.438	.875



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : I-605FrwyNBRamps_Ramona_2-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Unshifted

	I-605 Frwy NB On-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy NB Off-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	3	0	0	0	0	0	2	0	5
07:15 AM	0	0	0	0	3	0	0	0	0	0	2	0	5
07:30 AM	0	0	0	0	3	1	0	0	0	1	1	0	6
07:45 AM	0	0	0	0	6	2	0	0	0	1	2	0	11
Total	0	0	0	0	15	3	0	0	0	2	7	0	27
08:00 AM	0	0	0	0	8	1	0	0	0	0	1	0	10
08:15 AM	0	0	0	0	6	3	0	0	0	1	1	0	11
08:30 AM	0	0	0	0	6	2	0	0	0	3	3	0	14
08:45 AM	0	0	0	0	6	1	1	0	1	1	1	0	11
Total	0	0	0	0	26	7	1	0	1	5	6	0	46
04:00 PM	0	0	0	0	4	0	0	0	2	0	7	0	13
04:15 PM	0	0	0	0	2	1	2	0	3	1	3	0	12
04:30 PM	0	0	0	0	7	0	1	0	2	0	8	0	18
04:45 PM	0	0	0	0	3	0	0	0	1	0	9	0	13
Total	0	0	0	0	16	1	3	0	8	1	27	0	56
05:00 PM	0	0	0	0	3	0	1	0	1	0	5	0	10
05:15 PM	0	0	0	0	4	0	1	0	0	0	2	0	7
05:30 PM	0	0	0	0	3	0	0	0	2	0	2	0	7
05:45 PM	0	0	0	0	1	1	0	0	2	1	4	0	9
Total	0	0	0	0	11	1	2	0	5	1	13	0	33
Grand Total	0	0	0	0	68	12	6	0	14	9	53	0	162
Apprch %	0	0	0	0	85	15	30	0	70	14.5	85.5	0	
Total %	0	0	0	0	42	7.4	3.7	0	8.6	5.6	32.7	0	

CITY TRAFFIC COUNTERS

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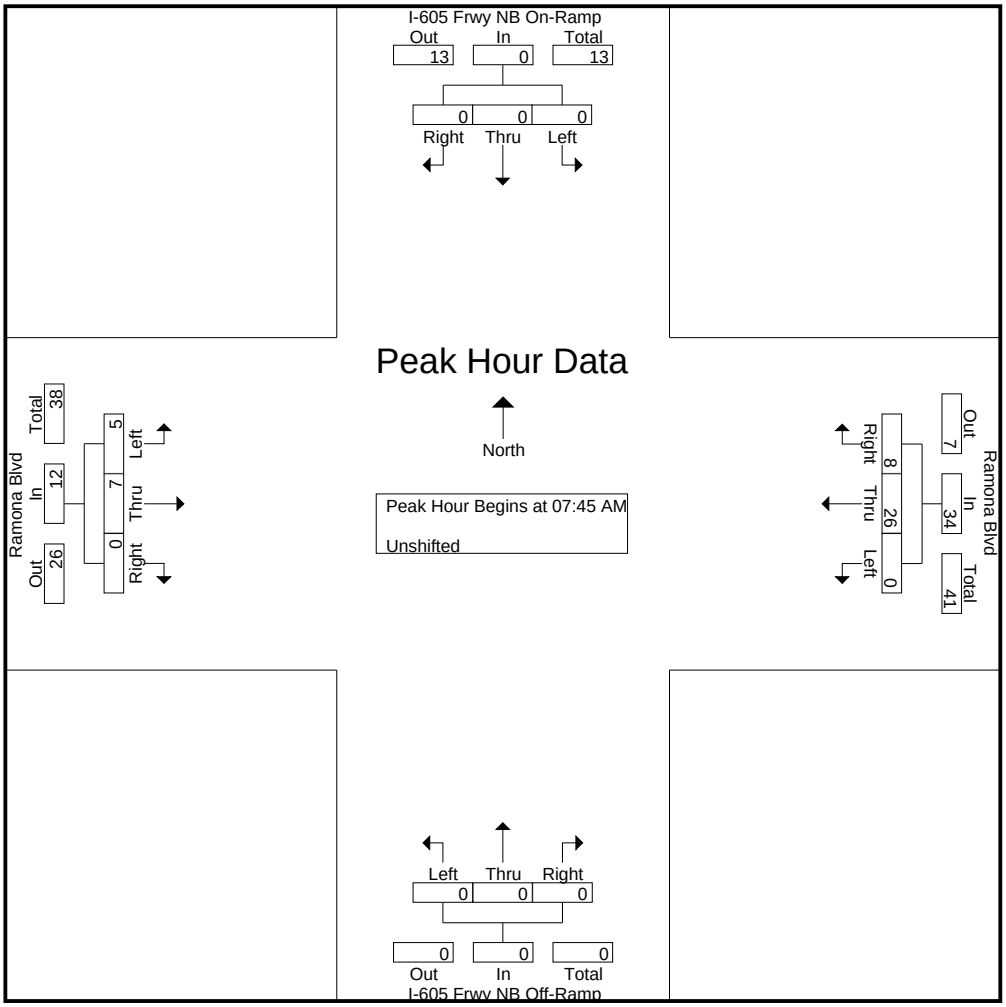
File Name : I-605FrwyNBRamps_Ramona_2-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	I-605 Frwy NB On-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy NB Off-Ramp Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	6	2	8	0	0	0	0	1	2	0	3	11
08:00 AM	0	0	0	0	0	**8**	1	**9**	0	0	0	0	0	1	0	1	10
08:15 AM	0	0	0	0	0	6	**3**	9	0	0	0	0	1	1	0	2	11
08:30 AM	0	0	0	0	0	6	2	8	0	0	0	0	**3**	**3**	0	**6**	**14**
Total Volume	0	0	0	0	0	26	8	34	0	0	0	0	5	7	0	12	46
% App. Total	0	0	0		0	76.5	23.5		0	0	0		41.7	58.3	0		
PHF	.000	.000	.000	.000	.000	.813	.667	.944	.000	.000	.000	.000	.417	.583	.000	.500	.821



CITY TRAFFIC COUNTERS

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File Name : I-605FrwyNBRamps_Ramona_2-Axle
Site Code : 00000000
Start Date : 5/19/2015
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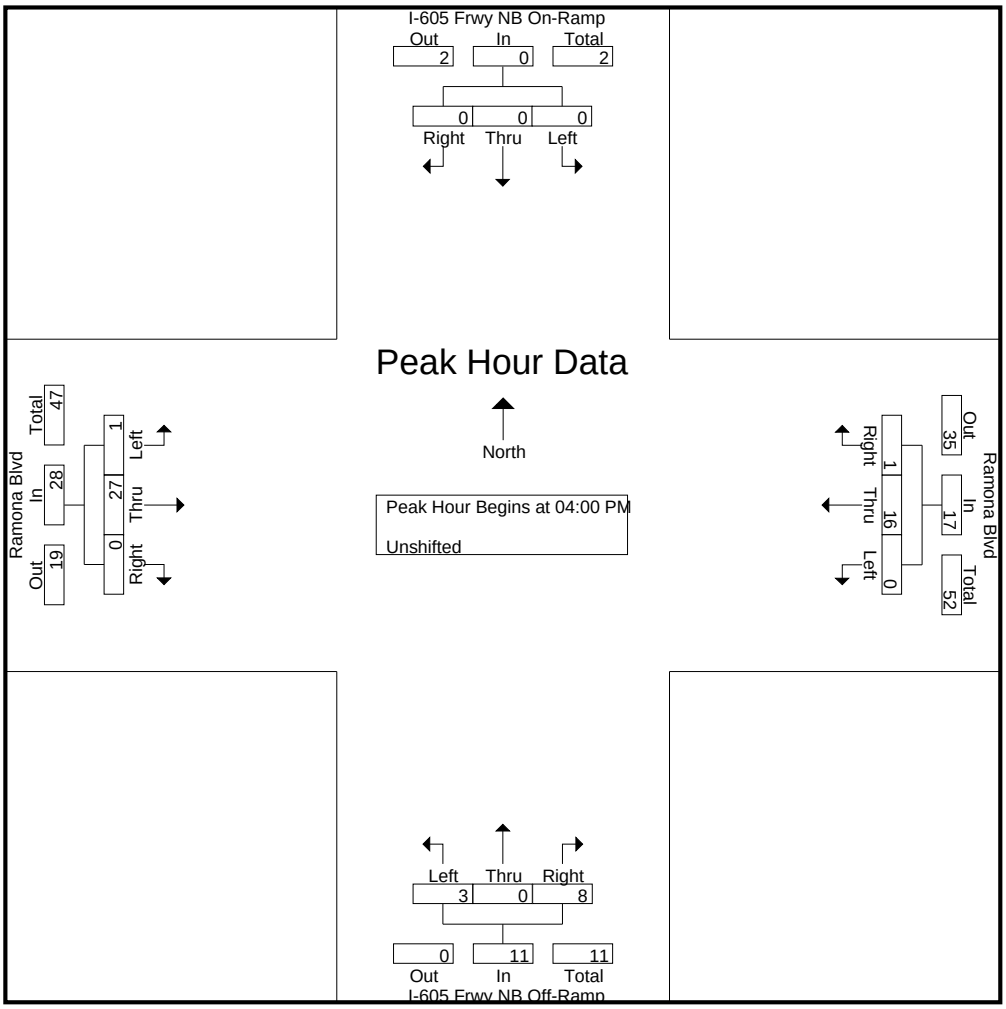
	I-605 Frwy NB On-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy NB Off-Ramp Northbound				Ramona Blvd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	4	0	4	0	0	2	2	0	7	0	7	13
04:15 PM	0	0	0	0	0	2	**1**	3	**2**	0	**3**	**5**	**1**	3	0	4	12
04:30 PM	0	0	0	0	0	**7**	0	**7**	1	0	2	3	0	8	0	8	**18**
04:45 PM	0	0	0	0	0	3	0	3	0	0	1	1	0	**9**	0	**9**	13
Total Volume	0	0	0	0	0	16	1	17	3	0	8	11	1	27	0	28	56
% App. Total	0	0	0		0	94.1	5.9		27.3	0	72.7		3.6	96.4	0		
PHF	.000	.000	.000	.000	.000	.571	.250	.607	.375	.000	.667	.550	.250	.750	.000	.778	.778



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : I-605FrwyNBRamps_Ramona_3-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	I-605 Frwy NB On-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy NB Off-RAmp Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
07:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
Total	0	0	0	0	3	0	0	0	0	0	2	0	5
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
08:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	1	0	0	0	0	0	3	0	4
04:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
04:30 PM	0	0	0	0	1	0	0	0	2	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	0	1	0	0	0	3	0	1	0	5
05:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	6	0	0	0	3	0	6	0	15
Apprch %	0	0	0	0	100	0	0	0	100	0	100	0	
Total %	0	0	0	0	40	0	0	0	20	0	40	0	

CITY TRAFFIC COUNTERS

626.991.7522

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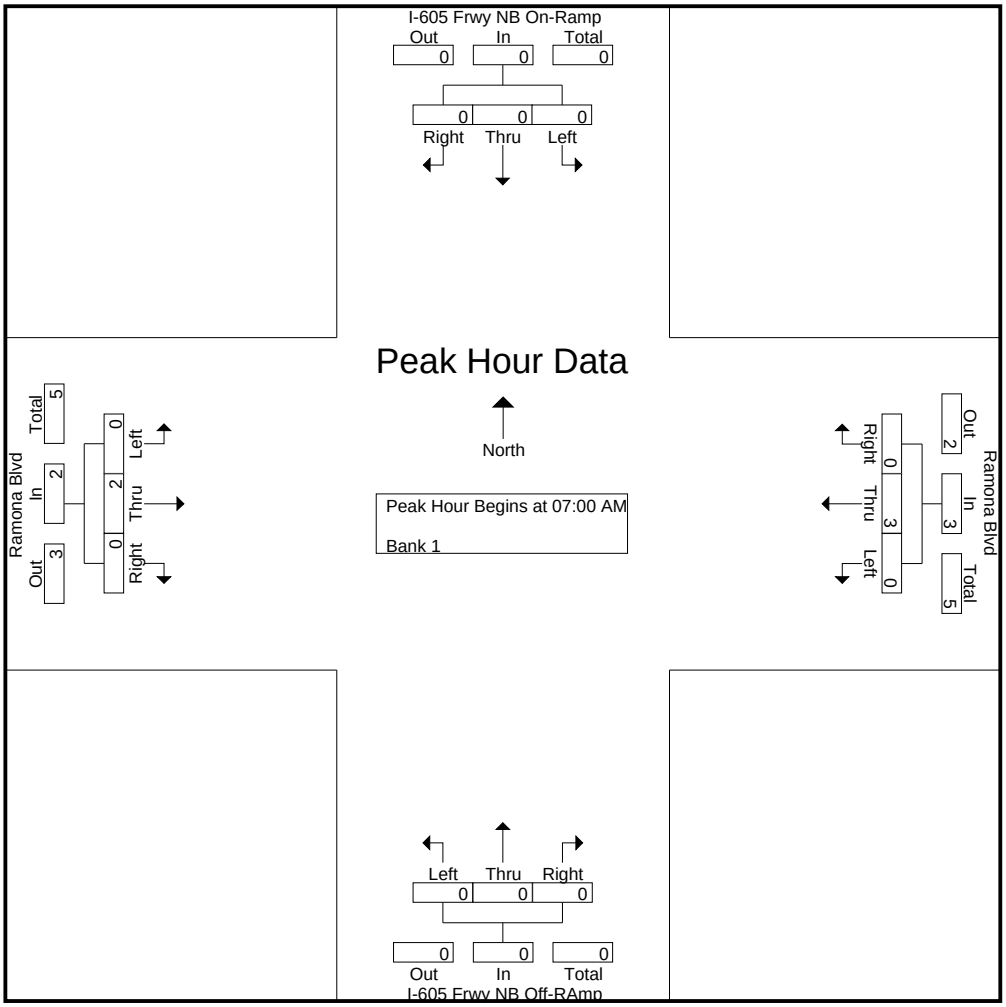
File Name : I-605FrwyNBRamps_Ramona_3-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	I-605 Frwy NB On-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy NB Off-RAmp Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	**1**	0	**1**	**2**
07:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	5
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.500	.000	.500	.625



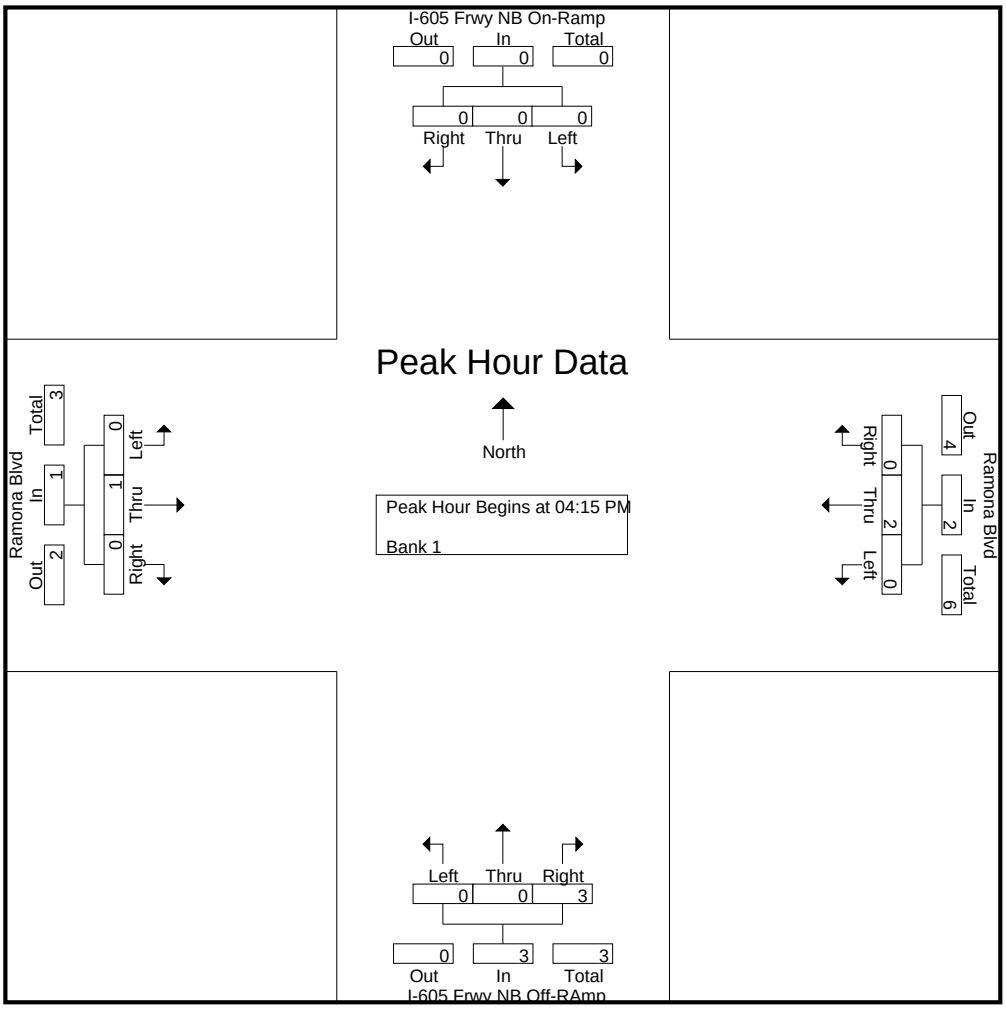
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : I-605FrwyNBRamps_Ramona_3-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	I-605 Frwy NB On-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy NB Off-RAmp Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	1
04:30 PM	0	0	0	0	0	**1**	0	**1**	0	0	**2**	**2**	0	0	0	0	**3**
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
05:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	2	0	2	0	0	3	3	0	1	0	1	6
% App. Total	0	0	0		0	100	0		0	0	100		0	100	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.375	.375	.000	.250	.000	.250	.500



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : I-605FrwyNBRamps_Ramona_4+-Axles
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 2

	I-605 Frwy NB On-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy NB Off-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	1	0	0	0	1	0	1	0	3
07:15 AM	0	0	0	0	0	0	0	0	1	0	1	0	2
07:45 AM	0	0	0	0	1	0	0	0	0	1	0	0	2
Total	0	0	0	0	2	0	0	0	2	1	2	0	7
08:15 AM	0	0	0	0	3	0	0	0	0	0	0	0	3
08:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	2
08:45 AM	0	0	0	0	3	1	0	0	0	1	0	0	5
Total	0	0	0	0	6	1	0	0	0	2	1	0	10
04:00 PM	0	0	0	0	3	0	0	0	2	0	0	0	5
04:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	1	1	0	0	1	0	0	0	3
Total	0	0	0	0	6	1	0	0	3	0	0	0	10
05:00 PM	0	0	0	0	1	0	0	0	1	0	1	0	3
05:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	0	1	0	1	0	2	0	1	0	5
Grand Total	0	0	0	0	15	2	1	0	7	3	4	0	32
Apprch %	0	0	0	0	88.2	11.8	12.5	0	87.5	42.9	57.1	0	
Total %	0	0	0	0	46.9	6.2	3.1	0	21.9	9.4	12.5	0	

CITY TRAFFIC COUNTERS

626.991.7522

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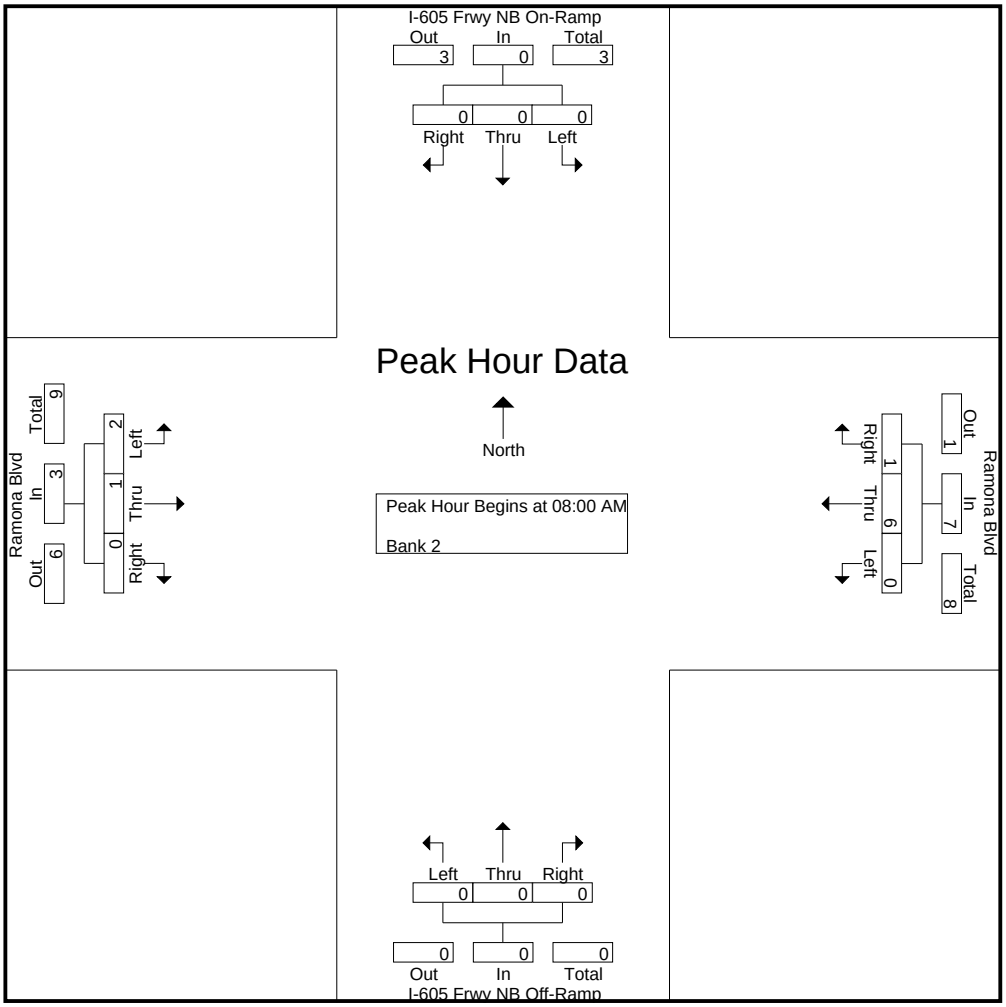
File Name : I-605FrwyNBRamps_Ramona_4+-Axles
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	I-605 Frwy NB On-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy NB Off-Ramp Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	**3**	0	3	0	0	0	0	0	0	0	0	3
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	**2**	2
08:45 AM	0	0	0	0	0	3	**1**	**4**	0	0	0	0	1	0	0	1	**5**
Total Volume	0	0	0	0	0	6	1	7	0	0	0	0	2	1	0	3	10
% App. Total	0	0	0		0	85.7	14.3		0	0	0		66.7	33.3	0		
PHF	.000	.000	.000	.000	.000	.500	.250	.438	.000	.000	.000	.000	.500	.250	.000	.375	.500



CITY TRAFFIC COUNTERS

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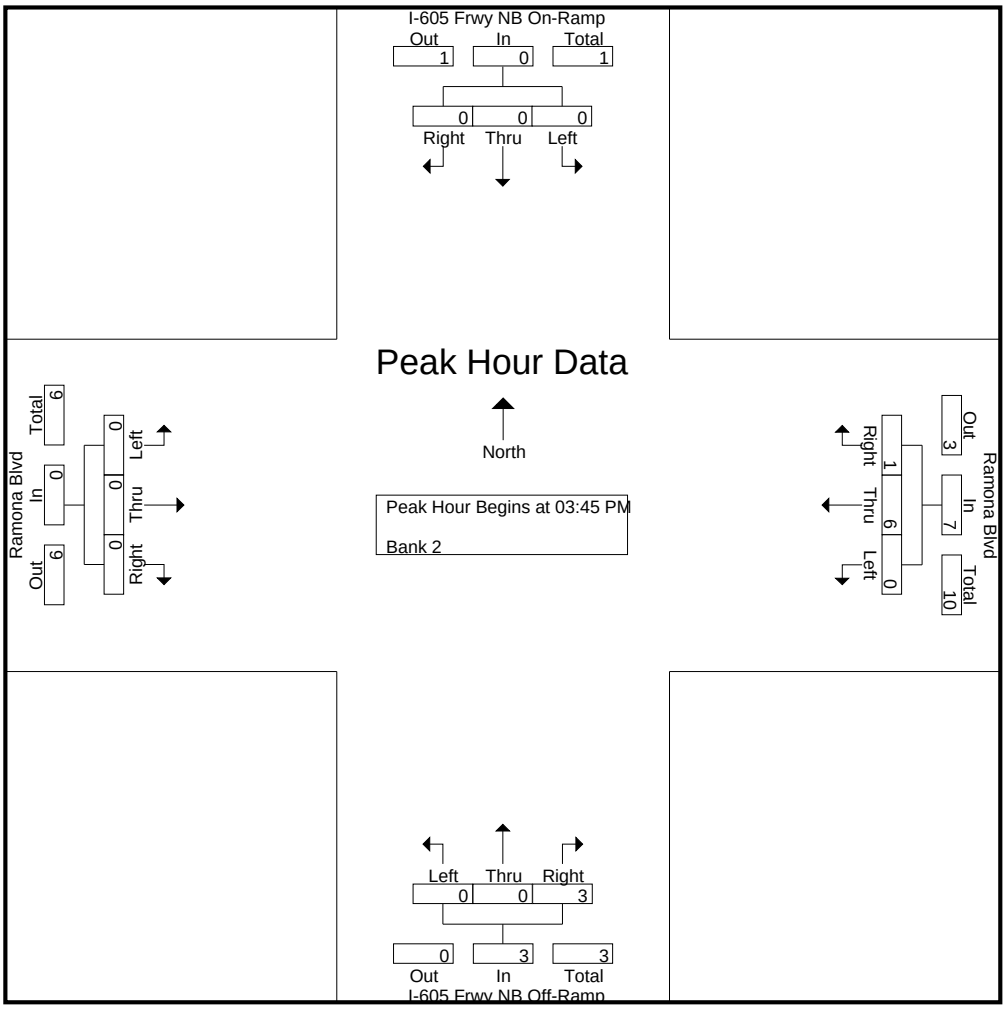
File Name : I-605FrwyNBRamps_Ramona_4+-Axles
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	I-605 Frwy NB On-Ramp Southbound				Ramona Blvd Westbound				I-605 Frwy NB Off-Ramp Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:45 PM																	
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	**3**	0	**3**	0	0	**2**	**2**	0	0	0	0	**5**
04:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	1	**1**	2	0	0	1	1	0	0	0	0	3
Total Volume	0	0	0	0	0	6	1	7	0	0	3	3	0	0	0	0	10
% App. Total	0	0	0		0	85.7	14.3		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.500	.250	.583	.000	.000	.375	.375	.000	.000	.000	.000	.500



CITY TRAFFIC COUNTERS

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File Name : I-605FrwyNBRamps_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	I-605 Frwy NB Off-Ramp Southbound		Ramona Blvd Westbound		I-605 Frwy NB Off-Ramp Northbound		Ramona Blvd Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:30 AM	0	0	0	0	0	0	0	1	1
07:45 AM	0	1	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	0	1	2
08:30 AM	0	1	0	1	0	0	0	0	2
Total	0	1	0	1	0	0	0	0	2
04:00 PM	0	0	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	1	1
Total	0	0	0	1	0	0	0	1	2
Grand Total	0	2	0	2	0	0	0	2	6
Apprch %	0	100	0	100	0	0	0	100	
Total %	0	33.3	0	33.3	0	0	0	33.3	

CITY TRAFFIC COUNTERS

626.991.7522

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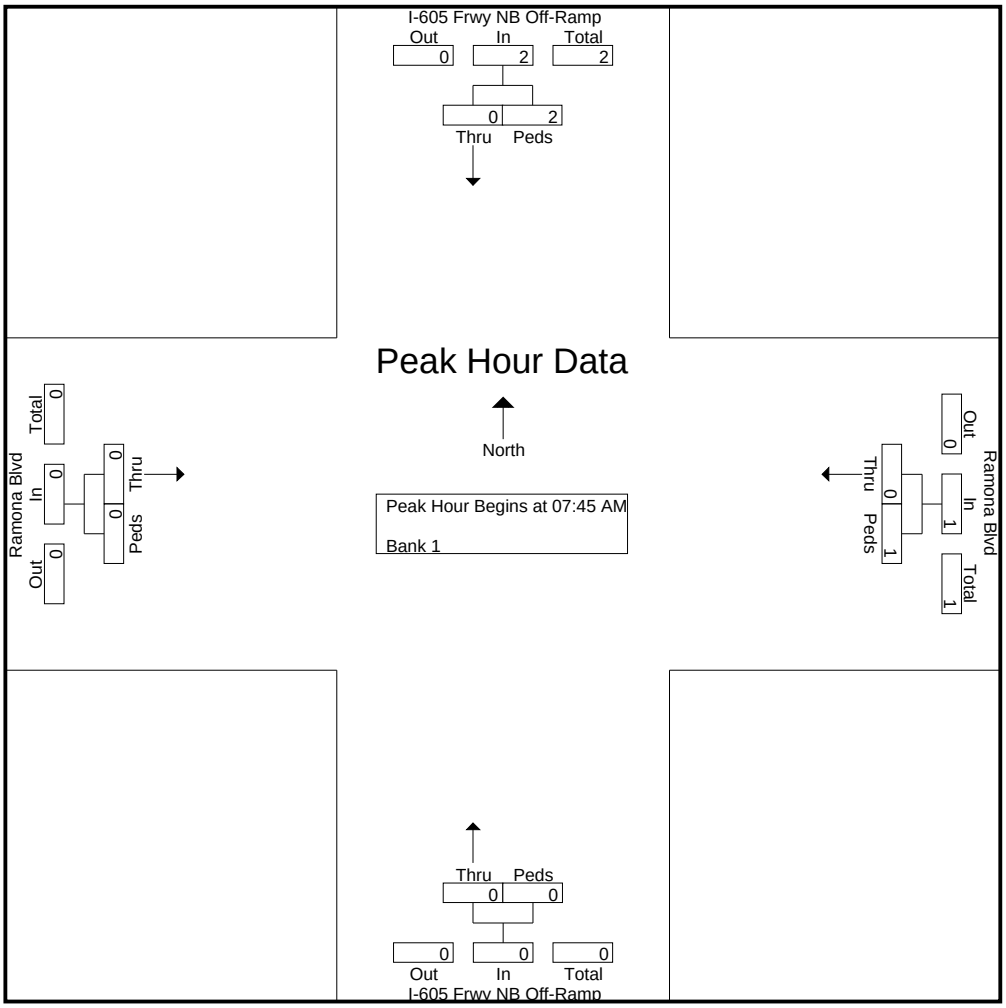
File Name : I-605FrwyNBRamps_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	I-605 Frwy NB Off-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy NB Off-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	0	**1**	**1**	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	1	1	0	**1**	**1**	0	0	0	0	0	0	**2**
Total Volume	0	2	2	0	1	1	0	0	0	0	0	0	3
% App. Total	0	100		0	100		0	0		0	0		
PHF	.000	.500	.500	.000	.250	.250	.000	.000	.000	.000	.000	.000	.375



CITY TRAFFIC COUNTERS

626.991.7522

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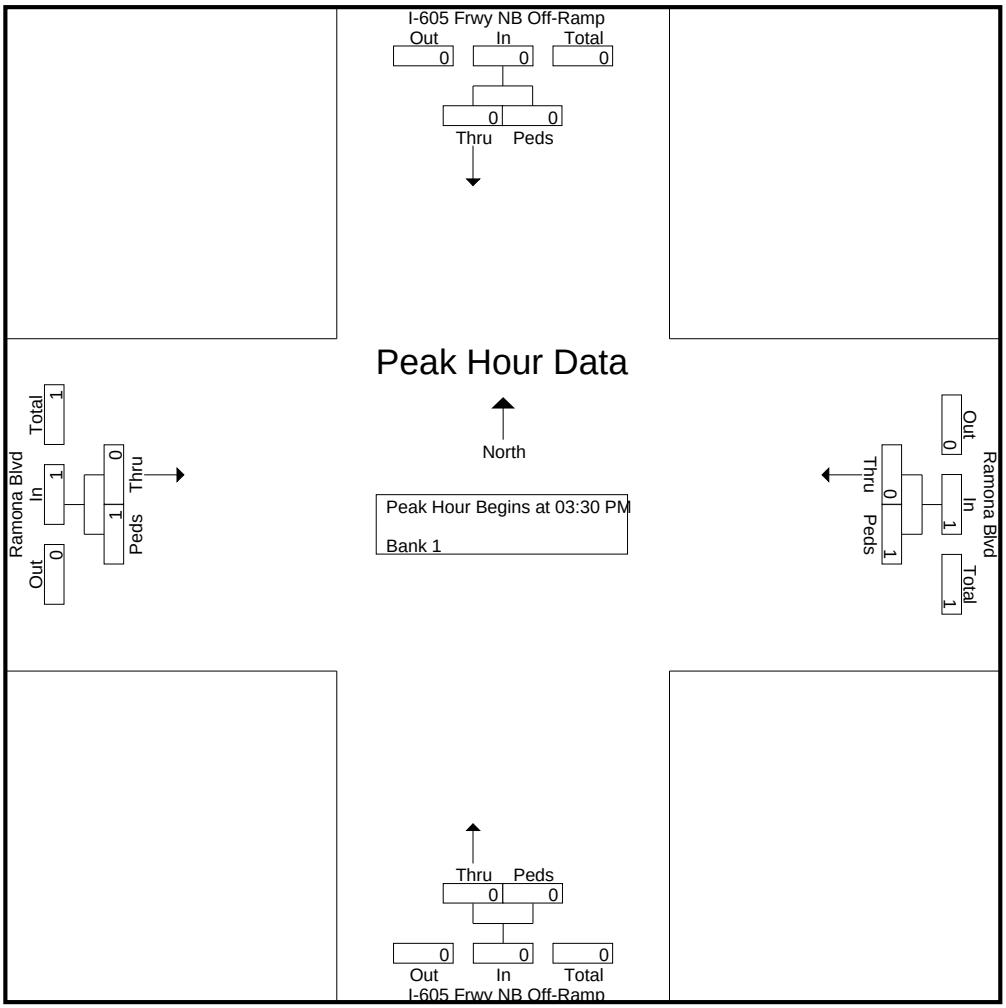
File Name : I-605FrwyNBRamps_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	I-605 Frwy NB Off-Ramp Southbound			Ramona Blvd Westbound			I-605 Frwy NB Off-Ramp Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:30 PM													
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	**1**	**1**	0	0	0	0	0	0	**1**
04:15 PM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	1
Total Volume	0	0	0	0	1	1	0	0	0	0	1	1	2
% App. Total	0	0		0	100		0	0		0	100		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.250	.250	.500



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Sch_Syra
Site Code : 00000000
Start Date : 3/17/2015
Page No : 1

Groups Printed- Unshifted

	Schabarum Avenue Southbound			Ramona Blvd Westbound			Syracuse Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	1	0	6	3	262	0	47	1	6	10	99	12	447
07:15 AM	0	1	10	4	328	2	52	1	10	10	95	8	521
07:30 AM	0	0	23	2	285	3	64	3	20	19	133	22	574
07:45 AM	2	1	29	2	318	3	52	1	12	35	187	23	665
Total	3	2	68	11	1193	8	215	6	48	74	514	65	2207
08:00 AM	0	4	11	12	310	5	49	1	8	32	126	18	576
08:15 AM	4	1	5	5	284	6	40	2	8	48	144	15	562
08:30 AM	2	2	3	5	258	5	48	3	15	36	114	11	502
08:45 AM	2	1	11	7	207	14	34	5	0	65	134	13	493
Total	8	8	30	29	1059	30	171	11	31	181	518	57	2133
04:00 PM	11	0	18	9	154	6	21	1	22	9	361	65	677
04:15 PM	7	1	17	5	136	2	13	2	13	9	384	57	646
04:30 PM	16	2	27	12	162	2	20	1	18	9	398	58	725
04:45 PM	12	3	22	10	150	5	18	1	12	9	376	70	688
Total	46	6	84	36	602	15	72	5	65	36	1519	250	2736
05:00 PM	12	4	46	8	153	6	27	0	13	14	379	66	728
05:15 PM	10	0	26	11	128	6	24	0	9	13	407	64	698
05:30 PM	9	3	25	10	172	3	26	1	16	7	392	77	741
05:45 PM	5	5	22	10	133	4	26	0	20	3	393	65	686
Total	36	12	119	39	586	19	103	1	58	37	1571	272	2853
Grand Total	93	28	301	115	3440	72	561	23	202	328	4122	644	9929
Apprch %	22	6.6	71.3	3.2	94.8	2	71.4	2.9	25.7	6.4	80.9	12.6	
Total %	0.9	0.3	3	1.2	34.6	0.7	5.7	0.2	2	3.3	41.5	6.5	

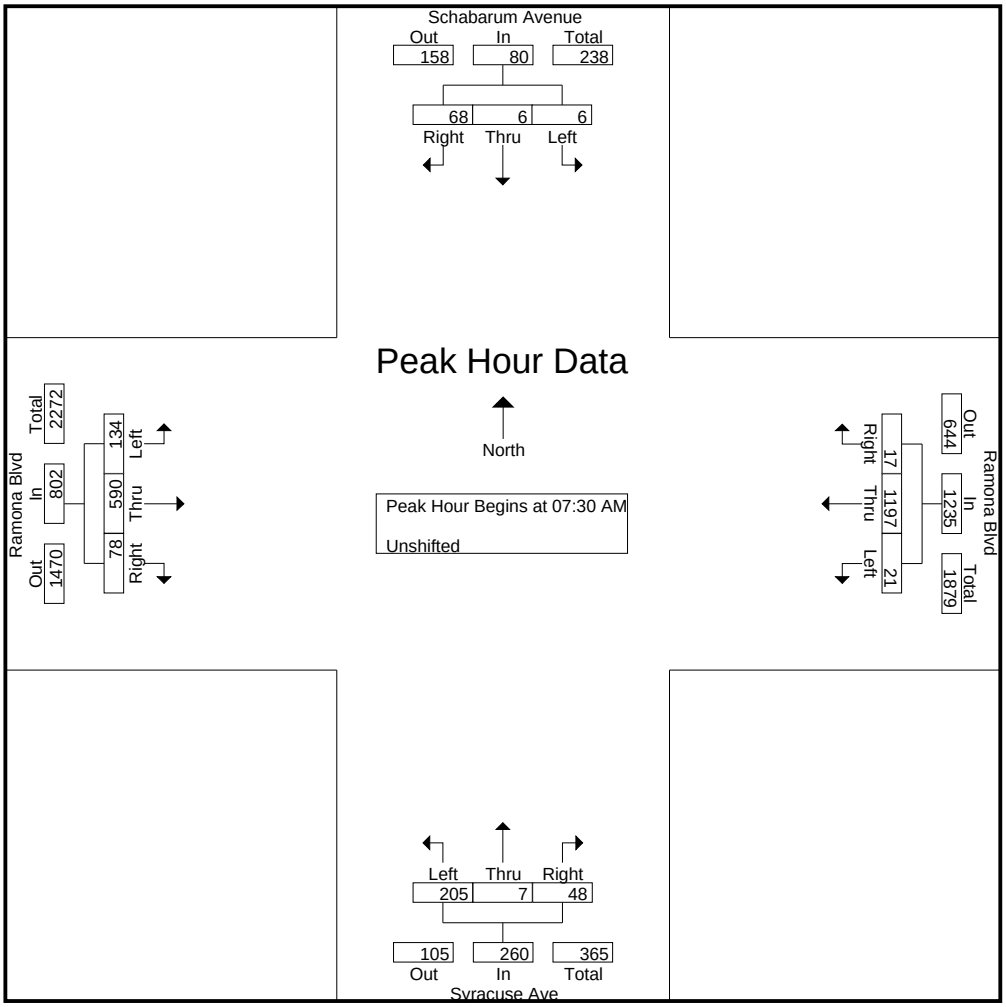
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Sch_Syra
Site Code : 00000000
Start Date : 3/17/2015
Page No : 2

	Schabarum Avenue Southbound				Ramona Blvd Westbound				Syracuse Ave Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	23	23	2	285	3	290	**64**	**3**	**20**	**87**	19	133	22	174	574
07:45 AM	2	1	**29**	**32**	2	**318**	3	323	52	1	12	65	35	**187**	**23**	**245**	**665**
08:00 AM	0	**4**	11	15	**12**	310	5	**327**	49	1	8	58	32	126	18	176	576
08:15 AM	**4**	1	5	10	5	284	**6**	295	40	2	8	50	**48**	144	15	207	562
Total Volume	6	6	68	80	21	1197	17	1235	205	7	48	260	134	590	78	802	2377
% App. Total	7.5	7.5	85		1.7	96.9	1.4		78.8	2.7	18.5		16.7	73.6	9.7		
PHF	.375	.375	.586	.625	.438	.941	.708	.944	.801	.583	.600	.747	.698	.789	.848	.818	.894



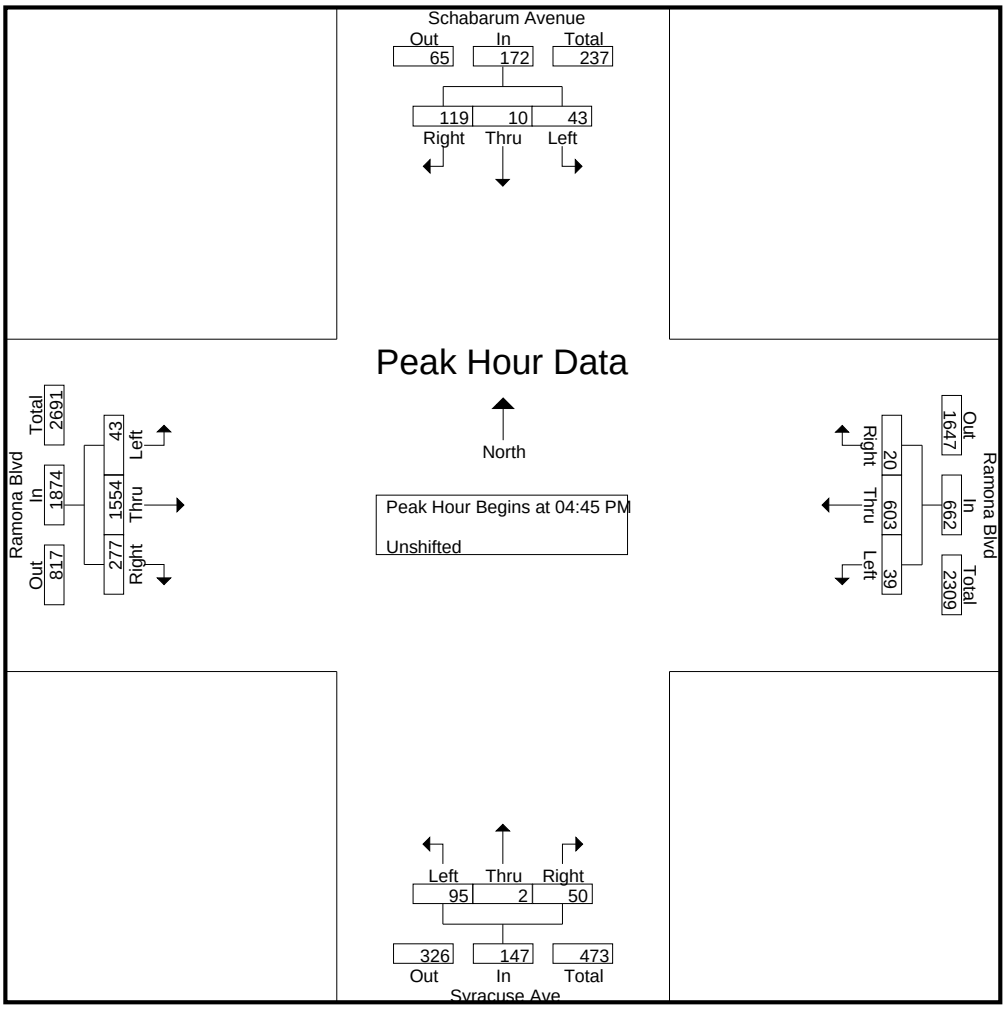
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Sch_Syra
Site Code : 00000000
Start Date : 3/17/2015
Page No : 3

	Schabarum Avenue Southbound				Ramona Blvd Westbound				Syracuse Ave Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**12**	3	22	37	10	150	5	165	18	**1**	12	31	9	376	70	455	688
05:00 PM	12	**4**	**46**	**62**	8	153	**6**	167	**27**	0	13	40	**14**	379	66	459	728
05:15 PM	10	0	26	36	**11**	128	6	145	24	0	9	33	13	**407**	64	**484**	698
05:30 PM	9	3	25	37	10	**172**	3	**185**	26	1	**16**	**43**	7	392	**77**	476	**741**
Total Volume	43	10	119	172	39	603	20	662	95	2	50	147	43	1554	277	1874	2855
% App. Total	25	5.8	69.2		5.9	91.1	3		64.6	1.4	34		2.3	82.9	14.8		
PHF	.896	.625	.647	.694	.886	.876	.833	.895	.880	.500	.781	.855	.768	.955	.899	.968	.963



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Sch_Syra_2AXLE
Site Code : 00000000
Start Date : 3/17/2015
Page No : 1

Groups Printed- Unshifted

	Schabarum Ave Southbound			Ramona Blvd Westbound			Syracuse Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	11	0	3	0	1	0	7	1	23
07:15 AM	0	2	2	0	21	0	2	0	0	0	7	1	35
07:30 AM	0	1	5	0	14	0	3	0	0	0	8	1	32
07:45 AM	0	0	0	1	12	0	6	0	0	0	7	0	26
Total	0	3	7	1	58	0	14	0	1	0	29	3	116
08:00 AM	0	1	1	1	12	0	3	0	3	1	9	1	32
08:15 AM	0	0	2	3	16	1	1	0	2	0	9	5	39
08:30 AM	1	0	1	0	15	0	3	0	0	4	7	4	35
08:45 AM	0	1	4	1	6	0	3	0	0	2	10	3	30
Total	1	2	8	5	49	1	10	0	5	7	35	13	136
04:00 PM	0	1	1	1	5	0	2	0	0	2	18	4	34
04:15 PM	0	1	0	0	3	0	0	0	1	1	17	4	27
04:30 PM	2	0	1	0	6	0	0	1	0	3	10	3	26
04:45 PM	0	0	0	0	7	0	0	0	1	1	10	2	21
Total	2	2	2	1	21	0	2	1	2	7	55	13	108
05:00 PM	1	0	0	1	8	1	0	0	0	1	5	1	18
05:15 PM	0	0	2	1	6	0	1	0	1	0	9	2	22
05:30 PM	0	0	1	0	6	0	0	0	0	1	4	1	13
05:45 PM	0	0	3	0	3	0	0	0	0	1	5	6	18
Total	1	0	6	2	23	1	1	0	1	3	23	10	71
Grand Total	4	7	23	9	151	2	27	1	9	17	142	39	431
Apprch %	11.8	20.6	67.6	5.6	93.2	1.2	73	2.7	24.3	8.6	71.7	19.7	
Total %	0.9	1.6	5.3	2.1	35	0.5	6.3	0.2	2.1	3.9	32.9	9	

CITY TRAFFIC COUNTERS

626.991.7522

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File Name : Sch_Syra_2AXLE
Site Code : 00000000
Start Date : 3/17/2015
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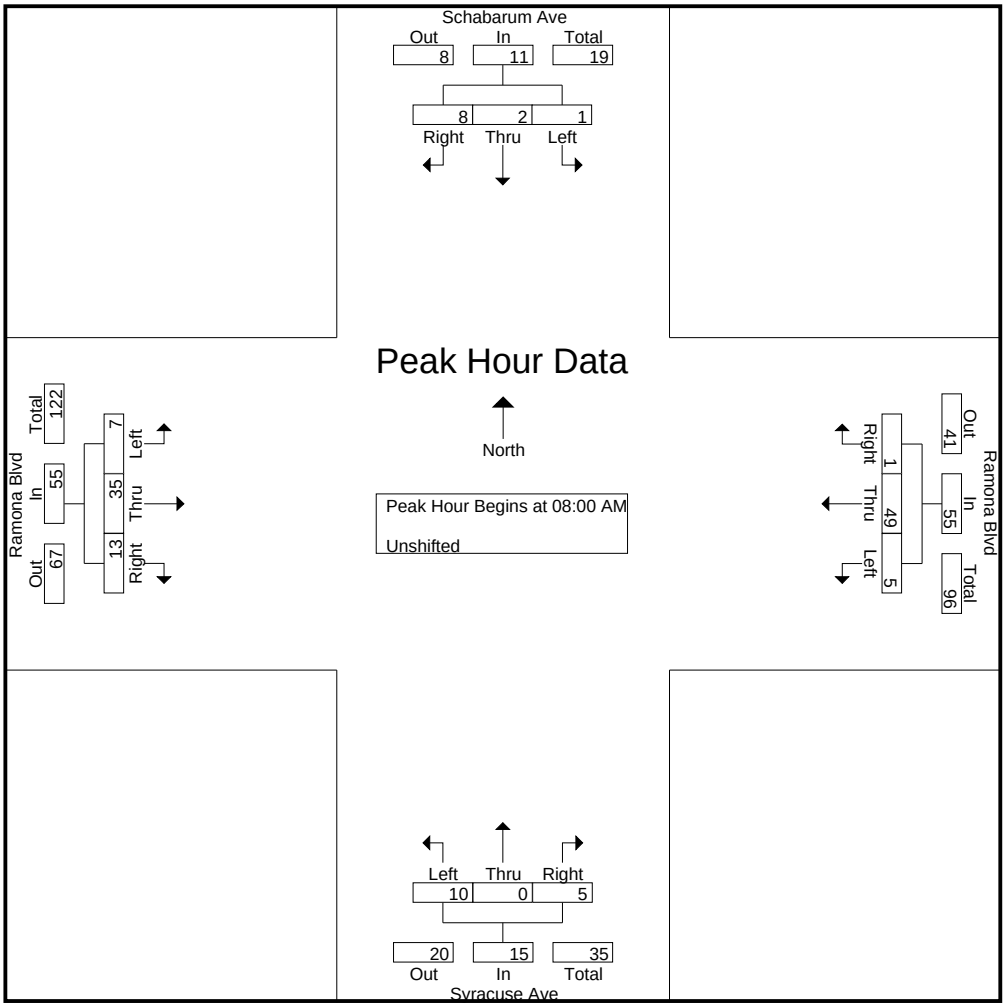
	Schabarum Ave Southbound				Ramona Blvd Westbound				Syracuse Ave Northbound				Ramona Blvd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	**1**	1	2	1	12	0	13	**3**	0	**3**	**6**	1	9	1	11	32
08:15 AM	0	0	2	2	**3**	**16**	**1**	**20**	1	0	2	3	0	9	**5**	14	**39**
08:30 AM	**1**	0	1	2	0	15	0	15	3	0	0	3	**4**	7	4	**15**	35
08:45 AM	0	1	**4**	**5**	1	6	0	7	3	0	0	3	2	**10**	3	15	30
Total Volume	1	2	8	11	5	49	1	55	10	0	5	15	7	35	13	55	136
% App. Total	9.1	18.2	72.7		9.1	89.1	1.8		66.7	0	33.3		12.7	63.6	23.6		
PHF	.250	.500	.500	.550	.417	.766	.250	.688	.833	.000	.417	.625	.438	.875	.650	.917	.872



CITY TRAFFIC COUNTERS

626.991.7522

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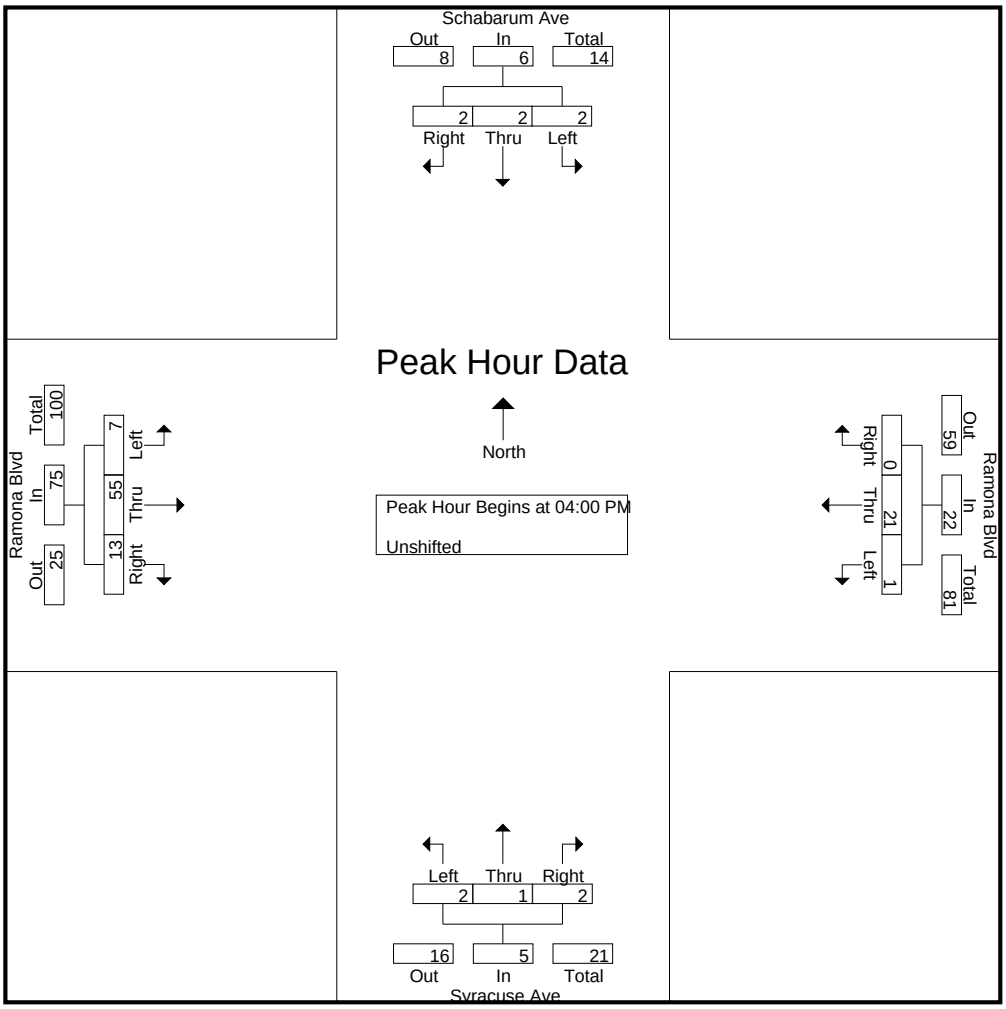
File Name : Sch_Syra_2AXLE
Site Code : 00000000
Start Date : 3/17/2015
Page No : 3

	Schabarum Ave Southbound				Ramona Blvd Westbound				Syracuse Ave Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**1**	**1**	2	**1**	5	0	6	**2**	0	0	**2**	2	**18**	**4**	**24**	**34**
04:15 PM	0	1	0	1	0	3	0	3	0	0	**1**	1	1	17	4	22	27
04:30 PM	**2**	0	1	**3**	0	6	0	6	0	**1**	0	1	**3**	10	3	16	26
04:45 PM	0	0	0	0	0	**7**	0	**7**	0	0	1	1	1	10	2	13	21
Total Volume	2	2	2	6	1	21	0	22	2	1	2	5	7	55	13	75	108
% App. Total	33.3	33.3	33.3		4.5	95.5	0		40	20	40		9.3	73.3	17.3		
PHF	.250	.500	.500	.500	.250	.750	.000	.786	.250	.250	.500	.625	.583	.764	.813	.781	.794



CITY TRAFFIC COUNTERS

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File Name : Sch_Syra_3AXLE
Site Code : 00000000
Start Date : 3/17/2015
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Groups Printed- Bank 1

	Schabarum Ave Southbound			Ramona Blvd Westbound			Syracuse Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	1	0	0	0	0	1	2	0	4
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
08:45 AM	1	0	0	0	1	0	0	0	0	0	2	0	4
Total	1	0	0	0	1	0	0	0	0	0	3	0	5
04:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	3	1	4
05:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	1	0	0	0	0	0	1	0	2
Grand Total	1	0	0	0	3	0	0	0	0	1	9	1	15
Apprch %	100	0	0	0	100	0	0	0	0	9.1	81.8	9.1	
Total %	6.7	0	0	0	20	0	0	0	0	6.7	60	6.7	

CITY TRAFFIC COUNTERS

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File Name : Sch_Syra_3AXLE
Site Code : 00000000
Start Date : 3/17/2015
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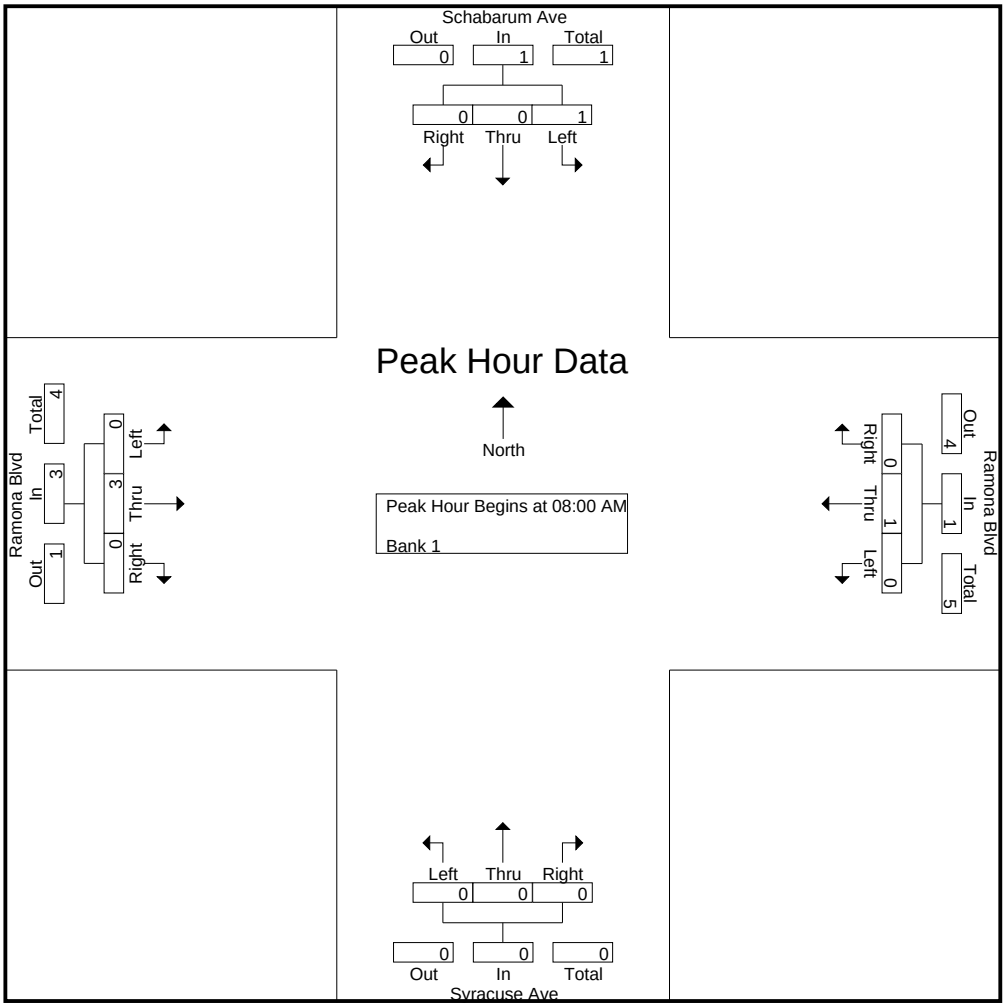
	Schabarum Ave Southbound				Ramona Blvd Westbound				Syracuse Ave Northbound				Ramona Blvd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	**1**	0	0	**1**	0	**1**	0	**1**	0	0	0	0	0	**2**	0	**2**	**4**
Total Volume	1	0	0	1	0	1	0	1	0	0	0	0	0	3	0	3	5
% App. Total	100	0	0		0	100	0		0	0	0		0	100	0		
PHF	.250	.000	.000	.250	.000	.250	.000	.250	.000	.000	.000	.000	.000	.375	.000	.375	.313



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File Name : Sch_Syra_3AXLE
Site Code : 00000000
Start Date : 3/17/2015
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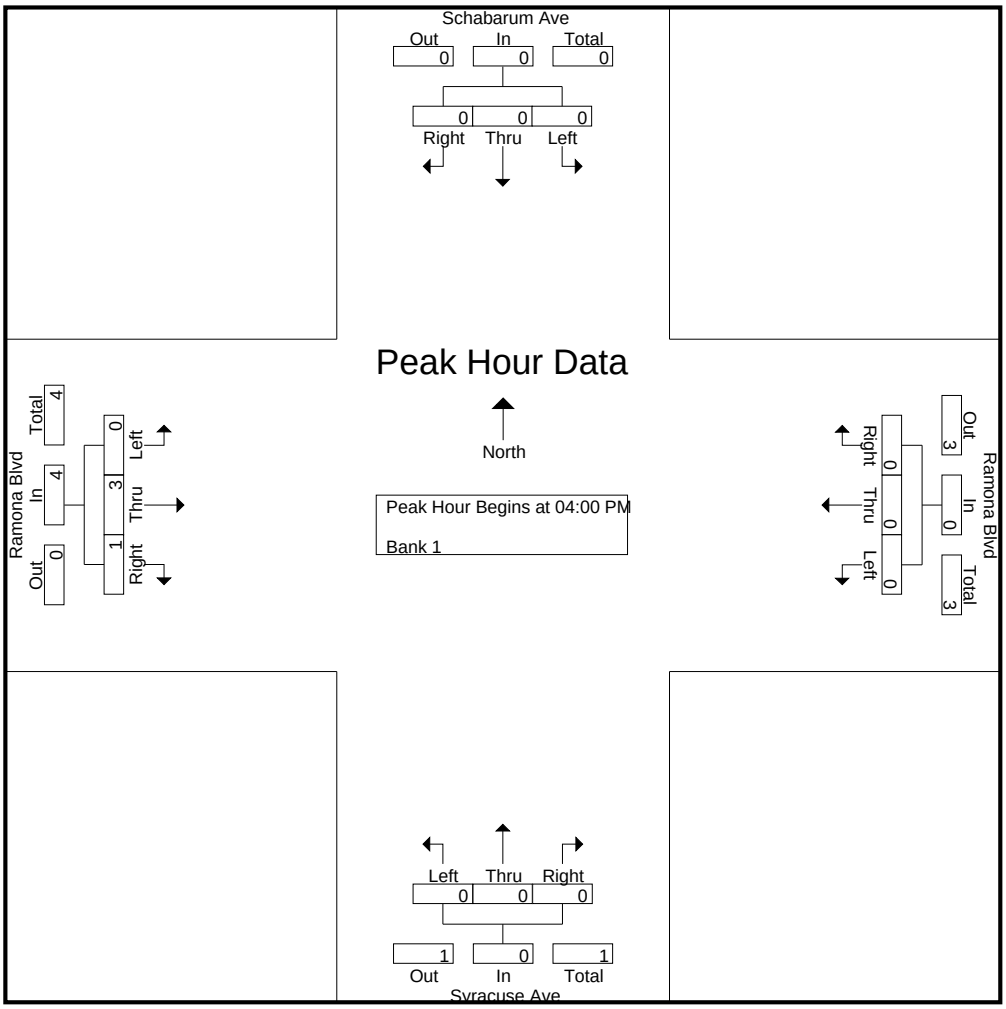
	Schabarum Ave Southbound				Ramona Blvd Westbound				Syracuse Ave Northbound				Ramona Blvd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	0	**2**	**2**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	4
% App. Total	0	0	0		0	0	0		0	0	0		0	75	25		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.375	.250	.500	.500



CITY TRAFFIC COUNTERS

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File Name : Sch_Syra_4AXLE
Site Code : 00000000
Start Date : 3/17/2015
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Groups Printed- Bank 2

	Schabarum Ave Southbound			Ramona Blvd Westbound			Syracuse Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	3	0	0	0	0	1	1	0	5
07:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
07:30 AM	0	0	1	0	1	0	0	0	0	1	2	0	5
07:45 AM	0	0	0	0	1	0	0	0	0	1	0	1	3
Total	0	0	1	0	6	0	0	0	0	3	3	1	14
08:00 AM	0	0	0	0	0	0	0	0	0	0	4	0	4
08:15 AM	0	0	1	0	2	0	0	0	0	0	2	0	5
08:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	2
08:45 AM	0	0	0	0	1	0	0	0	0	0	2	0	3
Total	0	0	1	0	3	0	0	0	0	1	9	0	14
04:00 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
04:15 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	1	0	0	0	1	1	0	3
Total	0	0	0	0	2	1	0	0	0	1	5	0	9
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
05:30 PM	0	0	0	0	2	0	0	0	0	2	0	0	4
05:45 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
Total	0	0	0	0	4	0	0	0	0	2	2	0	8
Grand Total	0	0	2	0	15	1	0	0	0	7	19	1	45
Apprch %	0	0	100	0	93.8	6.2	0	0	0	25.9	70.4	3.7	
Total %	0	0	4.4	0	33.3	2.2	0	0	0	15.6	42.2	2.2	

CITY TRAFFIC COUNTERS

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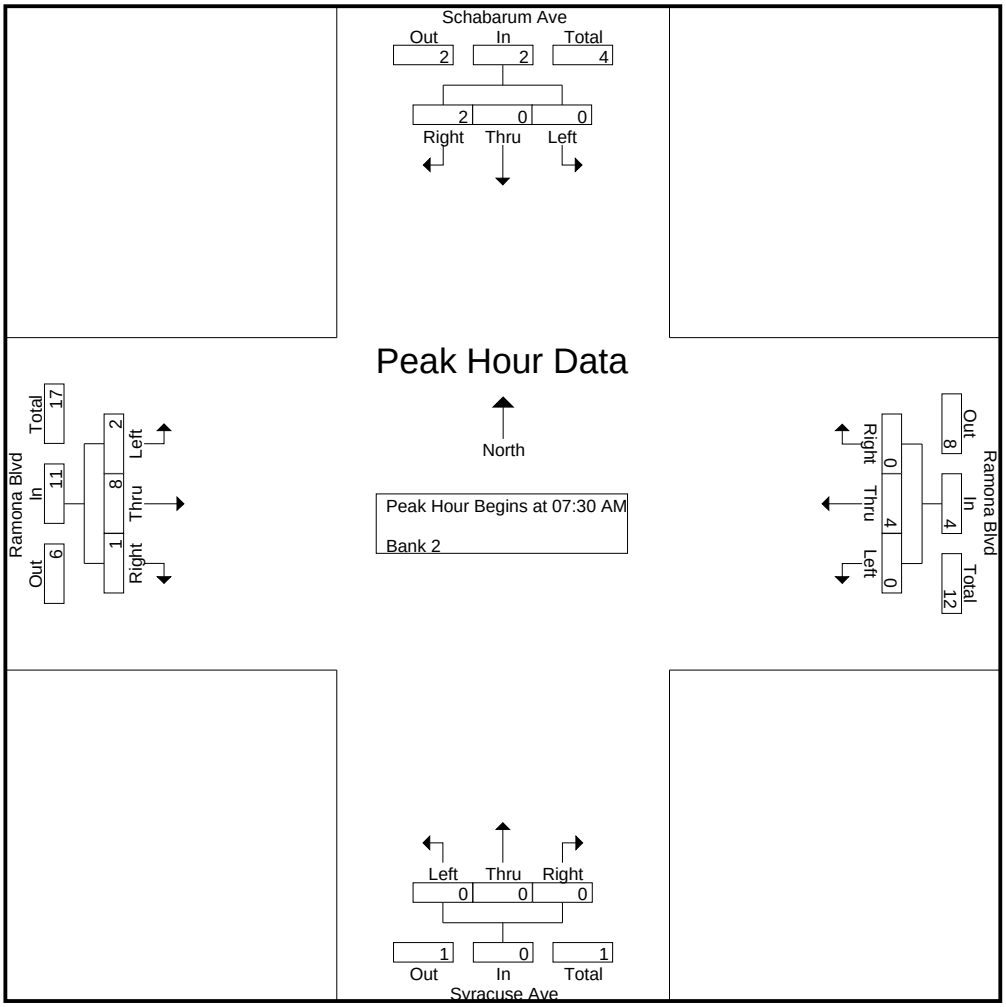
File Name : Sch_Syra_4AXLE
Site Code : 00000000
Start Date : 3/17/2015
Page No : 2

	Schabarum Ave Southbound				Ramona Blvd Westbound				Syracuse Ave Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	**1**	**1**	0	1	0	1	0	0	0	0	**1**	2	0	3	**5**
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1	0	**1**	2	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**	0	**4**	4
08:15 AM	0	0	1	1	0	**2**	0	**2**	0	0	0	0	0	2	0	2	5
Total Volume	0	0	2	2	0	4	0	4	0	0	0	0	2	8	1	11	17
% App. Total	0	0	100		0	100	0		0	0	0		18.2	72.7	9.1		
PHF	.000	.000	.500	.500	.000	.500	.000	.500	.000	.000	.000	.000	.500	.500	.250	.688	.850



CITY TRAFFIC COUNTERS

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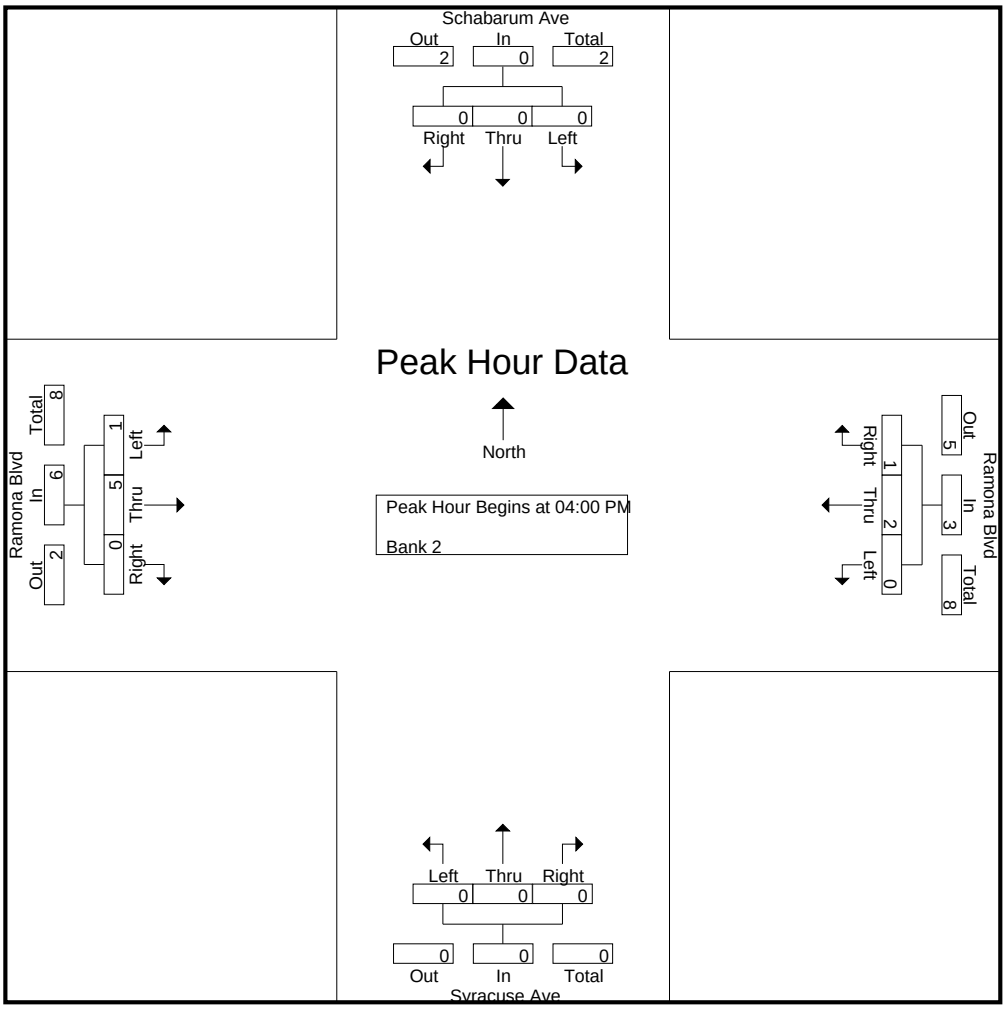
File Name : Sch_Syra_4AXLE
Site Code : 00000000
Start Date : 3/17/2015
Page No : 3

	Schabarum Ave Southbound				Ramona Blvd Westbound				Syracuse Ave Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	**2**	0	**2**	**3**
04:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	**1**	1	0	0	0	0	**1**	1	0	2	3
Total Volume	0	0	0	0	0	2	1	3	0	0	0	0	1	5	0	6	9
% App. Total	0	0	0		0	66.7	33.3		0	0	0		16.7	83.3	0		
PHF	.000	.000	.000	.000	.000	.500	.250	.750	.000	.000	.000	.000	.250	.625	.000	.750	.750



CITY TRAFFIC COUNTERS

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File Name : Sch_Syra_Bus
Site Code : 00000000
Start Date : 3/17/2015
Page No : 1

Groups Printed- Bank 1

	Schabarum Avenue Southbound			Ramona Blvd Westbound			Syracuse Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	3	0	0	0	3	0	4	0	10
07:15 AM	0	0	0	0	2	0	0	0	0	0	2	1	5
07:30 AM	0	0	0	0	1	0	0	0	0	0	2	0	3
07:45 AM	0	0	0	1	2	0	0	0	1	0	3	1	8
Total	0	0	0	1	8	0	0	0	4	0	11	2	26
08:00 AM	0	0	0	0	3	0	1	0	0	1	4	0	9
08:15 AM	0	0	0	1	2	0	0	0	0	0	1	0	4
08:30 AM	0	0	0	0	3	0	0	0	1	0	1	0	5
08:45 AM	0	0	0	0	5	0	1	0	0	0	0	0	6
Total	0	0	0	1	13	0	2	0	1	1	6	0	24
04:00 PM	0	0	0	0	2	0	0	0	1	0	2	0	5
04:15 PM	0	0	0	1	2	0	0	0	0	0	1	0	4
04:30 PM	0	0	0	0	1	0	0	0	1	0	2	0	4
04:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
Total	0	0	0	1	6	0	0	0	2	0	6	0	15
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
05:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	1	3	0	0	0	1	0	2	0	7
05:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	1	4	0	0	0	2	0	3	0	10
Grand Total	0	0	0	4	31	0	2	0	9	1	26	2	75
Apprch %	0	0	0	11.4	88.6	0	18.2	0	81.8	3.4	89.7	6.9	
Total %	0	0	0	5.3	41.3	0	2.7	0	12	1.3	34.7	2.7	

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File Name : Sch_Syra_Bus
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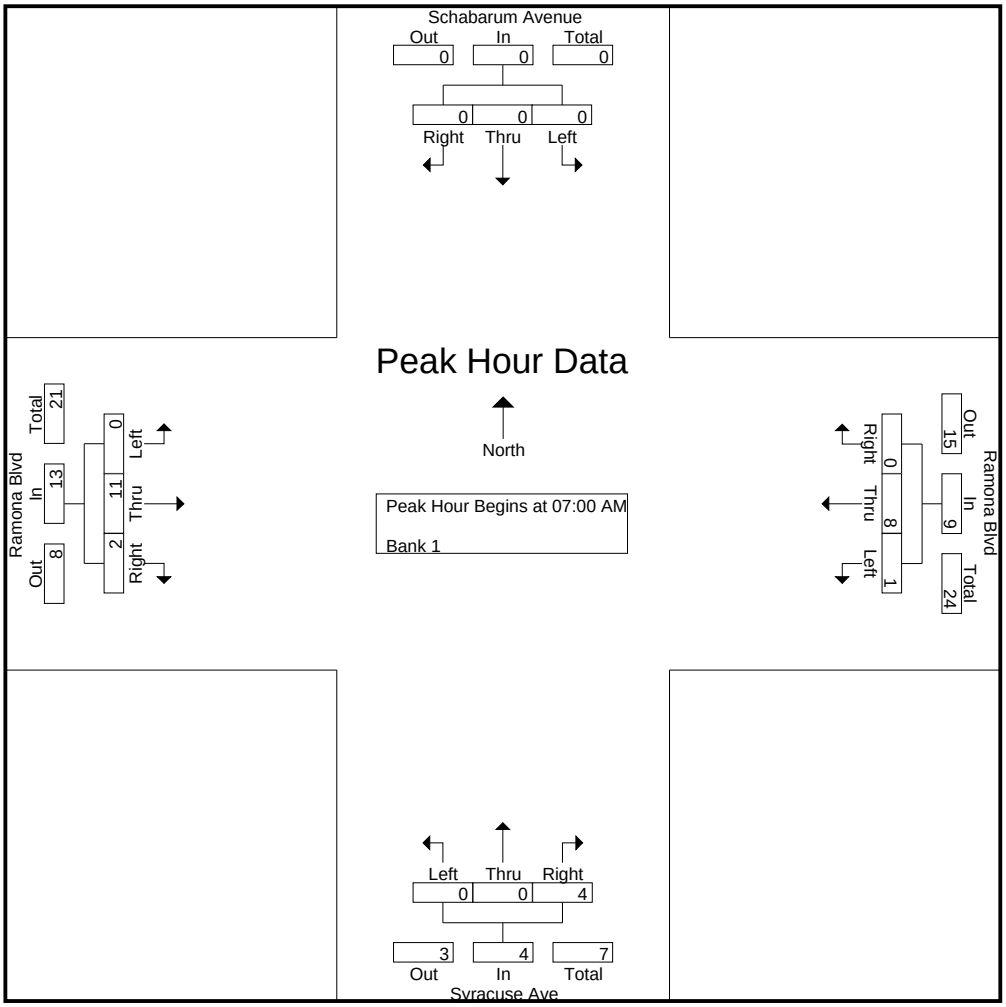
	Schabarum Avenue Southbound				Ramona Blvd Westbound				Syracuse Ave Northbound				Ramona Blvd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**3**	0	**3**	0	0	**3**	**3**	0	**4**	0	**4**	**10**
07:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	**1**	3	5
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
07:45 AM	0	0	0	0	**1**	2	0	3	0	0	1	1	0	3	1	4	8
Total Volume	0	0	0	0	1	8	0	9	0	0	4	4	0	11	2	13	26
% App. Total	0	0	0		11.1	88.9	0		0	0	100		0	84.6	15.4		
PHF	.000	.000	.000	.000	.250	.667	.000	.750	.000	.000	.333	.333	.000	.688	.500	.813	.650



CITY TRAFFIC COUNTERS

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File Name : Sch_Syra_Bus
Site Code : 00000000
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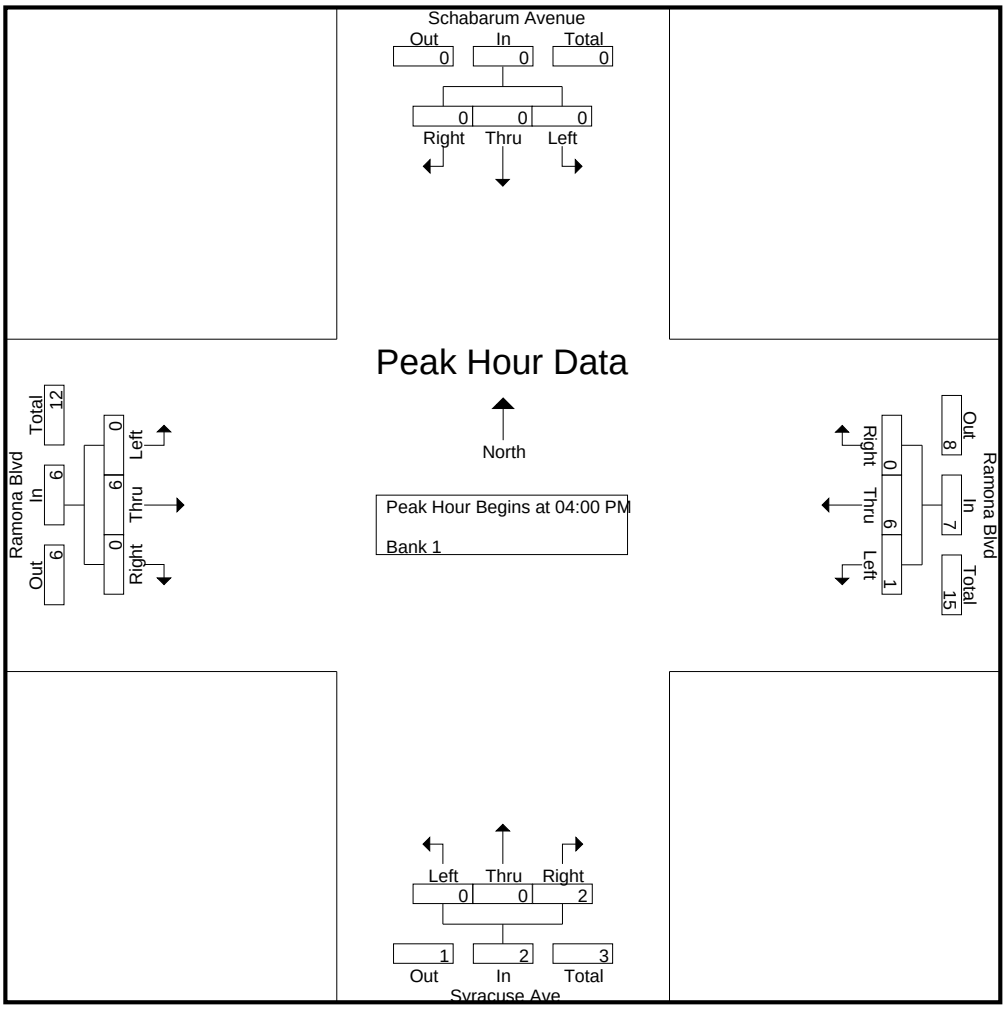
	Schabarum Avenue Southbound				Ramona Blvd Westbound				Syracuse Ave Northbound				Ramona Blvd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	**2**	0	2	0	0	**1**	**1**	0	**2**	0	**2**	**5**
04:15 PM	0	0	0	0	**1**	2	0	**3**	0	0	0	0	0	1	0	1	4
04:30 PM	0	0	0	0	0	1	0	1	0	0	1	1	0	2	0	2	4
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total Volume	0	0	0	0	1	6	0	7	0	0	2	2	0	6	0	6	15
% App. Total	0	0	0		14.3	85.7	0		0	0	100		0	100	0		
PHF	.000	.000	.000	.000	.250	.750	.000	.583	.000	.000	.500	.500	.000	.750	.000	.750	.750



CITY TRAFFIC COUNTERS

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Groups Printed- Bank 1

	Schabarum Ave Southbound		Ramona Blvd Westbound		Syracuse Ave Northbound		Ramona Blvd Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:00 AM	0	0	0	4	2	1	1	0	8
07:15 AM	1	0	0	2	0	0	0	0	3
07:30 AM	2	2	1	1	3	1	0	0	10
Total	3	2	1	7	5	2	1	0	21
08:00 AM	2	0	0	0	0	1	0	0	3
08:15 AM	0	0	0	2	0	0	0	0	2
08:45 AM	2	0	0	1	0	1	0	1	5
Total	4	0	0	3	0	2	0	1	10
04:00 PM	0	1	0	2	0	1	0	0	4
04:15 PM	2	4	0	6	0	0	0	0	12
04:30 PM	0	1	1	0	0	0	0	0	2
04:45 PM	2	1	1	1	1	0	0	0	6
Total	4	7	2	9	1	1	0	0	24
05:00 PM	2	0	1	0	2	0	0	0	5
05:15 PM	1	0	0	0	0	0	0	0	1
05:30 PM	1	0	0	0	0	0	0	0	1
05:45 PM	2	1	0	1	0	0	0	0	4
Total	6	1	1	1	2	0	0	0	11
Grand Total	17	10	4	20	8	5	1	1	66
Apprch %	63	37	16.7	83.3	61.5	38.5	50	50	
Total %	25.8	15.2	6.1	30.3	12.1	7.6	1.5	1.5	

CITY TRAFFIC COUNTERS

626.991.7522

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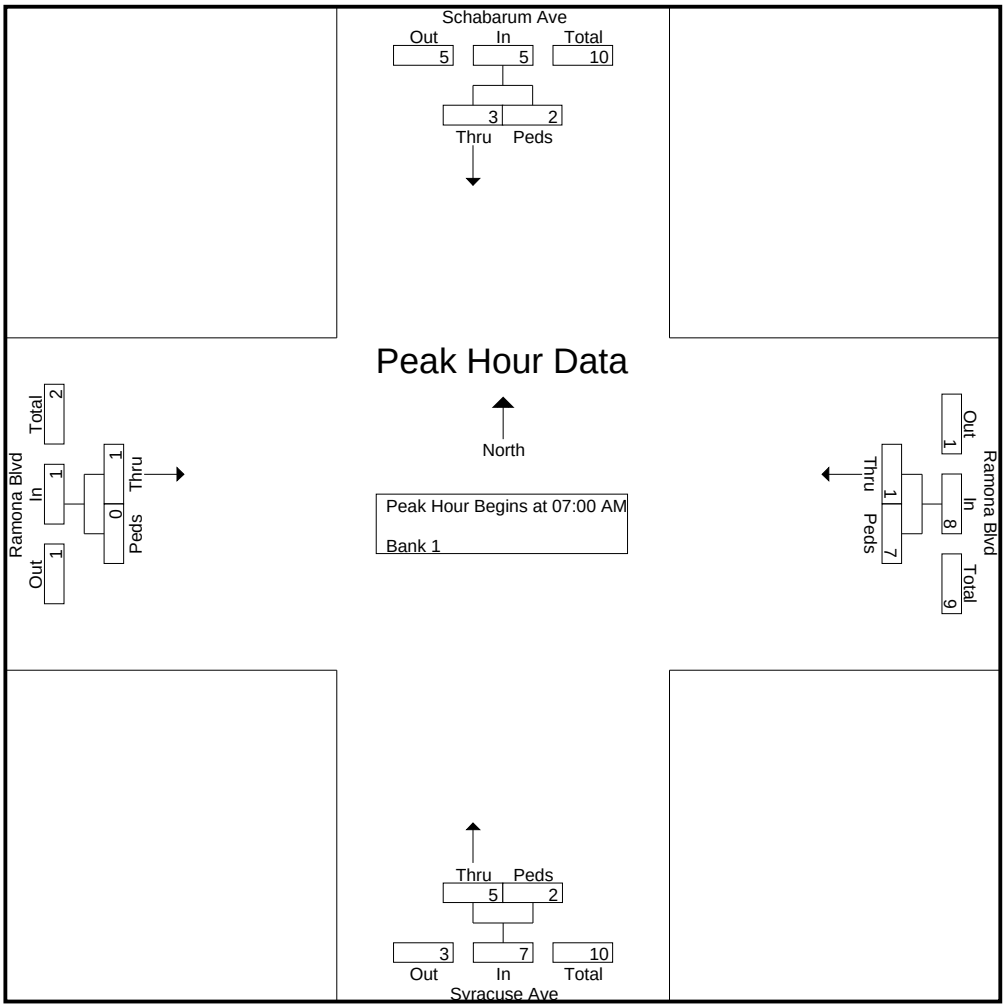
File Name : Sch_Syra_BP
Site Code : 00000000
Start Date : 3/17/2015
Page No : 2

	Schabarum Ave Southbound			Ramona Blvd Westbound			Syracuse Ave Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	0	0	0	**4**	**4**	2	**1**	3	**1**	0	**1**	8
07:15 AM	1	0	1	0	2	2	0	0	0	0	0	0	3
07:30 AM	**2**	**2**	**4**	**1**	1	2	**3**	1	**4**	0	0	0	**10**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	3	2	5	1	7	8	5	2	7	1	0	1	21
% App. Total	60	40		12.5	87.5		71.4	28.6		100	0		
PHF	.375	.250	.313	.250	.438	.500	.417	.500	.438	.250	.000	.250	.525



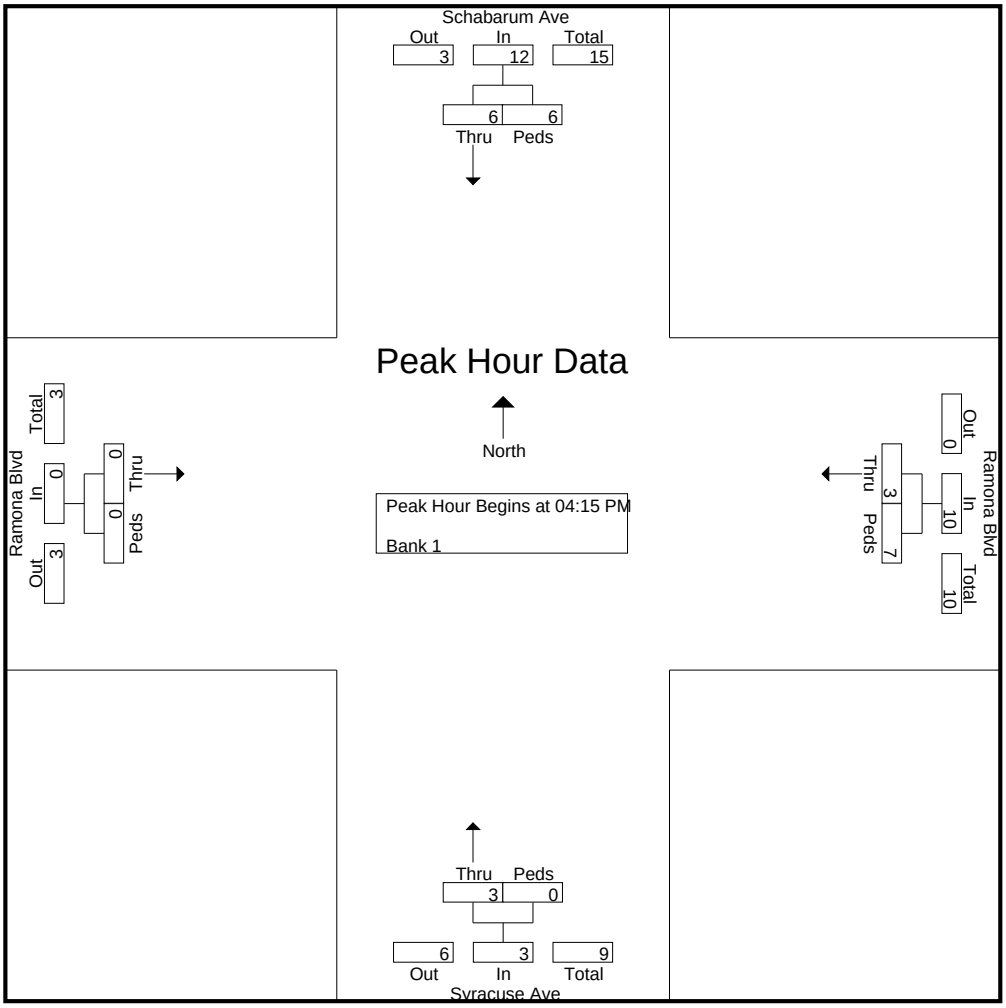
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Sch_Syra_BP
Site Code : 00000000
Start Date : 3/17/2015
Page No : 3

	Schabarum Ave Southbound			Ramona Blvd Westbound			Syracuse Ave Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	**2**	**4**	**6**	0	**6**	**6**	0	0	0	0	0	0	**12**
04:30 PM	0	1	1	**1**	0	1	0	0	0	0	0	0	2
04:45 PM	2	1	3	1	1	2	1	0	1	0	0	0	6
05:00 PM	2	0	2	1	0	1	**2**	0	**2**	0	0	0	5
Total Volume	6	6	12	3	7	10	3	0	3	0	0	0	25
% App. Total	50	50		30	70		100	0		0	0		
PHF	.750	.375	.500	.750	.292	.417	.375	.000	.375	.000	.000	.000	.521



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : Frazier_Judith_10EBRamp
Site Code : 00000000
Start Date : 5/21/2014
Page No : 1

Groups Printed- Unshifted

	I-10 EB ramp Southbound			Frazier St Westbound			Judith St Northbound			Frazier St Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	86	14	16	0	0	0	18	0	1	0	38	10	183
07:15 AM	86	21	23	0	0	0	42	0	1	0	25	12	210
07:30 AM	113	19	24	0	0	0	38	0	0	0	41	22	257
07:45 AM	130	27	30	0	0	0	38	0	0	0	31	17	273
Total	415	81	93	0	0	0	136	0	2	0	135	61	923
08:00 AM	124	30	21	0	0	0	29	0	0	0	29	16	249
08:15 AM	138	24	23	0	0	0	25	0	1	0	36	10	257
08:30 AM	111	28	16	0	0	0	20	0	0	0	19	15	209
08:45 AM	99	17	13	0	0	0	23	0	0	0	27	12	191
Total	472	99	73	0	0	0	97	0	1	0	111	53	906
04:00 PM	69	27	32	0	0	0	34	0	0	0	17	15	194
04:15 PM	64	27	45	0	0	0	34	0	0	0	21	10	201
04:30 PM	75	32	33	0	0	0	42	0	1	0	17	3	203
04:45 PM	65	18	40	0	0	0	51	0	0	0	20	15	209
Total	273	104	150	0	0	0	161	0	1	0	75	43	807
05:00 PM	74	27	47	0	0	0	50	0	1	0	16	21	236
05:15 PM	70	16	38	0	0	0	68	0	2	0	23	17	234
05:30 PM	74	27	33	0	0	0	41	0	1	0	18	17	211
05:45 PM	100	31	47	0	0	0	40	0	2	0	20	22	262
Total	318	101	165	0	0	0	199	0	6	0	77	77	943
Grand Total	1478	385	481	0	0	0	593	0	10	0	398	234	3579
Apprch %	63.1	16.4	20.5	0	0	0	98.3	0	1.7	0	63	37	
Total %	41.3	10.8	13.4	0	0	0	16.6	0	0.3	0	11.1	6.5	

CITY TRAFFIC COUNTERS

626.991.7522

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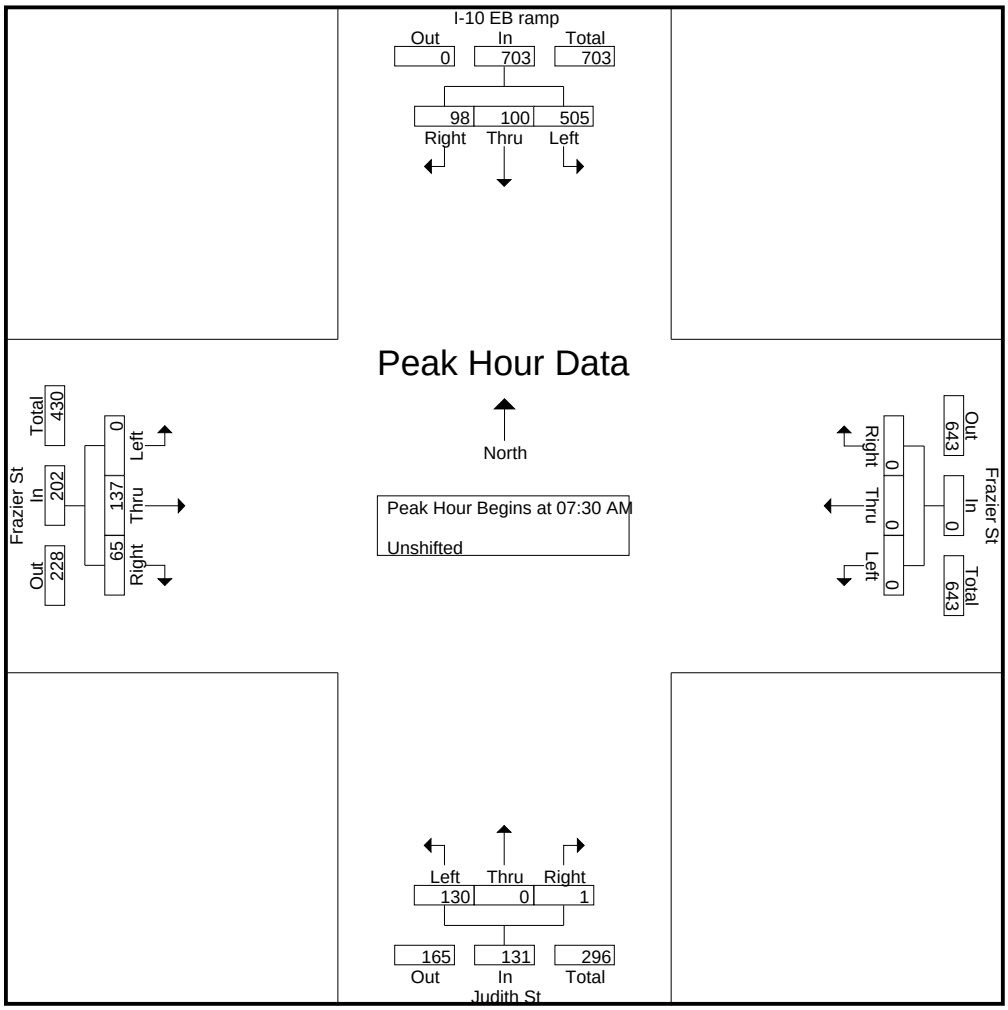
File Name : Frazier_Judith_10EBRamp
Site Code : 00000000
Start Date : 5/21/2014
Page No : 2

	I-10 EB ramp Southbound				Frazier St Westbound				Judith St Northbound				Frazier St 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	113	19	24	156	0	0	0	0	**38**	0	0	**38**	0	**41**	**22**	**63**	257
07:45 AM	130	27	**30**	**187**	0	0	0	0	38	0	0	38	0	31	17	48	**273**
08:00 AM	124	**30**	21	175	0	0	0	0	29	0	0	29	0	29	16	45	249
08:15 AM	**138**	24	23	185	0	0	0	0	25	0	**1**	26	0	36	10	46	257
Total Volume	505	100	98	703	0	0	0	0	130	0	1	131	0	137	65	202	1036
% App. Total	71.8	14.2	13.9		0	0	0		99.2	0	0.8		0	67.8	32.2		
PHF	.915	.833	.817	.940	.000	.000	.000	.000	.855	.000	.250	.862	.000	.835	.739	.802	.949



CITY TRAFFIC COUNTERS

626.991.7522

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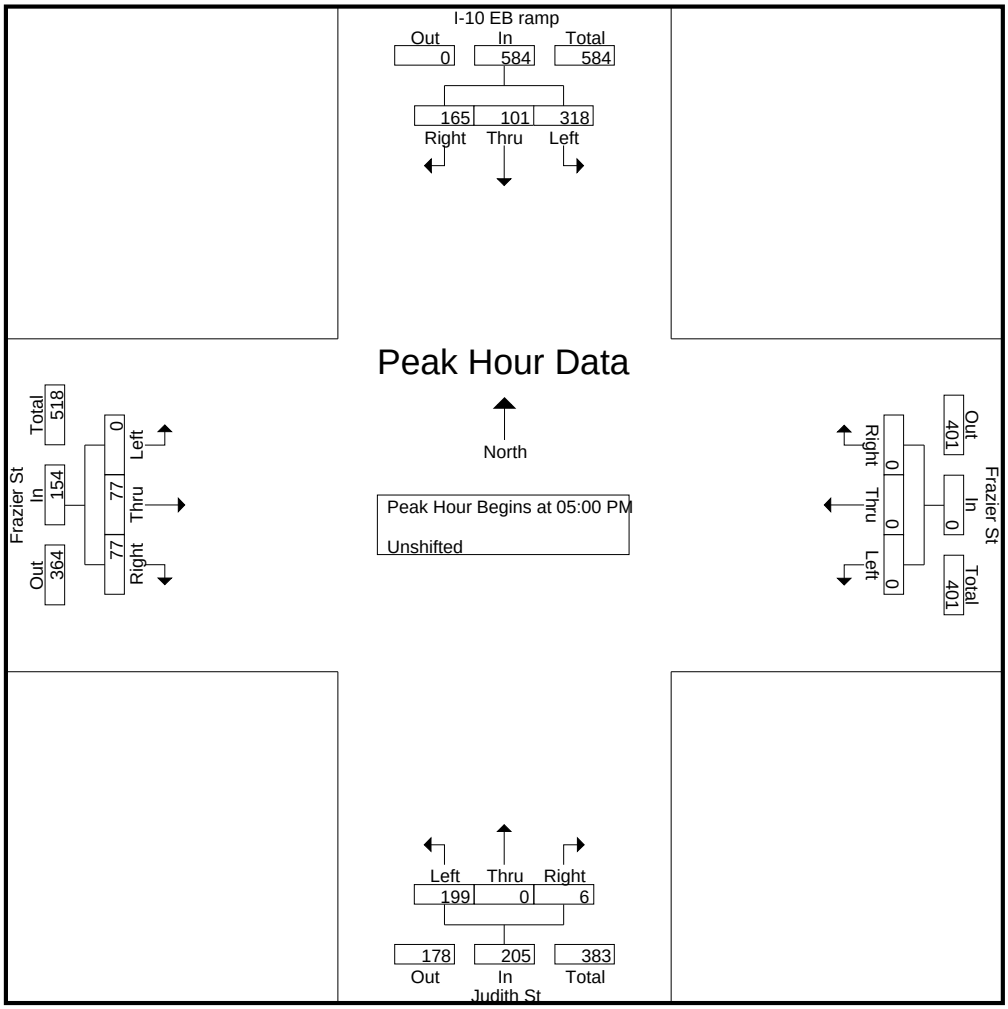
File Name : Frazier_Judith_10EBRamp
Site Code : 00000000
Start Date : 5/21/2014
Page No : 3

	I-10 EB ramp Southbound				Frazier St Westbound				Judith St Northbound				Frazier St 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	74	27	**47**	148	0	0	0	0	50	0	1	51	0	16	21	37	236
05:15 PM	70	16	38	124	0	0	0	0	**68**	0	**2**	**70**	0	**23**	17	40	234
05:30 PM	74	27	33	134	0	0	0	0	41	0	1	42	0	18	17	35	211
05:45 PM	**100**	**31**	47	**178**	0	0	0	0	40	0	2	42	0	20	**22**	**42**	**262**
Total Volume	318	101	165	584	0	0	0	0	199	0	6	205	0	77	77	154	943
% App. Total	54.5	17.3	28.3		0	0	0		97.1	0	2.9		0	50	50		
PHF	.795	.815	.878	.820	.000	.000	.000	.000	.732	.000	.750	.732	.000	.837	.875	.917	.900



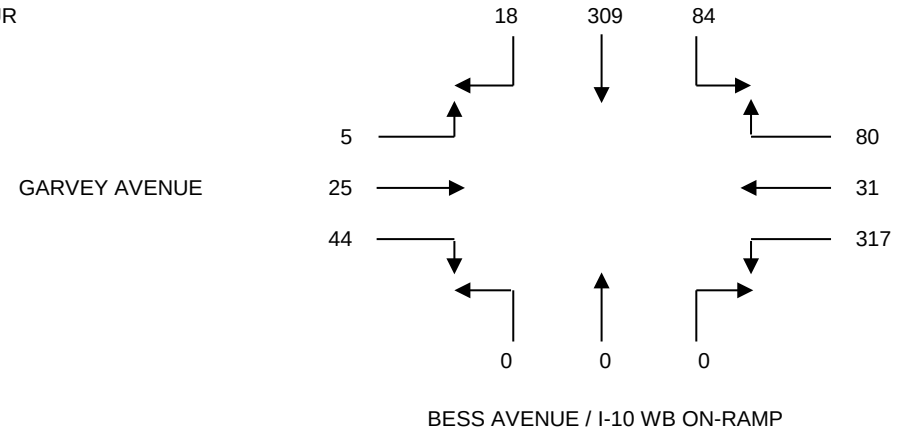
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT:		LLG - PASADENA
PROJECT:		KAISER PERMANENTE - IRWINDALE
DATE:		TUESDAY, JUNE 23, 2015
PERIOD:		07:00 AM TO 09:00 AM
INTERSECTION	N/S	BESS AVENUE / I-10 WB ON-RAMP
	E/W	GARVEY AVENUE
FILE NUMBER:		1-AM

15 MINUTE TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT
0700-0715	4	86	21	13	10	87	0	0	0	14	8	1
0715-0730	7	71	26	28	8	73	0	0	0	13	7	0
0730-0745	3	79	17	21	5	99	0	0	0	8	3	2
0745-0800	4	73	20	18	8	58	0	0	0	9	7	2
0800-0815	0	50	19	16	14	57	0	0	0	8	8	1
0815-0830	4	47	19	16	6	56	0	0	0	15	4	2
0830-0845	3	55	21	16	4	63	0	0	0	7	9	1
0845-0900	6	44	15	13	5	45	0	0	0	5	4	2

1 HOUR TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
0700-0800	18	309	84	80	31	317	0	0	0	44	25	5	913
0715-0815	14	273	82	83	35	287	0	0	0	38	25	5	842
0730-0830	11	249	75	71	33	270	0	0	0	40	22	7	778
0745-0845	11	225	79	66	32	234	0	0	0	39	28	6	720
0800-0900	13	196	74	61	29	221	0	0	0	35	25	6	660

A.M. PEAK HOUR
0700-0800



DATA PROVIDED BY:

THE TRAFFIC SOLUTION
329 DIAMOND STREET
ARCADIA, CALIFORNIA 91005
PH: 626-446-7978
FAX: 626-446-2877
.

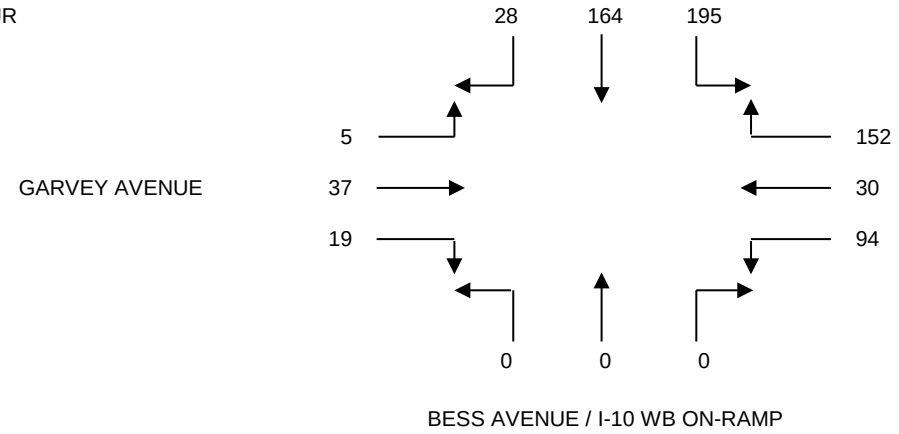
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: KAISER PERMANENTE - IRWINDALE
DATE: TUESDAY, JUNE 23, 2015
PERIOD: 04:00 PM TO 06:00 PM
INTERSECTION N/S BESS AVENUE / I-10 WB ON-RAMP
E/W GARVEY AVENUE
FILE NUMBER: 1-PM

15 MINUTE TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT
0400-0415	5	35	39	46	12	36	0	0	0	10	6	2
0415-0430	5	37	24	34	9	20	0	0	0	9	9	3
0430-0445	7	34	46	34	5	20	0	0	0	4	10	3
0445-0500	5	41	40	39	9	26	0	0	0	5	10	0
0500-0515	12	37	59	21	9	22	0	0	0	8	8	2
0515-0530	5	44	46	38	7	24	0	0	0	4	8	3
0530-0545	6	42	50	54	5	22	0	0	0	2	11	0
0545-0600	4	32	44	39	9	23	0	0	0	5	9	2

1 HOUR TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
0400-0500	22	147	149	153	35	102	0	0	0	28	35	8	679
0415-0515	29	149	169	128	32	88	0	0	0	26	37	8	666
0430-0530	29	156	191	132	30	92	0	0	0	21	36	8	695
0445-0545	28	164	195	152	30	94	0	0	0	19	37	5	724
0500-0600	27	155	199	152	30	91	0	0	0	19	36	7	716

P.M. PEAK HOUR
0445-0545



DATA PROVIDED BY:

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329 DIAMOND STREET
ARCADIA, CALIFORNIA 91005
PH: 626-446-7978
FAX: 626-446-2877
.

PEDESTRIAN - BICYCLE COUNT SUMMARY

CLIENT: LLG ENGINEERS - PASADENA

PROJECT: KAISER PERMANENTE - IRWINDALE

DATE: TUESDAY, JUNE 23, 2015

PERIOD: 07:00 AM TO 09:00 AM

04:00 PM TO 06:00 PM

INTERSECTION: BESS AVENUE - I-10 WB ON RAMP / GARVEY AVENUE

FILE: 01-AM_PM

	PEDESTRIAN MOVEMENTS			
15-MINUTE PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D
0700-0715	2	1	0	0
0715-0730	1	4	0	0
0730-0745	2	3	0	0
0745-0800	1	2	0	0
0800-0815	2	2	0	0
0815-0830	4	3	0	0
0830-0845	4	3	0	0
0845-0900	0	1	0	0

	BICYCLIST MOVEMENTS			
15-MINUTE PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D
0700-0715	0	0	0	0
0715-0730	0	0	0	0
0730-0745	0	0	0	0
0745-0800	0	0	0	0
0800-0815	0	1	0	0
0815-0830	0	0	0	0
0830-0845	0	0	0	0
0845-0900	0	0	0	0

	PEDESTRIAN MOVEMENTS				
1-HOUR PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D	TOTALS
0700-0800	6	10	0	0	16
0715-0815	6	11	0	0	17
0730-0830	9	10	0	0	19
0745-0845	11	10	0	0	21
0800-0900	10	9	0	0	19

	BICYCLIST MOVEMENTS				
1-HOUR PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D	TOTALS
0700-0800	0	0	0	0	0
0715-0815	0	1	0	0	1
0730-0830	0	1	0	0	1
0745-0845	0	1	0	0	1
0800-0900	0	1	0	0	1

THE TRAFFIC SOLUTION
329 DIAMOND STREET
ARCADIA, CALIFORNIA 91006

PEDESTRIAN - BICYCLE COUNT SUMMARY

CLIENT: LLG ENGINEERS - PASADENA

PROJECT: KAISER PERMANENTE - IRWINDALE

DATE: TUESDAY, JUNE 23, 2015

PERIOD: 07:00 AM TO 09:00 AM

04:00 PM TO 06:00 PM

INTERSECTION: BESS AVENUE - I-10 WB ON RAMP / GARVEY AVENUE

FILE: 01-AM_PM

	PEDESTRIAN MOVEMENTS			
15-MINUTE PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D
0400-0415	0	0	0	0
0415-0430	2	3	0	0
0430-0445	3	2	0	0
0445-0500	2	1	0	0
0500-0515	1	1	0	0
0515-0530	6	3	0	0
0530-0545	10	8	0	0
0545-0600	2	4	0	0

	BICYCLIST MOVEMENTS			
15-MINUTE PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D
0400-0415	0	1	0	0
0415-0430	0	0	0	0
0430-0445	0	0	0	0
0445-0500	0	0	0	0
0500-0515	0	0	0	0
0515-0530	0	0	0	0
0530-0545	1	1	0	0
0545-0600	2	0	0	0

	PEDESTRIAN MOVEMENTS				
1-HOUR PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D	TOTALS
0400-0500	7	6	0	0	13
0415-0515	8	7	0	0	15
0430-0530	12	7	0	0	19
0445-0545	19	13	0	0	32
0500-0600	19	16	0	0	35

	BICYCLIST MOVEMENTS				
1-HOUR PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D	TOTALS
0400-0500	0	1	0	0	1
0415-0515	0	0	0	0	0
0430-0530	0	0	0	0	0
0445-0545	1	1	0	0	2
0500-0600	3	1	0	0	4

THE TRAFFIC SOLUTION
329 DIAMOND STREET
ARCADIA, CALIFORNIA 91006

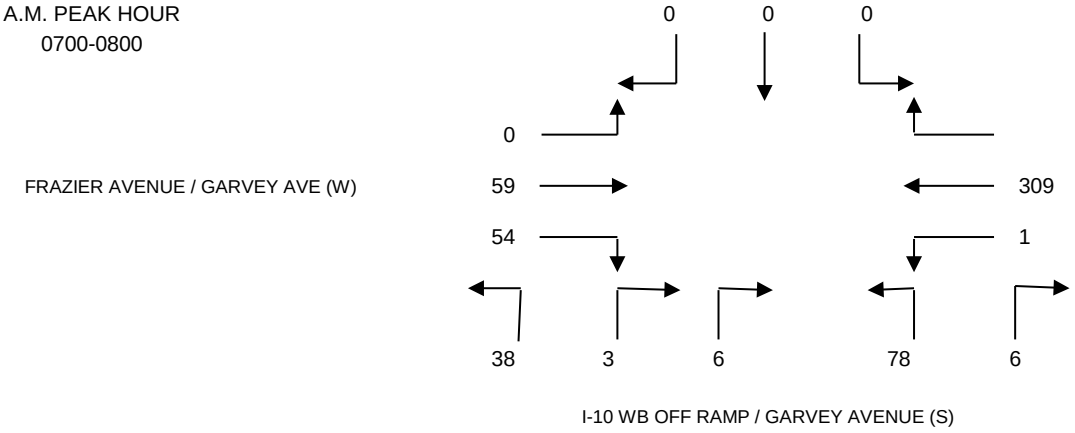
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT:		LLG - PASADENA
PROJECT:		KAISER PERMANENTE - IRWINDALE
DATE:		TUESDAY, JUNE 23, 2015
PERIOD:		07:00 AM TO 09:00 AM
INTERSECTION	N/S	I-10 WB OFF RAMP / GARVEY AVENUE (S)
	E/W	FRAZIER AVENUE / GARVEY AVENUE (W)
FILE NUMBER:		2-AM

				FRAZIER		GARVEY (S)		I-10 WB OFF RAMP			GARVEY (W)	
15 MINUTE	1	2	3	5	6	7A	9A	7B	7C	9B	10	11
TOTALS	SBRT	SBTH	SBLT	WBTH	WBLT	NBRT	NBLT	NBRT	NBRT	NBLT	EBRT	EBTH
0700-0715	0	0	0	77	0	0	11	2	2	10	14	14
0715-0730	0	0	0	84	0	2	27	1	1	13	14	23
0730-0745	0	0	0	73	1	1	22	1	0	9	13	11
0745-0800	0	0	0	75	0	3	18	2	0	6	13	11
0800-0815	0	0	0	60	1	2	15	1	2	11	10	19
0815-0830	0	0	0	50	1	1	17	0	1	16	12	10
0830-0845	0	0	0	47	1	0	15	3	3	10	16	15
0845-0900	0	0	0	49	0	1	14	1	2	10	11	7

				FRAZIER		GARVEY (S)		I-10 WB OFF RAMP			GARVEY (W)		
1 HOUR	1	2	3	5	6	7A	9A	7B	7C	9B	10	11	
TOTALS	SBRT	SBTH	SBLT	WBTH	WBLT	NBRT	NBLT	NBRT	NBRT	NBLT	EBRT	EBTH	TOTALS
0700-0800	0	0	0	309	1	6	78	6	3	38	54	59	554
0715-0815	0	0	0	292	2	8	82	5	3	39	50	64	545
0730-0830	0	0	0	258	3	7	72	4	3	42	48	51	488
0745-0845	0	0	0	232	3	6	65	6	6	43	51	55	467
0800-0900	0	0	0	206	3	4	61	5	8	47	49	51	434

A.M. PEAK HOUR
0700-0800



DATA PROVIDED BY:

THE TRAFFIC SOLUTION
329 DIAMOND STREET
ARCADIA, CALIFORNIA 91005
PH: 626-446-7978
FAX: 626-446-2877
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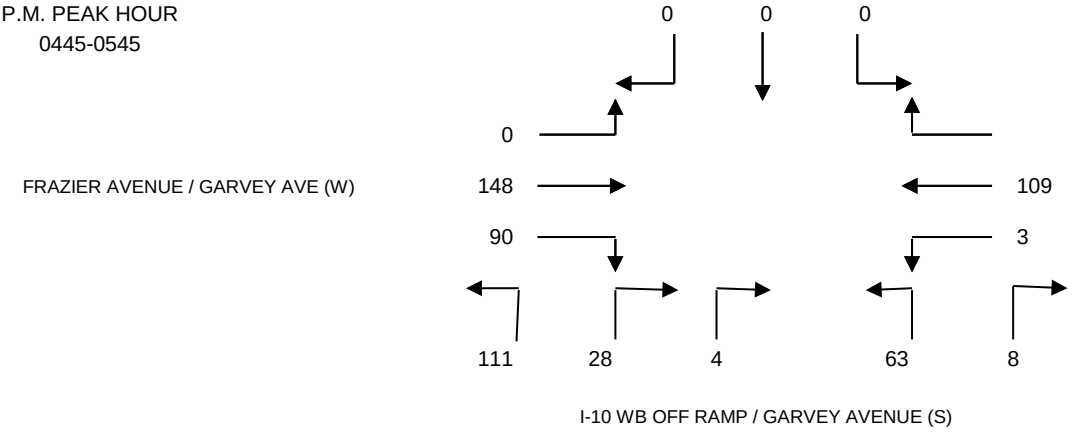
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT:		LLG - PASADENA
PROJECT:		KAISER PERMANENTE - IRWINDALE
DATE:		TUESDAY, JUNE 23, 2015
PERIOD:		04:00 PM TO 06:00 PM
INTERSECTION	N/S	I-10 WB OFF RAMP / GARVEY AVENUE (S)
	E/W	FRAZIER AVENUE / GARVEY AVENUE (W)
FILE NUMBER:		2-PM

				FRAZIER		GARVEY (S)		I-10 WB OFF RAMP			GARVEY (W)	
15 MINUTE	1	2	3	5	6	7A	9A	7B	7C	9B	10	11
TOTALS	SBRT	SBTH	SBLT	WBTH	WBLT	NBRT	NBLT	NBRT	NBRT	NBLT	EBRT	EBTH
0400-0415	0	0	0	39	2	0	17	3	4	43	25	29
0415-0430	0	0	0	26	3	2	22	0	6	23	20	20
0430-0445	0	0	0	18	0	0	16	2	9	23	22	25
0445-0500	0	0	0	27	0	1	14	1	6	28	23	21
0500-0515	0	0	0	22	1	2	16	0	5	18	26	44
0515-0530	0	0	0	32	1	2	18	1	9	29	16	45
0530-0545	0	0	0	28	1	3	15	2	8	36	25	38
0545-0600	0	0	0	24	1	5	10	0	5	27	14	32

				FRAZIER		GARVEY (S)		I-10 WB OFF RAMP			GARVEY (W)		
1 HOUR	1	2	3	5	6	7A	9A	7B	7C	9B	10	11	
TOTALS	SBRT	SBTH	SBLT	WBTH	WBLT	NBRT	NBLT	NBRT	NBRT	NBLT	EBRT	EBTH	TOTALS
0400-0500	0	0	0	110	5	3	69	6	25	117	90	95	520
0415-0515	0	0	0	93	4	5	68	3	26	92	91	110	492
0430-0530	0	0	0	99	2	5	64	4	29	98	87	135	523
0445-0545	0	0	0	109	3	8	63	4	28	111	90	148	564
0500-0600	0	0	0	106	4	12	59	3	27	110	81	159	561

P.M. PEAK HOUR
0445-0545



DATA PROVIDED BY:

THE TRAFFIC SOLUTION
329 DIAMOND STREET
ARCADIA, CALIFORNIA 91005
PH: 626-446-7978
FAX: 626-446-2877
.

PEDESTRIAN - BICYCLE COUNT SUMMARY

CLIENT: LLG ENGINEERS - PASADENA

PROJECT: KAISER PERMANENTE - IRWINDALE

DATE: TUESDAY, JUNE 23, 2015

PERIOD: 07:00 AM TO 09:00 AM
04:00 PM TO 06:00 PM

INTERSECTION: I-10 WB OFF RAMP / GARVEY AVENUE (S)
FRAZIER AVENUE / GARVEY AVENUE (W)

FILE: 02-AM_PM

	PEDESTRIAN MOVEMENTS			
15-MINUTE PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D
0700-0715	0	1	3	0
0715-0730	0	0	1	0
0730-0745	0	0	0	0
0745-0800	0	1	0	0
0800-0815	0	0	1	0
0815-0830	0	0	2	0
0830-0845	0	0	0	0
0845-0900	0	0	0	0

	BICYCLIST MOVEMENTS			
15-MINUTE PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D
0700-0715	0	0	0	0
0715-0730	0	0	0	0
0730-0745	0	0	0	0
0745-0800	0	0	0	0
0800-0815	0	0	0	0
0815-0830	0	0	0	0
0830-0845	0	0	0	0
0845-0900	0	1	0	0

	PEDESTRIAN MOVEMENTS				
1-HOUR PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D	TOTALS
0700-0800	0	2	4	0	6
0715-0815	0	1	2	0	3
0730-0830	0	1	3	0	4
0745-0845	0	1	3	0	4
0800-0900	0	0	3	0	3

	BICYCLIST MOVEMENTS				
1-HOUR PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D	TOTALS
0700-0800	0	0	0	0	0
0715-0815	0	0	0	0	0
0730-0830	0	0	0	0	0
0745-0845	0	0	0	0	0
0800-0900	0	1	0	0	1

THE TRAFFIC SOLUTION
329 DIAMOND STREET
ARCADIA, CALIFORNIA 91006

PEDESTRIAN - BICYCLE COUNT SUMMARY

CLIENT: LLG ENGINEERS - PASADENA

PROJECT: KAISER PERMANENTE - IRWINDALE

DATE: TUESDAY, JUNE 23, 2015

PERIOD: 07:00 AM TO 09:00 AM
04:00 PM TO 06:00 PM

INTERSECTION: I-10 WB OFF RAMP / GARVEY AVENUE (S)
FRAZIER AVENUE / GARVEY AVENUE (W)

FILE: 02-AM_PM

	PEDESTRIAN MOVEMENTS			
15-MINUTE PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D
0400-0415	0	2	2	0
0415-0430	0	0	3	0
0430-0445	0	3	0	0
0445-0500	0	0	1	0
0500-0515	0	0	1	0
0515-0530	0	0	1	0
0530-0545	0	0	10	0
0545-0600	0	0	0	0

	BICYCLIST MOVEMENTS			
15-MINUTE PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D
0400-0415	0	0	1	0
0415-0430	0	2	0	0
0430-0445	0	0	0	0
0445-0500	0	0	0	0
0500-0515	0	0	0	0
0515-0530	0	0	0	0
0530-0545	0	0	0	0
0545-0600	0	0	0	0

	PEDESTRIAN MOVEMENTS				
1-HOUR PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D	TOTALS
0400-0500	0	5	6	0	11
0415-0515	0	3	5	0	8
0430-0530	0	3	3	0	6
0445-0545	0	0	13	0	13
0500-0600	0	0	12	0	12

	BICYCLIST MOVEMENTS				
1-HOUR PERIOD	NORTH LEG A	EAST LEG B	SOUTH LEG C	WEST LEG D	TOTALS
0400-0500	0	2	1	0	3
0415-0515	0	2	0	0	2
0430-0530	0	0	0	0	0
0445-0545	0	0	0	0	0
0500-0600	0	0	0	0	0

THE TRAFFIC SOLUTION
329 DIAMOND STREET
ARCADIA, CALIFORNIA 91006

<< ACCUTEK >>
<< 21114 TRIGGER LANE >>
<< DIAMOND BAR, CA 91765 >>
<< (909) 595-6199 FAX: (909) 595-6022 >

File Name : 361606
Site Code : 00361606
Start Date : 03/06/2007
Page No : 1

Groups Printed- Turning Movement

	BALDWIN PARK BLVD. Southbound				DALEWOOD STREET Westbound				BALWIN PARK BLVD. Northbound				DALEWOOD STREET Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	33	119	42	194	29	8	33	70	17	246	12	275	8	15	14	37	576
07:15 AM	27	106	52	185	45	8	46	99	22	257	15	294	11	20	15	46	624
07:30 AM	34	150	80	264	51	9	52	112	19	223	6	248	14	31	31	76	700
07:45 AM	49	161	43	253	61	15	81	157	25	186	18	229	11	37	22	70	709
Total	143	536	217	896	186	40	212	438	83	912	51	1046	44	103	82	229	2609
08:00 AM	66	158	37	261	34	20	76	130	34	188	11	233	16	28	22	66	690
08:15 AM	87	160	42	289	39	22	86	147	33	179	19	231	13	21	19	53	720
08:30 AM	48	193	52	293	36	12	75	123	26	196	12	234	28	16	17	61	711
08:45 AM	56	161	33	250	33	11	66	110	44	240	8	292	17	22	13	52	704
Total	257	672	164	1093	142	65	303	510	137	803	50	990	74	87	71	232	2825
*** BREAK ***																	
04:00 PM	19	153	41	213	61	11	52	124	27	220	22	269	23	40	51	114	720
04:15 PM	22	116	22	160	50	8	36	94	36	228	7	271	21	47	49	117	642
04:30 PM	16	121	26	163	54	4	50	108	46	196	8	250	24	44	56	124	645
04:45 PM	24	139	38	201	41	6	33	80	45	263	8	316	24	31	45	100	697
Total	81	529	127	737	206	29	171	406	154	907	45	1106	92	162	201	455	2704
05:00 PM	19	143	30	192	91	5	60	156	43	180	3	226	21	58	64	143	717
05:15 PM	32	131	27	190	80	4	65	149	45	182	5	232	31	58	81	170	741
05:30 PM	23	119	18	160	69	10	57	136	59	235	12	306	25	47	52	124	726
05:45 PM	31	134	41	206	82	7	66	155	34	197	9	240	21	30	42	93	694
Total	105	527	116	748	322	26	248	596	181	794	29	1004	98	193	239	530	2878
Grand Total	586	2264	624	3474	856	160	934	1950	555	3416	175	4146	308	545	593	1446	11016
Apprch %	16.9	65.2	18.0		43.9	8.2	47.9		13.4	82.4	4.2		21.3	37.7	41.0		
Total %	5.3	20.6	5.7	31.5	7.8	1.5	8.5	17.7	5.0	31.0	1.6	37.6	2.8	4.9	5.4	13.1	

	BALDWIN PARK BLVD. Southbound				DALEWOOD STREET Westbound				BALWIN PARK BLVD. Northbound				DALEWOOD STREET Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:45 AM																
Volume	250	672	174	1096	170	69	318	557	118	749	60	927	68	102	80	250	2830
Percent	22.8	61.3	15.9		30.5	12.4	57.1		12.7	80.8	6.5		27.2	40.8	32.0		
08:15 Volume	87	160	42	289	39	22	86	147	33	179	19	231	13	21	19	53	720
Peak Factor																	0.983
High Int.	08:30 AM				07:45 AM				08:30 AM				07:45 AM				
Volume	48	193	52	293	61	15	81	157	26	196	12	234	11	37	22	70	
Peak Factor				0.935				0.887				0.990				0.893	
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:45 PM																
Volume	98	532	113	743	281	25	215	521	192	860	28	1080	101	194	242	537	2881
Percent	13.2	71.6	15.2		53.9	4.8	41.3		17.8	79.6	2.6		18.8	36.1	45.1		
05:15 Volume	32	131	27	190	80	4	65	149	45	182	5	232	31	58	81	170	741
Peak Factor																	0.972
High Int.	04:45 PM				05:00 PM				04:45 PM				05:15 PM				
Volume	24	139	38	201	91	5	60	156	45	263	8	316	31	58	81	170	
Peak Factor				0.924				0.835				0.854				0.790	

<< ACCUTEK >>
<< 21114 TRIGGER LANE >>
<< DIAMOND BAR, CA 91765 >>
<< (909) 595-6199 FAX: (909) 595-6022 >

64

File Name : 361603
Site Code : 00361603
Start Date : 02/15/2007
Page No : 1

Groups Printed- 1 - Turning Movement

	Baldwin Park Bl./I-10 On Ramp Southbound				I-10 Off Ramp Westbound				Baldwin Park Bl./I-10 On Ramp Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	183	128	0	311	14	0	26	40	138	98	0	236	0	0	0	0	587
07:15 AM	186	178	0	364	10	0	27	37	136	102	0	238	0	0	0	0	639
07:30 AM	150	196	0	346	8	0	20	28	134	150	0	284	0	0	0	0	658
07:45 AM	141	218	0	359	12	0	67	79	132	134	0	266	0	0	0	0	704
Total	660	720	0	1380	44	0	140	184	540	484	0	1024	0	0	0	0	2588
08:00 AM	114	216	0	330	7	0	59	66	91	145	0	236	0	0	0	0	632
08:15 AM	100	212	0	312	9	0	85	94	97	128	0	225	0	0	0	0	631
08:30 AM	80	154	0	234	10	0	59	69	84	118	0	202	0	0	0	0	505
08:45 AM	87	143	0	230	16	0	72	88	85	135	0	220	0	0	0	0	538
Total	381	725	0	1106	42	0	275	317	357	526	0	883	0	0	0	0	2306
*** BREAK ***																	
04:00 PM	51	155	0	206	32	0	36	68	115	230	0	345	0	0	0	0	619
04:15 PM	64	150	0	214	17	0	43	60	93	202	0	295	0	0	0	0	569
04:30 PM	57	134	0	191	20	0	29	49	123	196	0	319	0	0	0	0	559
04:45 PM	47	106	0	153	38	0	31	69	98	234	0	332	0	0	0	0	554
Total	219	545	0	764	107	0	139	246	429	862	0	1291	0	0	0	0	2301
05:00 PM	53	102	0	155	29	0	27	56	105	226	0	331	0	0	0	0	542
05:15 PM	56	119	0	175	23	0	29	52	85	263	0	348	0	0	0	0	575
05:30 PM	66	138	0	204	30	0	38	68	89	260	0	349	0	0	0	0	621
05:45 PM	55	154	0	209	33	0	45	78	95	219	0	314	0	0	0	0	601
Total	230	513	0	743	115	0	139	254	374	968	0	1342	0	0	0	0	2339
Grand Total	1490	2503	0	3993	308	0	693	1001	1700	2840	0	4540	0	0	0	0	9534
Apprch %	37.3	62.7	0.0		30.8	0.0	69.2		37.4	62.6	0.0		0.0	0.0	0.0		
Total %	15.6	26.3	0.0	41.9	3.2	0.0	7.3	10.5	17.8	29.8	0.0	47.6	0.0	0.0	0.0	0.0	

	Baldwin Park Bl./I-10 On Ramp Southbound				I-10 Off Ramp Westbound				Baldwin Park Bl./I-10 On Ramp Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:15 AM	858		1449			223 +50 only	260									
Volume	591	808 +50 only	0	1399	37	0	173	210	493	531	0	1024	0	0	0	0	2633
Percent	42.2	57.8	0.0		17.6	0.0	82.4		48.1	51.9	0.0		0.0	0.0	0.0		
07:45 Volume	141	218	0	359	12	0	67	79	132	134	0	266	0	0	0	0	704
Peak Factor																	0.935
High Int.	07:15 AM				07:45 AM				07:30 AM				6:45:00 AM				
Volume	186	178	0	364	12	0	67	79	134	150	0	284					
Peak Factor				0.961				0.665				0.901					
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	05:00 PM	563		793													
Volume	230	513 +50	0	743	115	0	139	254	374	968	0	1342	0	0	0	0	2339
Percent	31.0	69.0	0.0		45.3	0.0	54.7		27.9	72.1	0.0		0.0	0.0	0.0		
05:30 Volume	66	138	0	204	30	0	38	68	89	260	0	349	0	0	0	0	621
Peak Factor																	0.942
High Int.	05:45 PM				05:45 PM				05:30 PM								
Volume	55	154	0	209	33	0	45	78	89	260	0	349					
Peak Factor				0.889				0.814				0.961					

CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Unshifted

	Francisquito Ave Southbound			Ramona Blvd Westbound			Francisquito Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	2	1	0	10	266	1	91	3	9	3	76	32	494
07:15 AM	1	1	0	15	292	0	96	0	16	4	82	60	567
07:30 AM	1	1	4	37	247	3	79	3	27	11	127	112	652
07:45 AM	1	0	2	37	260	0	124	4	31	6	122	77	664
Total	5	3	6	99	1065	4	390	10	83	24	407	281	2377
08:00 AM	2	1	1	34	227	2	98	11	24	9	91	42	542
08:15 AM	2	3	3	19	222	1	85	1	15	8	66	44	469
08:30 AM	1	2	2	11	213	1	92	10	12	4	85	46	479
08:45 AM	3	1	4	12	188	2	84	3	25	5	70	48	445
Total	8	7	10	76	850	6	359	25	76	26	312	180	1935
04:00 PM	5	2	3	20	93	0	56	3	23	2	285	112	604
04:15 PM	3	4	1	31	104	0	47	1	24	6	290	124	635
04:30 PM	4	6	2	18	125	0	53	3	24	10	276	118	639
04:45 PM	2	6	2	23	102	0	35	5	22	7	329	121	654
Total	14	18	8	92	424	0	191	12	93	25	1180	475	2532
05:00 PM	18	13	3	31	119	2	33	2	23	2	308	108	662
05:15 PM	7	7	2	25	119	1	45	2	18	7	305	128	666
05:30 PM	7	5	4	34	111	0	42	3	25	9	296	123	659
05:45 PM	3	9	1	18	120	1	50	2	24	9	280	124	641
Total	35	34	10	108	469	4	170	9	90	27	1189	483	2628
Grand Total	62	62	34	375	2808	14	1110	56	342	102	3088	1419	9472
Apprch %	39.2	39.2	21.5	11.7	87.8	0.4	73.6	3.7	22.7	2.2	67	30.8	
Total %	0.7	0.7	0.4	4	29.6	0.1	11.7	0.6	3.6	1.1	32.6	15	

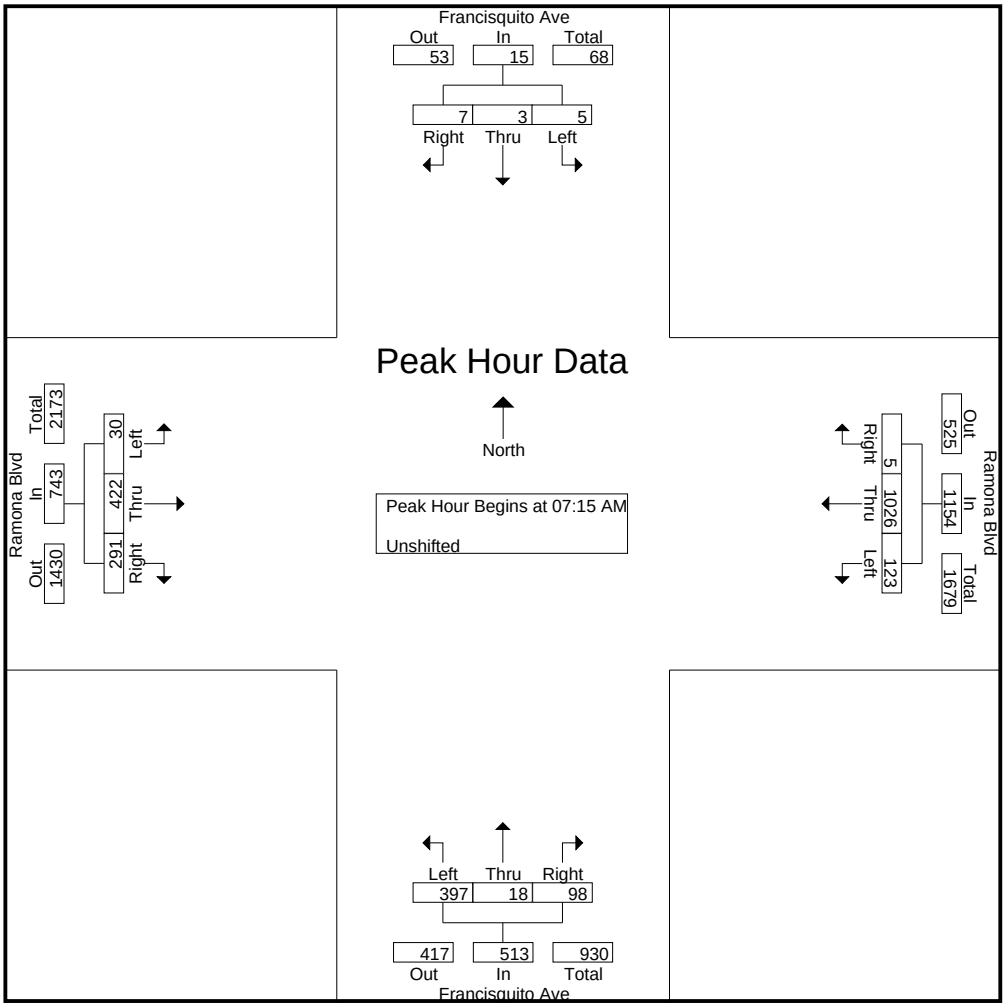
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Francisquito Ave Southbound				Ramona Blvd Westbound				Francisquito Ave Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	**1**	0	2	15	**292**	0	**307**	96	0	16	112	4	82	60	146	567
07:30 AM	1	1	**4**	**6**	**37**	247	**3**	287	79	3	27	109	**11**	**127**	**112**	**250**	652
07:45 AM	1	0	2	3	37	260	0	297	**124**	4	**31**	**159**	6	122	77	205	**664**
08:00 AM	**2**	1	1	4	34	227	2	263	98	**11**	24	133	9	91	42	142	542
Total Volume	5	3	7	15	123	1026	5	1154	397	18	98	513	30	422	291	743	2425
% App. Total	33.3	20	46.7		10.7	88.9	0.4		77.4	3.5	19.1		4	56.8	39.2		
PHF	.625	.750	.438	.625	.831	.878	.417	.940	.800	.409	.790	.807	.682	.831	.650	.743	.913



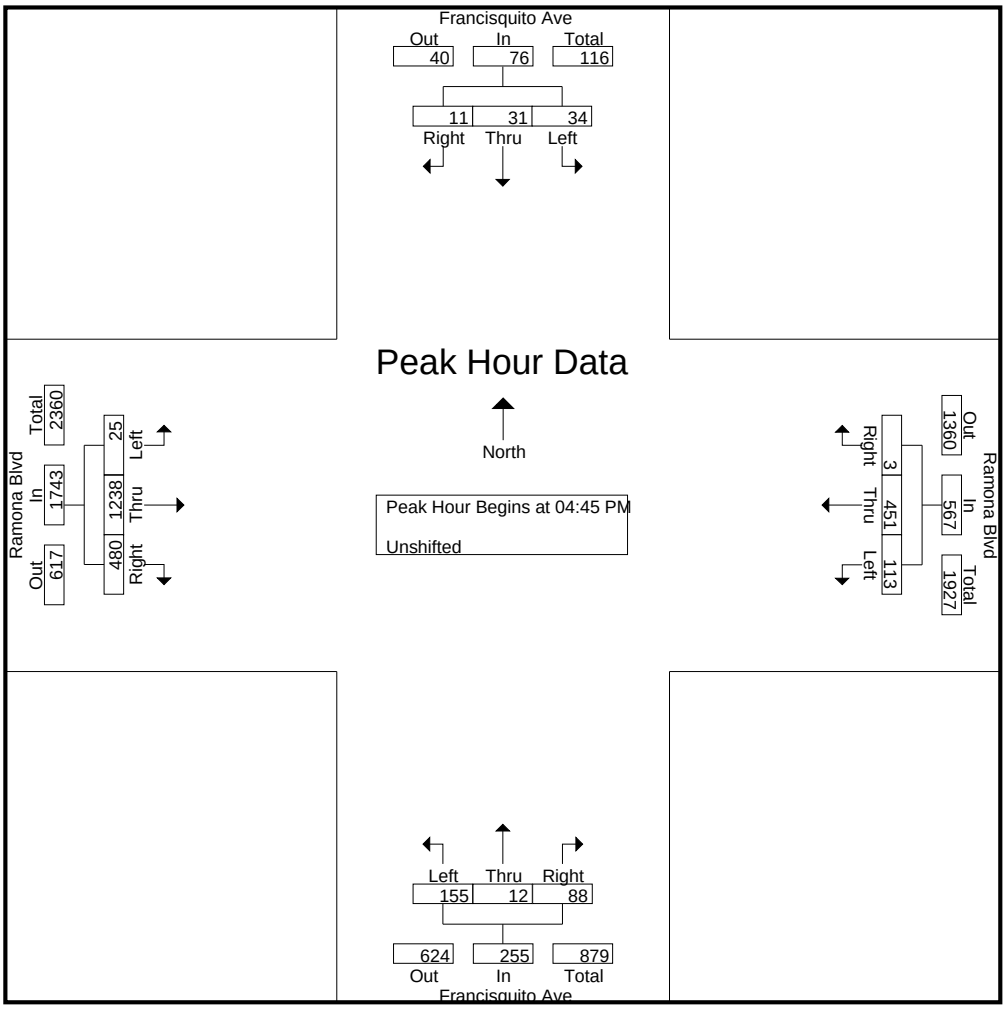
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Francisquito Ave Southbound				Ramona Blvd Westbound				Francisquito Ave Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	2	6	2	10	23	102	0	125	35	**5**	22	62	7	**329**	121	**457**	654
05:00 PM	**18**	**13**	3	**34**	31	**119**	**2**	**152**	33	2	23	58	2	308	108	418	662
05:15 PM	7	7	2	16	25	119	1	145	**45**	2	18	65	7	305	**128**	440	**666**
05:30 PM	7	5	**4**	16	**34**	111	0	145	42	3	**25**	**70**	**9**	296	123	428	659
Total Volume	34	31	11	76	113	451	3	567	155	12	88	255	25	1238	480	1743	2641
% App. Total	44.7	40.8	14.5		19.9	79.5	0.5		60.8	4.7	34.5		1.4	71	27.5		
PHF	.472	.596	.688	.559	.831	.947	.375	.933	.861	.600	.880	.911	.694	.941	.938	.954	.991



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona_Buses
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	Francisquito Ave Southbound			Ramona Blvd Westbound			Francisquito Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	2	0	1	0	0	0	2	1	6
07:15 AM	0	0	0	0	2	0	0	0	2	0	1	1	6
07:30 AM	0	0	0	0	2	0	1	0	0	0	1	0	4
07:45 AM	0	0	0	0	1	0	0	0	1	0	2	1	5
Total	0	0	0	0	7	0	2	0	3	0	6	3	21
08:00 AM	0	0	0	0	2	0	1	0	0	0	3	0	6
08:15 AM	0	0	0	0	1	0	1	0	0	0	1	1	4
08:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
08:45 AM	0	0	0	0	1	0	1	0	0	0	0	0	2
Total	0	0	0	0	5	0	3	0	0	0	5	1	14
04:00 PM	0	0	0	0	1	0	1	0	0	0	1	2	5
04:15 PM	0	0	0	0	2	0	0	0	0	0	0	1	3
04:30 PM	0	0	0	0	1	0	0	0	0	0	2	2	5
04:45 PM	0	0	0	0	1	0	1	0	0	0	2	0	4
Total	0	0	0	0	5	0	2	0	0	0	5	5	17
05:00 PM	0	0	0	0	0	0	1	0	0	0	1	1	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
05:30 PM	0	0	0	0	1	0	0	0	0	0	1	1	3
05:45 PM	0	0	0	0	0	0	1	0	0	0	1	0	2
Total	0	0	0	0	1	0	2	0	0	0	4	2	9
Grand Total	0	0	0	0	18	0	9	0	3	0	20	11	61
Apprch %	0	0	0	0	100	0	75	0	25	0	64.5	35.5	
Total %	0	0	0	0	29.5	0	14.8	0	4.9	0	32.8	18	

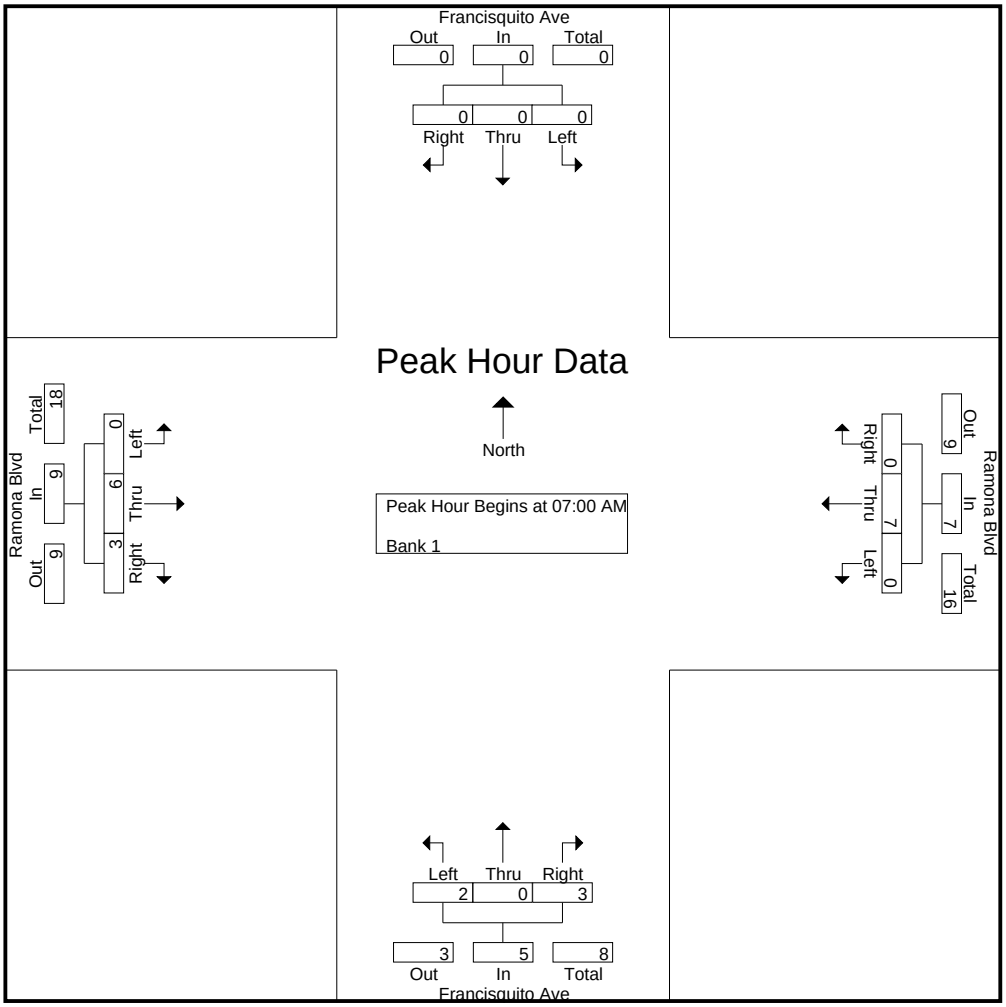
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona_Buses
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Francisquito Ave Southbound				Ramona Blvd Westbound				Francisquito Ave Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**2**	0	**2**	**1**	0	0	1	0	**2**	**1**	**3**	**6**
07:15 AM	0	0	0	0	0	2	0	2	0	0	**2**	**2**	0	1	1	2	6
07:30 AM	0	0	0	0	0	2	0	2	1	0	0	1	0	1	0	1	4
07:45 AM	0	0	0	0	0	1	0	1	0	0	1	1	0	2	1	3	5
Total Volume	0	0	0	0	0	7	0	7	2	0	3	5	0	6	3	9	21
% App. Total	0	0	0		0	100	0		40	0	60		0	66.7	33.3		
PHF	.000	.000	.000	.000	.000	.875	.000	.875	.500	.000	.375	.625	.000	.750	.750	.750	.875



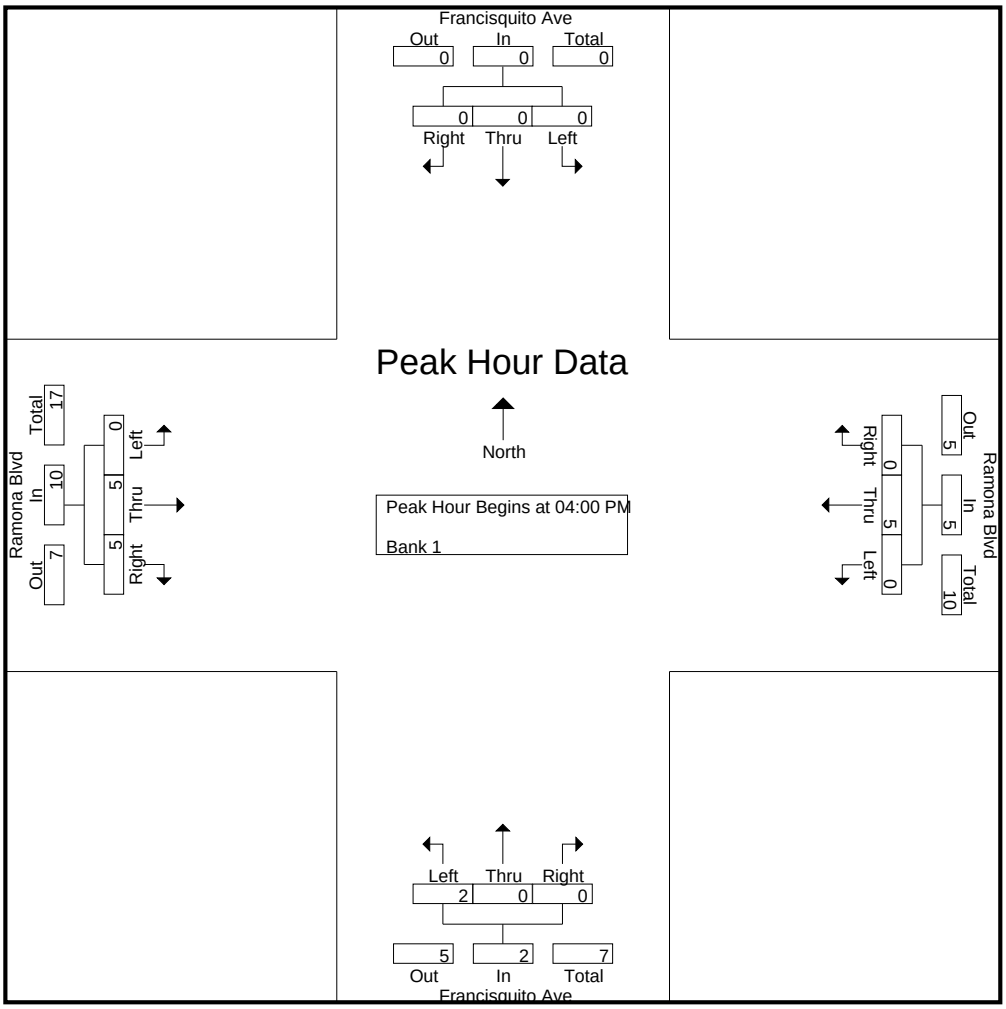
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona_Buses
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Francisquito Ave Southbound				Ramona Blvd Westbound				Francisquito Ave Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	1	0	1	**1**	0	0	**1**	0	1	**2**	3	**5**
04:15 PM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	1	1	3
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	**2**	2	**4**	5
04:45 PM	0	0	0	0	0	1	0	1	1	0	0	1	0	2	0	2	4
Total Volume	0	0	0	0	0	5	0	5	2	0	0	2	0	5	5	10	17
% App. Total	0	0	0		0	100	0		100	0	0		0	50	50		
PHF	.000	.000	.000	.000	.000	.625	.000	.625	.500	.000	.000	.500	.000	.625	.625	.625	.850



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona_2-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 2

	Francisquito Ave Southbound			Ramona Blvd Westbound			Francisquito Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	2	3	0	2	0	1	0	3	2	13
07:15 AM	0	0	0	1	4	0	4	0	1	1	7	1	19
07:30 AM	0	1	0	1	3	0	6	0	0	0	5	2	18
07:45 AM	0	0	0	3	5	0	3	0	0	0	3	0	14
Total	0	1	0	7	15	0	15	0	2	1	18	5	64
08:00 AM	0	1	0	0	4	0	1	1	0	0	2	0	9
08:15 AM	0	0	0	1	5	1	4	0	2	0	4	2	19
08:30 AM	1	0	0	1	8	1	1	0	1	0	5	0	18
08:45 AM	1	0	0	1	7	1	1	0	2	0	1	2	16
Total	2	1	0	3	24	3	7	1	5	0	12	4	62
04:00 PM	0	0	0	0	0	0	2	0	0	0	2	0	4
04:15 PM	0	1	0	0	5	0	0	1	0	0	5	1	13
04:30 PM	0	2	0	1	2	0	1	0	0	0	8	1	15
04:45 PM	0	1	0	0	3	1	0	1	0	0	4	4	14
Total	0	4	0	1	10	1	3	2	0	0	19	6	46
05:00 PM	0	1	1	0	3	0	2	0	0	0	1	3	11
05:15 PM	0	1	0	0	0	0	1	0	0	0	3	2	7
05:30 PM	0	1	0	0	2	0	1	0	1	0	5	2	12
05:45 PM	0	0	0	0	1	0	0	0	0	0	5	4	10
Total	0	3	1	0	6	0	4	0	1	0	14	11	40
Grand Total	2	9	1	11	55	4	29	3	8	1	63	26	212
Apprch %	16.7	75	8.3	15.7	78.6	5.7	72.5	7.5	20	1.1	70	28.9	
Total %	0.9	4.2	0.5	5.2	25.9	1.9	13.7	1.4	3.8	0.5	29.7	12.3	

CITY TRAFFIC COUNTERS

626.991.7522

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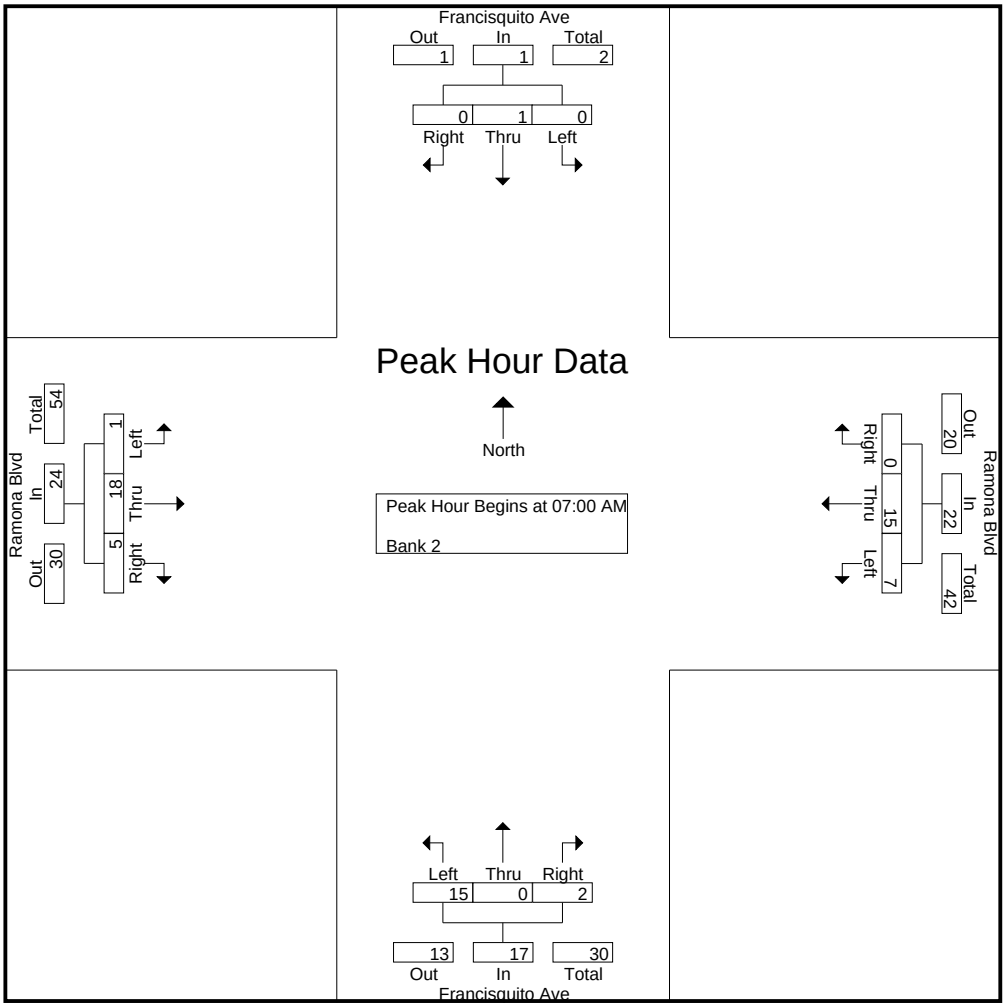
File Name : Francisquito_Ramona_2-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Francisquito Ave Southbound				Ramona Blvd Westbound				Francisquito Ave Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	2	3	0	5	2	0	**1**	3	0	3	**2**	5	13
07:15 AM	0	0	0	0	1	4	0	5	4	0	1	5	**1**	**7**	1	**9**	**19**
07:30 AM	0	**1**	0	**1**	1	3	0	4	**6**	0	0	**6**	0	5	2	7	18
07:45 AM	0	0	0	0	**3**	**5**	0	**8**	3	0	0	3	0	3	0	3	14
Total Volume	0	1	0	1	7	15	0	22	15	0	2	17	1	18	5	24	64
% App. Total	0	100	0		31.8	68.2	0		88.2	0	11.8		4.2	75	20.8		
PHF	.000	.250	.000	.250	.583	.750	.000	.688	.625	.000	.500	.708	.250	.643	.625	.667	.842



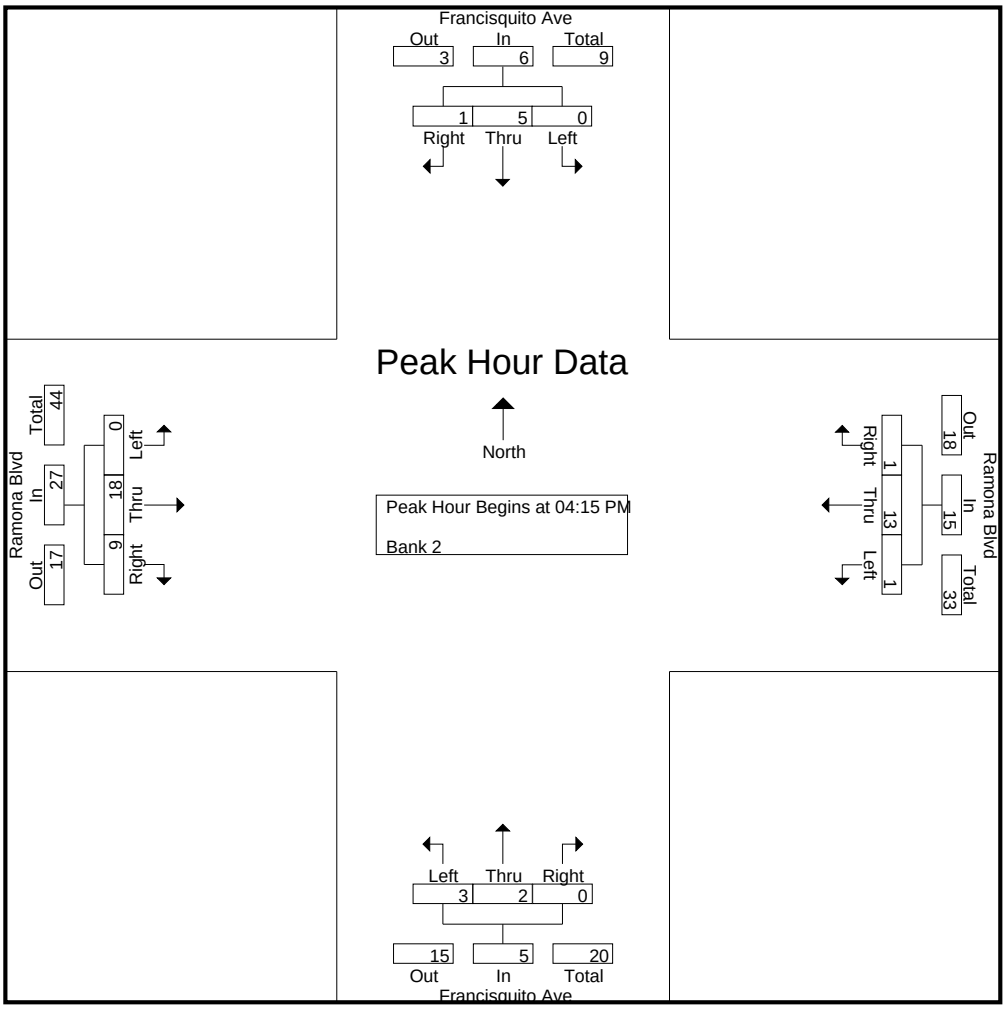
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona_2-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Francisquito Ave Southbound				Ramona Blvd Westbound				Francisquito Ave Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	1	0	1	0	**5**	0	**5**	0	**1**	0	1	0	5	1	6	13
04:30 PM	0	**2**	0	**2**	**1**	2	0	3	1	0	0	1	0	**8**	1	**9**	**15**
04:45 PM	0	1	0	1	0	3	**1**	4	0	1	0	1	0	4	**4**	8	14
05:00 PM	0	1	**1**	2	0	3	0	3	**2**	0	0	**2**	0	1	3	4	11
Total Volume	0	5	1	6	1	13	1	15	3	2	0	5	0	18	9	27	53
% App. Total	0	83.3	16.7		6.7	86.7	6.7		60	40	0		0	66.7	33.3		
PHF	.000	.625	.250	.750	.250	.650	.250	.750	.375	.500	.000	.625	.000	.563	.563	.750	.883



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona_3-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Unshifted

	Francisquito Ave Southbound			Ramona Blvd Westbound			Francisquito Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
07:15 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	0	0	2	0	0	0	0	0	4	0	6
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
08:30 AM	0	0	0	0	1	0	0	0	0	0	1	1	3
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	1	0	0	0	0	0	3	1	5
04:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	1	0	0	0	0	0	3	0	4
05:00 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	1	0	0	0	0	0	3	0	4
Grand Total	0	0	0	0	5	0	0	0	0	0	13	1	19
Apprch %	0	0	0	0	100	0	0	0	0	0	92.9	7.1	
Total %	0	0	0	0	26.3	0	0	0	0	0	68.4	5.3	

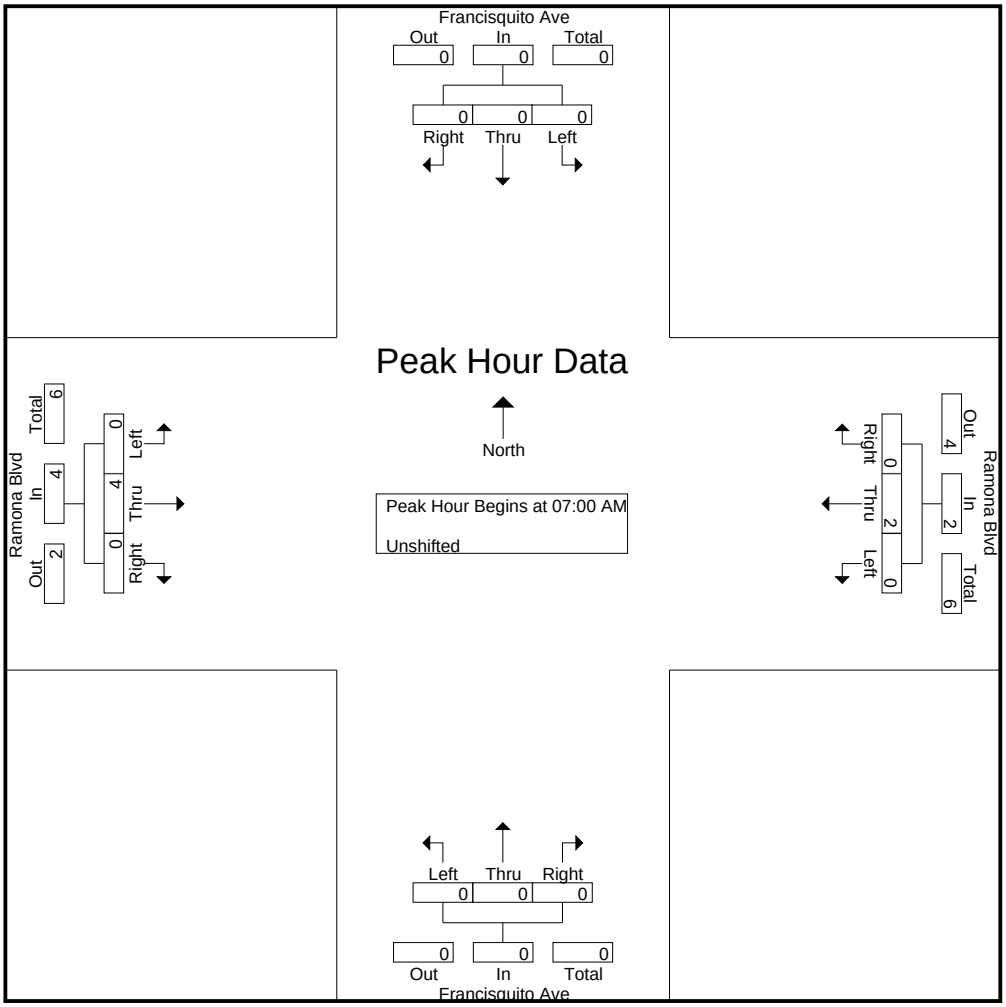
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona_3-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Francisquito Ave Southbound				Ramona Blvd Westbound				Francisquito Ave Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	1	0	1	**2**
07:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	0	**2**	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	4	0	4	6
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.750



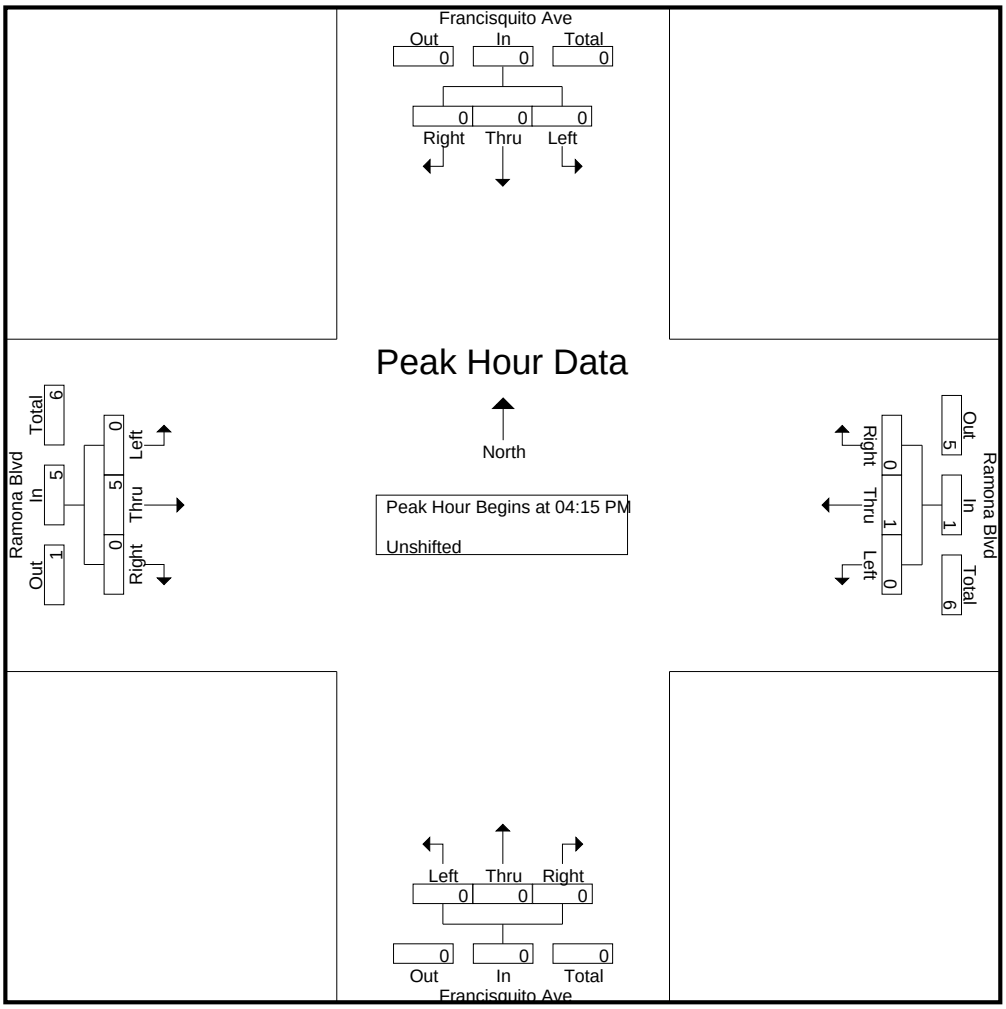
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona_3-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Francisquito Ave Southbound				Ramona Blvd Westbound				Francisquito Ave Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:00 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	**2**	0	**2**	**3**
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	5	0	5	6
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.625	.000	.625	.500



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona 4+-Axles
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	Francisquito Ave Southbound			Ramona Blvd Westbound			Francisquito Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	2	2
Total	0	0	0	0	0	0	0	0	0	0	2	2	4
08:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
08:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	1	0	1	0	0	0	1	0	3
08:45 AM	0	0	0	0	2	0	1	0	0	0	0	1	4
Total	0	0	0	0	7	0	2	0	0	0	1	1	11
04:00 PM	0	0	0	0	3	0	0	0	0	0	0	0	3
04:15 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
Total	0	0	0	0	5	0	0	0	0	0	1	0	6
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	1	1	2
Grand Total	0	0	0	0	12	0	2	0	0	0	5	4	23
Apprch %	0	0	0	0	100	0	100	0	0	0	55.6	44.4	
Total %	0	0	0	0	52.2	0	8.7	0	0	0	21.7	17.4	

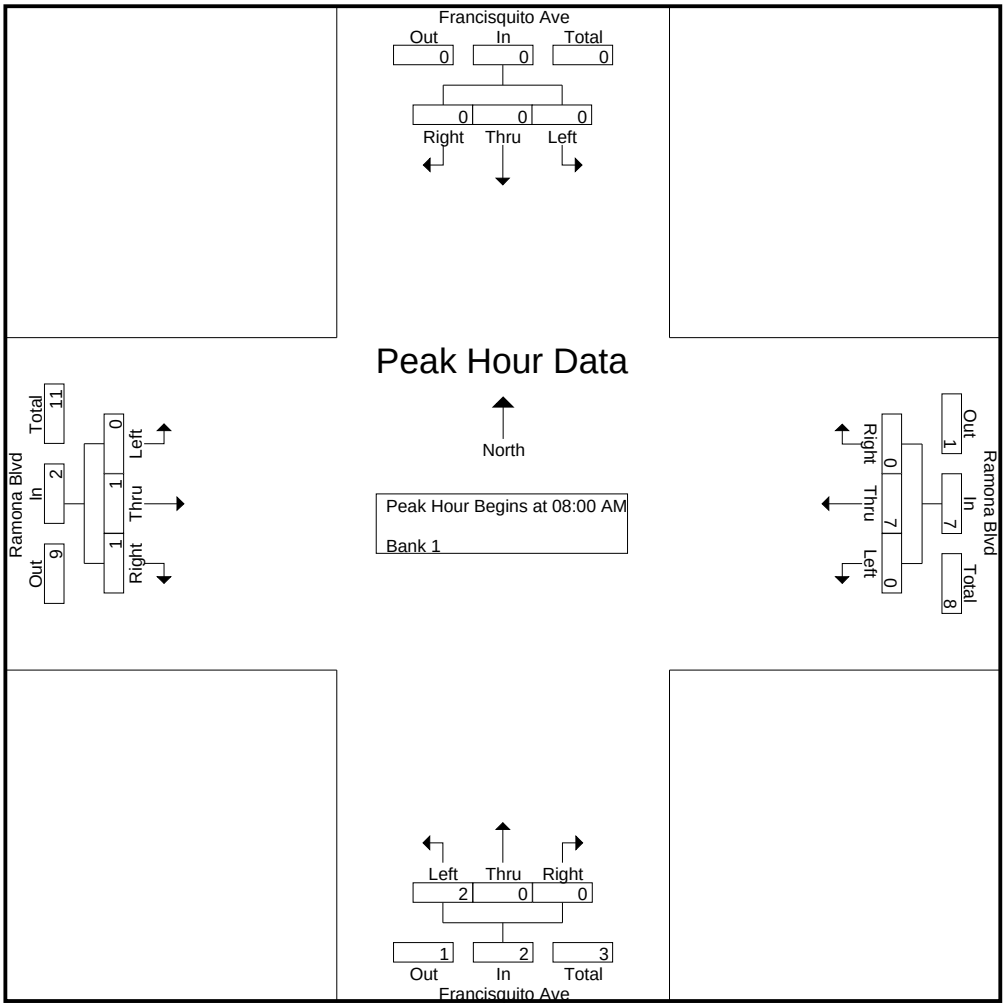
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona 4+-Axles
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Francisquito Ave Southbound				Ramona Blvd Westbound				Francisquito Ave Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	0	0	2
08:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	1	0	1	**1**	0	0	**1**	0	**1**	0	**1**	3
08:45 AM	0	0	0	0	0	2	0	2	1	0	0	1	0	0	**1**	1	**4**
Total Volume	0	0	0	0	0	7	0	7	2	0	0	2	0	1	1	2	11
% App. Total	0	0	0		0	100	0		100	0	0		0	50	50		
PHF	.000	.000	.000	.000	.000	.875	.000	.875	.500	.000	.000	.500	.000	.250	.250	.500	.688



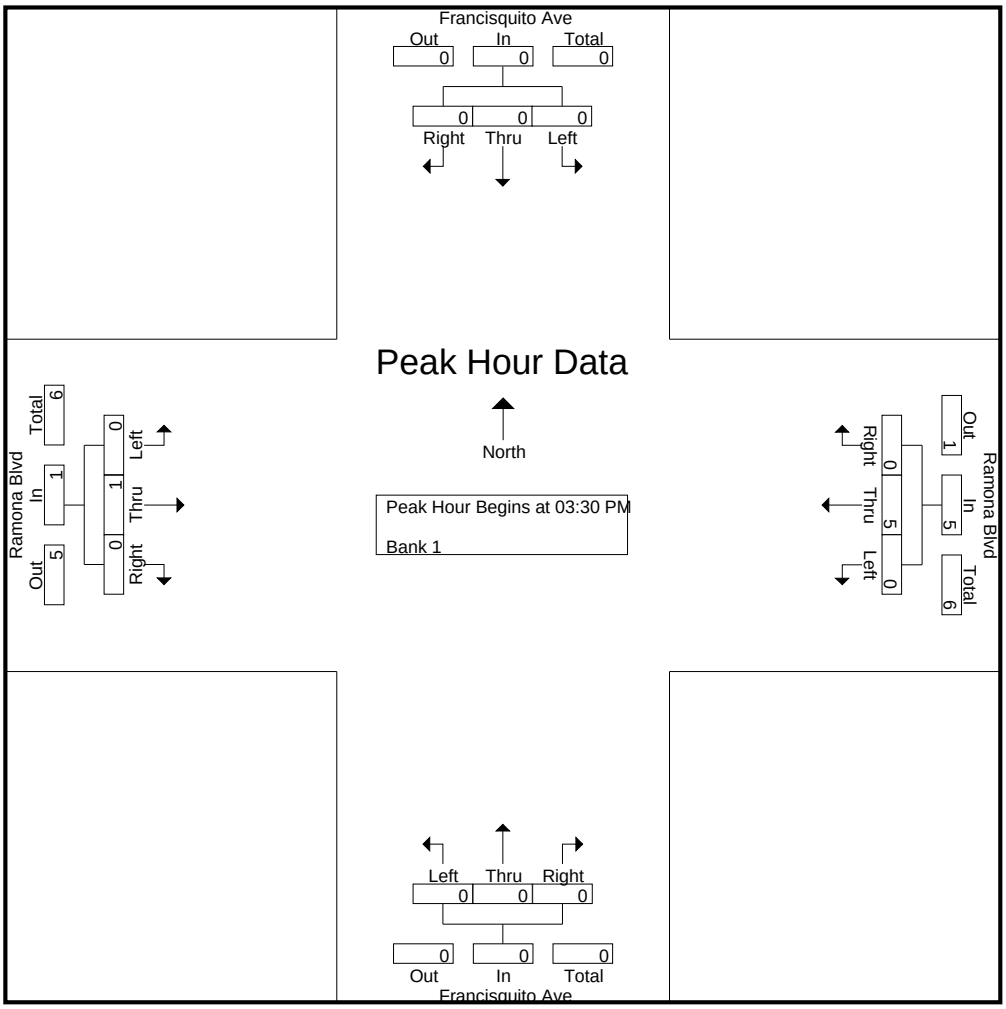
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona 4+-Axles
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Francisquito Ave Southbound				Ramona Blvd Westbound				Francisquito Ave Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	0	0	0	**3**
04:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	**1**	0	**1**	3
Total Volume	0	0	0	0	0	5	0	5	0	0	0	0	0	1	0	1	6
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.417	.000	.417	.000	.000	.000	.000	.000	.250	.000	.250	.500



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	Francisquito Ave Southbound		Ramona Blvd Westbound		Francisquito Ave Northbound		Ramona Blvd Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:00 AM	1	2	0	0	1	1	0	1	6
07:15 AM	3	2	0	0	0	3	0	3	11
07:30 AM	1	5	0	0	0	1	0	7	14
07:45 AM	3	5	0	0	2	3	0	9	22
Total	8	14	0	0	3	8	0	20	53
08:00 AM	4	5	0	0	3	6	0	4	22
08:15 AM	0	1	0	2	0	1	0	3	7
08:30 AM	0	1	0	0	2	1	0	1	5
08:45 AM	0	1	0	0	0	1	0	2	4
Total	4	8	0	2	5	9	0	10	38
04:00 PM	3	7	0	3	1	2	1	6	23
04:15 PM	1	2	0	9	1	2	0	1	16
04:30 PM	3	1	0	0	0	1	0	4	9
04:45 PM	1	3	0	0	0	3	1	1	9
Total	8	13	0	12	2	8	2	12	57
05:00 PM	3	6	0	0	1	0	0	4	14
05:15 PM	5	9	0	0	4	0	0	2	20
05:30 PM	3	3	0	0	1	6	1	6	20
05:45 PM	0	6	0	1	2	3	2	4	18
Total	11	24	0	1	8	9	3	16	72
Grand Total	31	59	0	15	18	34	5	58	220
Apprch %	34.4	65.6	0	100	34.6	65.4	7.9	92.1	
Total %	14.1	26.8	0	6.8	8.2	15.5	2.3	26.4	

CITY TRAFFIC COUNTERS

626.991.7522

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File Name : Francisquito_Ramona_BP
Site Code : 00000000
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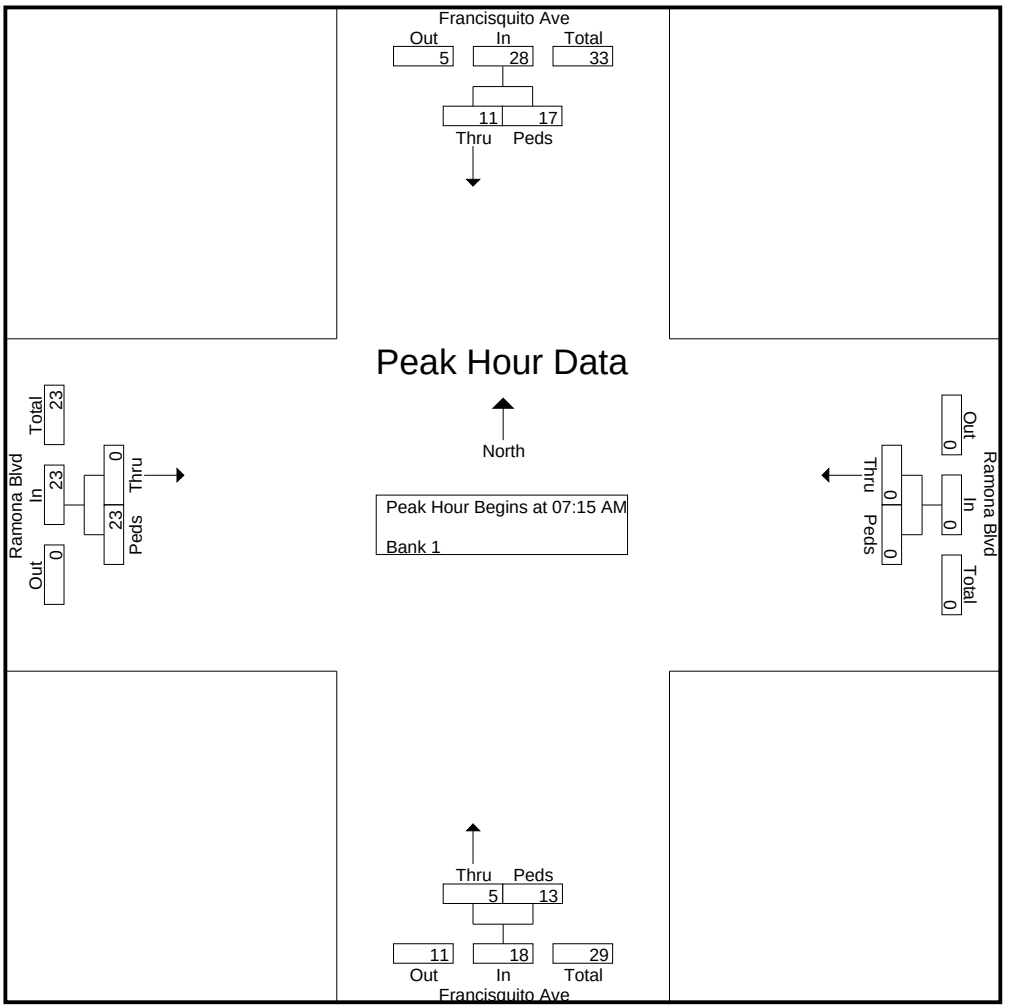
	Francisquito Ave Southbound			Ramona Blvd Westbound			Francisquito Ave Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	3	2	5	0	0	0	0	3	3	0	3	3	11
07:30 AM	1	**5**	6	0	0	0	0	1	1	0	7	7	14
07:45 AM	3	5	8	0	0	0	2	3	5	0	**9**	**9**	**22**
08:00 AM	**4**	5	**9**	0	0	0	**3**	**6**	**9**	0	4	4	22
Total Volume	11	17	28	0	0	0	5	13	18	0	23	23	69
% App. Total	39.3	60.7		0	0		27.8	72.2		0	100		
PHF	.688	.850	.778	.000	.000	.000	.417	.542	.500	.000	.639	.639	.784



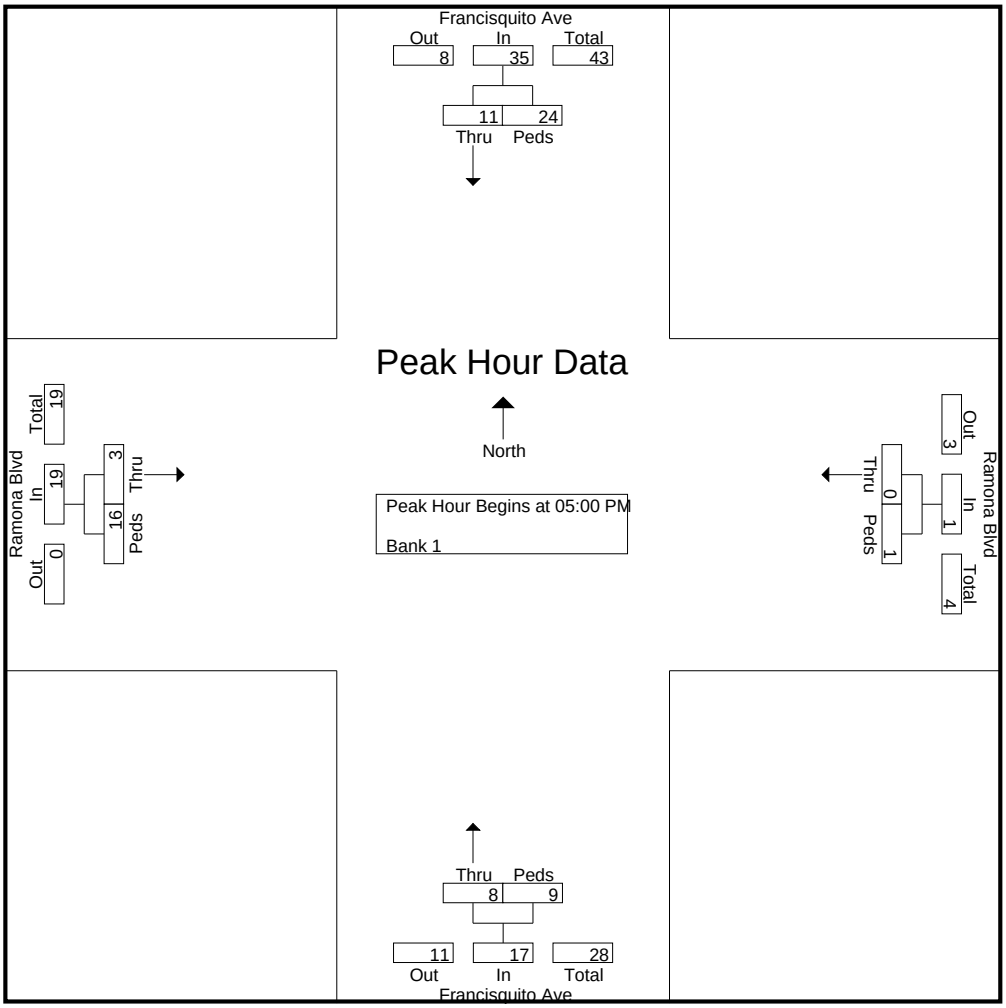
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Francisquito_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Francisquito Ave Southbound			Ramona Blvd Westbound			Francisquito Ave Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	3	6	9	0	0	0	1	0	1	0	4	4	14
05:15 PM	**5**	**9**	**14**	0	0	0	**4**	0	4	0	2	2	**20**
05:30 PM	3	3	6	0	0	0	1	**6**	**7**	1	**6**	**7**	20
05:45 PM	0	6	6	0	**1**	**1**	2	3	5	**2**	4	6	18
Total Volume	11	24	35	0	1	1	8	9	17	3	16	19	72
% App. Total	31.4	68.6		0	100		47.1	52.9		15.8	84.2		
PHF	.550	.667	.625	.000	.250	.250	.500	.375	.607	.375	.667	.679	.900



City Traffic Counters
(626) 256-4171

File Name : franfraz
Site Code : 00000000
Start Date : 1/24/2007
Page No : 1

Groups Printed- 1 - Unshifted

	Francisquito Ave Southbound			Frazier St Westbound			Francisquito Ave Northbound			Frazier St Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	4	55	11	16	41	4	43	108	15	3	21	13	334
07:15 AM	14	74	14	18	58	8	39	93	44	8	36	12	418
07:30 AM	41	83	23	25	116	32	36	125	72	15	129	31	728
07:45 AM	11	105	32	39	148	27	34	141	47	19	96	34	733
Total	70	317	80	98	363	71	152	467	178	45	282	90	2213
08:00 AM	16	75	21	24	38	16	31	130	32	10	48	37	478
08:15 AM	12	72	9	20	47	2	24	141	20	9	55	20	431
08:30 AM	8	73	9	21	52	22	20	98	16	6	63	14	402
08:45 AM	5	66	4	15	30	7	16	101	24	5	37	19	329
Total	41	286	43	80	167	47	91	470	92	30	203	90	1640
04:00 PM	14	115	18	29	29	11	22	70	30	12	44	21	415
04:15 PM	11	108	12	18	31	7	16	68	38	4	30	23	366
04:30 PM	13	112	14	24	37	10	14	86	25	5	54	20	414
04:45 PM	12	143	9	21	38	8	21	81	31	5	42	16	427
Total	50	478	53	92	135	36	73	305	124	26	170	80	1622
05:00 PM	4	151	18	14	37	7	28	86	32	7	32	33	449
05:15 PM	12	139	15	17	36	9	20	72	33	5	33	20	411
05:30 PM	16	156	22	27	45	18	22	84	28	14	38	14	484
05:45 PM	16	145	14	27	27	2	21	82	40	12	32	17	435
Total	48	591	69	85	145	36	91	324	133	38	135	84	1779
Grand Total	209	1672	245	355	810	190	407	1566	527	139	790	344	7254
Apprch %	9.8	78.6	11.5	26.2	59.8	14.0	16.3	62.6	21.1	10.9	62.1	27.0	
Total %	2.9	23.0	3.4	4.9	11.2	2.6	5.6	21.6	7.3	1.9	10.9	4.7	

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File Name : franfraz
Site Code : 00000000
Start Date : 1/24/2007
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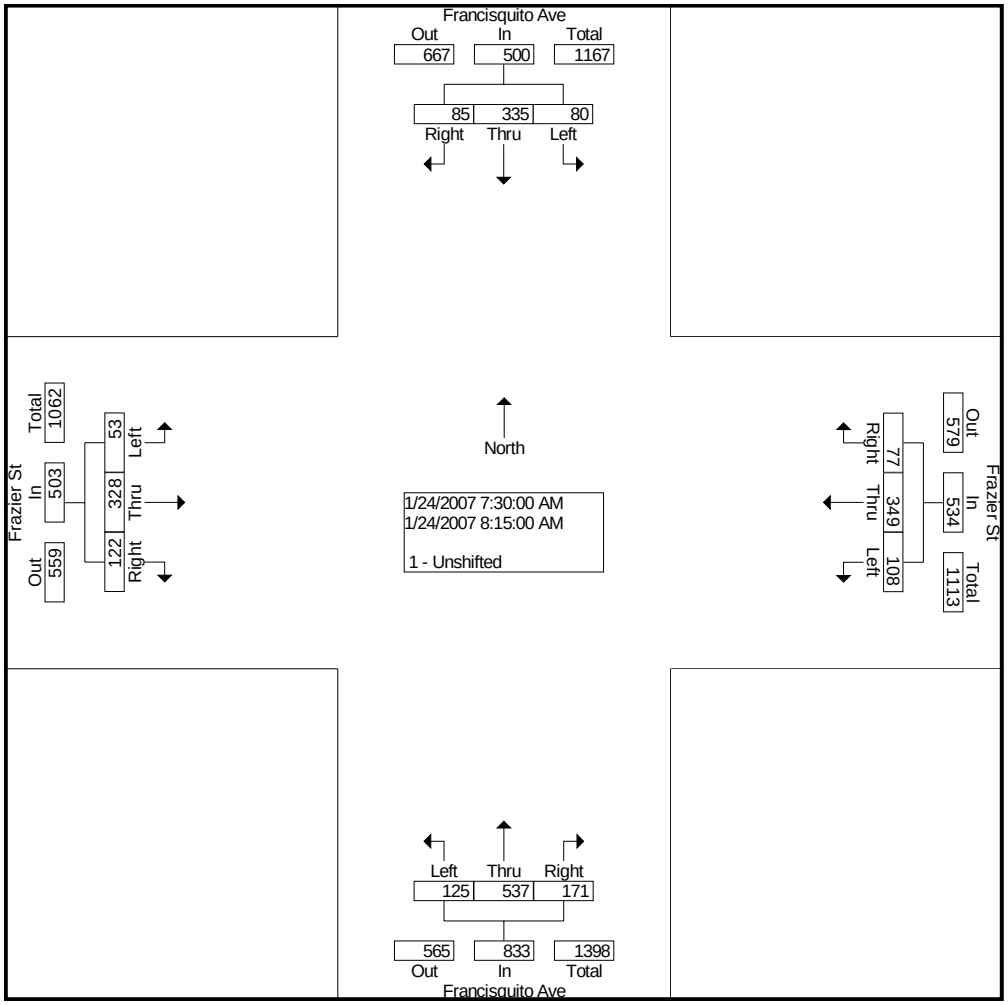
	Francisquito Ave Southbound				Frazier St Westbound				Francisquito Ave Northbound				Frazier St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	80	335	85	500	108	349	77	534	125	537	171	833	53	328	122	503	2370
Percent	16.0	67.0	17.0		20.2	65.4	14.4		15.0	64.5	20.5		10.5	65.2	24.3		
07:45 Volume	11	105	32	148	39	148	27	214	34	141	47	222	19	96	34	149	733
Peak Factor																	0.808
High Int.	07:45 AM				07:45 AM				07:30 AM				07:30 AM				
Volume	11	105	32	148	39	148	27	214	36	125	72	233	15	129	31	175	
Peak Factor				0.845				0.624				0.894				0.719	



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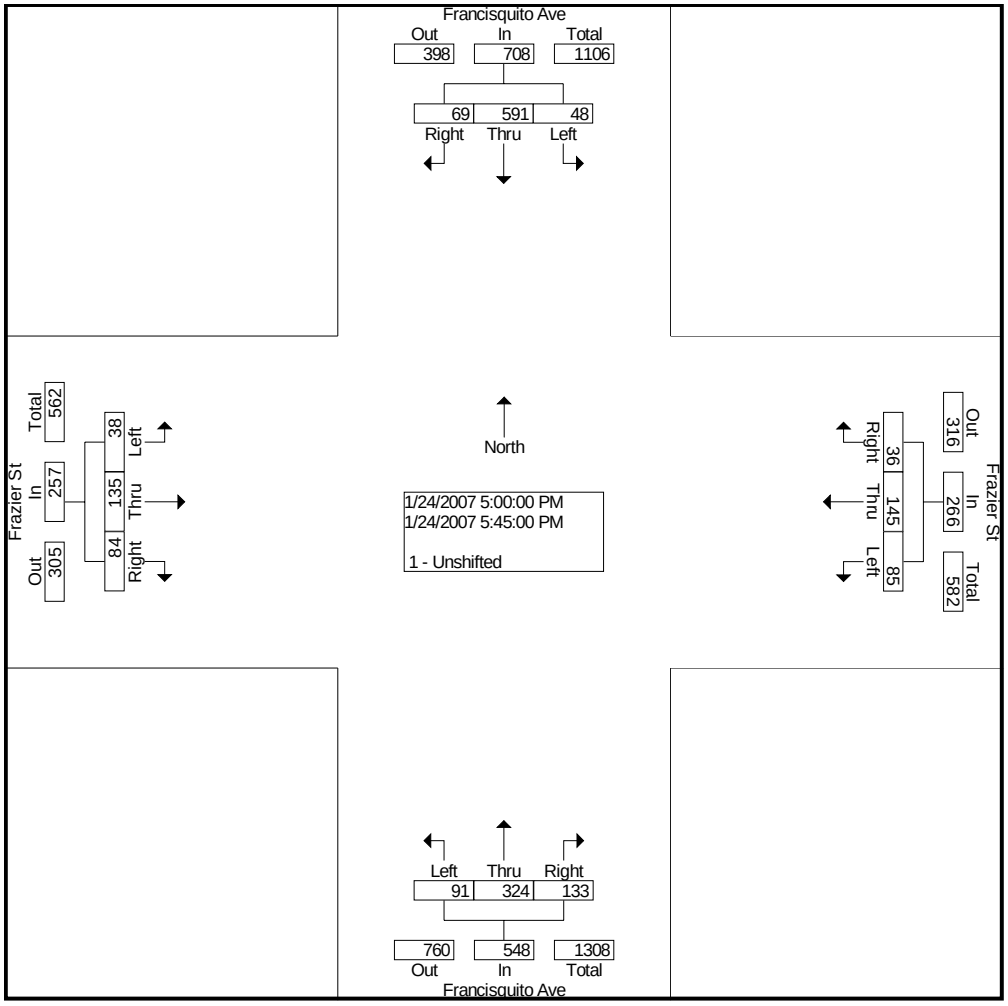
File Name : franfraz
Site Code : 00000000
Start Date : 1/24/2007
Page No : 3

	Francisquito Ave Southbound				Frazier St Westbound				Francisquito Ave Northbound				Frazier St 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 From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	05:00 PM																
Volume	48	591	69	708	85	145	36	266	91	324	133	548	38	135	84	257	1779
Percent	6.8	83.5	9.7		32.0	54.5	13.5		16.6	59.1	24.3		14.8	52.5	32.7		
05:30 Volume	16	156	22	194	27	45	18	90	22	84	28	134	14	38	14	66	484
Peak Factor																	0.919
High Int.	05:30 PM				05:30 PM				05:00 PM				05:00 PM				
Volume	16	156	22	194	27	45	18	90	28	86	32	146	7	32	33	72	
Peak Factor				0.912				0.739				0.938				0.892	



City Traffic Counters
626.256.4171

File Name : BPfran
Site Code : 00000000
Start Date : 1/17/2007
Page No : 1

Groups Printed- 1 - Unshifted

	Baldwin Park Blvd Southbound			Francisquito Ave Westbound			Baldwin Park Blvd Northbound			Francisquito Ave Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	19	173	20	57	119	18	18	60	9	6	55	21	575
07:15 AM	17	162	19	65	146	26	18	72	13	12	83	31	664
07:30 AM	26	199	23	60	136	12	30	94	17	12	73	32	714
07:45 AM	25	189	46	55	148	12	36	87	11	16	86	29	740
Total	87	723	108	237	549	68	102	313	50	46	297	113	2693
08:00 AM	40	163	20	59	169	16	42	71	6	20	86	40	732
08:15 AM	30	175	20	47	130	16	39	84	15	12	57	25	650
08:30 AM	29	202	33	52	117	9	51	97	11	14	68	35	718
08:45 AM	31	145	27	47	108	13	35	72	18	10	86	27	619
Total	130	685	100	205	524	54	167	324	50	56	297	127	2719
04:00 PM	40	99	11	27	92	32	39	152	50	15	118	32	707
04:15 PM	39	97	13	36	90	34	45	156	38	13	112	26	699
04:30 PM	49	106	14	36	100	20	37	163	46	19	135	25	750
04:45 PM	45	131	17	25	98	47	55	169	40	11	134	20	792
Total	173	433	55	124	380	133	176	640	174	58	499	103	2948
05:00 PM	48	128	12	37	127	38	35	177	38	12	147	33	832
05:15 PM	35	112	18	50	117	37	36	183	44	15	139	28	814
05:30 PM	51	113	14	43	87	39	34	179	54	20	135	28	797
05:45 PM	51	128	23	31	114	42	37	171	44	13	134	24	812
Total	185	481	67	161	445	156	142	710	180	60	555	113	3255
Grand Total	575	2322	330	727	1898	411	587	1987	454	220	1648	456	11615
Apprch %	17.8	72.0	10.2	23.9	62.5	13.5	19.4	65.6	15.0	9.5	70.9	19.6	
Total %	5.0	20.0	2.8	6.3	16.3	3.5	5.1	17.1	3.9	1.9	14.2	3.9	

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File Name : BPfran
Site Code : 00000000
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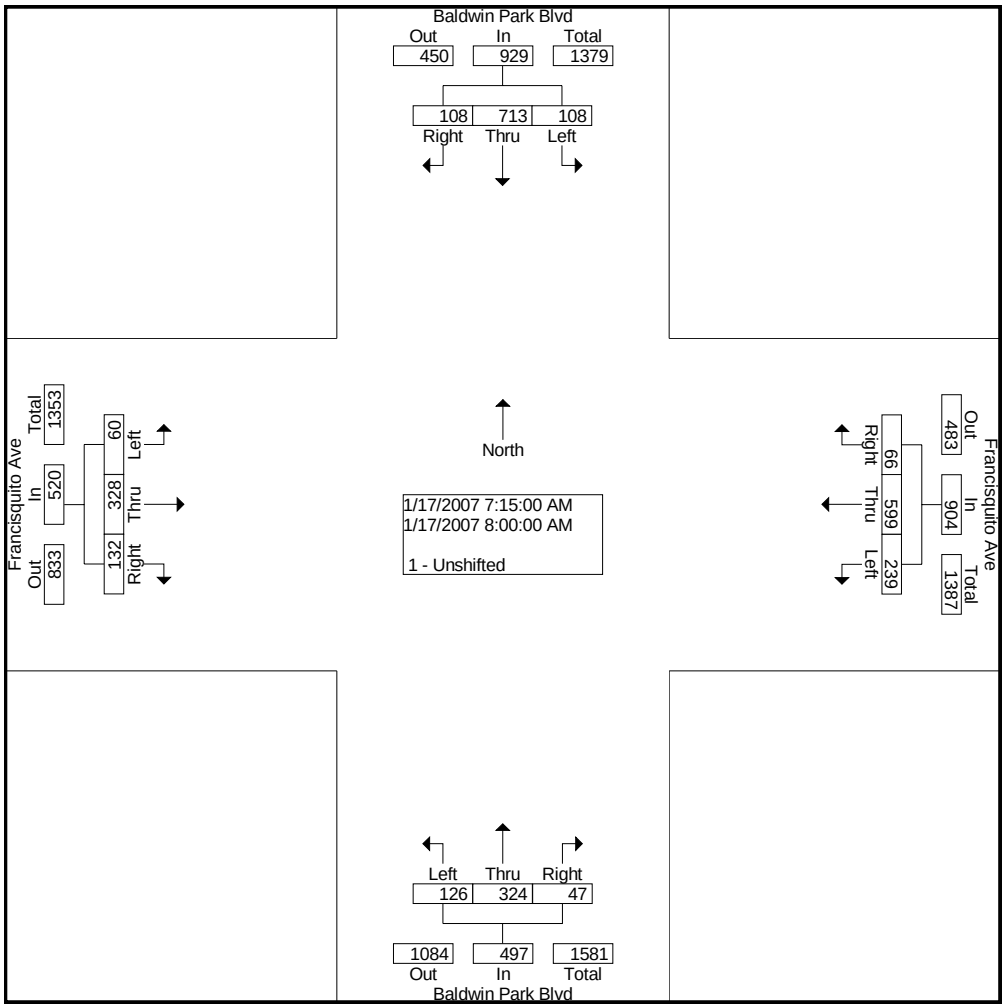
	Baldwin Park Blvd Southbound				Francisquito Ave Westbound				Baldwin Park Blvd Northbound				Francisquito Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Intersection	07:15 AM																
Volume	108	713	108	929	239	599	66	904	126	324	47	497	60	328	132	520	2850
Percent	11.6	76.7	11.6		26.4	66.3	7.3		25.4	65.2	9.5		11.5	63.1	25.4		
07:45 Volume	25	189	46	260	55	148	12	215	36	87	11	134	16	86	29	131	740
Peak Factor																	0.963
High Int.	07:45 AM				08:00 AM				07:30 AM				08:00 AM				
Volume	25	189	46	260	59	169	16	244	30	94	17	141	20	86	40	146	
Peak Factor				0.893				0.926				0.881				0.890	



City Traffic Counters
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File Name : BPfran
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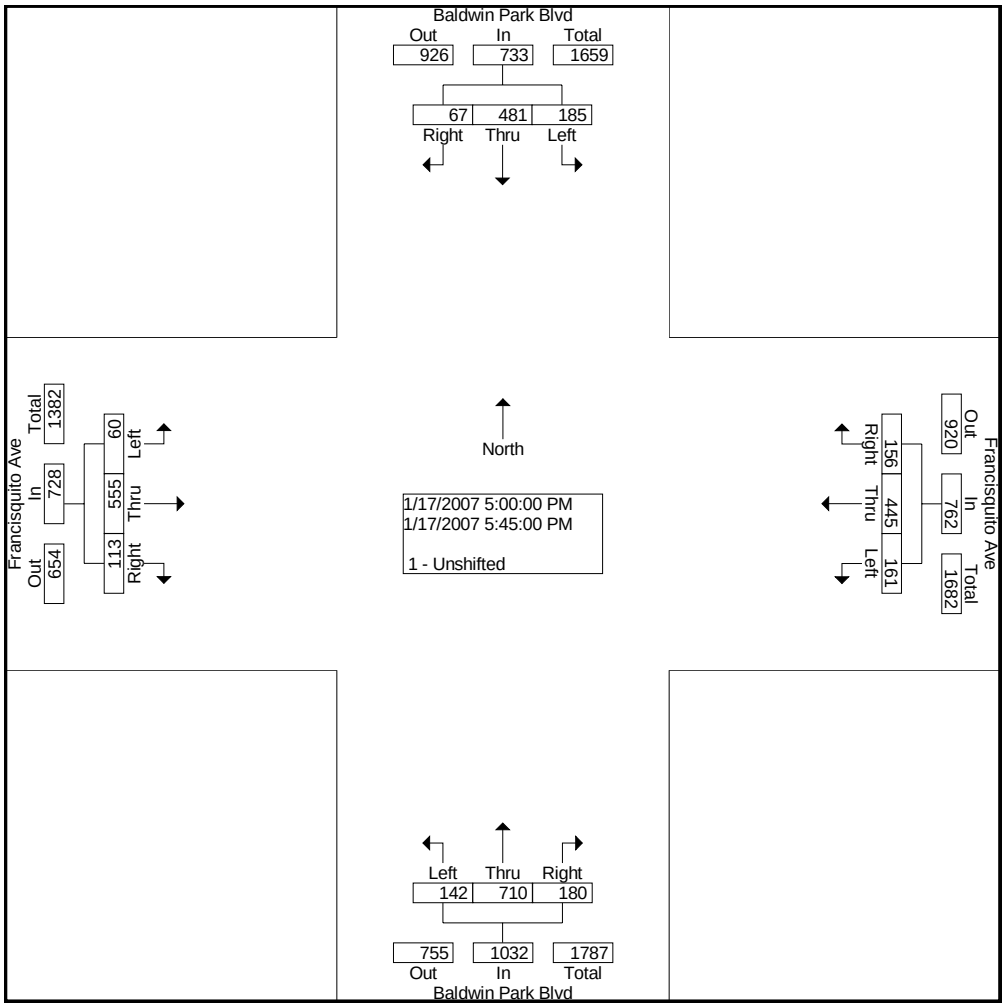
	Baldwin Park Blvd Southbound				Francisquito Ave Westbound				Baldwin Park Blvd Northbound				Francisquito Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	05:00 PM																
Volume	185	481	67	733	161	445	156	762	142	710	180	1032	60	555	113	728	3255
Percent	25.2	65.6	9.1		21.1	58.4	20.5		13.8	68.8	17.4		8.2	76.2	15.5		
05:00 Volume	48	128	12	188	37	127	38	202	35	177	38	250	12	147	33	192	832
Peak Factor																	0.978
High Int.	05:45 PM				05:15 PM				05:30 PM				05:00 PM				
Volume	51	128	23	202	50	117	37	204	34	179	54	267	12	147	33	192	
Peak Factor				0.907				0.934				0.966				0.948	



City Traffic Counters
626.256.4171

File Name : frangarv
Site Code : 00000000
Start Date : 1/17/2007
Page No : 1

Groups Printed- 1 - Unshifted

	Francisquito Ave Southbound			Garvey Ave Westbound			Francisquito Ave Northbound			Garvey Ave Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	7	88	0	9	0	27	0	177	105	0	0	0	413
07:15 AM	16	104	0	28	0	38	1	263	107	1	1	0	559
07:30 AM	22	122	0	29	1	64	1	229	133	0	0	0	601
07:45 AM	38	128	1	36	0	65	1	224	143	0	0	1	637
Total	83	442	1	102	1	194	3	893	488	1	1	1	2210
08:00 AM	27	116	0	42	0	77	1	229	122	0	0	2	616
08:15 AM	20	109	0	23	0	47	0	159	91	0	0	1	450
08:30 AM	25	124	0	27	1	53	0	144	81	0	0	0	455
08:45 AM	20	114	0	30	0	43	1	143	65	0	0	0	416
Total	92	463	0	122	1	220	2	675	359	0	0	3	1937
04:00 PM	38	204	0	34	0	44	0	181	95	0	0	0	596
04:15 PM	41	224	2	33	0	47	0	180	103	1	0	0	631
04:30 PM	54	219	0	33	1	44	0	172	83	0	0	1	607
04:45 PM	50	227	0	36	0	46	1	204	111	0	0	4	679
Total	183	874	2	136	1	181	1	737	392	1	0	5	2513
05:00 PM	44	202	0	29	0	46	0	207	84	1	1	1	615
05:15 PM	36	215	1	34	0	44	0	228	73	0	0	0	631
05:30 PM	55	232	0	29	1	47	1	217	69	1	0	0	652
05:45 PM	54	191	1	33	0	53	0	220	76	0	0	1	629
Total	189	840	2	125	1	190	1	872	302	2	1	2	2527
Grand Total	547	2619	5	485	4	785	7	3177	1541	4	2	11	9187
Apprch %	17.3	82.6	0.2	38.1	0.3	61.6	0.1	67.2	32.6	23.5	11.8	64.7	
Total %	6.0	28.5	0.1	5.3	0.0	8.5	0.1	34.6	16.8	0.0	0.0	0.1	

City Traffic Counters
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File Name : frangarv
Site Code : 00000000
Start Date : 1/17/2007
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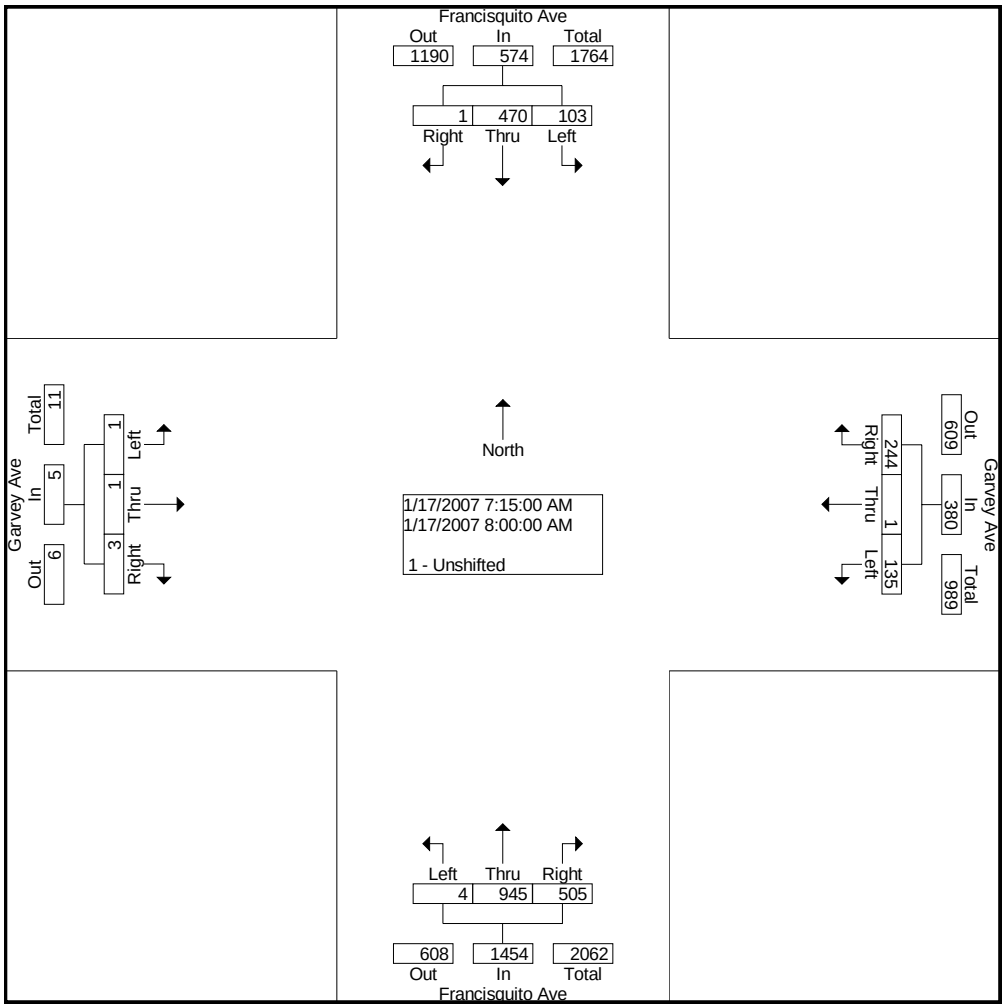
	Francisquito Ave Southbound				Garvey Ave Westbound				Francisquito Ave Northbound				Garvey Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Intersection	07:15 AM																
Volume	103	470	1	574	135	1	244	380	4	945	505	1454	1	1	3	5	2413
Percent	17.9	81.9	0.2		35.5	0.3	64.2		0.3	65.0	34.7		20.0	20.0	60.0		
07:45 Volume	38	128	1	167	36	0	65	101	1	224	143	368	0	0	1	1	637
Peak Factor																	0.947
High Int.	07:45 AM				08:00 AM				07:15 AM				07:15 AM				
Volume	38	128	1	167	42	0	77	119	1	263	107	371	1	1	0	2	
Peak Factor				0.859				0.798				0.980				0.625	



City Traffic Counters
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File Name : frangarv
Site Code : 00000000
Start Date : 1/17/2007
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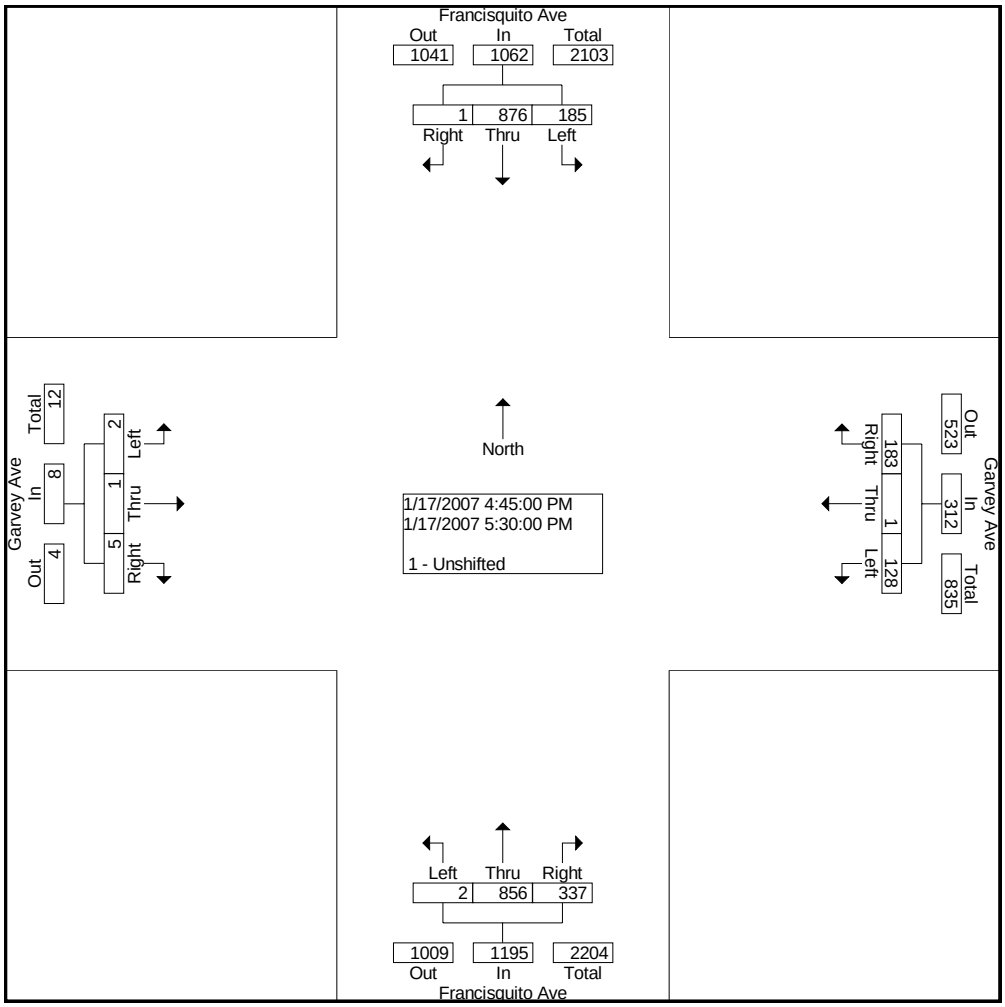
	Francisquito Ave Southbound				Garvey Ave Westbound				Francisquito Ave Northbound				Garvey Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:45 PM																
Volume	185	876	1	1062	128	1	183	312	2	856	337	1195	2	1	5	8	2577
Percent	17.4	82.5	0.1		41.0	0.3	58.7		0.2	71.6	28.2		25.0	12.5	62.5		
04:45 Volume	50	227	0	277	36	0	46	82	1	204	111	316	0	0	4	4	679
Peak Factor																	0.949
High Int.	05:30 PM				04:45 PM				04:45 PM				04:45 PM				
Volume	55	232	0	287	36	0	46	82	1	204	111	316	0	0	4	4	
Peak Factor				0.925				0.951				0.945				0.500	



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Earl_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Unshifted

	Earl Ave Southbound			Ramona Blvd Westbound			Earl Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	2	284	1	3	0	3	2	77	2	374
07:15 AM	0	0	2	4	317	3	5	1	10	3	84	6	435
07:30 AM	0	0	2	12	296	0	14	0	51	0	147	26	548
07:45 AM	1	0	1	10	302	2	14	1	40	1	183	7	562
Total	1	0	5	28	1199	6	36	2	104	6	491	41	1919
08:00 AM	0	0	0	5	262	0	4	0	6	2	110	4	393
08:15 AM	0	1	0	3	265	1	3	0	6	0	89	2	370
08:30 AM	0	1	1	0	215	0	7	1	3	1	89	5	323
08:45 AM	0	0	0	5	213	0	5	0	7	2	107	1	340
Total	0	2	1	13	955	1	19	1	22	5	395	12	1426
04:00 PM	1	0	0	9	111	2	4	1	10	2	316	11	467
04:15 PM	3	1	1	7	147	0	4	1	9	0	327	9	509
04:30 PM	3	2	1	3	135	1	5	0	5	1	309	9	474
04:45 PM	0	0	1	1	124	1	3	0	6	0	336	7	479
Total	7	3	3	20	517	4	16	2	30	3	1288	36	1929
05:00 PM	5	0	2	7	146	0	7	0	9	1	358	7	542
05:15 PM	2	0	0	4	161	1	1	0	4	4	335	6	518
05:30 PM	4	0	0	7	141	1	1	0	4	2	301	8	469
05:45 PM	3	0	1	6	145	2	3	0	12	2	318	12	504
Total	14	0	3	24	593	4	12	0	29	9	1312	33	2033
Grand Total	22	5	12	85	3264	15	83	5	185	23	3486	122	7307
Apprch %	56.4	12.8	30.8	2.5	97	0.4	30.4	1.8	67.8	0.6	96	3.4	
Total %	0.3	0.1	0.2	1.2	44.7	0.2	1.1	0.1	2.5	0.3	47.7	1.7	

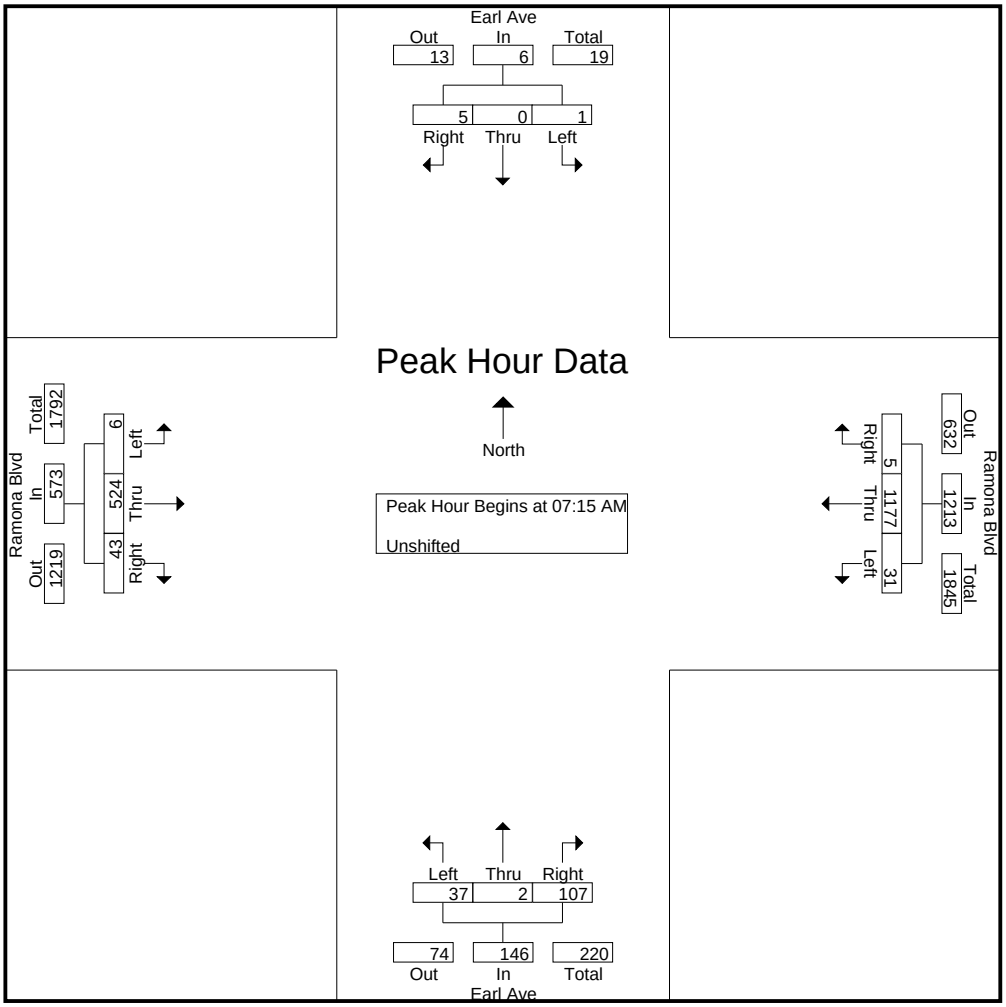
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Earl_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Earl Ave Southbound				Ramona Blvd Westbound				Earl Ave Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	**2**	**2**	4	**317**	**3**	**324**	5	**1**	10	16	**3**	84	6	93	435
07:30 AM	0	0	2	2	**12**	296	0	308	**14**	0	**51**	**65**	0	147	**26**	173	548
07:45 AM	**1**	0	1	2	10	302	2	314	14	1	40	55	1	**183**	7	**191**	**562**
08:00 AM	0	0	0	0	5	262	0	267	4	0	6	10	2	110	4	116	393
Total Volume	1	0	5	6	31	1177	5	1213	37	2	107	146	6	524	43	573	1938
% App. Total	16.7	0	83.3		2.6	97	0.4		25.3	1.4	73.3		1	91.4	7.5		
PHF	.250	.000	.625	.750	.646	.928	.417	.936	.661	.500	.525	.562	.500	.716	.413	.750	.862



CITY TRAFFIC COUNTERS

626.991.7522

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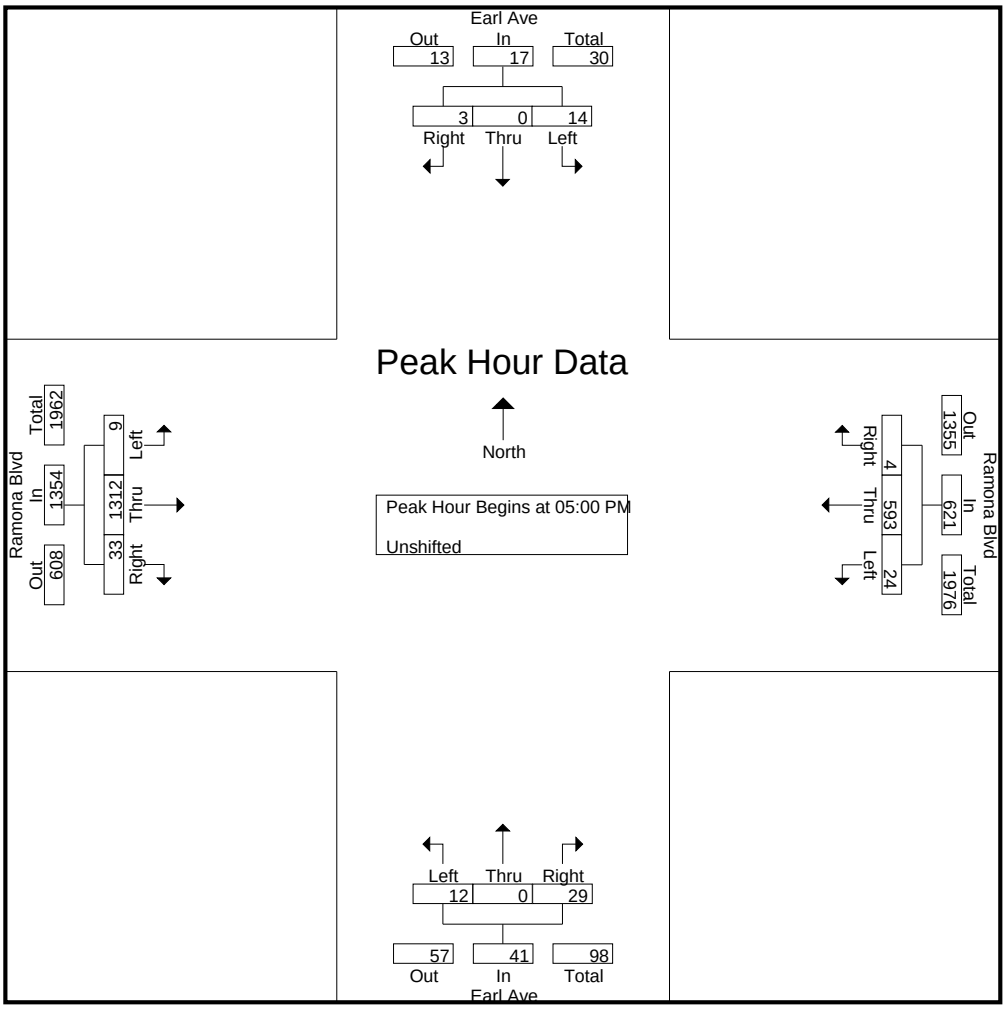
File Name : Earl_Ramona
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Earl Ave Southbound				Ramona Blvd Westbound				Earl Ave Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**5**	0	**2**	**7**	**7**	146	0	153	**7**	0	9	**16**	1	**358**	7	**366**	**542**
05:15 PM	2	0	0	2	4	**161**	1	**166**	1	0	4	5	**4**	335	6	345	518
05:30 PM	4	0	0	4	7	141	1	149	1	0	4	5	2	301	8	311	469
05:45 PM	3	0	1	4	6	145	**2**	153	3	0	**12**	15	2	318	**12**	332	504
Total Volume	14	0	3	17	24	593	4	621	12	0	29	41	9	1312	33	1354	2033
% App. Total	82.4	0	17.6		3.9	95.5	0.6		29.3	0	70.7		0.7	96.9	2.4		
PHF	.700	.000	.375	.607	.857	.921	.500	.935	.429	.000	.604	.641	.563	.916	.688	.925	.938



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : Earl_Ramona_Buses
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	Earl Ave Southbound			Ramona Blvd Westbound			Earl Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	2	0	0	0	0	0	2	0	4
07:15 AM	0	0	0	0	2	0	0	0	0	0	3	0	5
07:30 AM	0	0	0	0	2	0	0	0	0	0	1	0	3
07:45 AM	0	0	0	0	1	0	0	0	0	0	3	0	4
Total	0	0	0	0	7	0	0	0	0	0	9	0	16
08:00 AM	0	0	0	0	2	0	0	0	0	0	2	0	4
08:15 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
08:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
08:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	5	0	0	0	0	0	4	0	9
04:00 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
04:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
04:45 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
Total	0	0	0	0	5	0	0	0	0	0	5	0	10
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
05:30 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	1	0	0	0	0	0	4	0	5
Grand Total	0	0	0	0	18	0	0	0	0	0	22	0	40
Apprch %	0	0	0	0	100	0	0	0	0	0	100	0	
Total %	0	0	0	0	45	0	0	0	0	0	55	0	

CITY TRAFFIC COUNTERS

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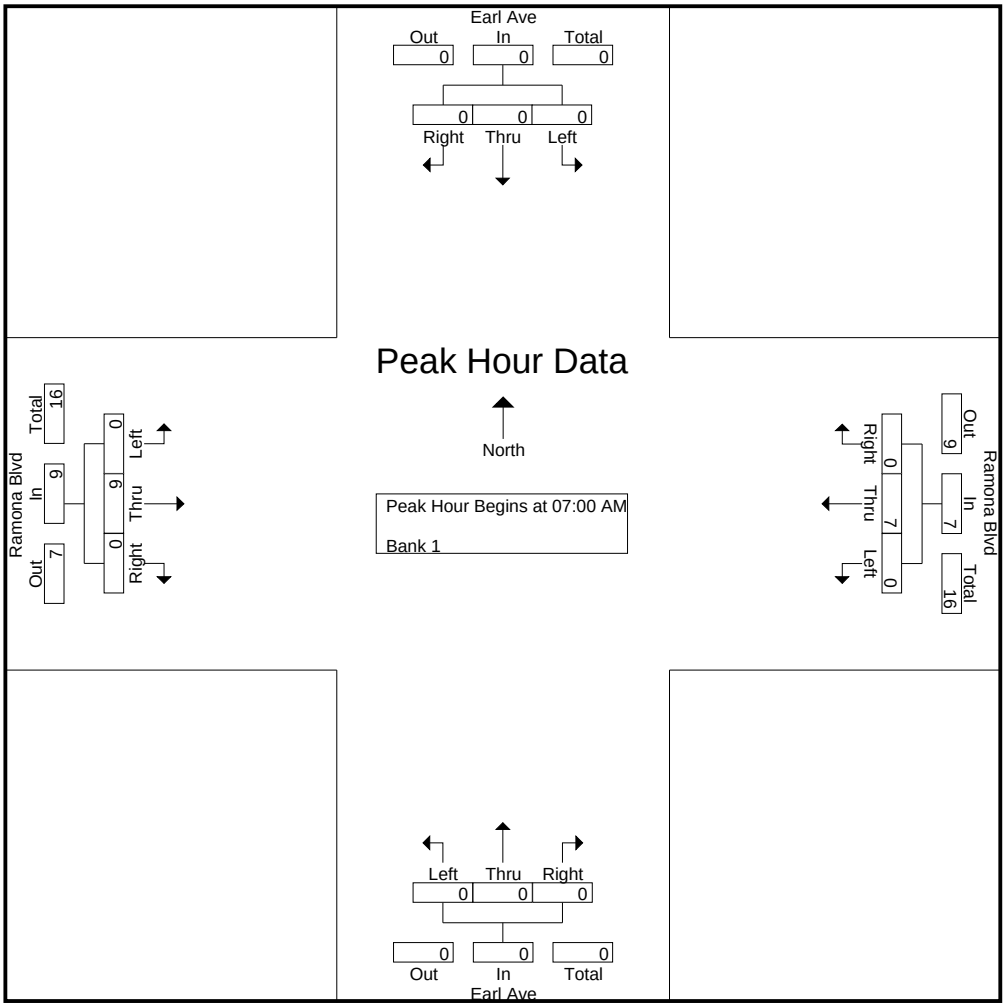
File Name : Earl_Ramona_Buses
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Earl Ave Southbound				Ramona Blvd Westbound				Earl Ave Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	2	0	2	4
07:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	**3**	0	**3**	**5**
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
Total Volume	0	0	0	0	0	7	0	7	0	0	0	0	0	9	0	9	16
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.875	.000	.875	.000	.000	.000	.000	.000	.750	.000	.750	.800



CITY TRAFFIC COUNTERS

626.991.7522

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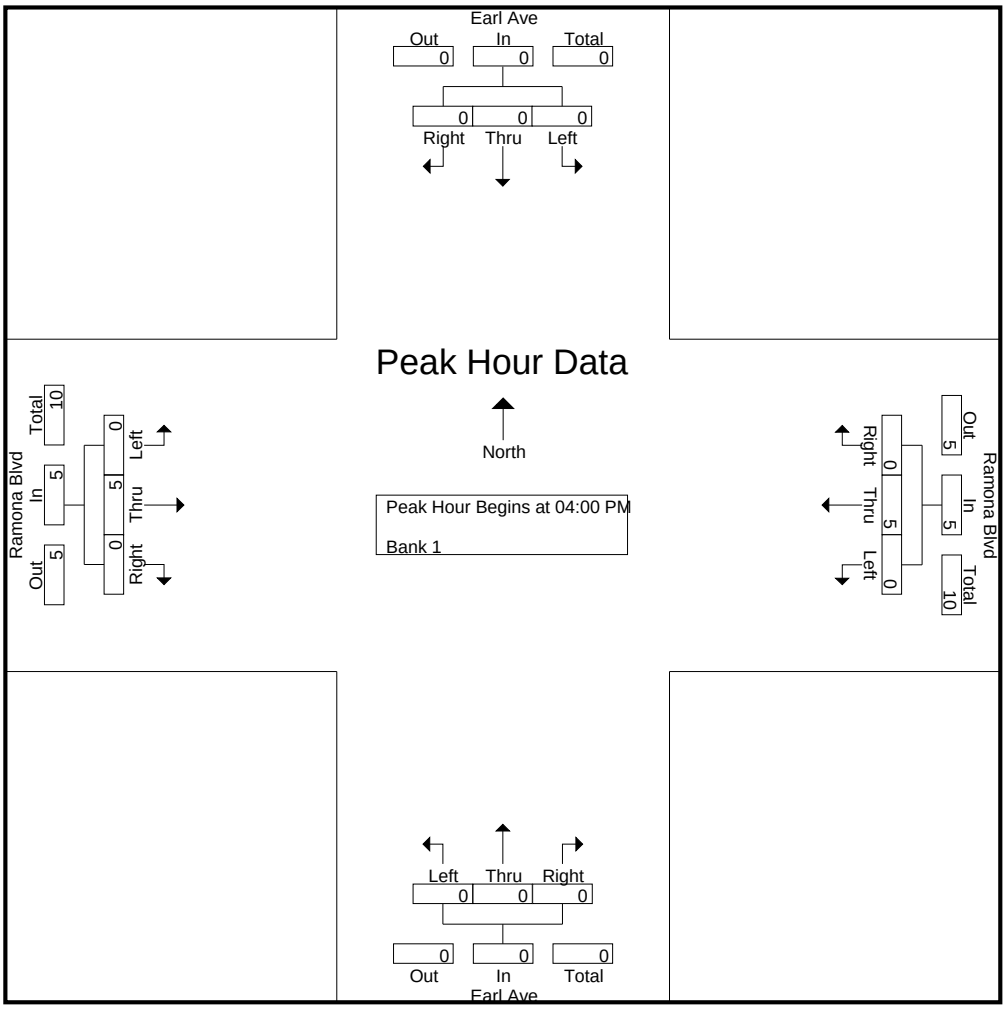
File Name : Earl_Ramona_Buses
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Earl Ave Southbound				Ramona Blvd Westbound				Earl Ave Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
04:15 PM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	**2**	0	**2**	**3**
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
Total Volume	0	0	0	0	0	5	0	5	0	0	0	0	0	5	0	5	10
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.625	.000	.625	.000	.000	.000	.000	.000	.625	.000	.625	.833



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : Earl_Ramona_2-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 2

	Earl Ave Southbound			Ramona Blvd Westbound			Earl Ave Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	1	0	0	0	2	0	1	0	0	0	5	0	9
07:15 AM	0	0	1	0	4	0	0	0	0	0	8	0	13
07:30 AM	1	0	0	1	2	0	1	0	0	0	4	0	9
07:45 AM	0	0	0	0	5	0	1	0	0	0	1	0	7
Total	2	0	1	1	13	0	3	0	0	0	18	0	38
08:00 AM	0	0	0	0	3	1	0	0	0	0	3	0	7
08:15 AM	0	0	0	0	6	0	0	0	0	0	6	0	12
08:30 AM	0	0	0	0	7	0	0	0	0	0	5	0	12
08:45 AM	0	0	0	0	7	0	1	0	0	0	0	1	9
Total	0	0	0	0	23	1	1	0	0	0	14	1	40
04:00 PM	0	0	0	0	1	0	0	0	0	0	4	0	5
04:15 PM	0	0	0	0	3	1	0	0	0	0	3	0	7
04:30 PM	0	0	0	0	3	0	0	0	0	0	6	0	9
04:45 PM	0	0	0	0	3	0	0	0	0	0	3	0	6
Total	0	0	0	0	10	1	0	0	0	0	16	0	27
05:00 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
05:15 PM	0	0	0	0	1	1	0	0	0	0	1	0	3
05:30 PM	0	0	0	0	2	0	0	0	0	0	4	0	6
05:45 PM	0	0	0	0	1	0	0	0	0	0	3	0	4
Total	0	0	0	0	6	1	0	0	0	0	9	0	16
Grand Total	2	0	1	1	52	3	4	0	0	0	57	1	121
Apprch %	66.7	0	33.3	1.8	92.9	5.4	100	0	0	0	98.3	1.7	
Total %	1.7	0	0.8	0.8	43	2.5	3.3	0	0	0	47.1	0.8	

CITY TRAFFIC COUNTERS

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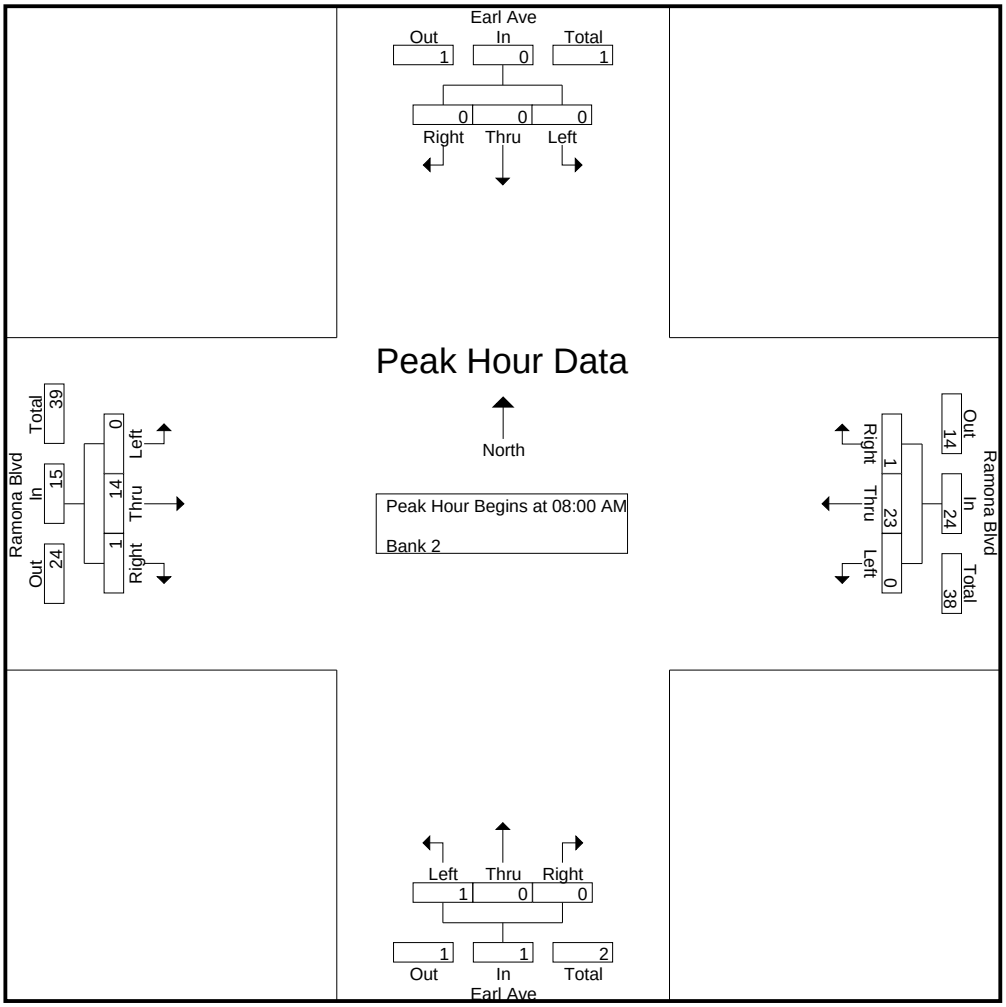
File Name : Earl_Ramona_2-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Earl Ave Southbound				Ramona Blvd Westbound				Earl Ave Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	3	**1**	4	0	0	0	0	0	3	0	3	7
08:15 AM	0	0	0	0	0	6	0	6	0	0	0	0	0	**6**	0	**6**	**12**
08:30 AM	0	0	0	0	0	**7**	0	**7**	0	0	0	0	0	5	0	5	12
08:45 AM	0	0	0	0	0	7	0	7	**1**	0	0	**1**	0	0	**1**	1	9
Total Volume	0	0	0	0	0	23	1	24	1	0	0	1	0	14	1	15	40
% App. Total	0	0	0		0	95.8	4.2		100	0	0		0	93.3	6.7		
PHF	.000	.000	.000	.000	.000	.821	.250	.857	.250	.000	.000	.250	.000	.583	.250	.625	.833



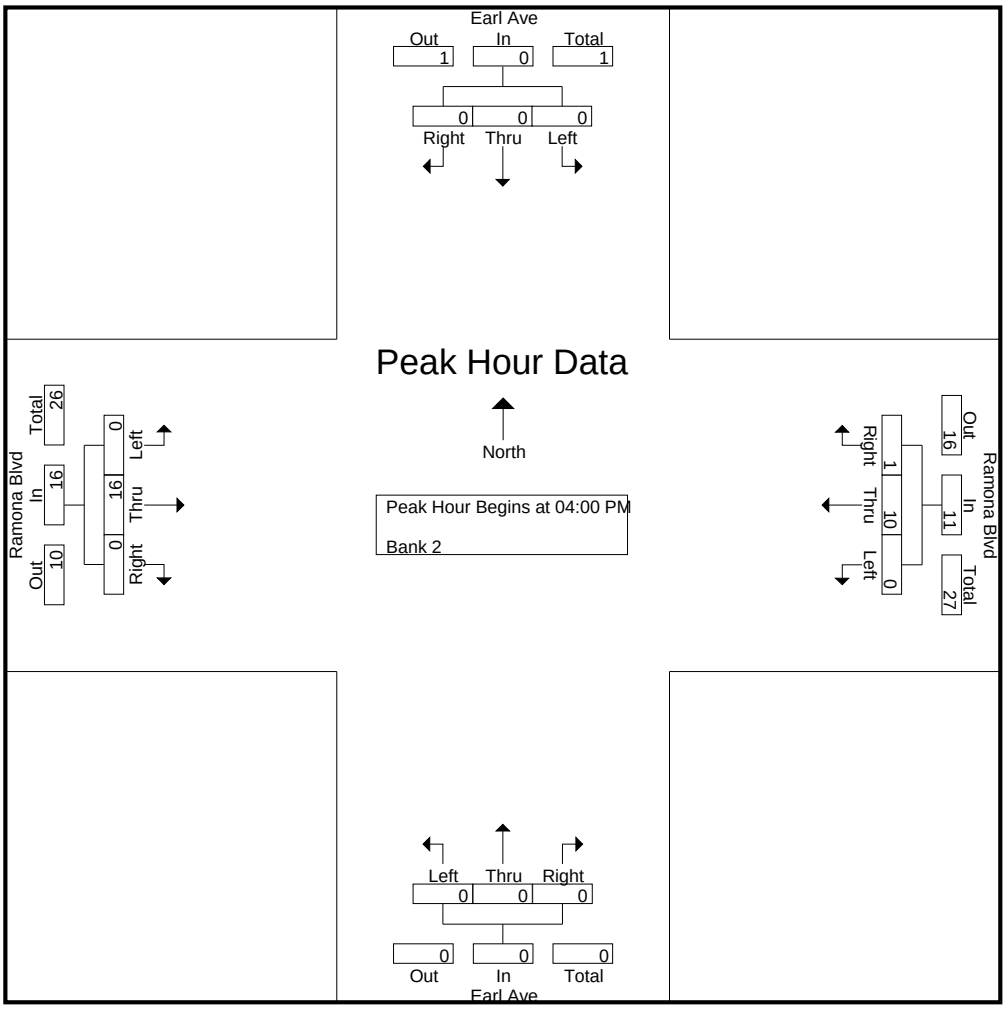
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Earl_Ramona_2-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Earl Ave Southbound				Ramona Blvd Westbound				Earl Ave Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	4	5
04:15 PM	0	0	0	0	0	**3**	**1**	**4**	0	0	0	0	0	3	0	3	7
04:30 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	**6**	0	**6**	**9**
04:45 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	3	0	3	6
Total Volume	0	0	0	0	0	10	1	11	0	0	0	0	0	16	0	16	27
% App. Total	0	0	0		0	90.9	9.1		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.833	.250	.688	.000	.000	.000	.000	.000	.667	.000	.667	.750



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : Earl_Ramona_3-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Unshifted

	Earl Ave Southbound			Ramona Blvd Westbound			Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	1	0	0	0	0	0	2	0	3
07:15 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
07:30 AM	0	0	1	0	0	0	0	0	0	0	3	0	4
07:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	1	0	3	0	0	0	0	0	6	0	10
08:00 AM	0	0	1	0	0	0	0	0	0	0	2	0	3
08:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
08:45 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
Total	0	0	1	0	2	0	0	0	0	0	4	0	7
04:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
04:30 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	2	0	0	0	0	0	3	0	5
05:00 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	1	0	0	0	0	0	4	0	5
Grand Total	0	0	2	0	8	0	0	0	0	0	17	0	27
Apprch %	0	0	100	0	100	0	0	0	0	0	100	0	
Total %	0	0	7.4	0	29.6	0	0	0	0	0	63	0	

CITY TRAFFIC COUNTERS

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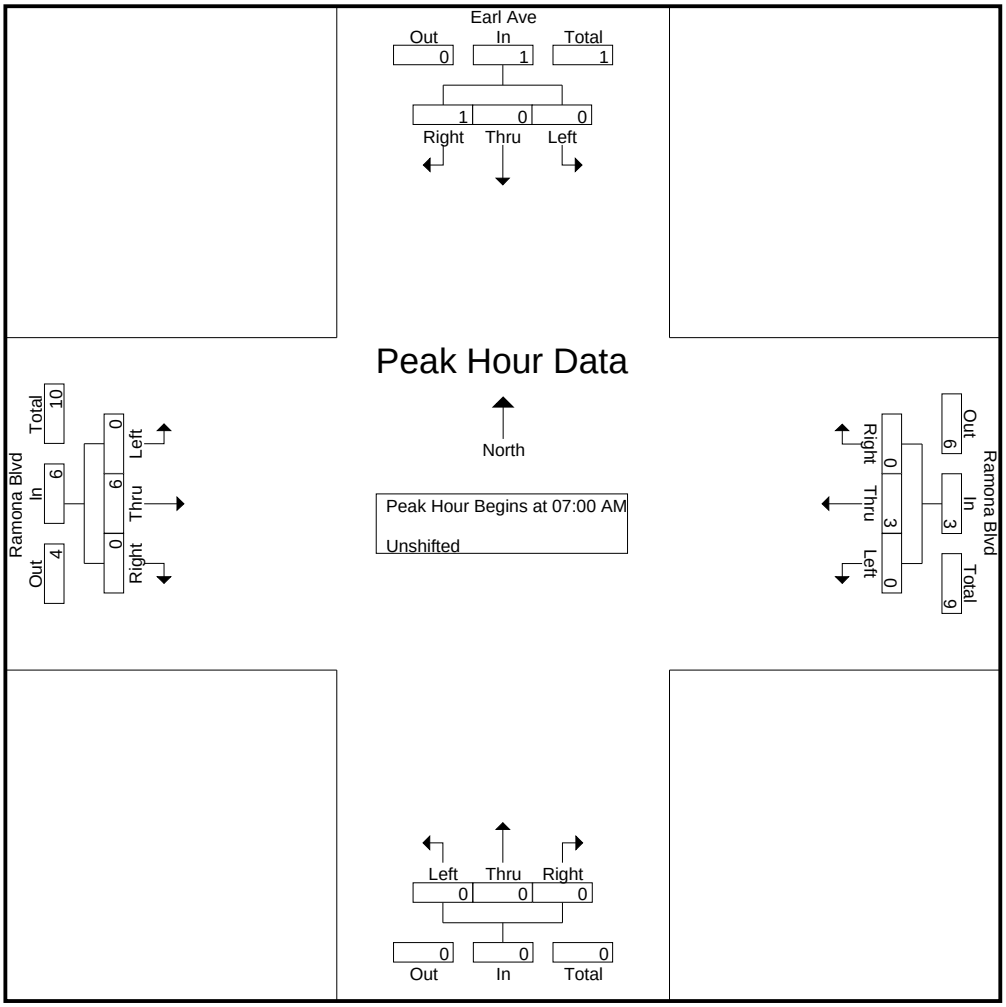
www.ctcounters.com

File Name : Earl_Ramona_3-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Earl Ave Southbound				Ramona Blvd Westbound				Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	2	0	2	3
07:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:30 AM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	**3**	0	**3**	**4**
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	1	1	0	3	0	3	0	0	0	0	0	6	0	6	10
% App. Total	0	0	100		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.250	.250	.000	.750	.000	.750	.000	.000	.000	.000	.000	.500	.000	.500	.625



CITY TRAFFIC COUNTERS

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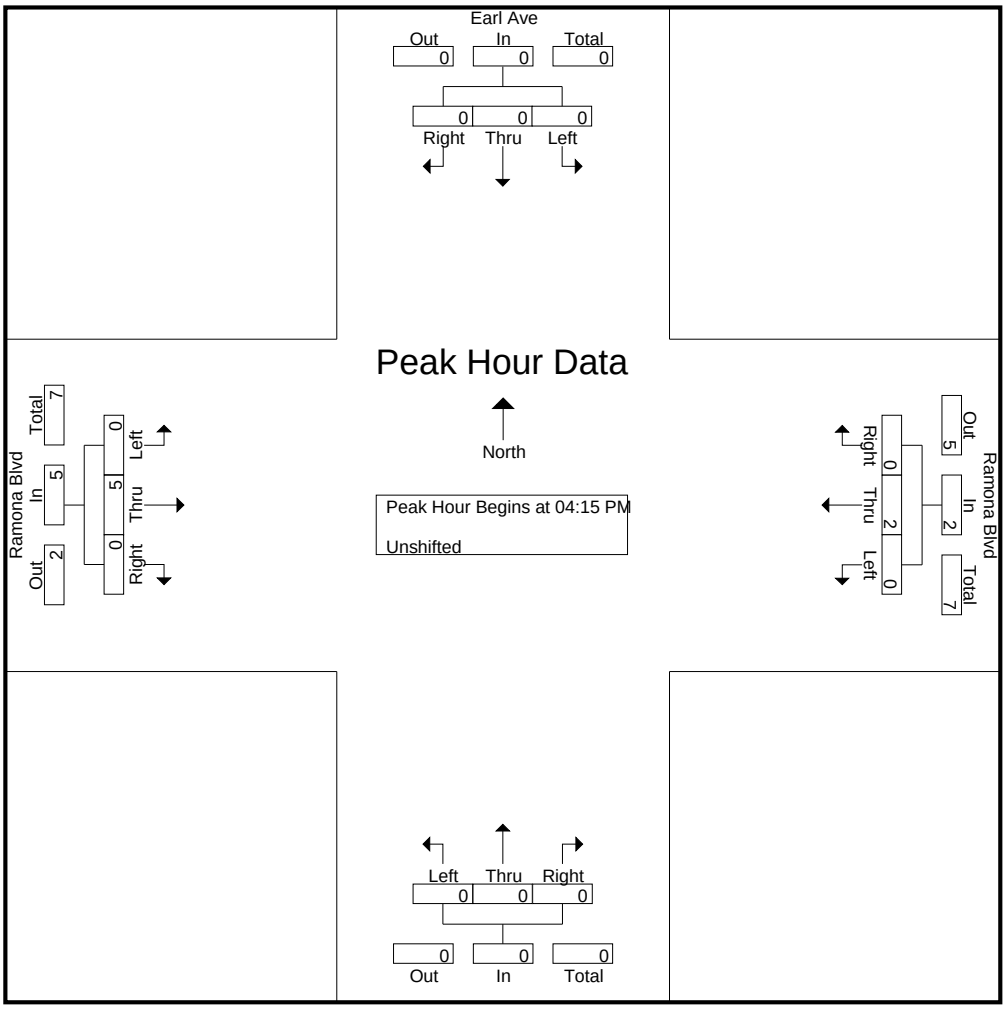
www.ctcounters.com

File Name : Earl_Ramona_3-Axle
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Earl Ave Southbound				Ramona Blvd Westbound				Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	1	0	1	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	**2**	0	**2**	**3**
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	5	0	5	7
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.625	.000	.625	.583



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Earl_Ramona_4+-Axles
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	Earl Ave Southbound			Ramona Blvd Westbound			Northbound			Ramona Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	4	0	4
08:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
08:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
08:45 AM	0	0	0	0	3	0	0	0	0	0	1	0	4
Total	0	0	0	0	8	0	0	0	0	0	2	0	10
04:00 PM	0	0	0	0	3	0	0	0	0	0	1	0	4
04:15 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
Total	0	0	0	0	5	0	0	0	0	0	2	0	7
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	1	0	1
Grand Total	0	0	0	0	13	0	0	0	0	0	9	0	22
Apprch %	0	0	0	0	100	0	0	0	0	0	100	0	
Total %	0	0	0	0	59.1	0	0	0	0	0	40.9	0	

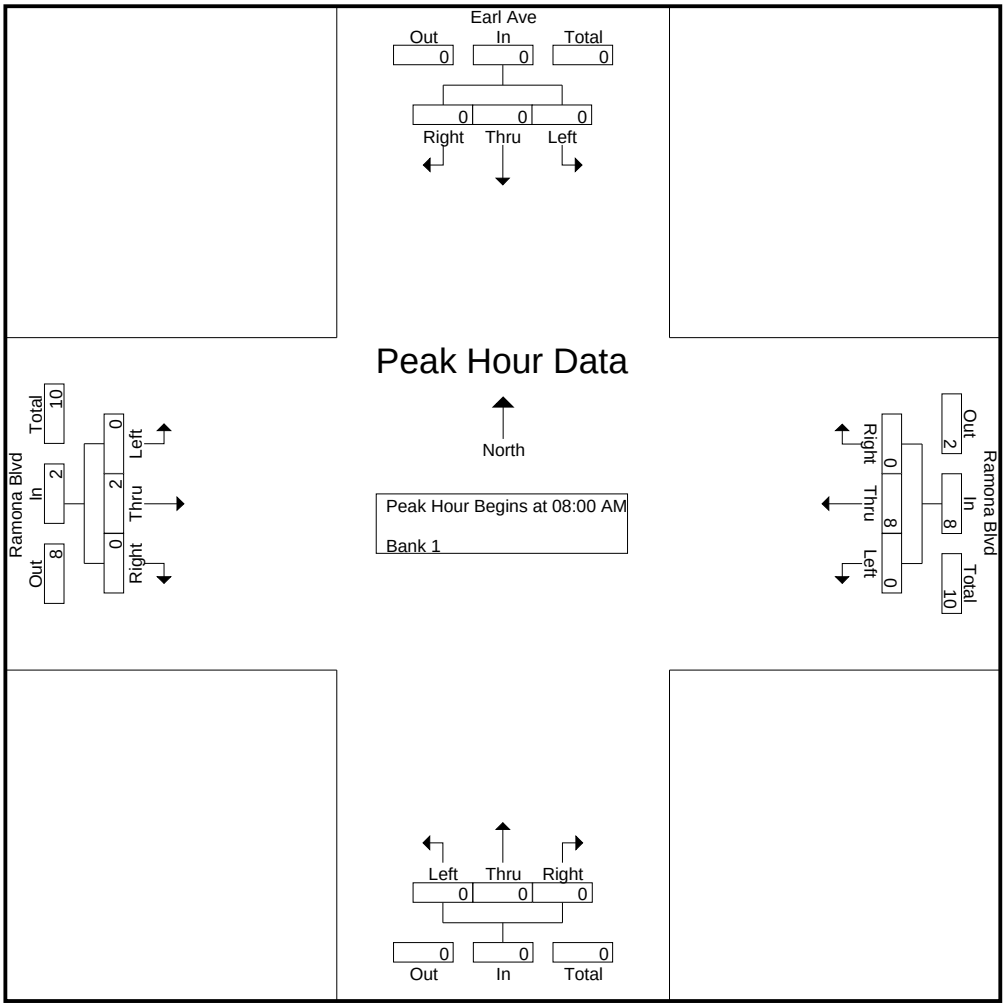
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Earl_Ramona_4+-Axles
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Earl Ave Southbound				Ramona Blvd Westbound				Northbound				Ramona Blvd 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
08:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	**1**	0	**1**	2
08:45 AM	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	1	0	1	**4**
Total Volume	0	0	0	0	0	8	0	8	0	0	0	0	0	2	0	2	10
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.667	.000	.667	.000	.000	.000	.000	.000	.500	.000	.500	.625



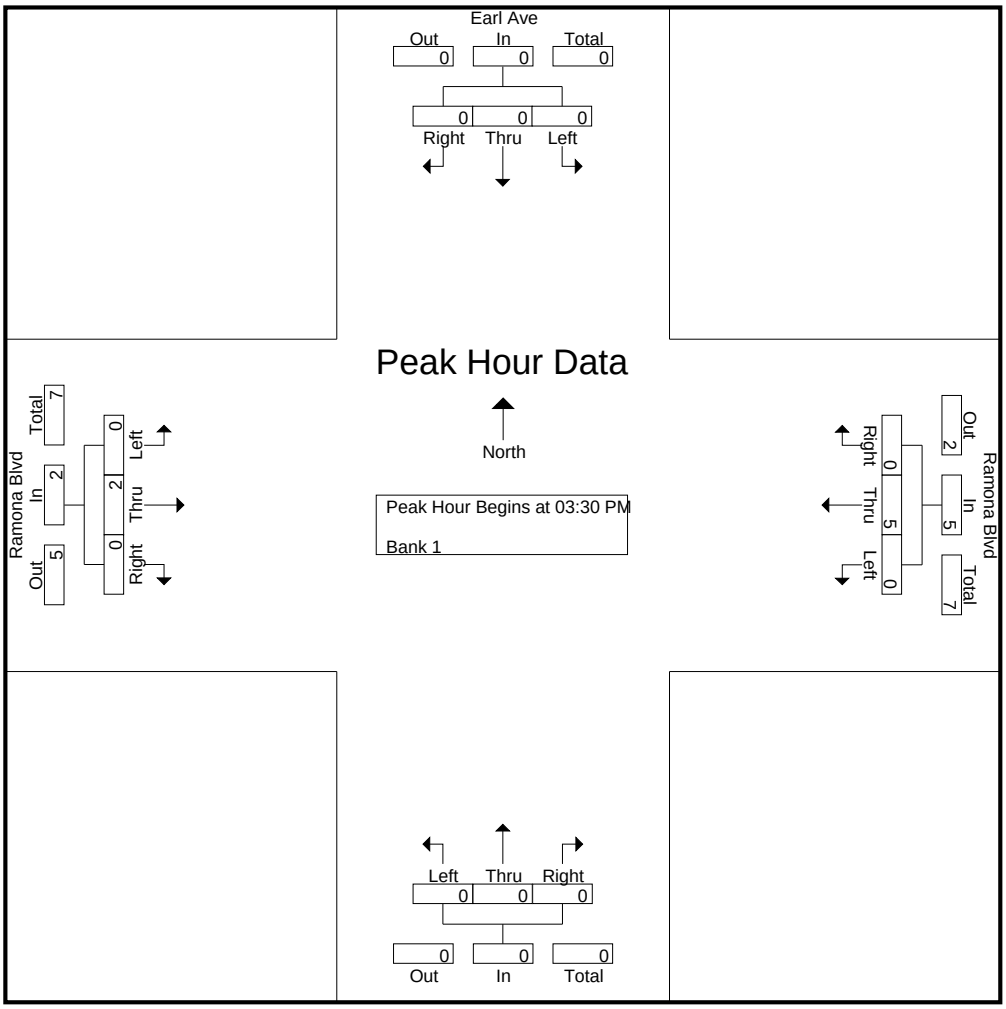
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Earl_Ramona_4+-Axles
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Earl Ave Southbound				Ramona Blvd Westbound				Northbound				Ramona Blvd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	**1**	0	**1**	**4**
04:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
Total Volume	0	0	0	0	0	5	0	5	0	0	0	0	0	2	0	2	7
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.417	.000	.417	.000	.000	.000	.000	.000	.500	.000	.500	.438



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Earl_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 1

Groups Printed- Bank 1

	Earl Ave Southbound		Ramona Blvd Westbound		Earl Ave Northbound		Ramona Blvd Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:00 AM	1	2	0	0	0	1	0	2	6
07:15 AM	2	3	0	0	0	1	0	2	8
07:30 AM	2	1	0	0	0	1	0	2	6
07:45 AM	2	3	0	0	0	2	1	1	9
Total	7	9	0	0	0	5	1	7	29
08:00 AM	4	2	0	0	0	2	0	2	10
08:15 AM	0	1	0	0	0	0	1	1	3
08:30 AM	0	2	0	0	0	2	0	1	5
Total	4	5	0	0	0	4	1	4	18
04:00 PM	6	1	0	0	0	0	0	1	8
04:15 PM	3	0	0	0	0	1	0	2	6
04:30 PM	4	2	0	0	0	1	0	1	8
04:45 PM	4	2	0	0	0	1	0	1	8
Total	17	5	0	0	0	3	0	5	30
05:00 PM	1	1	0	0	0	4	0	0	6
05:15 PM	5	1	0	0	0	1	0	0	7
05:30 PM	3	2	0	0	0	2	0	1	8
05:45 PM	0	0	0	0	0	4	0	0	4
Total	9	4	0	0	0	11	0	1	25
Grand Total	37	23	0	0	0	23	2	17	102
Apprch %	61.7	38.3	0	0	0	100	10.5	89.5	
Total %	36.3	22.5	0	0	0	22.5	2	16.7	

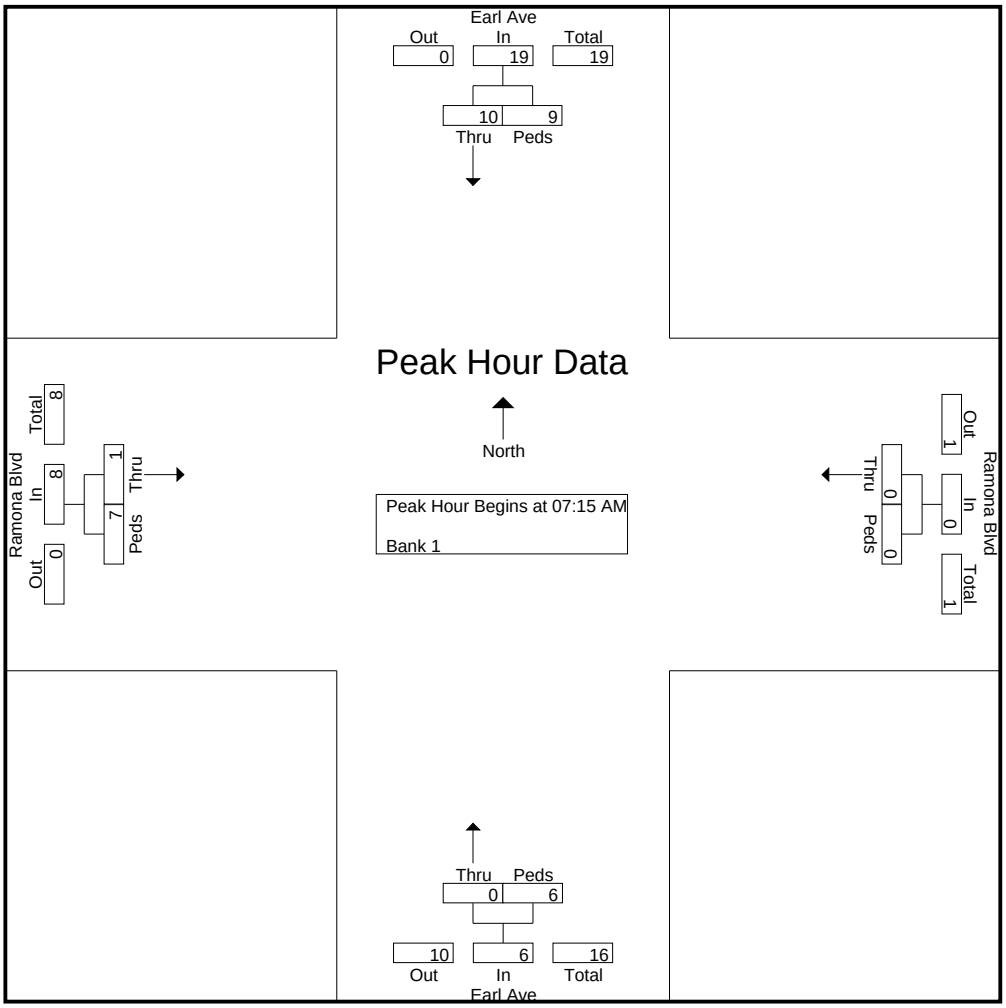
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Earl_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 2

	Earl Ave Southbound			Ramona Blvd Westbound			Earl Ave Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	2	**3**	5	0	0	0	0	1	1	0	**2**	**2**	8
07:30 AM	2	1	3	0	0	0	0	1	1	0	2	2	6
07:45 AM	2	3	5	0	0	0	0	**2**	**2**	**1**	1	2	9
08:00 AM	**4**	2	**6**	0	0	0	0	2	2	0	2	2	**10**
Total Volume	10	9	19	0	0	0	0	6	6	1	7	8	33
% App. Total	52.6	47.4		0	0		0	100		12.5	87.5		
PHF	.625	.750	.792	.000	.000	.000	.000	.750	.750	.250	.875	1.00	.825



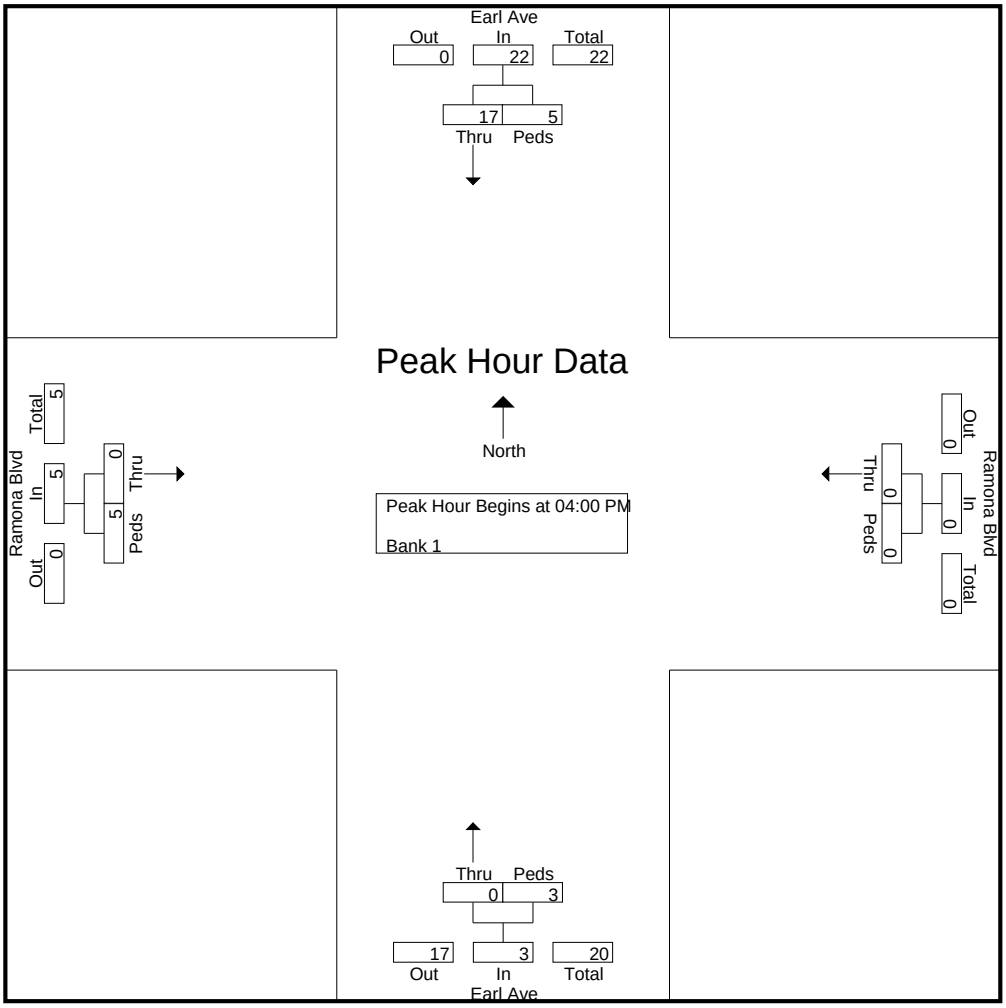
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : Earl_Ramona_BP
Site Code : 00000000
Start Date : 5/19/2015
Page No : 3

	Earl Ave Southbound			Ramona Blvd Westbound			Earl Ave Northbound			Ramona Blvd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	**6**	1	**7**	0	0	0	0	0	0	0	1	1	**8**
04:15 PM	3	0	3	0	0	0	0	**1**	**1**	0	**2**	**2**	6
04:30 PM	4	**2**	6	0	0	0	0	1	1	0	1	1	8
04:45 PM	4	2	6	0	0	0	0	1	1	0	1	1	8
Total Volume	17	5	22	0	0	0	0	3	3	0	5	5	30
% App. Total	77.3	22.7		0	0		0	100		0	100		
PHF	.708	.625	.786	.000	.000	.000	.000	.750	.750	.000	.625	.625	.938



City Traffic Counters
626.256.4171

File Name : BPfoster
Site Code : 00000000
Start Date : 1/17/2007
Page No : 1

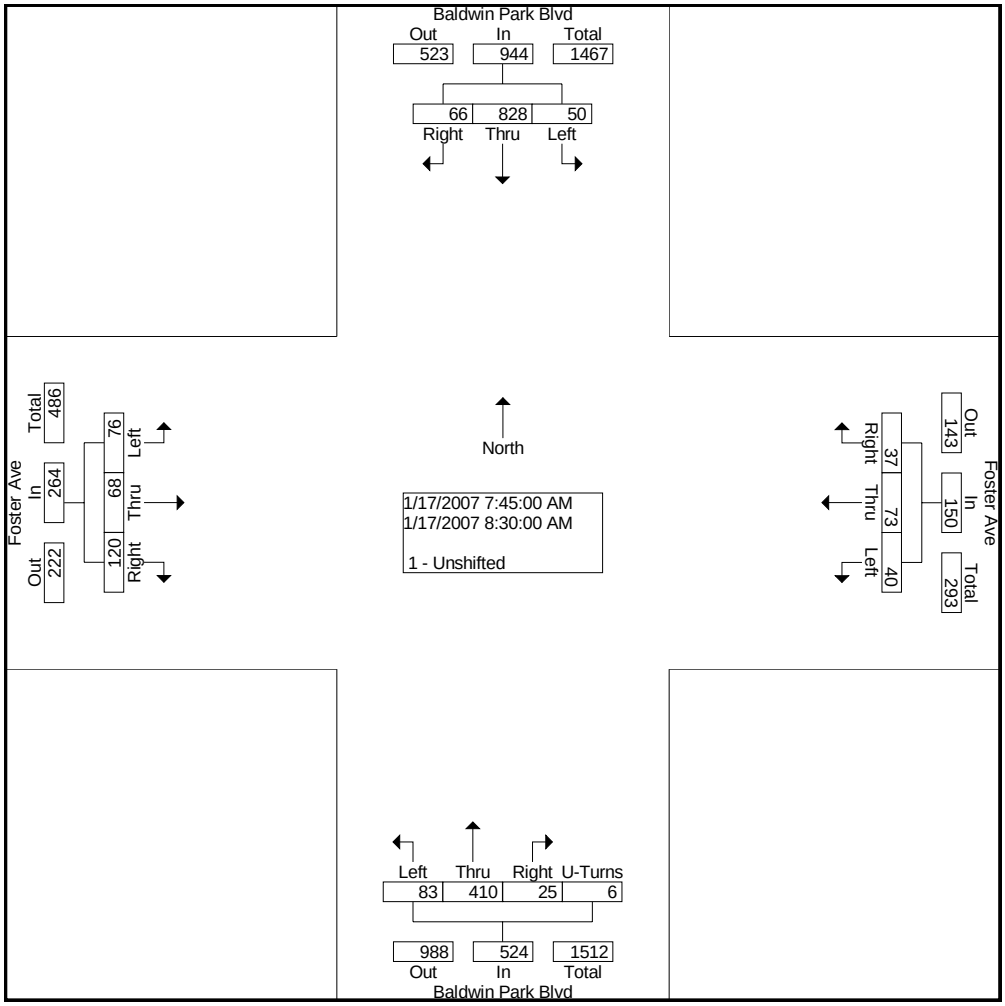
Groups Printed- 1 - Unshifted

	Baldwin Park Blvd Southbound			Foster Ave Westbound			Baldwin Park Blvd Northbound				Foster Ave Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turns	Left	Thru	Right	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	5	180	5	5	7	1	11	71	1	0	3	6	18	313
07:15 AM	3	179	14	8	14	6	18	93	2	1	2	6	23	369
07:30 AM	18	229	12	7	18	17	13	99	7	2	9	18	18	467
07:45 AM	17	225	9	12	16	16	19	102	13	1	6	15	15	466
Total	43	813	40	32	55	40	61	365	23	4	20	45	74	1615
08:00 AM	12	213	13	7	7	11	17	93	4	2	14	11	18	422
08:15 AM	15	191	13	9	12	4	11	107	3	1	22	15	27	430
08:30 AM	6	199	31	12	38	6	36	108	5	2	34	27	60	564
08:45 AM	11	149	3	5	11	4	7	79	4	0	24	20	51	368
Total	44	752	60	33	68	25	71	387	16	5	94	73	156	1784
04:00 PM	5	138	9	1	8	8	13	185	8	2	12	20	17	426
04:15 PM	6	138	11	3	7	13	18	173	2	0	5	12	14	402
04:30 PM	6	139	6	3	11	6	19	157	8	1	15	19	14	404
04:45 PM	7	180	6	2	15	6	13	191	4	1	14	24	9	472
Total	24	595	32	9	41	33	63	706	22	4	46	75	54	1704
05:00 PM	10	174	2	4	8	2	26	193	3	0	9	10	11	452
05:15 PM	4	141	4	3	9	7	17	195	7	3	2	9	12	413
05:30 PM	7	164	4	4	16	7	18	212	7	5	16	23	15	498
05:45 PM	1	199	4	4	13	10	15	195	6	0	12	16	8	483
Total	22	678	14	15	46	26	76	795	23	8	39	58	46	1846
Grand Total	133	2838	146	89	210	124	271	2253	84	21	199	251	330	6949
Apprch %	4.3	91.0	4.7	21.0	49.6	29.3	10.3	85.7	3.2	0.8	25.5	32.2	42.3	
Total %	1.9	40.8	2.1	1.3	3.0	1.8	3.9	32.4	1.2	0.3	2.9	3.6	4.7	

City Traffic Counters
626.256.4171

File Name : BPfoster
Site Code : 00000000
Start Date : 1/17/2007
Page No : 2

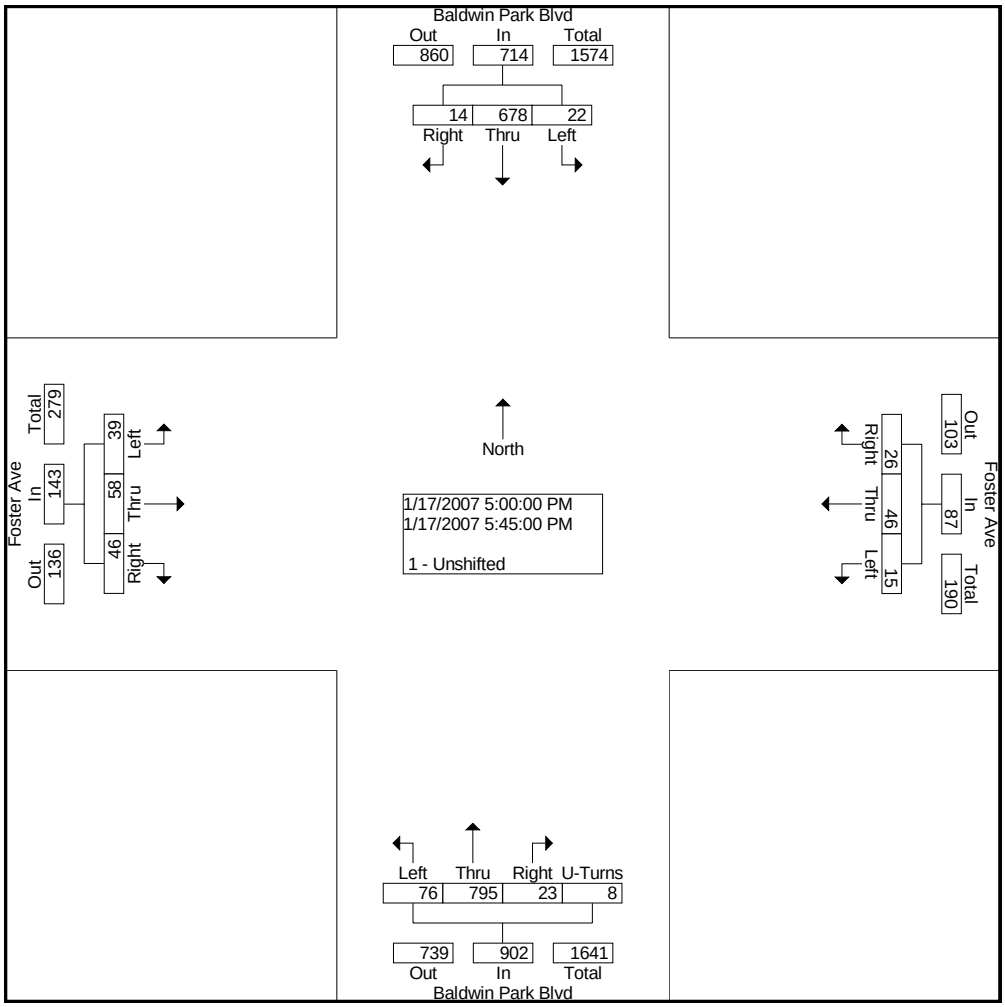
	Baldwin Park Blvd Southbound				Foster Ave Westbound				Baldwin Park Blvd Northbound					Foster Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																		
Intersection	07:45 AM																	
Volume	50	828	66	944	40	73	37	150	83	410	25	6	524	76	68	120	264	1882
Percent	5.3	87.7	7.0		26.7	48.7	24.7		15.8	78.2	4.8	1.1		28.8	25.8	45.5		
08:30 Volume	6	199	31	236	12	38	6	56	36	108	5	2	151	34	27	60	121	564
Peak Factor																		0.834
High Int.	07:45 AM				08:30 AM				08:30 AM					08:30 AM				
Volume	17	225	9	251	12	38	6	56	36	108	5	2	151	34	27	60	121	
Peak Factor				0.940				0.670					0.868				0.545	



City Traffic Counters
626.256.4171

File Name : BPfoster
Site Code : 00000000
Start Date : 1/17/2007
Page No : 3

	Baldwin Park Blvd Southbound				Foster Ave Westbound				Baldwin Park Blvd Northbound					Foster Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																		
Intersection	05:00 PM																	
Volume	22	678	14	714	15	46	26	87	76	795	23	8	902	39	58	46	143	1846
Percent	3.1	95.0	2.0		17.2	52.9	29.9		8.4	88.1	2.5	0.9		27.3	40.6	32.2		
05:30 Volume	7	164	4	175	4	16	7	27	18	212	7	5	242	16	23	15	54	498
Peak Factor																		0.927
High Int.	05:45 PM				05:30 PM				05:30 PM					05:30 PM				
Volume	1	199	4	204	4	16	7	27	18	212	7	5	242	16	23	15	54	
Peak Factor				0.875				0.806					0.932				0.662	



CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey
Site Code : 00000000
Start Date : 6/11/2015
Page No : 1

Groups Printed- Unshifted

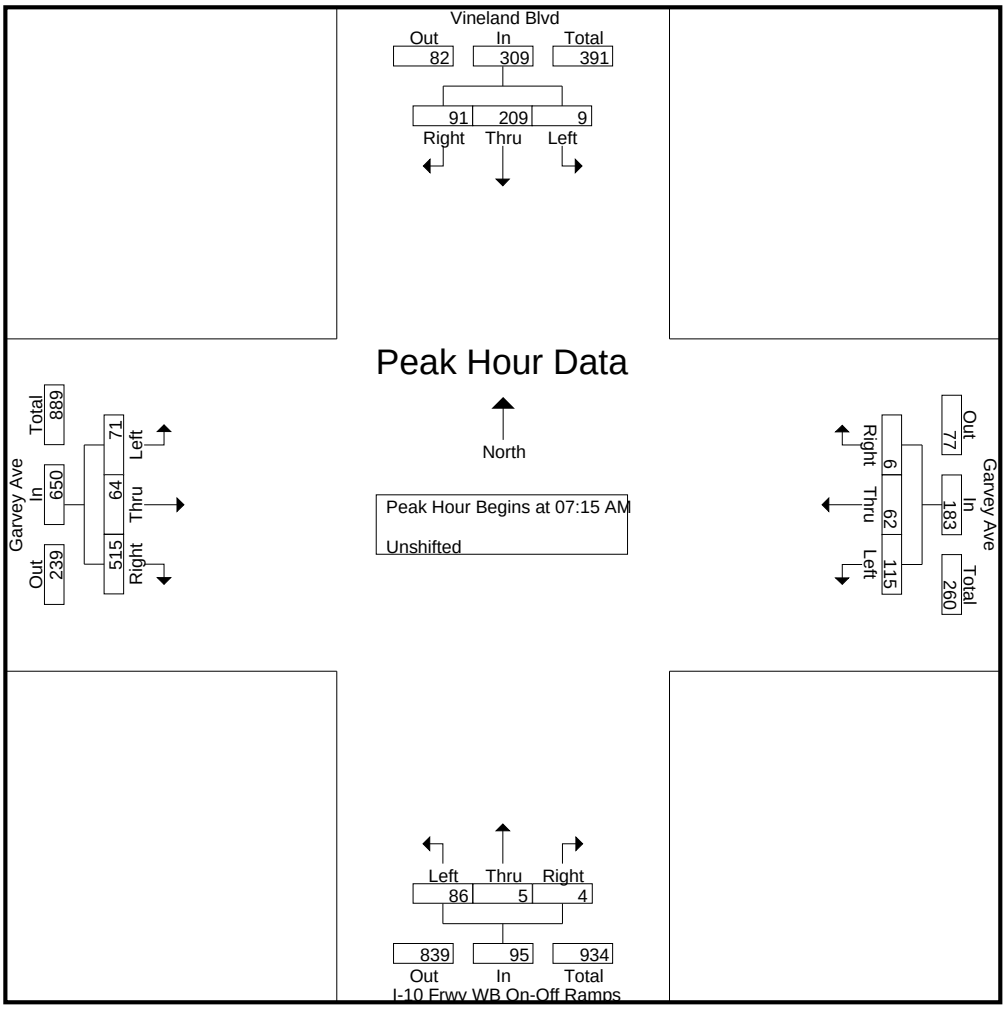
	Vineland Blvd Southbound			Garvey Ave Westbound			I-10 Frwy WB On-Off Ramps Northbound			Garvey Ave Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	3	37	25	33	16	2	11	0	1	10	20	109	267
07:15 AM	2	66	25	32	15	3	21	0	0	16	10	136	326
07:30 AM	4	49	28	37	14	2	20	1	0	16	24	146	341
07:45 AM	0	48	20	22	17	0	18	1	0	20	12	121	279
Total	9	200	98	124	62	7	70	2	1	62	66	512	1213
08:00 AM	3	46	18	24	16	1	27	3	4	19	18	112	291
08:15 AM	1	36	11	23	20	0	19	2	1	19	19	111	262
08:30 AM	3	30	9	15	8	0	22	2	3	6	23	105	226
08:45 AM	1	32	23	11	10	4	14	1	2	15	25	101	239
Total	8	144	61	73	54	5	82	8	10	59	85	429	1018
04:00 PM	3	14	21	16	18	7	33	8	3	44	61	63	291
04:15 PM	2	20	23	15	23	5	41	9	4	50	56	77	325
04:30 PM	4	21	10	8	19	3	34	11	4	65	56	71	306
04:45 PM	6	20	13	19	24	3	44	6	5	47	41	80	308
Total	15	75	67	58	84	18	152	34	16	206	214	291	1230
05:00 PM	1	21	23	19	26	3	39	7	7	52	46	76	320
05:15 PM	2	25	24	15	26	4	26	14	1	51	57	67	312
05:30 PM	5	19	14	11	21	1	31	5	1	62	63	71	304
05:45 PM	2	17	25	12	32	3	30	6	6	62	52	62	309
Total	10	82	86	57	105	11	126	32	15	227	218	276	1245
Grand Total	42	501	312	312	305	41	430	76	42	554	583	1508	4706
Apprch %	4.9	58.6	36.5	47.4	46.4	6.2	78.5	13.9	7.7	20.9	22	57	
Total %	0.9	10.6	6.6	6.6	6.5	0.9	9.1	1.6	0.9	11.8	12.4	32	

CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey
Site Code : 00000000
Start Date : 6/11/2015
Page No : 2

	Vineland Blvd Southbound				Garvey Ave Westbound				I-10 Frwy WB On-Off Ramps Northbound				Garvey Ave 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	2	**66**	25	**93**	32	15	**3**	50	21	0	0	21	16	10	136	162	326
07:30 AM	**4**	49	**28**	81	**37**	14	2	**53**	20	1	0	21	16	**24**	**146**	**186**	**341**
07:45 AM	0	48	20	68	22	**17**	0	39	18	1	0	19	**20**	12	121	153	279
08:00 AM	3	46	18	67	24	16	1	41	**27**	**3**	**4**	**34**	19	18	112	149	291
Total Volume	9	209	91	309	115	62	6	183	86	5	4	95	71	64	515	650	1237
% App. Total	2.9	67.6	29.4		62.8	33.9	3.3		90.5	5.3	4.2		10.9	9.8	79.2		
PHF	.563	.792	.813	.831	.777	.912	.500	.863	.796	.417	.250	.699	.888	.667	.882	.874	.907

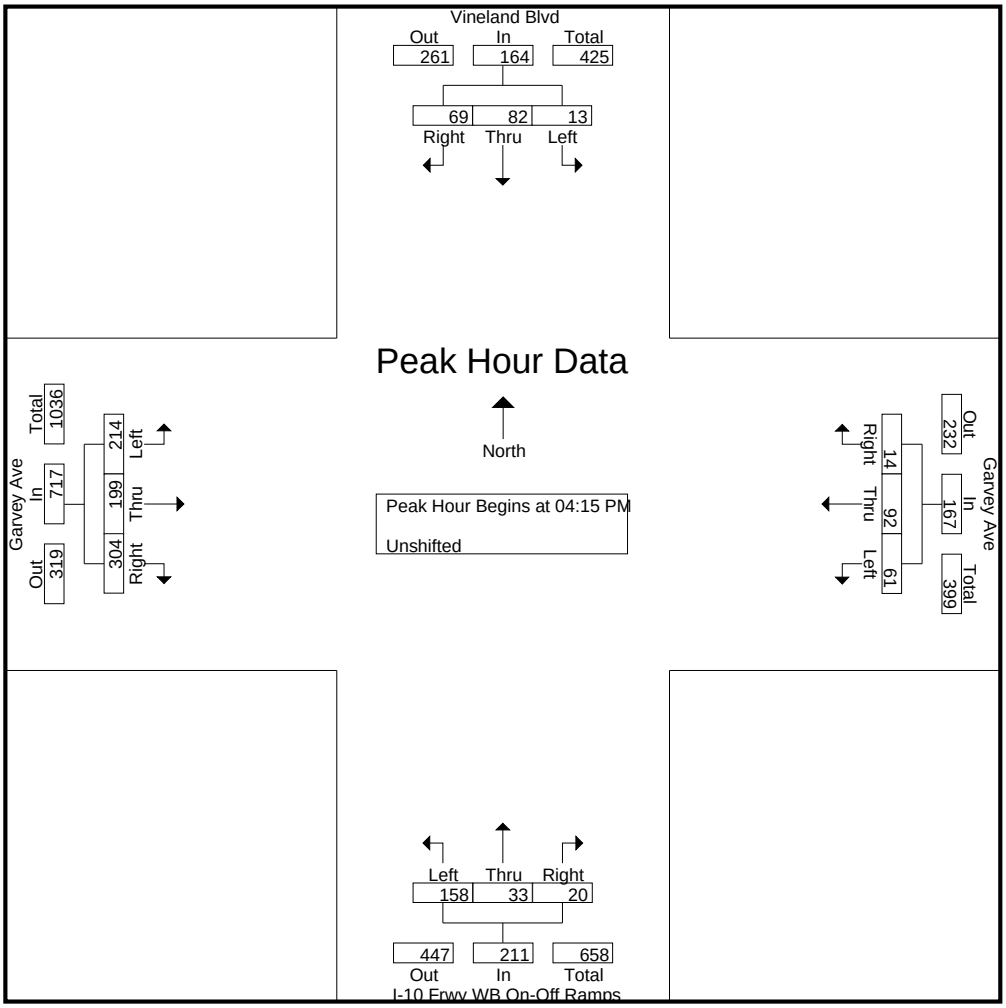


CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey
Site Code : 00000000
Start Date : 6/11/2015
Page No : 3

	Vineland Blvd Southbound				Garvey Ave Westbound				I-10 Frwy WB On-Off Ramps Northbound				Garvey Ave 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	2	20	**23**	**45**	15	23	**5**	43	41	9	4	54	50	**56**	77	183	**325**
04:30 PM	4	**21**	10	35	8	19	3	30	34	**11**	4	49	**65**	56	71	**192**	306
04:45 PM	**6**	20	13	39	**19**	24	3	46	**44**	6	5	**55**	47	41	**80**	168	308
05:00 PM	1	21	23	45	19	**26**	3	**48**	39	7	**7**	53	52	46	76	174	320
Total Volume	13	82	69	164	61	92	14	167	158	33	20	211	214	199	304	717	1259
% App. Total	7.9	50	42.1		36.5	55.1	8.4		74.9	15.6	9.5		29.8	27.8	42.4		
PHF	.542	.976	.750	.911	.803	.885	.700	.870	.898	.750	.714	.959	.823	.888	.950	.934	.968



CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey_Buses
Site Code : 00000000
Start Date : 6/11/2015
Page No : 1

Groups Printed- Bank 1

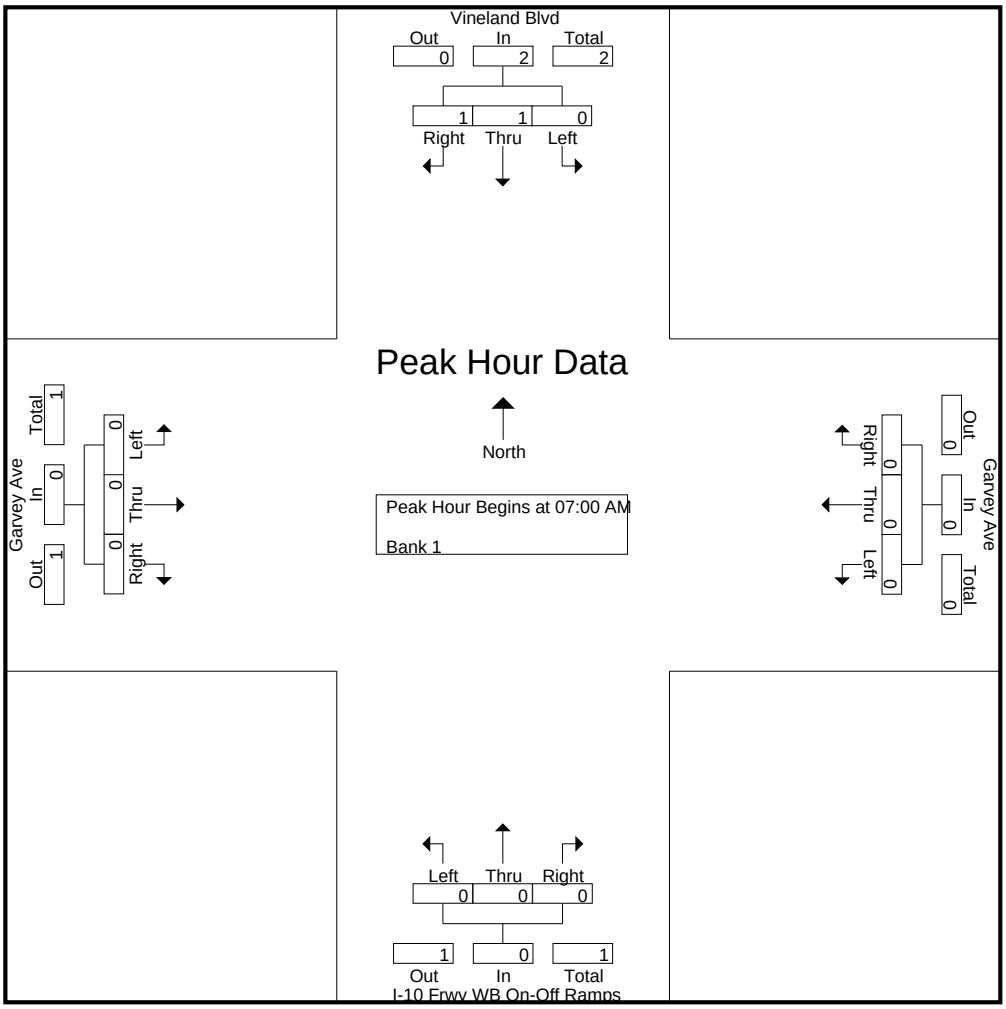
	Vineland Blvd Southbound			Garvey Ave Westbound			I-10 Frwy WB On-Off Ramps Northbound			Garvey Ave Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	1	0	0	0	0	0	0	0	0	0	2
Grand Total	0	1	1	0	0	0	0	0	0	0	0	0	2
Apprch %	0	50	50	0	0	0	0	0	0	0	0	0	
Total %	0	50	50	0	0	0	0	0	0	0	0	0	

CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey_Buses
Site Code : 00000000
Start Date : 6/11/2015
Page No : 2

	Vineland Blvd Southbound				Garvey Ave Westbound				I-10 Frwy WB On-Off Ramps Northbound				Garvey Ave 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	50	50		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.250	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500

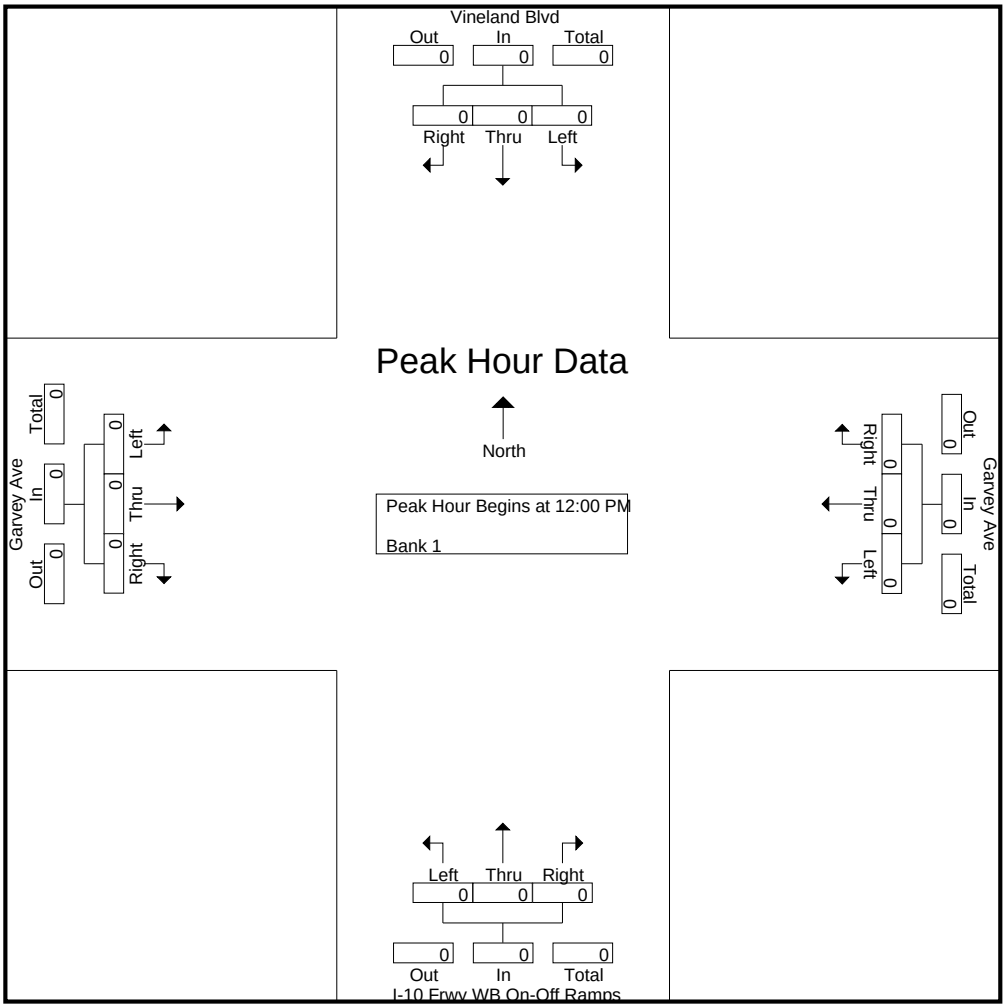


CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey_Buses
Site Code : 00000000
Start Date : 6/11/2015
Page No : 3

	Vineland Blvd Southbound				Garvey Ave Westbound				I-10 Frwy WB On-Off Ramps Northbound				Garvey Ave 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey_2-Axle
Site Code : 00000000
Start Date : 6/11/2015
Page No : 1

Groups Printed- Unshifted

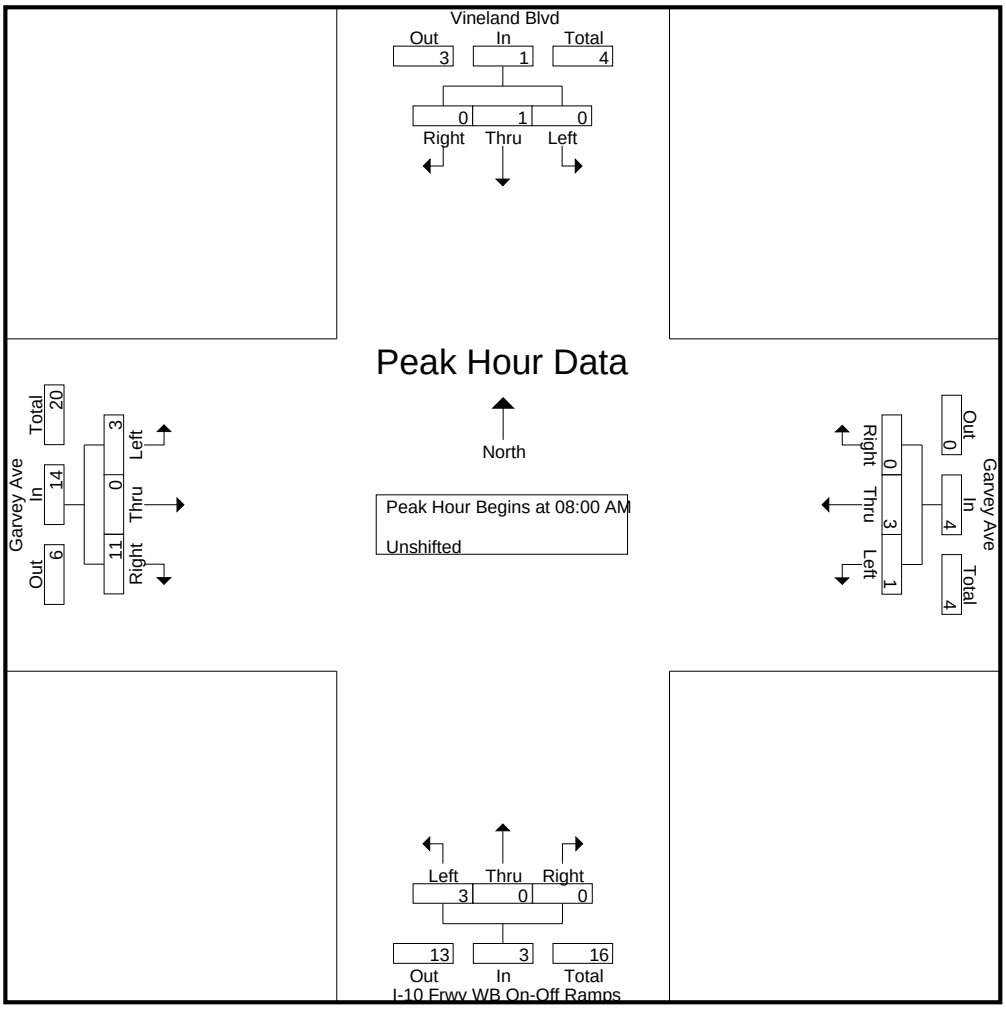
	Vineland Blvd Southbound			Garvey Ave Westbound			I-10 Frwy WB On-Off Ramps Northbound			Garvey Ave Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	1	0	0	0	0	0	1	2	4
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	3	3
07:30 AM	0	1	1	2	0	0	0	0	0	0	0	1	5
07:45 AM	0	0	0	0	1	0	0	0	0	0	0	3	4
Total	0	1	1	2	2	0	0	0	0	0	1	9	16
08:00 AM	0	0	0	1	1	0	0	0	0	1	0	1	4
08:15 AM	0	0	0	0	1	0	1	0	0	1	0	2	5
08:30 AM	0	1	0	0	0	0	2	0	0	1	0	3	7
08:45 AM	0	0	0	0	1	0	0	0	0	0	0	5	6
Total	0	1	0	1	3	0	3	0	0	3	0	11	22
04:00 PM	1	0	0	0	0	0	1	0	0	0	0	1	3
04:15 PM	0	0	1	0	0	0	0	0	0	0	0	3	4
04:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	1	0	0	0	0	0	1	0	1	3
Total	1	0	2	1	0	0	1	0	0	1	0	5	11
05:00 PM	0	0	0	1	0	0	0	0	0	1	0	2	4
05:15 PM	0	0	0	0	0	0	1	0	0	1	1	1	4
05:30 PM	0	0	0	1	0	0	1	0	0	0	0	2	4
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	3	4
Total	0	0	0	2	0	0	2	0	0	2	2	8	16
Grand Total	1	2	3	6	5	0	6	0	0	6	3	33	65
Apprch %	16.7	33.3	50	54.5	45.5	0	100	0	0	14.3	7.1	78.6	
Total %	1.5	3.1	4.6	9.2	7.7	0	9.2	0	0	9.2	4.6	50.8	

CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey_2-Axle
Site Code : 00000000
Start Date : 6/11/2015
Page No : 2

	Vineland Blvd Southbound				Garvey Ave Westbound				I-10 Frwy WB On-Off Ramps Northbound				Garvey Ave 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	**1**	**1**	0	**2**	0	0	0	0	**1**	0	1	2	4
08:15 AM	0	0	0	0	0	1	0	1	1	0	0	1	1	0	2	3	5
08:30 AM	0	**1**	0	**1**	0	0	0	0	**2**	0	0	**2**	1	0	3	4	**7**
08:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	**5**	**5**	6
Total Volume	0	1	0	1	1	3	0	4	3	0	0	3	3	0	11	14	22
% App. Total	0	100	0		25	75	0		100	0	0		21.4	0	78.6		
PHF	.000	.250	.000	.250	.250	.750	.000	.500	.375	.000	.000	.375	.750	.000	.550	.700	.786



CITY TRAFFIC COUNTERS

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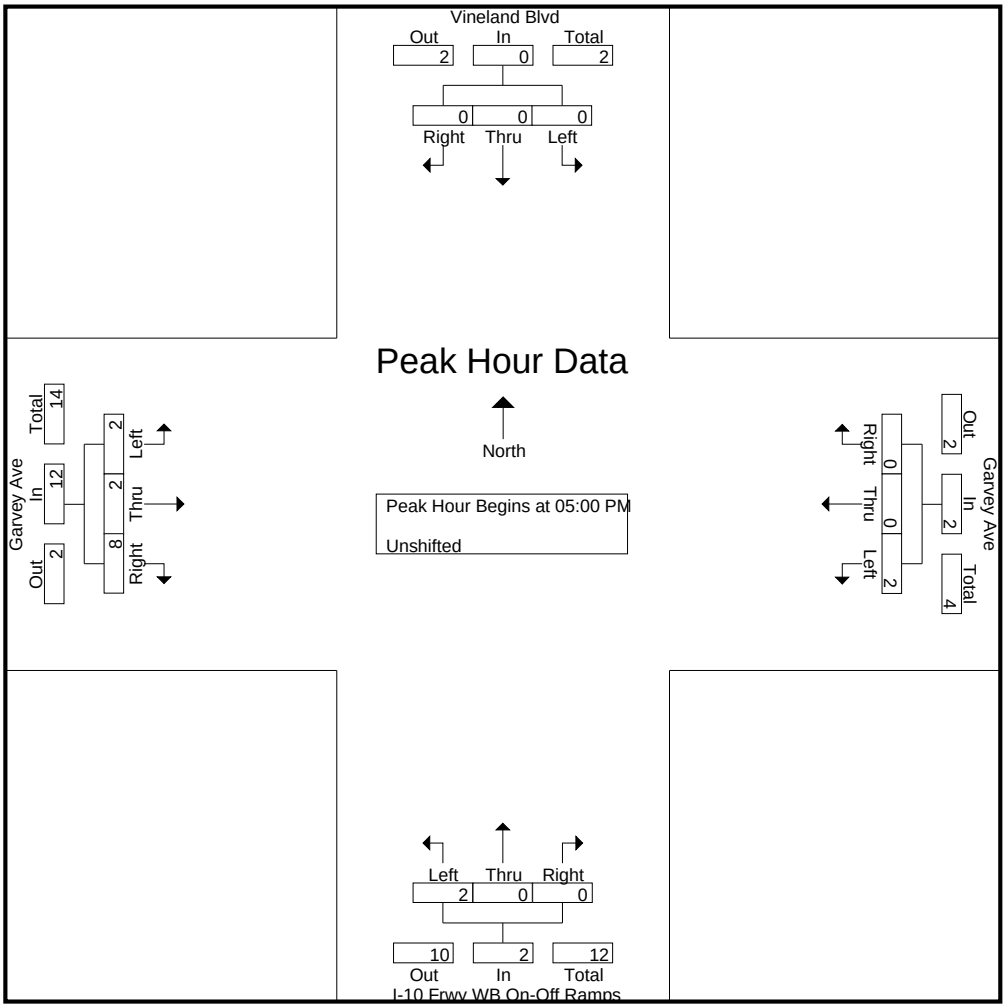
File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey_2-Axle
Site Code : 00000000
Start Date : 6/11/2015
Page No : 3

	Vineland Blvd Southbound				Garvey Ave Westbound				I-10 Frwy WB On-Off Ramps Northbound				Garvey Ave 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**1**	0	2	3	**4**
05:15 PM	0	0	0	0	0	0	0	0	**1**	0	0	**1**	1	**1**	1	3	4
05:30 PM	0	0	0	0	1	0	0	1	1	0	0	1	0	0	2	2	4
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	**3**	**4**	4
Total Volume	0	0	0	0	2	0	0	2	2	0	0	2	2	2	8	12	16
% App. Total	0	0	0		100	0	0		100	0	0		16.7	16.7	66.7		
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.500	.000	.000	.500	.500	.500	.667	.750	1.00



CITY TRAFFIC COUNTERS

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File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey_3-Axle
Site Code : 00000000
Start Date : 6/11/2015
Page No : 1

Groups Printed- Bank 1

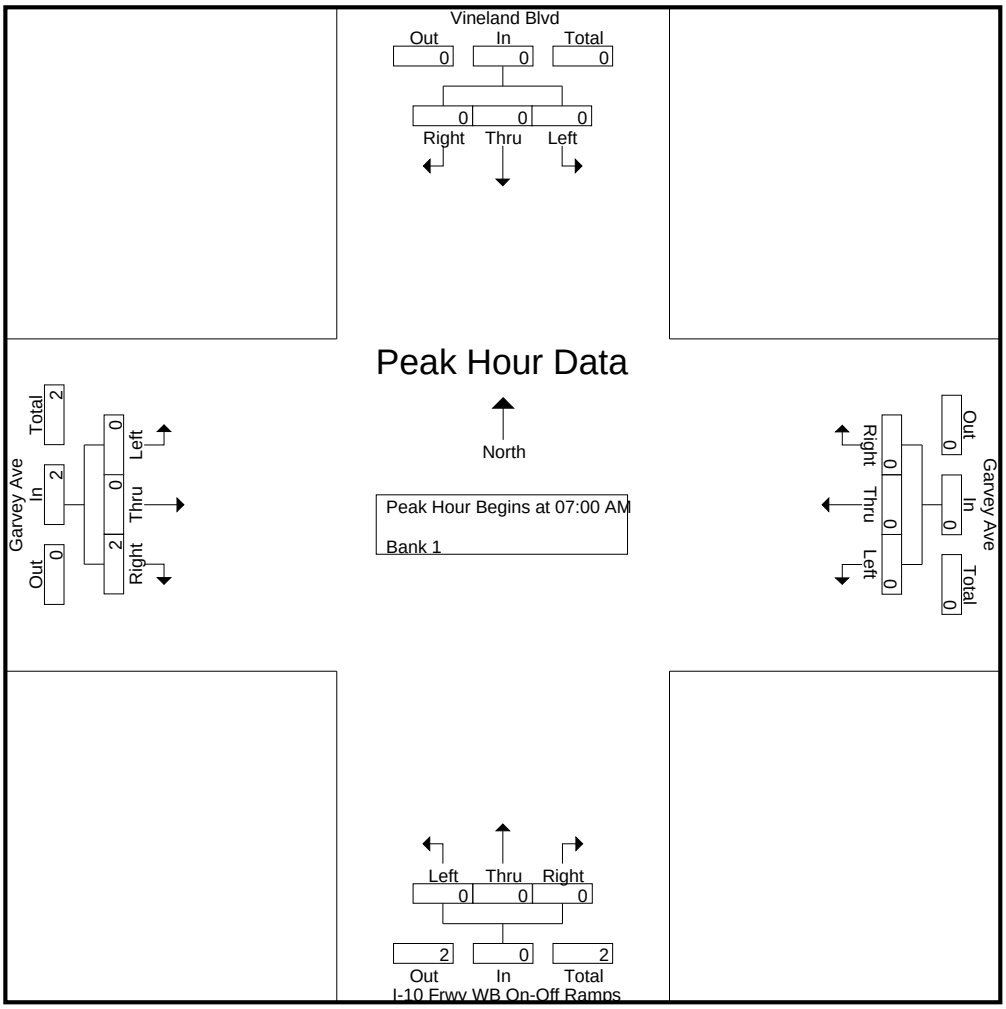
	Vineland Blvd Southbound			Garvey Ave Westbound			I-10 Frwy WB On-Off Ramps Northbound			Garvey Ave Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	2	2
04:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	1	0	0	0	1	0	2
Grand Total	0	0	0	0	0	0	1	0	0	0	1	2	4
Apprch %	0	0	0	0	0	0	100	0	0	0	33.3	66.7	
Total %	0	0	0	0	0	0	25	0	0	0	25	50	

CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey_3-Axle
Site Code : 00000000
Start Date : 6/11/2015
Page No : 2

	Vineland Blvd Southbound				Garvey Ave Westbound				I-10 Frwy WB On-Off Ramps Northbound				Garvey Ave 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
% App. Total	0	0	0		0	0	0		0	0	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.500	.500

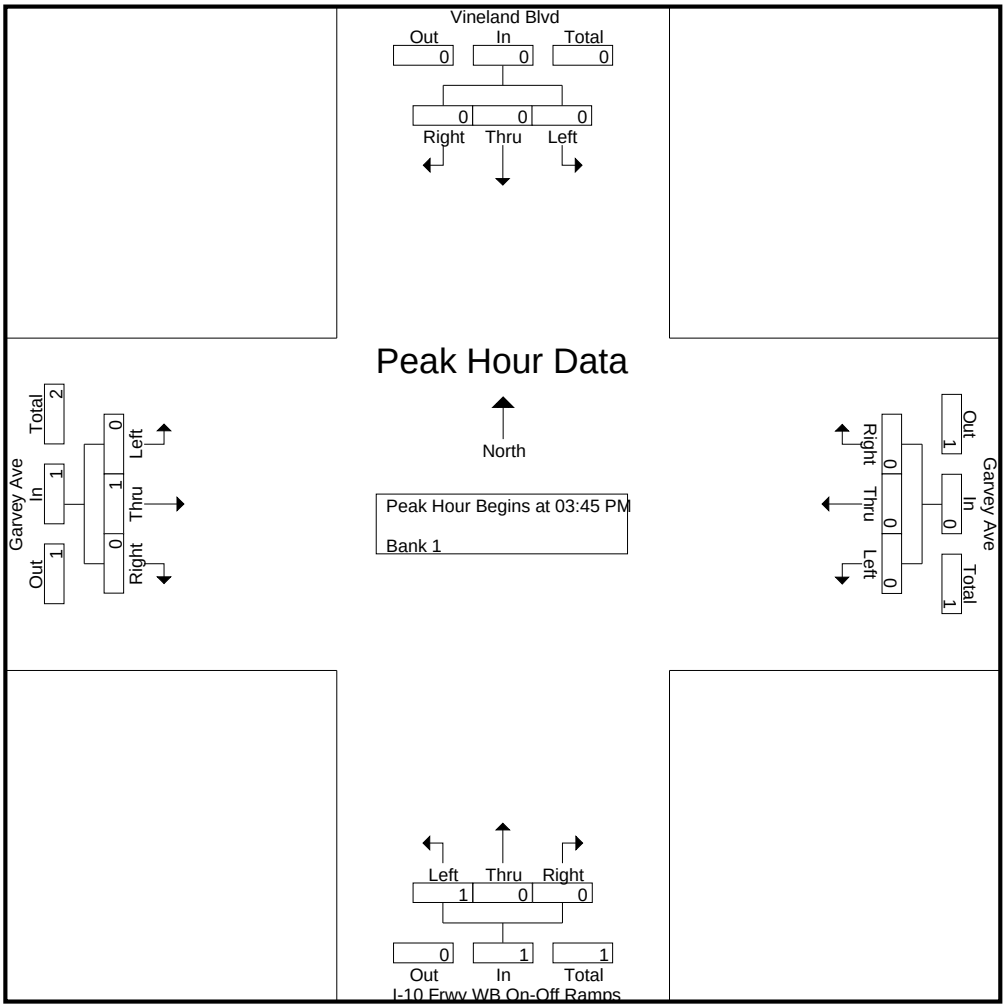


CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey_3-Axle
Site Code : 00000000
Start Date : 6/11/2015
Page No : 3

	Vineland Blvd Southbound				Garvey Ave Westbound				I-10 Frwy WB On-Off Ramps Northbound				Garvey Ave 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:45 PM																	
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**1**
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	1
Total Volume	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	2
% App. Total	0	0	0		0	0	0		100	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.000	.250	.000	.250	.500



CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey_4+-Axles
Site Code : 00000000
Start Date : 6/11/2015
Page No : 1

Groups Printed- Bank 2

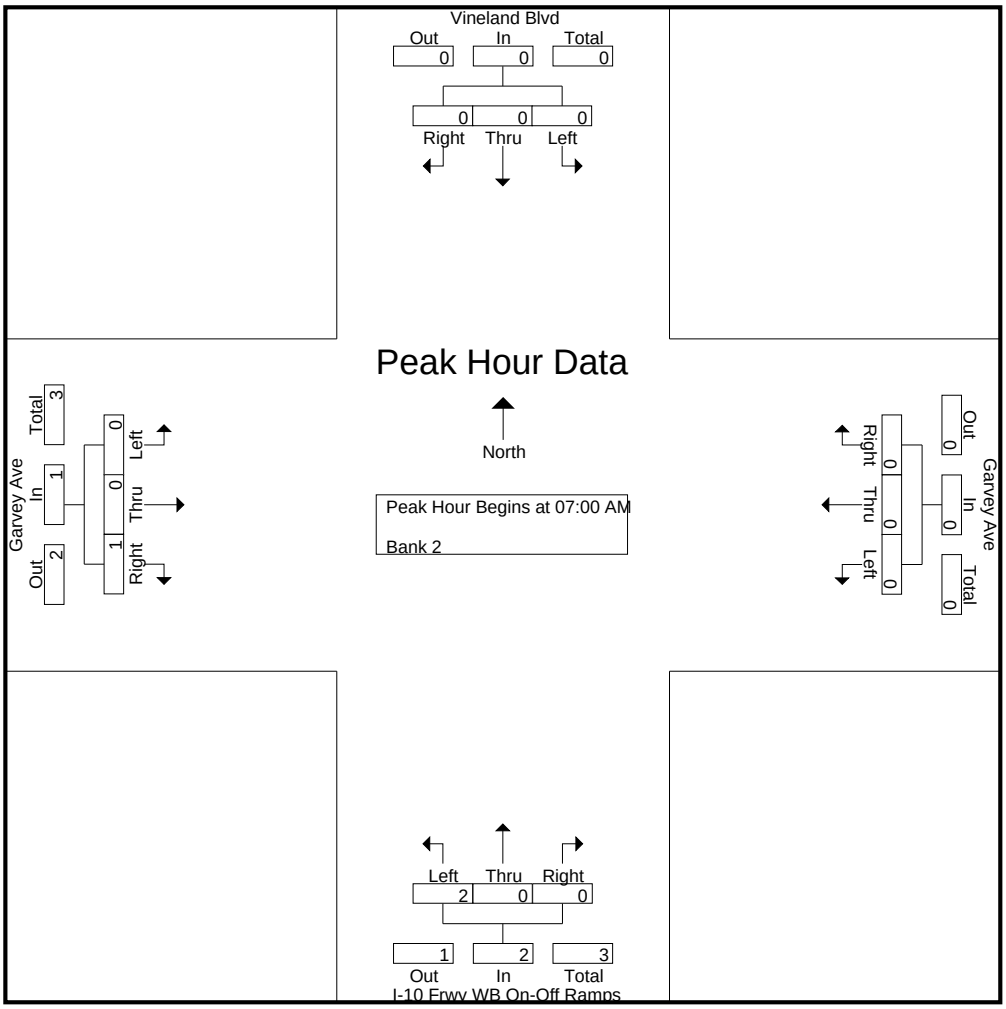
	Vineland Blvd Southbound			Garvey Ave Westbound			I-10 Frwy WB On-Off Ramps Northbound			Garvey Ave Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
07:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	2	0	0	0	0	1	3
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	1
04:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
04:45 PM	0	0	0	0	1	0	0	0	0	0	0	1	2
Total	0	0	0	0	1	0	0	0	1	0	0	1	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	2
Total	0	0	0	0	0	0	0	0	0	0	1	1	2
Grand Total	0	0	0	0	1	0	2	0	1	0	1	4	9
Apprch %	0	0	0	0	100	0	66.7	0	33.3	0	20	80	
Total %	0	0	0	0	11.1	0	22.2	0	11.1	0	11.1	44.4	

CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey_4+-Axles
Site Code : 00000000
Start Date : 6/11/2015
Page No : 2

	Vineland Blvd Southbound				Garvey Ave Westbound				I-10 Frwy WB On-Off Ramps Northbound				Garvey Ave 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	1
07:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	1	3
% App. Total	0	0	0		0	0	0		100	0	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.250	.250	.750

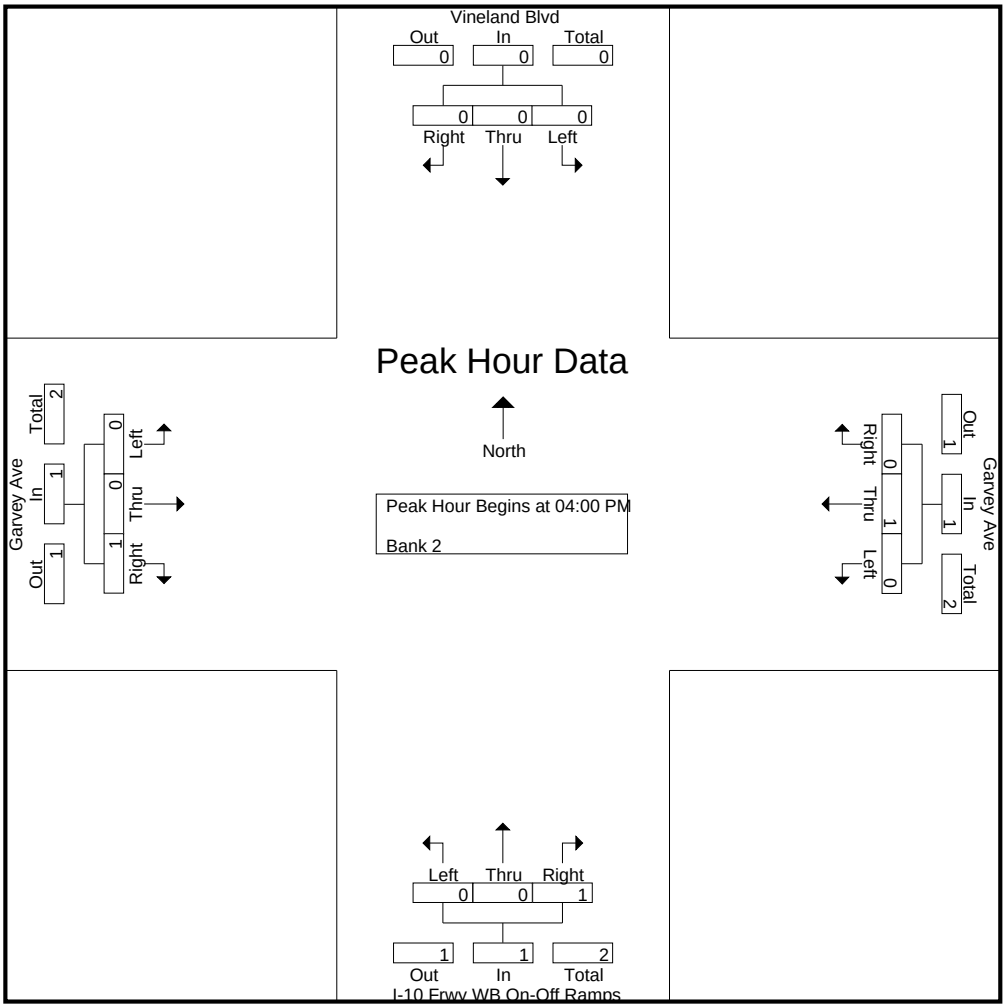


CITY TRAFFIC COUNTERS

www.ctcounters.com

File Name : I-10FrwyWBOnOff-Ramps-Vineland_Garvey_4+-Axles
Site Code : 00000000
Start Date : 6/11/2015
Page No : 3

	Vineland Blvd Southbound				Garvey Ave Westbound				I-10 Frwy WB On-Off Ramps Northbound				Garvey Ave 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	**1**	**1**	**2**
Total Volume	0	0	0	0	0	1	0	1	0	0	1	1	0	0	1	1	3
% App. Total	0	0	0		0	100	0		0	0	100		0	0	100		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250	.000	.000	.250	.250	.375



APPENDIX B

ICU AND LEVELS OF SERVICE EXPLANATION
HCM AND LEVELS OF SERVICE EXPLANATION
INTERSECTION LEVELS OF SERVICE DATA WORKSHEETS – WEEKDAY AM AND PM PEAK HOURS

INTERSECTION CAPACITY UTILIZATION (ICU) DESCRIPTION

Level of Service is a term used to describe prevailing conditions and their effect on traffic. Broadly interpreted, the Levels of Service concept denotes any one of a number of differing combinations of operating conditions which may occur as a roadway is accommodating various traffic volumes. Level of Service is a qualitative measure of the effect of such factors as travel speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

Six Levels of Service, A through F, have been defined in the 1965 *Highway Capacity Manual*, published by the Transportation Research Board. Level of Service A describes a condition of free flow, with low traffic volumes and relatively high speeds, while Level of Service F describes forced traffic flow at low speeds with jammed conditions and queues which cannot clear during the green phases.

The Intersection Capacity Utilization (ICU) method of intersection capacity analysis has been used in our studies. It directly relates traffic demand and available capacity for key intersection movements, regardless of present signal timing, The capacity per hour of green time for each approach is calculated based on the methods of the *Highway Capacity Manual*. The proportion of total signal time needed by each key movement is determined and compared to the total time available (100 percent of the hour). The result of summing the requirements of the conflicting key movements plus an allowance for clearance times is expressed as a decimal fraction. Conflicting key traffic movements are those opposing movements whose combined green time requirements are greatest.

The resulting ICU represents the proportion of the total hour required to accommodate intersection demand volumes if the key conflicting traffic movements are operating at capacity. Other movements may be operating near capacity, or may be operating at significantly better levels. The ICU may be translated to a Level of Service as tabulated below.

The Levels of Service (abbreviated from the *Highway Capacity Manual*) are listed here with their corresponding ICU and Load Factor equivalents. Load Factor is that proportion of the signal cycles during the peak hour which are fully loaded; i.e. when all of the vehicles waiting at the beginning of green are not able to clear on that green phase.

Intersection Capacity Utilization Characteristics

Level of Service	Load Factor	Equivalent ICU
A	0.0	0.00 - 0.60
B	0.0 - 0.1	0.61 - 0.70
C	0.1 - 0.3	0.71 - 0.80
D	0.3 - 0.7	0.81 - 0.90
E	0.7 - 1.0	0.91 - 1.00
F	Not Applicable	Not Applicable

SERVICE LEVEL A
There are no loaded cycles and few are even close to loaded at this service level. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.

SERVICE LEVEL B
This level represents stable operation where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.

SERVICE LEVEL C
At this level stable operation continues. Loading is still intermittent but more frequent than at Level B. Occasionally drivers may have to wait through more than one red signal indication and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.

SERVICE LEVEL D
This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak hour, but enough cycles with lower demand occur to permit periodic clearance of queues, thus preventing excessive backups. Drivers frequently have to wait through more than one red signal. This level is the lower limit of acceptable operation to most drivers.

SERVICE LEVEL E
This represents near capacity and capacity operation. At capacity (ICU = 1.0) it represents the most vehicles that the particular intersection can accommodate. However, full utilization of every signal cycle is seldom attained no matter how great the demand. At this level all drivers wait through more than one red signal, and frequently through several.

SERVICE LEVEL F
Jammed conditions. Traffic backed up from a downstream location on one of the street restricts or prevents movement of traffic through the intersection under consideration.

LEVEL OF SERVICE FOR UNSIGNALIZED INTERSECTIONS

In the *Highway Capacity Manual (HCM)*, published by the Transportation Research Board, 2000, level of service for unsignalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, in the absence of incidents, control, traffic, or geometric delay. Only the portion of total delay attributed to the traffic control measures, either traffic signals or stop signs, is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Level of Service criteria for unsignalized intersections are stated in terms of the average control delay per vehicle. The level of service is determined by the computed or measured control delay and is defined for each minor movement. Average control delay for any particular minor movement is a function of the service time for the approach and the degree of utilization. (Level of service is not defined for the intersection as a whole for two-way stop controlled intersections.)

Level of Service Criteria for TWSC/AWSC Intersections

Level of Service	Average Control Delay (Sec/Veh)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Level of Service (LOS) values are used to describe intersection operations with service levels varying from LOS A (free flow) to LOS F (jammed condition). The following descriptions summarize *HCM* criteria for each level of service:

LOS A describes operations with very low control delay, up to 10 seconds per vehicle.

LOS B describes operations with control delay greater than 10 and up to 15 seconds per vehicle.

LOS C describes operations with control delay greater than 15 and up to 25 seconds per vehicle.

LOS D describes operations with control delay greater than 25 and up to 35 seconds per vehicle.

LOS E describes operations with control delay greater than 35 and up to 50 seconds per vehicle.

LOS F describes operations with control delay in excess of 50 seconds per vehicle. For two-way stop controlled intersections, LOS F exists when there are insufficient gaps of suitable size to allow side-street demand to safely cross through a major-street traffic stream. This level of service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches.

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INTERSECTION CAPACITY UTILIZATION

Peck Road @ Lower Azusa Road

N-S St: Peck Road
E-W St: Lower Azusa Road
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU1

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	209	1600	0.131	0	209	1600	0.131	0	209	1600	0.131	53	262	1600	0.164 *	0	262	1600	0.164 *
Nb Thru	951	3200	0.322 *	2	953	3200	0.323 *	0	953	3200	0.323 *	89	1040	3200	0.357	2	1042	3200	0.358
Nb Right	79	0	-	0	79	0	-	0	79	0	-	24	103	0	-	0	103	0	-
Sb Left	107	1600	0.067 *	0	107	1600	0.067 *	0	107	1600	0.067 *	4	111	1600	0.070	0	111	1600	0.070
Sb Thru	781	3200	0.244	10	791	3200	0.247	0	791	3200	0.247	72	853	3200	0.267 *	10	863	3200	0.270 *
Sb Right	150	1600	0.094	0	150	1600	0.094	0	150	1600	0.094	6	157	1600	0.098	0	157	1600	0.098
Eb Left	122	1600	0.076 *	0	122	1600	0.076 *	0	122	1600	0.076 *	5	127	1600	0.079	0	127	1600	0.079
Eb Thru	395	3200	0.168	0	395	3200	0.168	0	395	3200	0.168	19	414	3200	0.183 *	0	414	3200	0.183 *
Eb Right	142	0	-	0	142	0	-	0	142	0	-	30	172	0	-	0	172	0	-
Wb Left	217	1600	0.136	0	217	1600	0.136	0	217	1600	0.136	15	232	1600	0.145 *	0	232	1600	0.145 *
Wb Thru	644	3200	0.231 *	0	644	3200	0.231 *	0	644	3200	0.231 *	32	676	3200	0.242	0	676	3200	0.242
Wb Right	94	0	-	0	94	0	-	0	94	0	-	4	98	0	-	0	98	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.796				0.797				0.797				0.859				0.862
LOS			C				C				C				D				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Peck Road @ Lower Azusa Road
Peak hr: PM
Annual Growth: 1.00%

N-S St: Peck Road
E-W St: Lower Azusa Road
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU1

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	208	1600	0.130	0	208	1600	0.130	0	208	1600	0.130	50	258	1600	0.161	0	258	1600	0.161
Nb Thru	830	3200	0.332 *	11	841	3200	0.335 *	0	841	3200	0.335 *	92	922	3200	0.368 *	11	933	3200	0.372 *
Nb Right	231	0	-	0	231	0	-	0	231	0	-	24	256	0	-	0	256	0	-
Sb Left	114	1600	0.071 *	0	114	1600	0.071 *	0	114	1600	0.071 *	5	119	1600	0.074 *	0	119	1600	0.074 *
Sb Thru	660	3200	0.206	4	664	3200	0.207	0	664	3200	0.207	90	750	3200	0.234	4	754	3200	0.236
Sb Right	139	1600	0.087	0	139	1600	0.087	0	139	1600	0.087	6	145	1600	0.091	0	145	1600	0.091
Eb Left	177	1600	0.110	0	177	1600	0.110	0	177	1600	0.110	7	184	1600	0.115	0	184	1600	0.115
Eb Thru	830	3200	0.306 *	0	830	3200	0.306 *	0	830	3200	0.306 *	44	874	3200	0.339 *	0	874	3200	0.339 *
Eb Right	150	0	-	0	150	0	-	0	150	0	-	59	210	0	-	0	210	0	-
Wb Left	171	1600	0.107 *	0	171	1600	0.107 *	0	171	1600	0.107 *	31	202	1600	0.126 *	0	202	1600	0.126 *
Wb Thru	547	3200	0.196	0	547	3200	0.196	0	547	3200	0.196	33	580	3200	0.208	0	580	3200	0.208
Wb Right	81	0	-	0	81	0	-	0	81	0	-	3	84	0	-	0	84	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.916				0.920				0.920				1.007				1.010
LOS			E				E				E				F				F

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Peck Road @ Ramona Boulevard

N-S St: Peck Road
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU2

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	35	1600	0.022 *	0	35	1600	0.022 *	0	35	1600	0.022 *	4	39	1600	0.025 *	0	39	1600	0.025 *
Nb Thru	621	3200	0.194	0	621	3200	0.194	0	621	3200	0.194	29	650	3200	0.203	0	650	3200	0.203
Nb Right	132	1600	0.083	10	142	1600	0.089	0	142	1600	0.089	7	139	1600	0.087	10	149	1600	0.093
Sb Left	113	1600	0.071	10	123	1600	0.077	0	123	1600	0.077	13	126	1600	0.078	10	136	1600	0.085
Sb Thru	1108	4800	0.264 *	0	1108	4800	0.264 *	0	1108	4800	0.264 *	56	1164	4800	0.278 *	0	1164	4800	0.278 *
Sb Right	157	0	-	0	157	0	-	0	157	0	-	15	172	0	-	0	172	0	-
Eb Left	83	1600	0.052 *	0	83	1600	0.052 *	0	83	1600	0.052 *	15	98	1600	0.061 *	0	98	1600	0.061 *
Eb Thru	239	3200	0.075	13	252	3200	0.079	0	252	3200	0.079	47	286	3200	0.089	13	299	3200	0.093
Eb Right	9	1600	0.006	0	9	1600	0.006	0	9	1600	0.006	10	19	1600	0.012	0	19	1600	0.012
Wb Left	259	1600	0.162	2	261	1600	0.163	0	261	1600	0.163	10	269	1600	0.168	2	271	1600	0.170
Wb Thru	733	3200	0.229 *	3	736	3200	0.230 *	0	736	3200	0.230 *	50	783	3200	0.245 *	3	786	3200	0.246 *
Wb Right	259	1600	0.162	2	261	1600	0.163	0	261	1600	0.163	11	270	1600	0.169	2	272	1600	0.170
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.666				0.667				0.667				0.709				0.710
LOS			B				B				B				C				C

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Peck Road @ Ramona Boulevard

N-S St: Peck Road
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU2

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	49	1600	0.031	0	49	1600	0.031	0	49	1600	0.031	14	63	1600	0.039	0	63	1600	0.039
Nb Thru	1000	3200	0.313 *	0	1000	3200	0.313 *	0	1000	3200	0.313 *	58	1058	3200	0.331 *	0	1058	3200	0.331 *
Nb Right	318	1600	0.199	4	322	1600	0.201	0	322	1600	0.201	13	331	1600	0.207	4	335	1600	0.209
Sb Left	205	1600	0.128 *	4	209	1600	0.131 *	0	209	1600	0.131 *	11	216	1600	0.135 *	4	220	1600	0.138 *
Sb Thru	761	4800	0.178	0	761	4800	0.178	0	761	4800	0.178	46	807	4800	0.192	0	807	4800	0.192
Sb Right	93	0	-	0	93	0	-	0	93	0	-	23	116	0	-	0	116	0	-
Eb Left	218	1600	0.136	0	218	1600	0.136	0	218	1600	0.136	25	243	1600	0.152	0	243	1600	0.152
Eb Thru	593	3200	0.185 *	6	599	3200	0.187 *	0	599	3200	0.187 *	63	656	3200	0.205 *	6	662	3200	0.207 *
Eb Right	30	1600	0.019	0	30	1600	0.019	0	30	1600	0.019	9	39	1600	0.025	0	39	1600	0.025
Wb Left	193	1600	0.121 *	11	204	1600	0.128 *	0	204	1600	0.128 *	10	203	1600	0.127 *	11	214	1600	0.134 *
Wb Thru	337	3200	0.105	14	351	3200	0.110	0	351	3200	0.110	64	401	3200	0.125	14	415	3200	0.130
Wb Right	134	1600	0.084	11	145	1600	0.091	0	145	1600	0.091	13	147	1600	0.092	11	158	1600	0.099
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.847				0.858				0.858				0.897				0.909
LOS			D				D				D				D				E

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Durfee Avenue @ Ramona Boulevard

N-S St:	Durfee Avenue	Peak hr:	AM	Date:	09/04/2015
E-W St:	Ramona Boulevard	Annual Growth:	1.00%	Date of Count:	2015
Project:	Kaiser Permanente Irwindale MOB Project/1-15-4118-1			Projection Year:	2019
File:	ICU3				

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	16	1600	0.010	0	16	1600	0.010	0	16	1600	0.010	1	17	1600	0.010	0	17	1600	0.010
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	99	1600	0.062	0	99	1600	0.062	0	99	1600	0.062	6	105	1600	0.066	0	105	1600	0.066
Sb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	644	3200	0.223 *	32	676	3200	0.233 *	0	676	3200	0.233 *	76	720	3200	0.248 *	32	752	3200	0.258 *
Eb Right	69	0	-	0	69	0	-	0	69	0	-	6	75	0	-	0	75	0	-
Wb Left	201	1600	0.126 *	0	201	1600	0.126 *	0	201	1600	0.126 *	9	210	1600	0.131 *	0	210	1600	0.131 *
Wb Thru	919	3200	0.287	8	927	3200	0.290	0	927	3200	0.290	57	976	3200	0.305	8	984	3200	0.307
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.458				0.468				0.468				0.490				0.500
LOS			A				A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Durfee Avenue @ Ramona Boulevard

N-S St: Durfee Avenue
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU3

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	28	1600	0.018	0	28	1600	0.018	0	28	1600	0.018	3	31	1600	0.019	0	31	1600	0.019
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	131	1600	0.082 *	0	131	1600	0.082 *	0	131	1600	0.082 *	6	137	1600	0.086 *	0	137	1600	0.086 *
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	959	3200	0.318 *	14	973	3200	0.322 *	0	973	3200	0.322 *	77	1036	3200	0.343 *	14	1050	3200	0.347 *
Eb Right	58	0	-	0	58	0	-	0	58	0	-	3	61	0	-	0	61	0	-
Wb Left	98	1600	0.061 *	0	98	1600	0.061 *	0	98	1600	0.061 *	6	104	1600	0.065 *	0	104	1600	0.065 *
Wb Thru	580	3200	0.181	36	616	3200	0.193	0	616	3200	0.193	81	661	3200	0.207	36	697	3200	0.218
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.561				0.565				0.565				0.594				0.598
LOS			A				A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	644	69	201	919	16	99
Future Vol, veh/h	644	69	201	919	16	99
Conflicting Peds, #/hr	0	20	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	700	75	218	999	17	108

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	775	0	1674	388
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	936	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	837	-	86	611
Stage 1	-	-	-	-	434	-
Stage 2	-	-	-	-	342	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	837	-	62	611
Mov Cap-2 Maneuver	-	-	-	-	62	-
Stage 1	-	-	-	-	434	-
Stage 2	-	-	-	-	248	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	22.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	62	611	-	-	837	-
HCM Lane V/C Ratio	0.281	0.176	-	-	0.261	-
HCM Control Delay (s)	84.3	12.1	-	-	10.8	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	1	0.6	-	-	1	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	959	58	98	580	28	131
Future Vol, veh/h	959	58	98	580	28	131
Conflicting Peds, #/hr	0	20	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	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	1009	61	103	611	29	138

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1071	0	1552	535
Stage 1	-	-	-	-	1040	-
Stage 2	-	-	-	-	512	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	647	-	104	490
Stage 1	-	-	-	-	302	-
Stage 2	-	-	-	-	567	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	647	-	86	490
Mov Cap-2 Maneuver	-	-	-	-	86	-
Stage 1	-	-	-	-	302	-
Stage 2	-	-	-	-	468	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	24.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	86	490	-	-	647	-
HCM Lane V/C Ratio	0.343	0.281	-	-	0.159	-
HCM Control Delay (s)	67.3	15.2	-	-	11.6	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	1.3	1.1	-	-	0.6	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	676	69	201	927	16	99
Future Vol, veh/h	676	69	201	927	16	99
Conflicting Peds, #/hr	0	20	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	735	75	218	1008	17	108

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	810	0	1713	405
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	941	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	812	-	81	595
Stage 1	-	-	-	-	416	-
Stage 2	-	-	-	-	340	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	812	-	58	595
Mov Cap-2 Maneuver	-	-	-	-	58	-
Stage 1	-	-	-	-	416	-
Stage 2	-	-	-	-	244	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	23.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	58	595	-	-	812	-
HCM Lane V/C Ratio	0.3	0.181	-	-	0.269	-
HCM Control Delay (s)	91.7	12.4	-	-	11.1	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	1.1	0.7	-	-	1.1	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	973	58	98	616	28	131
Future Vol, veh/h	973	58	98	616	28	131
Conflicting Peds, #/hr	0	20	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	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	1024	61	103	648	29	138

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1085	0	1586	543
Stage 1	-	-	-	-	1055	-
Stage 2	-	-	-	-	531	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	639	-	99	484
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	639	-	81	484
Mov Cap-2 Maneuver	-	-	-	-	81	-
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	456	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	25.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	81	484	-	-	639	-
HCM Lane V/C Ratio	0.364	0.285	-	-	0.161	-
HCM Control Delay (s)	72.9	15.4	-	-	11.7	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	1.4	1.2	-	-	0.6	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	720	75	210	976	17	105
Future Vol, veh/h	720	75	210	976	17	105
Conflicting Peds, #/hr	0	20	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	783	82	228	1061	18	114

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	864	0	1810	432
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	987	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	774	-	70	572
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	322	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	774	-	48	572
Mov Cap-2 Maneuver	-	-	-	-	48	-
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	223	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	27.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	48	572	-	-	774	-
HCM Lane V/C Ratio	0.385	0.2	-	-	0.295	-
HCM Control Delay (s)	120.9	12.9	-	-	11.6	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	1.4	0.7	-	-	1.2	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	1036	61	104	661	31	137
Future Vol, veh/h	1036	61	104	661	31	137
Conflicting Peds, #/hr	0	20	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	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	1091	64	109	696	33	144

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1155	0	1690	577
Stage 1	-	-	-	-	1123	-
Stage 2	-	-	-	-	567	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	601	-	84	460
Stage 1	-	-	-	-	273	-
Stage 2	-	-	-	-	531	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	601	-	67	460
Mov Cap-2 Maneuver	-	-	-	-	67	-
Stage 1	-	-	-	-	273	-
Stage 2	-	-	-	-	426	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	32.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	67	460	-	-	601	-
HCM Lane V/C Ratio	0.487	0.314	-	-	0.182	-
HCM Control Delay (s)	101.7	16.4	-	-	12.3	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	2	1.3	-	-	0.7	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	752	75	210	984	17	105
Future Vol, veh/h	752	75	210	984	17	105
Conflicting Peds, #/hr	0	20	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	817	82	228	1070	18	114

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	899	0	1849	449
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	991	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	751	-	66	557
Stage 1	-	-	-	-	376	-
Stage 2	-	-	-	-	320	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	751	-	45	557
Mov Cap-2 Maneuver	-	-	-	-	45	-
Stage 1	-	-	-	-	376	-
Stage 2	-	-	-	-	219	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	29.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	45	557	-	-	751	-
HCM Lane V/C Ratio	0.411	0.205	-	-	0.304	-
HCM Control Delay (s)	132.3	13.1	-	-	11.9	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	1.5	0.8	-	-	1.3	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	1050	61	104	697	31	137
Future Vol, veh/h	1050	61	104	697	31	137
Conflicting Peds, #/hr	0	20	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	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	1105	64	109	734	33	144

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1169	0	1723	585
Stage 1	-	-	-	-	1137	-
Stage 2	-	-	-	-	586	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	593	-	80	454
Stage 1	-	-	-	-	268	-
Stage 2	-	-	-	-	519	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	593	-	64	454
Mov Cap-2 Maneuver	-	-	-	-	64	-
Stage 1	-	-	-	-	268	-
Stage 2	-	-	-	-	416	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	33.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	64	454	-	-	593	-
HCM Lane V/C Ratio	0.51	0.318	-	-	0.185	-
HCM Control Delay (s)	109.3	16.6	-	-	12.4	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	2	1.4	-	-	0.7	-

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INTERSECTION CAPACITY UTILIZATION

Gilman Road @ Ramona Boulevard

N-S St: Gilman Road
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU4

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	82	0	0.051	0	82	0	0.051	0	82	0	0.051	3	85	0	0.053	0	85	0	0.053
Nb Thru	6	1600	0.120 *	0	6	1600	0.120 *	0	6	1600	0.120 *	0	6	1600	0.125 *	0	6	1600	0.125 *
Nb Right	104	0	-	0	104	0	-	0	104	0	-	4	108	0	-	0	108	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	99	1600	0.062 *	0	99	1600	0.062 *	0	99	1600	0.062 *	4	103	1600	0.064 *	0	103	1600	0.064 *
Eb Thru	682	3200	0.237	32	714	3200	0.247	0	714	3200	0.247	80	762	3200	0.263	32	794	3200	0.273
Eb Right	77	0	-	0	77	0	-	0	77	0	-	4	81	0	-	0	81	0	-
Wb Left	155	1600	0.097	0	155	1600	0.097	0	155	1600	0.097	6	161	1600	0.100	0	161	1600	0.100
Wb Thru	1024	3200	0.330 *	8	1032	3200	0.333 *	0	1032	3200	0.333 *	62	1086	3200	0.350 *	8	1094	3200	0.352 *
Wb Right	32	0	-	0	32	0	-	0	32	0	-	1	34	0	-	0	34	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.612				0.614				0.614				0.639				0.641
LOS			B				B				B				B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Gilman Road @ Ramona Boulevard

N-S St: Gilman Road
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU4

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	30	0	0.019	0	30	0	0.019	0	30	0	0.019	2	33	0	0.020	0	33	0	0.020
Nb Thru	0	1600	0.145 *	0	0	1600	0.145 *	0	0	1600	0.145 *	0	0	1600	0.152 *	0	0	1600	0.152 *
Nb Right	202	0	-	0	202	0	-	0	202	0	-	8	210	0	-	0	210	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	3	1600	0.002	0	3	1600	0.002	0	3	1600	0.002	0	3	1600	0.002	0	3	1600	0.002
Eb Thru	982	3200	0.319 *	14	996	3200	0.323 *	0	996	3200	0.323 *	78	1060	3200	0.344 *	14	1074	3200	0.348 *
Eb Right	38	0	-	0	38	0	-	0	38	0	-	2	40	0	-	0	40	0	-
Wb Left	81	1600	0.051 *	0	81	1600	0.051 *	0	81	1600	0.051 *	3	84	1600	0.053 *	0	84	1600	0.053 *
Wb Thru	635	3200	0.199	36	671	3200	0.210	0	671	3200	0.210	86	722	3200	0.226	36	758	3200	0.237
Wb Right	1	0	-	0	1	0	-	0	1	0	-	0	1	0	-	0	1	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.614				0.619				0.619				0.648				0.652
LOS			B				B				B				B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

I-605 Freeway SB Ramps @ Ramona Boulevard

N-S St: I-605 Freeway SB Ramps
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU5

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT				2019 FUTURE W/PROJECT + MITIGAT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	185	0	0.115	24	209	0	0.130	0	209	0	0.130	10	195	0	0.122	24	219	0	0.137	0	219	0	0.068
Sb Thru	10	1600	0.122	0	10	1600	0.137	0	10	1600	0.137	0	10	1600	0.128	0	10	1600	0.143	0	10	3200	0.148 *
Sb Right	231	1600	0.144 *	0	231	1600	0.144 *	0	231	1600	0.144 *	13	244	1600	0.153 *	0	244	1600	0.153 *	0	244	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	483	3200	0.151	32	515	3200	0.161	0	515	3200	0.161	67	550	3200	0.172	32	582	3200	0.182	0	582	3200	0.182
Eb Right	295	1600	0.184 *	0	295	1600	0.184 *	0	295	1600	0.184 *	27	322	1600	0.201 *	0	322	1600	0.201 *	0	322	1600	0.201 *
Wb Left	603	1600	0.377 *	6	609	1600	0.380 *	0	609	1600	0.380 *	29	632	1600	0.395 *	6	638	1600	0.399 *	0	638	1600	0.399 *
Wb Thru	929	3200	0.290	8	937	3200	0.293	0	937	3200	0.293	57	986	3200	0.308	8	994	3200	0.311	0	994	3200	0.311
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.805				0.809				0.809				0.849				0.852				0.848
LOS			D				D				D				D				D				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

I-605 Freeway SB Ramps @ Ramona Boulevard

N-S St: I-605 Freeway SB Ramps
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU5

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT				2019 FUTURE W/PROJECT + MITIGAT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000 *
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	415	0	0.259	10	425	0	0.265	0	425	0	0.265	22	436	0	0.273	10	446	0	0.279	0	446	0	0.139
Sb Thru	0	1600	0.259	0	0	1600	0.265	0	0	1600	0.265	0	0	1600	0.273	0	0	1600	0.279	0	0	3200	0.195 *
Sb Right	156	1600	0.098	0	156	1600	0.098	0	156	1600	0.098	22	178	1600	0.111	0	178	1600	0.111	0	178	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	972	3200	0.304 *	14	986	3200	0.308 *	0	986	3200	0.308 *	73	1045	3200	0.327 *	14	1059	3200	0.331 *	0	1059	3200	0.331 *
Eb Right	145	1600	0.090	0	145	1600	0.090	0	145	1600	0.090	16	160	1600	0.100	0	160	1600	0.100	0	160	1600	0.100
Wb Left	339	1600	0.212 *	29	368	1600	0.230 *	0	368	1600	0.230 *	17	355	1600	0.222 *	29	384	1600	0.240 *	0	384	1600	0.240 *
Wb Thru	587	3200	0.183	36	623	3200	0.195	0	623	3200	0.195	78	665	3200	0.208	36	701	3200	0.219	0	701	3200	0.219
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.874				0.903				0.903				0.921				0.950				0.866
LOS			D				E				E				E				E				D

** Key conflicting movement as a part of ICU*
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2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

I-605 Freeway NB Ramps @ Ramona Boulevard

N-S St: I-605 Freeway NB Ramps
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU6

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT				2019 FUTURE W/PROJECT + MITIGAT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	237	0	0.148	0	237	0	0.148	0	237	0	0.148	13	250	0	0.157	0	250	0	0.157	0	250	0	0.078
Nb Thru	1	1600	0.149	0	1	1600	0.149	0	1	1600	0.149	0	1	1600	0.157	0	1	1600	0.157	0	1	3200	0.173 *
Nb Right	264	1600	0.165 *	24	288	1600	0.180 *	0	288	1600	0.180 *	14	278	1600	0.173 *	24	302	1600	0.188 *	0	302	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	149	1600	0.093 *	0	149	1600	0.093 *	0	149	1600	0.093 *	21	169	1600	0.106 *	0	169	1600	0.106 *	0	169	1600	0.106 *
Eb Thru	534	3200	0.167	56	590	3200	0.184	0	590	3200	0.184	58	592	3200	0.185	56	648	3200	0.202	0	648	3200	0.202
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Thru	1301	3200	0.513 *	14	1315	3200	0.519 *	0	1315	3200	0.519 *	72	1373	3200	0.541 *	14	1387	3200	0.547 *	0	1387	3200	0.547 *
Wb Right	340	0	-	6	346	0	-	0	346	0	-	19	358	0	-	6	364	0	-	0	364	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.870				0.892				0.892				0.920				0.942				0.926
LOS			D				D				D				E				E				E

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

I-605 Freeway NB Ramps @ Ramona Boulevard

N-S St: I-605 Freeway NB Ramps
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU6

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT				2019 FUTURE W/PROJECT + MITIGAT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	259	0	0.162	0	259	0	0.162	0	259	0	0.162	26	285	0	0.178	0	285	0	0.178	0	285	0	0.089
Nb Thru	2	1600	0.163	0	2	1600	0.163	0	2	1600	0.163	0	2	1600	0.179	0	2	1600	0.179	0	2	3200	0.344 *
Nb Right	767	1600	0.479 *	10	777	1600	0.486 *	0	777	1600	0.486 *	36	803	1600	0.502 *	10	813	1600	0.508 *	0	813	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	125	1600	0.078	0	125	1600	0.078	0	125	1600	0.078	15	139	1600	0.087	0	139	1600	0.087	0	139	1600	0.087
Eb Thru	1242	3200	0.388 *	24	1266	3200	0.396 *	0	1266	3200	0.396 *	83	1325	3200	0.414 *	24	1349	3200	0.421 *	0	1349	3200	0.421 *
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	667	3200	0.258	65	732	3200	0.286	0	732	3200	0.286	69	735	3200	0.282	65	800	3200	0.311	0	800	3200	0.311
Wb Right	158	0	-	27	185	0	-	0	185	0	-	9	167	0	-	27	194	0	-	0	194	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.968				0.981				0.981				1.016				1.029				0.865
LOS			E				E				E				F				F				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Syracuse Avenue-Schabarum Avenue @ Ramona Boulevard

N-S St: Syracuse Avenue-Schabarum Avenue
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU7

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	220	0	0.138 *	0	220	0	0.138	0	220	0	0.138	12	232	0	0.145 *	0	232	0	0.145 *
Nb Thru	7	1600	0.142	3	10	1600	0.144	0	10	1600	0.144	0	7	1600	0.149	3	10	1600	0.151
Nb Right	62	1600	0.038	0	62	1600	0.038	0	62	1600	0.038	3	65	1600	0.041	0	65	1600	0.041
Sb Left	10	0	0.006	19	29	0	0.018	0	29	0	0.018	2	12	0	0.007	19	31	0	0.019
Sb Thru	9	1600	0.012 *	1	10	1600	0.024	0	10	1600	0.024	0	9	1600	0.013 *	1	10	1600	0.026 *
Sb Right	86	1600	0.054	20	106	1600	0.066	0	106	1600	0.066	6	92	1600	0.058	20	112	1600	0.070
Eb Left	151	1600	0.094 *	80	231	1600	0.144 *	0	231	1600	0.144 *	11	162	1600	0.101 *	80	242	1600	0.151 *
Eb Thru	689	3200	0.215	0	689	3200	0.215	0	689	3200	0.215	61	750	3200	0.234	0	750	3200	0.234
Eb Right	104	1600	0.065	0	104	1600	0.065	0	104	1600	0.065	4	108	1600	0.067	0	108	1600	0.067
Wb Left	30	1600	0.019	0	30	1600	0.019	0	30	1600	0.019	1	31	1600	0.020	0	31	1600	0.020
Wb Thru	1297	3200	0.405 *	0	1297	3200	0.405 *	0	1297	3200	0.405 *	69	1365	3200	0.427 *	0	1365	3200	0.427 *
Wb Right	19	1600	0.012	77	96	1600	0.060	0	96	1600	0.060	6	24	1600	0.015	77	101	1600	0.063
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.748				0.811				0.811				0.786				0.848
LOS			C				D				D				C				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Syracuse Avenue-Schabarum Avenue @ Ramona Boulevard

N-S St: Syracuse Avenue-Schabarum Avenue
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU7

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	98	0	0.061 *	0	98	0	0.061 *	0	98	0	0.061 *	4	102	0	0.064 *	0	102	0	0.064 *
Nb Thru	4	1600	0.063	1	5	1600	0.064	0	5	1600	0.064	0	4	1600	0.066	1	5	1600	0.067
Nb Right	56	1600	0.035	0	56	1600	0.035	0	56	1600	0.035	2	58	1600	0.036	0	58	1600	0.036
Sb Left	46	0	0.029	85	131	0	0.082	0	131	0	0.082	7	53	0	0.033	85	138	0	0.086
Sb Thru	13	1600	0.037	4	17	1600	0.093	0	17	1600	0.093	1	14	1600	0.041	4	18	1600	0.097
Sb Right	122	1600	0.076 *	92	214	1600	0.134 *	0	214	1600	0.134 *	11	133	1600	0.083 *	92	225	1600	0.141 *
Eb Left	57	1600	0.035	35	92	1600	0.057	0	92	1600	0.057	5	62	1600	0.039	35	97	1600	0.060
Eb Thru	1667	3200	0.521 *	0	1667	3200	0.521 *	0	1667	3200	0.521 *	98	1764	3200	0.551 *	0	1764	3200	0.551 *
Eb Right	299	1600	0.187	0	299	1600	0.187	0	299	1600	0.187	15	313	1600	0.196	0	313	1600	0.196
Wb Left	42	1600	0.026 *	0	42	1600	0.026 *	0	42	1600	0.026 *	3	45	1600	0.028 *	0	45	1600	0.028 *
Wb Thru	650	3200	0.203	0	650	3200	0.203	0	650	3200	0.203	65	714	3200	0.223	0	714	3200	0.223
Wb Right	23	1600	0.014	33	56	1600	0.035	0	56	1600	0.035	3	26	1600	0.016	33	59	1600	0.037
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.785				0.842				0.842				0.826				0.883
LOS			C				D				D				D				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Frazier Street @ I-10 Fwy EB Off-Ramp-Judith Street

N-S St: Frazier Street
E-W St: I-10 Fwy EB Off-Ramp-Judith Street
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU8

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	138	1600	0.128 *	0	138	1600	0.128 *	0	138	1600	0.128 *	8	146	1600	0.134 *	0	146	1600	0.134 *
Nb Right	66	0	-	0	66	0	-	0	66	0	-	3	68	0	-	0	68	0	-
Sb Left	25	0	0.016 *	0	25	0	0.016 *	0	25	0	0.016 *	1	26	0	0.016 *	0	26	0	0.016 *
Sb Thru	101	1600	0.079	0	101	1600	0.079	0	101	1600	0.079	4	105	1600	0.082	0	105	1600	0.082
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left [3]	510	0	0.319	0	510	0	0.319	0	510	0	0.319	35	545	0	0.341	0	545	0	0.341
Eb Thru [3]	101	1600	0.382 *	0	101	1600	0.382 *	0	101	1600	0.382 *	4	105	1600	0.407 *	0	105	1600	0.407 *
Eb Right [3]	99	1600	0.062	2	101	1600	0.063	0	101	1600	0.063	4	103	1600	0.064	2	105	1600	0.066
Wb Left [3]	131	0	0.082 *	0	131	0	0.082 *	0	131	0	0.082 *	6	138	0	0.086 *	0	138	0	0.086 *
Wb Thru [3]	0	1600	0.083	0	0	1600	0.083	0	0	1600	0.083	0	0	1600	0.087	0	0	1600	0.087
Wb Right [3	1	0	-	0	1	0	-	0	1	0	-	0	1	0	-	0	1	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.708				0.708				0.708				0.743				0.743
LOS			C				C				C				C				C

** Key conflicting movement as a part of ICU*
1 Counts conducted by.The Traffic Solution
2 Capacity expressed in veh/hour of green
3 Split phase operation.

LINSCOTT, LAW & GREENSPAN, ENGINEERS
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INTERSECTION CAPACITY UTILIZATION

Frazier Street @ I-10 Fwy EB Off-Ramp-Judith Street

N-S St:	Frazier Street	Peak hr:	PM	Date:	09/04/2015
E-W St:	I-10 Fwy EB Off-Ramp-Judith Street	Annual Growth:	1.00%	Date of Count:	2015
Project:	Kaiser Permanente Irwindale MOB Project/1-15-4118-1			Projection Year:	2019
File:	ICU8				

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	78	1600	0.097 *	0	78	1600	0.097 *	0	78	1600	0.097 *	4	82	1600	0.102 *	0	82	1600	0.102 *
Nb Right	78	0	-	0	78	0	-	0	78	0	-	3	81	0	-	0	81	0	-
Sb Left	22	0	0.014 *	0	22	0	0.014 *	0	22	0	0.014 *	1	23	0	0.014 *	0	23	0	0.014 *
Sb Thru	91	1600	0.071	0	91	1600	0.071	0	91	1600	0.071	4	95	1600	0.074	0	95	1600	0.074
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left [3]	321	0	0.201	0	321	0	0.201	0	321	0	0.201	18	339	0	0.212	0	339	0	0.212
Eb Thru [3]	102	1600	0.264 *	0	102	1600	0.264 *	0	102	1600	0.264 *	4	106	1600	0.278 *	0	106	1600	0.278 *
Eb Right [3]	167	1600	0.104	1	168	1600	0.105	0	168	1600	0.105	7	173	1600	0.108	1	174	1600	0.109
Wb Left [3]	201	0	0.126 *	0	201	0	0.126 *	0	201	0	0.126 *	10	211	0	0.132 *	0	211	0	0.132 *
Wb Thru [3]	0	1600	0.129	0	0	1600	0.129	0	0	1600	0.129	0	0	1600	0.136	0	0	1600	0.136
Wb Right [3	6	0	-	0	6	0	-	0	6	0	-	0	6	0	-	0	6	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.605				0.605				0.605				0.630				0.630
LOS			B				B				B				B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by.The Traffic Solution
2 Capacity expressed in veh/hour of green
3 Split phase operation.

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INTERSECTION CAPACITY UTILIZATION

Bess Avenue-I-10 Fwy WB On-Ramp @ Garvey Avenue

N-S St: Bess Avenue-I-10 Fwy WB On-Ramp
E-W St: Garvey Avenue
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU9

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	84	0	0.053	0	84	0	0.053	0	84	0	0.053	5	89	0	0.056	0	89	0	0.056
Sb Thru	309	1600	0.257 *	1	310	1600	0.258 *	0	310	1600	0.258 *	15	324	1600	0.270 *	1	325	1600	0.271 *
Sb Right	18	0	-	0	18	0	-	0	18	0	-	1	19	0	-	0	19	0	-
Eb Left	5	0	0.003 *	0	5	0	0.003 *	0	5	0	0.003 *	0	5	0	0.003 *	0	5	0	0.003 *
Eb Thru	25	1600	0.046	0	25	1600	0.046	0	25	1600	0.046	1	26	1600	0.048	0	26	1600	0.048
Eb Right	44	0	-	0	44	0	-	0	44	0	-	2	46	0	-	0	46	0	-
Wb Left	317	0	0.198	0	317	0	0.198	0	317	0	0.198	13	330	0	0.206	0	330	0	0.206
Wb Thru	31	1600	0.268 *	0	31	1600	0.269 *	0	31	1600	0.269 *	1	32	1600	0.278 *	0	32	1600	0.279 *
Wb Right	80	0	-	2	82	0	-	0	82	0	-	3	83	0	-	2	85	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.628				0.629				0.629				0.652				0.654
LOS			B				B				B				B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by.The Traffic Solution
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Bess Avenue-I-10 Fwy WB On-Ramp @ Garvey Avenue

N-S St: Bess Avenue-I-10 Fwy WB On-Ramp
E-W St: Garvey Avenue
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU9

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	195	0	0.122	0	195	0	0.122	0	195	0	0.122	8	203	0	0.127	0	203	0	0.127
Sb Thru	164	1600	0.242 *	4	168	1600	0.244 *	0	168	1600	0.244 *	7	171	1600	0.252 *	4	175	1600	0.254 *
Sb Right	28	0	-	0	28	0	-	0	28	0	-	1	29	0	-	0	29	0	-
Eb Left	5	0	0.003 *	0	5	0	0.003 *	0	5	0	0.003 *	0	5	0	0.003 *	0	5	0	0.003 *
Eb Thru	37	1600	0.038	0	37	1600	0.038	0	37	1600	0.038	1	38	1600	0.040	0	38	1600	0.040
Eb Right	19	0	-	0	19	0	-	0	19	0	-	1	20	0	-	0	20	0	-
Wb Left	94	0	0.059	0	94	0	0.059	0	94	0	0.059	4	98	0	0.061	0	98	0	0.061
Wb Thru	30	1600	0.173 *	0	30	1600	0.173 *	0	30	1600	0.173 *	1	31	1600	0.183 *	0	31	1600	0.183 *
Wb Right	152	0	-	1	153	0	-	0	153	0	-	11	163	0	-	1	164	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.518				0.521				0.521				0.537				0.540
LOS			A				A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by.The Traffic Solution
2 Capacity expressed in veh/hour of green

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	25	44	0	317	31	80	0	0	0	0
Future Vol, veh/h	0	5	25	44	0	317	31	80	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	27	47	0	337	33	85	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9.4	19.1
HCM LOS	A	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	74%	20%
Vol Thru, %	34%	7%	75%
Vol Right, %	59%	19%	4%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	74	428	411
LT Vol	5	317	84
Through Vol	25	31	309
RT Vol	44	80	18
Lane Flow Rate	79	455	437
Geometry Grp	1	1	1
Degree of Util (X)	0.122	0.679	0.659
Departure Headway (Hd)	5.588	5.37	5.423
Convergence, Y/N	Yes	Yes	Yes
Cap	639	674	665
Service Time	3.64	3.407	3.457
HCM Lane V/C Ratio	0.124	0.675	0.657
HCM Control Delay	9.4	19.1	18.4
HCM Lane LOS	A	C	C
HCM 95th-tile Q	0.4	5.3	4.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	84	309	18
Future Vol, veh/h	0	84	309	18
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	89	329	19
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	18.4
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	37	19	0	94	30	152	0	0	0	0
Future Vol, veh/h	0	5	37	19	0	94	30	152	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	39	20	0	100	32	162	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	8.8	10.9
HCM LOS	A	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	34%	50%
Vol Thru, %	61%	11%	42%
Vol Right, %	31%	55%	7%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	61	276	387
LT Vol	5	94	195
Through Vol	37	30	164
RT Vol	19	152	28
Lane Flow Rate	65	294	412
Geometry Grp	1	1	1
Degree of Util (X)	0.093	0.391	0.554
Departure Headway (Hd)	5.185	4.798	4.846
Convergence, Y/N	Yes	Yes	Yes
Cap	684	746	737
Service Time	3.272	2.861	2.913
HCM Lane V/C Ratio	0.095	0.394	0.559
HCM Control Delay	8.8	10.9	13.8
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.3	1.9	3.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	195	164	28
Future Vol, veh/h	0	195	164	28
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	207	174	30
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	13.8
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	18.1
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	25	44	0	317	31	82	0	0	0	0
Future Vol, veh/h	0	5	25	44	0	317	31	82	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	27	47	0	337	33	87	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9.4	19.2
HCM LOS	A	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	74%	20%
Vol Thru, %	34%	7%	75%
Vol Right, %	59%	19%	4%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	74	430	412
LT Vol	5	317	84
Through Vol	25	31	310
RT Vol	44	82	18
Lane Flow Rate	79	457	438
Geometry Grp	1	1	1
Degree of Util (X)	0.122	0.683	0.661
Departure Headway (Hd)	5.598	5.373	5.429
Convergence, Y/N	Yes	Yes	Yes
Cap	638	672	666
Service Time	3.649	3.408	3.464
HCM Lane V/C Ratio	0.124	0.68	0.658
HCM Control Delay	9.4	19.2	18.5
HCM Lane LOS	A	C	C
HCM 95th-tile Q	0.4	5.4	5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	84	310	18
Future Vol, veh/h	0	84	310	18
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	89	330	19
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	18.5
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	37	19	0	94	30	153	0	0	0	0
Future Vol, veh/h	0	5	37	19	0	94	30	153	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	39	20	0	100	32	163	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	8.8	11
HCM LOS	A	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	34%	50%
Vol Thru, %	61%	11%	43%
Vol Right, %	31%	55%	7%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	61	277	391
LT Vol	5	94	195
Through Vol	37	30	168
RT Vol	19	153	28
Lane Flow Rate	65	295	416
Geometry Grp	1	1	1
Degree of Util (X)	0.094	0.394	0.561
Departure Headway (Hd)	5.198	4.808	4.851
Convergence, Y/N	Yes	Yes	Yes
Cap	681	743	736
Service Time	3.29	2.875	2.919
HCM Lane V/C Ratio	0.095	0.397	0.565
HCM Control Delay	8.8	11	14
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.3	1.9	3.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	195	168	28
Future Vol, veh/h	0	195	168	28
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	207	179	30
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	14
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	26	46	0	330	32	83	0	0	0	0
Future Vol, veh/h	0	5	26	46	0	330	32	83	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	28	49	0	351	34	88	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9.6	21.3
HCM LOS	A	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	74%	21%
Vol Thru, %	34%	7%	75%
Vol Right, %	60%	19%	4%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	77	445	432
LT Vol	5	330	89
Through Vol	26	32	324
RT Vol	46	83	19
Lane Flow Rate	82	473	460
Geometry Grp	1	1	1
Degree of Util (X)	0.13	0.719	0.702
Departure Headway (Hd)	5.72	5.464	5.502
Convergence, Y/N	Yes	Yes	Yes
Cap	624	663	657
Service Time	3.78	3.503	3.544
HCM Lane V/C Ratio	0.131	0.713	0.7
HCM Control Delay	9.6	21.3	20.5
HCM Lane LOS	A	C	C
HCM 95th-tile Q	0.4	6.1	5.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	89	324	19
Future Vol, veh/h	0	89	324	19
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	95	345	20
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	20.5
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	38	20	0	98	31	163	0	0	0	0
Future Vol, veh/h	0	5	38	20	0	98	31	163	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	40	21	0	104	33	173	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9	11.4
HCM LOS	A	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	34%	50%
Vol Thru, %	60%	11%	42%
Vol Right, %	32%	56%	7%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	63	292	403
LT Vol	5	98	203
Through Vol	38	31	171
RT Vol	20	163	29
Lane Flow Rate	67	311	429
Geometry Grp	1	1	1
Degree of Util (X)	0.1	0.418	0.583
Departure Headway (Hd)	5.359	4.847	4.897
Convergence, Y/N	Yes	Yes	Yes
Cap	673	736	729
Service Time	3.359	2.921	2.975
HCM Lane V/C Ratio	0.1	0.423	0.588
HCM Control Delay	9	11.4	14.7
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.3	2.1	3.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	203	171	29
Future Vol, veh/h	0	203	171	29
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	216	182	31
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	14.7
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	20.2
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	26	46	0	330	32	85	0	0	0	0
Future Vol, veh/h	0	5	26	46	0	330	32	85	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	28	49	0	351	34	90	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9.7	21.5
HCM LOS	A	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	74%	21%
Vol Thru, %	34%	7%	75%
Vol Right, %	60%	19%	4%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	77	447	433
LT Vol	5	330	89
Through Vol	26	32	325
RT Vol	46	85	19
Lane Flow Rate	82	476	461
Geometry Grp	1	1	1
Degree of Util (X)	0.13	0.722	0.705
Departure Headway (Hd)	5.729	5.465	5.51
Convergence, Y/N	Yes	Yes	Yes
Cap	623	661	654
Service Time	3.79	3.506	3.549
HCM Lane V/C Ratio	0.132	0.72	0.705
HCM Control Delay	9.7	21.5	20.7
HCM Lane LOS	A	C	C
HCM 95th-tile Q	0.4	6.1	5.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	89	325	19
Future Vol, veh/h	0	89	325	19
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	95	346	20
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	20.7
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	38	20	0	98	31	164	0	0	0	0
Future Vol, veh/h	0	5	38	20	0	98	31	164	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	40	21	0	104	33	174	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9	11.5
HCM LOS	A	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	33%	50%
Vol Thru, %	60%	11%	43%
Vol Right, %	32%	56%	7%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	63	293	407
LT Vol	5	98	203
Through Vol	38	31	175
RT Vol	20	164	29
Lane Flow Rate	67	312	433
Geometry Grp	1	1	1
Degree of Util (X)	0.1	0.421	0.589
Departure Headway (Hd)	5.375	4.858	4.9
Convergence, Y/N	Yes	Yes	Yes
Cap	671	736	727
Service Time	3.375	2.932	2.981
HCM Lane V/C Ratio	0.1	0.424	0.596
HCM Control Delay	9	11.5	14.9
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.3	2.1	3.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	203	175	29
Future Vol, veh/h	0	203	175	29
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	216	186	31
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	14.9
HCM LOS	B

Lane

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INTERSECTION CAPACITY UTILIZATION

I-10 Fwy WB Off-Ramp-Frazier Avenue @ Garvey Avenue

N-S St:	I-10 Fwy WB Off-Ramp-Frazier Avenue	Peak hr:	AM	Date:	09/04/2015
E-W St:	Garvey Avenue	Annual Growth:	1.00%	Date of Count:	2015
Project:	Kaiser Permanente Irwindale MOB Project/1-15-4118-1			Projection Year:	2019
File:	ICU10				

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	38	1600	0.024	2	40	1600	0.025	0	40	1600	0.025	2	40	1600	0.025	2	42	1600	0.026
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	9	1600	0.006	0	9	1600	0.006	0	9	1600	0.006	0	9	1600	0.006	0	9	1600	0.006
Sb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Eb Thru	113	1600	0.071	0	113	1600	0.071	0	113	1600	0.071	7	120	1600	0.075	0	120	1600	0.075
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Thru	387	1600	0.242 *	0	387	1600	0.242 *	0	387	1600	0.242 *	15	402	1600	0.252 *	0	402	1600	0.252 *
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.366				0.367				0.367				0.376				0.378
LOS			A				A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by.The Traffic Solution
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

I-10 Fwy WB Off-Ramp-Frazier Avenue @ Garvey Avenue

N-S St: I-10 Fwy WB Off-Ramp-Frazier Avenue
E-W St: Garvey Avenue
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU10

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	111	1600	0.069	1	112	1600	0.070	0	112	1600	0.070	7	118	1600	0.074	1	119	1600	0.075
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	32	1600	0.020	0	32	1600	0.020	0	32	1600	0.020	1	33	1600	0.021	0	33	1600	0.021
Sb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	238	1600	0.149 *	0	238	1600	0.149 *	0	238	1600	0.149 *	10	248	1600	0.155 *	0	248	1600	0.155 *
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	172	1600	0.108	0	172	1600	0.108	0	172	1600	0.108	10	182	1600	0.114	0	182	1600	0.114
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.318				0.319				0.319				0.329				0.329
LOS			A				A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by.The Traffic Solution
2 Capacity expressed in veh/hour of green

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	113	0	0	387	38	9
Future Vol, veh/h	113	0	0	387	38	9
Conflicting Peds, #/hr	0	4	0	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	135	0	0	461	45	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	137	0	598	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	461	-
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	-	-	1447	-	465	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	635	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1447	-	462	909
Mov Cap-2 Maneuver	-	-	-	-	462	-
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	633	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	462	909	-	-	1447	-
HCM Lane V/C Ratio	0.098	0.012	-	-	-	-
HCM Control Delay (s)	13.6	9	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	238	0	0	172	111	32
Future Vol, veh/h	238	0	0	172	111	32
Conflicting Peds, #/hr	0	13	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	0	0	191	123	36

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	264	0	455	264
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	191	-
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	-	-	1300	-	563	775
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	841	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1300	-	556	775
Mov Cap-2 Maneuver	-	-	-	-	556	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	831	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	556	775	-	-	1300	-
HCM Lane V/C Ratio	0.222	0.046	-	-	-	-
HCM Control Delay (s)	13.3	9.9	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	113	0	0	387	40	9
Future Vol, veh/h	113	0	0	387	40	9
Conflicting Peds, #/hr	0	4	0	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	135	0	0	461	48	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	137	0	598	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	461	-
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	-	-	1447	-	465	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	635	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1447	-	462	909
Mov Cap-2 Maneuver	-	-	-	-	462	-
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	633	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	462	909	-	-	1447	-
HCM Lane V/C Ratio	0.103	0.012	-	-	-	-
HCM Control Delay (s)	13.7	9	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	238	0	0	172	112	32
Future Vol, veh/h	238	0	0	172	112	32
Conflicting Peds, #/hr	0	13	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	0	0	191	124	36

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	264	0	455	264
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	191	-
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	-	-	1300	-	563	775
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	841	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1300	-	556	775
Mov Cap-2 Maneuver	-	-	-	-	556	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	831	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	556	775	-	-	1300	-
HCM Lane V/C Ratio	0.224	0.046	-	-	-	-
HCM Control Delay (s)	13.3	9.9	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	120	0	0	402	40	9
Future Vol, veh/h	120	0	0	402	40	9
Conflicting Peds, #/hr	0	4	0	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	0	0	479	48	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	145	0	624	145
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	479	-
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	-	-	1437	-	449	902
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	623	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1437	-	446	900
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	621	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	446	900	-	-	1437	-
HCM Lane V/C Ratio	0.107	0.012	-	-	-	-
HCM Control Delay (s)	14	9	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	248	0	0	182	118	33
Future Vol, veh/h	248	0	0	182	118	33
Conflicting Peds, #/hr	0	13	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	276	0	0	202	131	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	276	0	478	276
Stage 1	-	-	-	-	276	-
Stage 2	-	-	-	-	202	-
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	-	-	1287	-	546	763
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	832	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1287	-	539	763
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	539	763	-	-	1287	-
HCM Lane V/C Ratio	0.243	0.048	-	-	-	-
HCM Control Delay (s)	13.8	10	-	-	0	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	120	0	0	402	42	9
Future Vol, veh/h	120	0	0	402	42	9
Conflicting Peds, #/hr	0	4	0	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	0	0	479	50	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	145	0	624	145
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	479	-
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	-	-	1437	-	449	902
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	623	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1437	-	446	900
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	621	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	446	900	-	-	1437	-
HCM Lane V/C Ratio	0.112	0.012	-	-	-	-
HCM Control Delay (s)	14.1	9	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	248	0	0	182	119	33
Future Vol, veh/h	248	0	0	182	119	33
Conflicting Peds, #/hr	0	13	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	276	0	0	202	132	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	276	0	478	276
Stage 1	-	-	-	-	276	-
Stage 2	-	-	-	-	202	-
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	-	-	1287	-	546	763
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	832	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1287	-	539	763
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	539	763	-	-	1287	-
HCM Lane V/C Ratio	0.245	0.048	-	-	-	-
HCM Control Delay (s)	13.8	10	-	-	0	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	1	0.2	-	-	0	-

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INTERSECTION CAPACITY UTILIZATION

Baldwin Park Boulevard @ Dalewood Street

N-S St:	Baldwin Park Boulevard	Peak hr:	AM	Date:	09/04/2015
E-W St:	Dalewood Street	Annual Growth:	1.00%	Date of Count:	2015
Project:	Kaiser Permanente Irwindale MOB Project/1-15-4118-1			Projection Year:	2019
File:	ICU11				

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	65	1600	0.041	0	65	1600	0.041	0	65	1600	0.041	3	67	1600	0.042	0	67	1600	0.042
Nb Thru	809	3200	0.293 *	5	814	3200	0.294 *	0	814	3200	0.294 *	46	855	3200	0.310 *	5	860	3200	0.311 *
Nb Right	127	0	-	0	127	0	-	0	127	0	-	8	136	0	-	0	136	0	-
Sb Left	188	1600	0.117 *	1	189	1600	0.118 *	0	189	1600	0.118 *	15	202	1600	0.127 *	1	203	1600	0.127 *
Sb Thru	726	3200	0.311	1	727	3200	0.311	0	727	3200	0.311	64	790	3200	0.342	1	791	3200	0.342
Sb Right	270	0	-	0	270	0	-	0	270	0	-	34	304	0	-	0	304	0	-
Eb Left [3]	86	0	0.027	0	86	0	0.027	0	86	0	0.027	10	97	0	0.030	0	97	0	0.030
Eb Thru [3]	110	3200	0.061 *	0	110	3200	0.061 *	0	110	3200	0.061 *	6	117	3200	0.067 *	0	117	3200	0.067 *
Eb Right [3]	73	1600	0.046	0	73	1600	0.046	0	73	1600	0.046	3	76	1600	0.048	0	76	1600	0.048
Wb Left [3]	343	0	0.215	0	343	0	0.215	0	343	0	0.215	14	357	0	0.223	0	357	0	0.223
Wb Thru [3]	75	1600	0.261 *	0	75	1600	0.261 *	0	75	1600	0.261 *	9	84	1600	0.275 *	0	84	1600	0.275 *
Wb Right [3],[4],[5]	184	1600	0.000	2	186	1600	0.000	0	186	1600	0.000	10	194	1600	0.000	2	196	1600	0.000
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.833				0.835				0.835				0.878				0.880
LOS			D				D				D				D				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by.Accutek
2 Capacity expressed in veh/hour of green
3 East/West Split Phase
4 No right-turn on red.
5 The westbound right-turn lane has an overlapping phase with the southbound left-turn phase.

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INTERSECTION CAPACITY UTILIZATION

Baldwin Park Boulevard @ Dalewood Street

N-S St:	Baldwin Park Boulevard	Peak hr:	PM	Date:	09/04/2015
E-W St:	Dalewood Street	Annual Growth:	1.00%	Date of Count:	2015
Project:	Kaiser Permanente Irwindale MOB Project/1-15-4118-1			Projection Year:	2019
File:	ICU11				

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	30	1600	0.019	0	30	1600	0.019	0	30	1600	0.019	1	31	1600	0.020	0	31	1600	0.020
Nb Thru	929	3200	0.355 *	2	931	3200	0.356 *	0	931	3200	0.356 *	70	999	3200	0.383 *	2	1001	3200	0.383 *
Nb Right	207	0	-	0	207	0	-	0	207	0	-	18	226	0	-	0	226	0	-
Sb Left	122	1600	0.076 *	4	126	1600	0.079 *	0	126	1600	0.079 *	12	134	1600	0.084 *	4	138	1600	0.086 *
Sb Thru	575	3200	0.213	5	580	3200	0.214	0	580	3200	0.214	39	614	3200	0.229	5	619	3200	0.230
Sb Right	106	0	-	0	106	0	-	0	106	0	-	12	118	0	-	0	118	0	-
Eb Left [3]	261	0	0.082	0	261	0	0.082	0	261	0	0.082	33	295	0	0.092	0	295	0	0.092
Eb Thru [3]	210	3200	0.147 *	0	210	3200	0.147 *	0	210	3200	0.147 *	13	223	3200	0.162 *	0	223	3200	0.162 *
Eb Right [3]	109	1600	0.068	0	109	1600	0.068	0	109	1600	0.068	4	113	1600	0.071	0	113	1600	0.071
Wb Left [3]	232	0	0.145	0	232	0	0.145	0	232	0	0.145	9	241	0	0.151	0	241	0	0.151
Wb Thru [3]	27	1600	0.162 *	0	27	1600	0.162 *	0	27	1600	0.162 *	3	30	1600	0.170 *	0	30	1600	0.170 *
Wb Right [3],[4].[5]	303	1600	0.113	1	304	1600	0.112	0	304	1600	0.112	16	320	1600	0.116	1	321	1600	0.114
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.840				0.844				0.844				0.898				0.901
LOS			D				D				D				D				E

** Key conflicting movement as a part of ICU*
1 Counts conducted by.Accutek
2 Capacity expressed in veh/hour of green
3 East/West Split Phase
4 No right-turn on red.
5 The westbound right-turn lane has an overlapping phase with the southbound left-turn phase.

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INTERSECTION CAPACITY UTILIZATION

Baldwin Park Boulevard @ I-10 Fwy WB Ramps

N-S St: Baldwin Park Boulevard
E-W St: I-10 Fwy WB Ramps
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU12

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Nb Thru	573	3200	0.346	6	579	3200	0.347	0	579	3200	0.347	43	616	3200	0.367	6	622	3200	0.369
Nb Right	532	0	-	0	532	0	-	0	532	0	-	26	559	0	-	0	559	0	-
Sb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Thru	927	3200	0.489 *	2	929	3200	0.490 *	0	929	3200	0.490 *	84	1011	3200	0.526 *	2	1013	3200	0.527 *
Sb Right	638	0	-	0	638	0	-	0	638	0	-	35	673	0	-	0	673	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	241	1600	0.151	0	241	1600	0.151	0	241	1600	0.151	27	267	1600	0.167	0	267	1600	0.167
Wb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Right	40	1600	0.025	2	42	1600	0.026	0	42	1600	0.026	11	51	1600	0.032	2	53	1600	0.033
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.740				0.740				0.740				0.793				0.794
LOS			C				C				C				C				C

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Baldwin Park Boulevard @ I-10 Fwy WB Ramps

N-S St: Baldwin Park Boulevard
E-W St: I-10 Fwy WB Ramps
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU12

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	1045	3200	0.453 *	3	1048	3200	0.454 *	0	1048	3200	0.454 *	86	1131	3200	0.490 *	3	1134	3200	0.491 *
Nb Right	404	0	-	0	404	0	-	0	404	0	-	34	438	0	-	0	438	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	608	3200	0.268	9	617	3200	0.270	0	617	3200	0.270	49	657	3200	0.289	9	666	3200	0.292
Sb Right	248	0	-	0	248	0	-	0	248	0	-	20	268	0	-	0	268	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	150	1600	0.094	0	150	1600	0.094	0	150	1600	0.094	12	162	1600	0.101	0	162	1600	0.101
Wb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Right	124	1600	0.078	1	125	1600	0.078	0	125	1600	0.078	15	139	1600	0.087	1	140	1600	0.088
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.647				0.648				0.648				0.692				0.693
LOS			B				B				B				B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Francisquito Avenue @ Ramona Boulevard

N-S St: Francisquito Avenue
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU13

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	429	0	0.134	40	469	0	0.146	0	469	0	0.146	27	456	0	0.142	40	496	0	0.155
Nb Thru	18	3200	0.173 *	0	18	3200	0.185 *	0	18	3200	0.185 *	1	19	3200	0.184 *	0	19	3200	0.197 *
Nb Right	106	0	-	0	106	0	-	0	106	0	-	9	115	0	-	0	115	0	-
Sb Left	5	0	0.003 *	0	5	0	0.003 *	0	5	0	0.003 *	0	5	0	0.003 *	0	5	0	0.003 *
Sb Thru	5	1600	0.010	0	5	1600	0.010	0	5	1600	0.010	0	5	1600	0.011	0	5	1600	0.011
Sb Right	7	0	-	0	7	0	-	0	7	0	-	0	7	0	-	0	7	0	-
Eb Left	32	1600	0.020 *	0	32	1600	0.020 *	0	32	1600	0.020 *	1	33	1600	0.020 *	0	33	1600	0.020 *
Eb Thru	469	3200	0.147	9	478	3200	0.149	0	478	3200	0.149	47	516	3200	0.161	9	525	3200	0.164
Eb Right	306	1600	0.191	10	316	1600	0.198	0	316	1600	0.198	22	328	1600	0.205	10	338	1600	0.211
Wb Left	134	1600	0.083	0	134	1600	0.083	0	134	1600	0.083	14	148	1600	0.092	0	148	1600	0.092
Wb Thru	1084	3200	0.339 *	37	1121	3200	0.350 *	0	1121	3200	0.350 *	57	1141	3200	0.357 *	37	1178	3200	0.368 *
Wb Right	5	1600	0.003	0	5	1600	0.003	0	5	1600	0.003	0	5	1600	0.003	0	5	1600	0.003
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.634				0.658				0.658				0.664				0.689
LOS			B				B				B				B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Francisquito Avenue @ Ramona Boulevard

N-S St: Francisquito Avenue
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU13

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	163	0	0.051	17	180	0	0.056	0	180	0	0.056	17	179	0	0.056	17	196	0	0.061
Nb Thru	15	3200	0.083 *	0	15	3200	0.088 *	0	15	3200	0.088 *	1	16	3200	0.092 *	0	16	3200	0.097 *
Nb Right	88	0	-	0	88	0	-	0	88	0	-	12	100	0	-	0	100	0	-
Sb Left	34	0	0.021 *	0	34	0	0.021 *	0	34	0	0.021 *	1	35	0	0.022 *	0	35	0	0.022 *
Sb Thru	39	1600	0.053	0	39	1600	0.053	0	39	1600	0.053	2	40	1600	0.055	0	40	1600	0.055
Sb Right	13	0	-	0	13	0	-	0	13	0	-	1	13	0	-	0	13	0	-
Eb Left	25	1600	0.016	0	25	1600	0.016	0	25	1600	0.016	1	26	1600	0.016	0	26	1600	0.016
Eb Thru	1286	3200	0.402 *	41	1327	3200	0.415 *	0	1327	3200	0.415 *	79	1365	3200	0.427 *	41	1406	3200	0.439 *
Eb Right	501	1600	0.313	43	544	1600	0.340	0	544	1600	0.340	32	533	1600	0.333	43	576	1600	0.360
Wb Left	115	1600	0.072 *	0	115	1600	0.072 *	0	115	1600	0.072 *	10	124	1600	0.078 *	0	124	1600	0.078 *
Wb Thru	495	3200	0.155	16	511	3200	0.160	0	511	3200	0.160	54	549	3200	0.172	16	565	3200	0.177
Wb Right	5	1600	0.003	0	5	1600	0.003	0	5	1600	0.003	0	5	1600	0.003	0	5	1600	0.003
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.678				0.696				0.696				0.718				0.736
LOS			B				B				B				C				C

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Francisquito Avenue @ Frazier Street

N-S St: Francisquito Avenue
E-W St: Frazier Street
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU14

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	135	1600	0.084	0	135	1600	0.084	0	135	1600	0.084	6	141	1600	0.088	0	141	1600	0.088
Nb Thru	580	3200	0.239 *	38	618	3200	0.251 *	0	618	3200	0.251 *	38	618	3200	0.254 *	38	656	3200	0.266 *
Nb Right	185	0	-	0	185	0	-	0	185	0	-	9	194	0	-	0	194	0	-
Sb Left	86	1600	0.054 *	0	86	1600	0.054 *	0	86	1600	0.054 *	3	90	1600	0.056 *	0	90	1600	0.056 *
Sb Thru	362	3200	0.142	9	371	3200	0.145	0	371	3200	0.145	35	397	3200	0.154	9	406	3200	0.157
Sb Right	92	0	-	0	92	0	-	0	92	0	-	4	95	0	-	0	95	0	-
Eb Left	57	1600	0.036	0	57	1600	0.036	0	57	1600	0.036	2	60	1600	0.037	0	60	1600	0.037
Eb Thru	354	3200	0.152 *	0	354	3200	0.152 *	0	354	3200	0.152 *	15	369	3200	0.159 *	0	369	3200	0.159 *
Eb Right	132	0	-	0	132	0	-	0	132	0	-	8	140	0	-	0	140	0	-
Wb Left	117	1600	0.073 *	0	117	1600	0.073 *	0	117	1600	0.073 *	7	123	1600	0.077 *	0	123	1600	0.077 *
Wb Thru	377	3200	0.144	0	377	3200	0.144	0	377	3200	0.144	15	392	3200	0.150	0	392	3200	0.150
Wb Right	83	0	-	2	85	0	-	0	85	0	-	3	86	0	-	2	88	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.618				0.630				0.630				0.646				0.658
LOS			B				B				B				B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Francisquito Avenue @ Frazier Street

N-S St: Francisquito Avenue
E-W St: Frazier Street
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU14

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	98	1600	0.061 *	0	98	1600	0.061 *	0	98	1600	0.061 *	7	105	1600	0.066 *	0	105	1600	0.066 *
Nb Thru	350	3200	0.154	17	367	3200	0.160	0	367	3200	0.160	35	385	3200	0.168	17	402	3200	0.173
Nb Right	144	0	-	0	144	0	-	0	144	0	-	8	151	0	-	0	151	0	-
Sb Left	52	1600	0.032	2	54	1600	0.034	0	54	1600	0.034	2	54	1600	0.034	2	56	1600	0.035
Sb Thru	638	3200	0.223 *	41	679	3200	0.236 *	0	679	3200	0.236 *	45	683	3200	0.238 *	41	724	3200	0.250 *
Sb Right	75	0	-	0	75	0	-	0	75	0	-	3	78	0	-	0	78	0	-
Eb Left	41	1600	0.026	0	41	1600	0.026	0	41	1600	0.026	2	43	1600	0.027	0	43	1600	0.027
Eb Thru	146	3200	0.074 *	0	146	3200	0.074 *	0	146	3200	0.074 *	6	152	3200	0.077 *	0	152	3200	0.077 *
Eb Right	91	0	-	0	91	0	-	0	91	0	-	5	95	0	-	0	95	0	-
Wb Left	92	1600	0.057 *	0	92	1600	0.057 *	0	92	1600	0.057 *	6	97	1600	0.061 *	0	97	1600	0.061 *
Wb Thru	157	3200	0.061	0	157	3200	0.061	0	157	3200	0.061	7	164	3200	0.064	0	164	3200	0.064
Wb Right	39	0	-	1	40	0	-	0	40	0	-	2	40	0	-	1	41	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.515				0.528				0.528				0.541				0.554
LOS			A				A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Baldwin Park Boulevard @ Francisquito Avenue

N-S St: Baldwin Park Boulevard
E-W St: Francisquito Avenue
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU15

Peak hr: AM
Annual Growth: 1.00%

Date: 09/25/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT				2019 FUTURE W/PROJECT + MITIGATI			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	136	1600	0.085 *	8	144	1600	0.090 *	0	144	1600	0.090 *	9	146	1600	0.091 *	8	154	1600	0.096 *	0	154	1600	0.096 *
Nb Thru	350	3200	0.125	0	350	3200	0.125	0	350	3200	0.125	32	382	3200	0.138	0	382	3200	0.138	0	382	3200	0.119
Nb Right	51	0	-	0	51	0	-	0	51	0	-	10	61	0	-	0	61	0	-	0	61	1600	0.038
Sb Left	117	1600	0.073	0	117	1600	0.073	0	117	1600	0.073	28	144	1600	0.090	0	144	1600	0.090	0	144	1600	0.090
Sb Thru	770	3200	0.277 *	0	770	3200	0.280 *	0	770	3200	0.280 *	48	818	3200	0.295 *	0	818	3200	0.297 *	0	818	3200	0.297 *
Sb Right	117	0	-	8	125	0	-	0	125	0	-	9	125	0	-	8	133	0	-	0	133	0	-
Eb Left	65	1600	0.041	2	67	1600	0.042	0	67	1600	0.042	11	75	1600	0.047	2	77	1600	0.048	0	77	1600	0.048
Eb Thru	354	3200	0.155 *	5	359	3200	0.157 *	0	359	3200	0.157 *	22	376	3200	0.167 *	5	381	3200	0.170 *	0	381	3200	0.170 *
Eb Right	143	0	-	2	145	0	-	0	145	0	-	17	159	0	-	2	161	0	-	0	161	0	-
Wb Left	258	1600	0.161 *	0	258	1600	0.161 *	0	258	1600	0.161 *	37	295	1600	0.185 *	0	295	1600	0.185 *	0	295	1600	0.185 *
Wb Thru	647	3200	0.224	22	669	3200	0.231	0	669	3200	0.231	37	684	3200	0.241	22	706	3200	0.248	0	706	3200	0.248
Wb Right	71	0	-	0	71	0	-	0	71	0	-	17	88	0	-	0	88	0	-	0	88	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.779				0.788				0.788				0.838				0.847				0.847
LOS			C				C				C				D				D				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Baldwin Park Boulevard @ Francisquito Avenue

N-S St: Baldwin Park Boulevard
E-W St: Francisquito Avenue
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU15

Peak hr: PM
Annual Growth: 1.00%

Date: 09/25/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT				2019 FUTURE W/PROJECT + MITIGATI			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	153	1600	0.096	3	156	1600	0.098	0	156	1600	0.098	16	169	1600	0.106	3	172	1600	0.108	0	172	1600	0.108
Nb Thru	767	3200	0.300 *	0	767	3200	0.300 *	0	767	3200	0.300 *	60	826	3200	0.327 *	0	826	3200	0.327 *	0	826	3200	0.258 *
Nb Right	194	0	-	0	194	0	-	0	194	0	-	25	219	0	-	0	219	0	-	0	219	1600	0.137
Sb Left	200	1600	0.125 *	0	200	1600	0.125 *	0	200	1600	0.125 *	28	228	1600	0.142 *	0	228	1600	0.142 *	0	228	1600	0.142 *
Sb Thru	519	3200	0.185	0	519	3200	0.186	0	519	3200	0.186	30	549	3200	0.196	0	549	3200	0.197	0	549	3200	0.197
Sb Right	72	0	-	3	75	0	-	0	75	0	-	6	78	0	-	3	81	0	-	0	81	0	-
Eb Left	65	1600	0.041	9	74	1600	0.046	0	74	1600	0.046	14	78	1600	0.049	9	87	1600	0.055	0	87	1600	0.055
Eb Thru	599	3200	0.225 *	23	622	3200	0.235 *	0	622	3200	0.235 *	32	631	3200	0.239 *	23	654	3200	0.249 *	0	654	3200	0.249 *
Eb Right	122	0	-	9	131	0	-	0	131	0	-	10	132	0	-	9	141	0	-	0	141	0	-
Wb Left	174	1600	0.109 *	0	174	1600	0.109 *	0	174	1600	0.109 *	28	202	1600	0.126 *	0	202	1600	0.126 *	0	202	1600	0.126 *
Wb Thru	481	3200	0.203	10	491	3200	0.206	0	491	3200	0.206	33	514	3200	0.223	10	524	3200	0.226	0	524	3200	0.226
Wb Right	168	0	-	0	168	0	-	0	168	0	-	31	199	0	-	0	199	0	-	0	199	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.859				0.869				0.869				0.934				0.944				0.875
LOS			D				D				D				E				E				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Francisquito Avenue @ Garvey Avenue

N-S St: Francisquito Avenue
E-W St: Garvey Avenue
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU16

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	4	1600	0.003	0	4	1600	0.003	0	4	1600	0.003	0	4	1600	0.003	0	4	1600	0.003
Nb Thru	1021	3200	0.319 *	21	1042	3200	0.326 *	0	1042	3200	0.326 *	63	1083	3200	0.339 *	21	1104	3200	0.345 *
Nb Right [3]	545	1600	0.170	0	545	1600	0.170	0	545	1600	0.170	60	605	1600	0.189	0	605	1600	0.189
Sb Left	111	1600	0.070 *	0	111	1600	0.070 *	0	111	1600	0.070 *	33	145	1600	0.090 *	0	145	1600	0.090 *
Sb Thru	508	3200	0.159	5	513	3200	0.161	0	513	3200	0.161	38	546	3200	0.171	5	551	3200	0.173
Sb Right	1	0	-	0	1	0	-	0	1	0	-	0	1	0	-	0	1	0	-
Eb Left	1	0	0.001 *	0	1	0	0.001 *	0	1	0	0.001 *	0	1	0	0.001 *	0	1	0	0.001 *
Eb Thru	1	1600	0.003	0	1	1600	0.003	0	1	1600	0.003	0	1	1600	0.004	0	1	1600	0.004
Eb Right	3	0	-	0	3	0	-	0	3	0	-	0	3	0	-	0	3	0	-
Wb Left	146	1600	0.091	0	146	1600	0.091	0	146	1600	0.091	38	184	1600	0.115	0	184	1600	0.115
Wb Thru	1	1600	0.165 *	0	1	1600	0.167 *	0	1	1600	0.167 *	0	1	1600	0.189 *	0	1	1600	0.190 *
Wb Right	264	0	-	2	266	0	-	0	266	0	-	38	301	0	-	2	303	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.655				0.662				0.662				0.719				0.726
LOS			B				B				B				C				C

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green
3 The northbound right-turn movement is accommodated via a sweeping right-turn only lane which is separated from the intersection via a large raised pork-chop island. For purposes of the intersection calculations, half (50%) of the right-turn volumes are included as part of the intersection analysis.

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INTERSECTION CAPACITY UTILIZATION

Francisquito Avenue @ Garvey Avenue

N-S St: Francisquito Avenue
E-W St: Garvey Avenue
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU16

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	2	1600	0.001	0	2	1600	0.001	0	2	1600	0.001	0	2	1600	0.001	0	2	1600	0.001
Nb Thru	924	3200	0.289 *	9	933	3200	0.292 *	0	933	3200	0.292 *	58	982	3200	0.307 *	9	991	3200	0.310 *
Nb Right [3]	364	1600	0.114	0	364	1600	0.114	0	364	1600	0.114	67	431	1600	0.135	0	431	1600	0.135
Sb Left	200	1600	0.125 *	0	200	1600	0.125 *	0	200	1600	0.125 *	43	243	1600	0.152 *	0	243	1600	0.152 *
Sb Thru	946	3200	0.296	23	969	3200	0.303	0	969	3200	0.303	61	1007	3200	0.315	23	1030	3200	0.322
Sb Right	1	0	-	0	1	0	-	0	1	0	-	0	1	0	-	0	1	0	-
Eb Left	2	0	0.001 *	0	2	0	0.001 *	0	2	0	0.001 *	0	2	0	0.001 *	0	2	0	0.001 *
Eb Thru	1	1600	0.005	0	1	1600	0.005	0	1	1600	0.005	0	1	1600	0.006	0	1	1600	0.006
Eb Right	5	0	-	0	5	0	-	0	5	0	-	0	6	0	-	0	6	0	-
Wb Left	138	1600	0.086	0	138	1600	0.086	0	138	1600	0.086	41	179	1600	0.112	0	179	1600	0.112
Wb Thru	1	1600	0.124 *	0	1	1600	0.125 *	0	1	1600	0.125 *	0	1	1600	0.149 *	0	1	1600	0.150 *
Wb Right	198	0	-	1	199	0	-	0	199	0	-	40	238	0	-	1	239	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.639				0.643				0.643				0.709				0.713
LOS			B				B				B				C				C

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green
3 The northbound right-turn movement is accommodated via a sweeping right-turn only lane which is separated from the intersection via a large raised pork-chop island. For purposes of the intersection calculations, half (50%) of the right-turn volumes are included as part of the intersection analysis.

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INTERSECTION CAPACITY UTILIZATION

Earl Avenue @ Ramona Boulevard

N-S St: Earl Avenue
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU17

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	39	0	0.024	0	39	0	0.024	0	39	0	0.024	2	40	0	0.025	0	40	0	0.025
Nb Thru	2	1600	0.092 *	0	2	1600	0.092 *	0	2	1600	0.092 *	0	2	1600	0.096 *	0	2	1600	0.096 *
Nb Right	107	0	-	0	107	0	-	0	107	0	-	4	111	0	-	0	111	0	-
Sb Left	1	0	0.001 *	0	1	0	0.001 *	0	1	0	0.001 *	0	1	0	0.001 *	0	1	0	0.001 *
Sb Thru	0	1600	0.005	0	0	1600	0.005	0	0	1600	0.005	0	0	1600	0.005	0	0	1600	0.005
Sb Right	7	0	-	0	7	0	-	0	7	0	-	0	7	0	-	0	7	0	-
Eb Left	6	1600	0.004 *	0	6	1600	0.004 *	0	6	1600	0.004 *	0	6	1600	0.004 *	0	6	1600	0.004 *
Eb Thru	577	3200	0.194	9	586	3200	0.197	0	586	3200	0.197	55	632	3200	0.212	9	641	3200	0.215
Eb Right	45	0	-	0	45	0	-	0	45	0	-	2	46	0	-	0	46	0	-
Wb Left	31	1600	0.019	0	31	1600	0.019	0	31	1600	0.019	1	32	1600	0.020	0	32	1600	0.020
Wb Thru	1852	3200	0.581 *	37	1889	3200	0.592 *	0	1889	3200	0.592 *	97	1949	3200	0.611 *	37	1986	3200	0.623 *
Wb Right	7	0	-	0	7	0	-	0	7	0	-	0	7	0	-	0	7	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.777				0.789				0.789				0.812				0.823
LOS			C				C				C				D				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Earl Avenue @ Ramona Boulevard

N-S St: Earl Avenue
E-W St: Ramona Boulevard
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU17

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	12	0	0.008	0	12	0	0.008	0	12	0	0.008	0	12	0	0.008	0	12	0	0.008
Nb Thru	0	1600	0.026 *	0	0	1600	0.026 *	0	0	1600	0.026 *	0	0	1600	0.027 *	0	0	1600	0.027 *
Nb Right	29	0	-	0	29	0	-	0	29	0	-	1	30	0	-	0	30	0	-
Sb Left	14	0	0.009 *	0	14	0	0.009 *	0	14	0	0.009 *	1	15	0	0.009 *	0	15	0	0.009 *
Sb Thru	0	1600	0.011	0	0	1600	0.011	0	0	1600	0.011	0	0	1600	0.011	0	0	1600	0.011
Sb Right	3	0	-	0	3	0	-	0	3	0	-	0	3	0	-	0	3	0	-
Eb Left	9	1600	0.006	0	9	1600	0.006	0	9	1600	0.006	0	9	1600	0.006	0	9	1600	0.006
Eb Thru	1360	3200	0.435 *	41	1401	3200	0.448 *	0	1401	3200	0.448 *	90	1450	3200	0.464 *	41	1491	3200	0.477 *
Eb Right	33	0	-	0	33	0	-	0	33	0	-	1	34	0	-	0	34	0	-
Wb Left	24	1600	0.015 *	0	24	1600	0.015 *	0	24	1600	0.015 *	1	25	1600	0.016 *	0	25	1600	0.016 *
Wb Thru	635	3200	0.200	16	651	3200	0.205	0	651	3200	0.205	63	698	3200	0.220	16	714	3200	0.225
Wb Right	6	0	-	0	6	0	-	0	6	0	-	0	6	0	-	0	6	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.585				0.597				0.597				0.615				0.628
LOS			A				A				A				B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Baldwin Park Boulevard @ Foster Avenue

N-S St:	Baldwin Park Boulevard	Peak hr:	AM	Date:	09/04/2015
E-W St:	Foster Avenue	Annual Growth:	1.00%	Date of Count:	2015
Project:	Kaiser Permanente Irwindale MOB Project/1-15-4118-1			Projection Year:	2019
File:	ICU18				

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	96	1600	0.060 *	0	96	1600	0.060 *	0	96	1600	0.060 *	8	104	1600	0.065 *	0	104	1600	0.065 *
Nb Thru	443	3200	0.147	2	445	3200	0.147	0	445	3200	0.147	43	486	3200	0.162	2	488	3200	0.162
Nb Right	27	0	-	0	27	0	-	0	27	0	-	5	32	0	-	0	32	0	-
Sb Left	54	1600	0.034	0	54	1600	0.034	0	54	1600	0.034	2	56	1600	0.035	0	56	1600	0.035
Sb Thru	894	3200	0.302 *	8	902	3200	0.304 *	0	902	3200	0.304 *	67	961	3200	0.323 *	8	969	3200	0.326 *
Sb Right	71	0	-	0	71	0	-	0	71	0	-	3	74	0	-	0	74	0	-
Eb Left	82	0	0.051 *	0	82	0	0.051 *	0	82	0	0.051 *	3	85	0	0.053 *	0	85	0	0.053 *
Eb Thru	73	1600	0.097	0	73	1600	0.097	0	73	1600	0.097	3	76	1600	0.101	0	76	1600	0.101
Eb Right	130	1600	0.081	0	130	1600	0.081	0	130	1600	0.081	8	138	1600	0.086	0	138	1600	0.086
Wb Left	43	0	0.027	0	43	0	0.027	0	43	0	0.027	5	48	0	0.030	0	48	0	0.030
Wb Thru	79	1600	0.101 *	0	79	1600	0.101 *	0	79	1600	0.101 *	3	82	1600	0.107 *	0	82	1600	0.107 *
Wb Right	40	0	-	0	40	0	-	0	40	0	-	2	42	0	-	0	42	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.614				0.617				0.617				0.649				0.651
LOS			B				B				B				B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Baldwin Park Boulevard @ Foster Avenue

N-S St: Baldwin Park Boulevard
E-W St: Foster Avenue
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU18

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	91	1600	0.057	0	91	1600	0.057	0	91	1600	0.057	7	97	1600	0.061	0	97	1600	0.061
Nb Thru	859	3200	0.276 *	9	868	3200	0.279 *	0	868	3200	0.279 *	66	925	3200	0.298 *	9	934	3200	0.301 *
Nb Right	25	0	-	0	25	0	-	0	25	0	-	4	29	0	-	0	29	0	-
Sb Left	24	1600	0.015 *	0	24	1600	0.015 *	0	24	1600	0.015 *	1	25	1600	0.015 *	0	25	1600	0.015 *
Sb Thru	732	3200	0.234	3	735	3200	0.234	0	735	3200	0.234	60	793	3200	0.253	3	796	3200	0.254
Sb Right	15	0	-	0	15	0	-	0	15	0	-	1	16	0	-	0	16	0	-
Eb Left	42	0	0.026 *	0	42	0	0.026 *	0	42	0	0.026 *	2	44	0	0.027 *	0	44	0	0.027 *
Eb Thru	63	1600	0.065	0	63	1600	0.065	0	63	1600	0.065	3	65	1600	0.068	0	65	1600	0.068
Eb Right	50	1600	0.031	0	50	1600	0.031	0	50	1600	0.031	6	56	1600	0.035	0	56	1600	0.035
Wb Left	16	0	0.010	0	16	0	0.010	0	16	0	0.010	5	21	0	0.013	0	21	0	0.013
Wb Thru	50	1600	0.059 *	0	50	1600	0.059 *	0	50	1600	0.059 *	2	52	1600	0.064 *	0	52	1600	0.064 *
Wb Right	28	0	-	0	28	0	-	0	28	0	-	1	29	0	-	0	29	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.476				0.479				0.479				0.504				0.507
LOS			A				A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
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INTERSECTION CAPACITY UTILIZATION

Vineland Avenue-I-10 FWY WB Ramps @ Garvey Avenue

N-S St: Vineland Avenue-I-10 FWY WB Ramps
E-W St: Garvey Avenue
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU19

Peak hr: AM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	97	0	0.060	2	99	0	0.062	0	99	0	0.062	24	120	0	0.075	2	122	0	0.076
Nb Thru	5	1600	0.063	0	5	1600	0.065	0	5	1600	0.065	1	6	1600	0.079	0	6	1600	0.080
Nb Right	4	1600	0.003	0	4	1600	0.003	0	4	1600	0.003	0	4	1600	0.003	0	4	1600	0.003
Sb Left	9	0	0.006	0	9	0	0.006	0	9	0	0.006	0	9	0	0.006	0	9	0	0.006
Sb Thru	212	1600	0.196 *	0	212	1600	0.196 *	0	212	1600	0.196 *	11	223	1600	0.210 *	0	223	1600	0.210 *
Sb Right	93	0	-	0	93	0	-	0	93	0	-	11	103	0	-	0	103	0	-
Eb Left	76	0	0.047	0	76	0	0.047	0	76	0	0.047	9	85	0	0.053	0	85	0	0.053
Eb Thru	64	1600	0.087	0	64	1600	0.087	0	64	1600	0.087	29	93	1600	0.111	0	93	1600	0.111
Eb Right	539	1600	0.337 *	0	539	1600	0.337 *	0	539	1600	0.337 *	41	579	1600	0.362 *	0	579	1600	0.362 *
Wb Left	117	0	0.073 *	0	117	0	0.073 *	0	117	0	0.073 *	5	121	0	0.076 *	0	121	0	0.076 *
Wb Thru	67	1600	0.118	0	67	1600	0.118	0	67	1600	0.118	25	91	1600	0.137	0	91	1600	0.137
Wb Right	6	0	-	0	6	0	-	0	6	0	-	0	6	0	-	0	6	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.766				0.767				0.767				0.823				0.824
LOS			C				C				C				D				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Vineland Avenue-I-10 FWY WB Ramps @ Garvey Avenue

N-S St: Vineland Avenue-I-10 FWY WB Ramps
E-W St: Garvey Avenue
Project: Kaiser Permanente Irwindale MOB Project/1-15-4118-1
File: ICU19

Peak hr: PM
Annual Growth: 1.00%

Date: 09/04/2015
Date of Count: 2015
Projection Year: 2019

	2015 EXIST. TRAFFIC			2015 EXISTING WITH PROJECT				2015 EXIST. W/PROJECT + MITIGATI				2019 FUTURE PRE-PROJECT				2019 FUTURE WITH PROJECT			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	163	0	0.102 *	1	164	0	0.103 *	0	164	0	0.103 *	32	195	0	0.122 *	1	196	0	0.122 *
Nb Thru	33	1600	0.123	0	33	1600	0.123	0	33	1600	0.123	4	37	1600	0.145	0	37	1600	0.146
Nb Right	23	1600	0.014	0	23	1600	0.014	0	23	1600	0.014	1	24	1600	0.015	0	24	1600	0.015
Sb Left	13	0	0.008	0	13	0	0.008	0	13	0	0.008	1	14	0	0.008	0	14	0	0.008
Sb Thru	82	1600	0.103 *	0	82	1600	0.103 *	0	82	1600	0.103 *	6	88	1600	0.113 *	0	88	1600	0.113 *
Sb Right	69	0	-	0	69	0	-	0	69	0	-	11	80	0	-	0	80	0	-
Eb Left	217	0	0.136	0	217	0	0.136	0	217	0	0.136	16	233	0	0.145	0	233	0	0.145
Eb Thru	204	1600	0.263 *	0	204	1600	0.263 *	0	204	1600	0.263 *	36	240	1600	0.296 *	0	240	1600	0.296 *
Eb Right	319	1600	0.199	0	319	1600	0.199	0	319	1600	0.199	34	353	1600	0.220	0	353	1600	0.220
Wb Left	64	0	0.040 *	0	64	0	0.040 *	0	64	0	0.040 *	3	67	0	0.042 *	0	67	0	0.042 *
Wb Thru	95	1600	0.108	0	95	1600	0.108	0	95	1600	0.108	34	129	1600	0.131	0	129	1600	0.131
Wb Right	14	0	-	0	14	0	-	0	14	0	-	1	15	0	-	0	15	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.608				0.608				0.608				0.672				0.673
LOS			B				B				B				B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	76	64	539	117	67	6	97	5	4	9	212	93
Future Volume (vph)	76	64	539	117	67	6	97	5	4	9	212	93
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
Hourly flow rate (vph)	84	70	592	129	74	7	107	5	4	10	233	102

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	154	592	210	112	4	345
Volume Left (vph)	84	0	129	107	0	10
Volume Right (vph)	0	592	7	0	4	102
Hadj (s)	0.14	-0.57	0.14	0.51	-0.67	-0.14
Departure Headway (s)	5.7	3.2	5.6	6.5	5.4	5.2
Degree Utilization, x	0.24	0.53	0.33	0.20	0.01	0.49
Capacity (veh/h)	573	1117	587	497	607	662
Control Delay (s)	10.5	9.7	11.3	10.0	7.2	13.1
Approach Delay (s)	9.9		11.3	9.9		13.1
Approach LOS	A		B	A		B

Intersection Summary				
Delay	10.9			
Level of Service	B			
Intersection Capacity Utilization	72.5%	ICU Level of Service	C	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	37.3
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	76	64	539	0	117	67	6	0	97	5	4
Future Vol, veh/h	0	76	64	539	0	117	67	6	0	97	5	4
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	84	70	592	0	129	74	7	0	107	5	4
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	51.7	17.1	14.3
HCM LOS	F	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	95%	0%	54%	0%	62%	3%
Vol Thru, %	5%	0%	46%	0%	35%	68%
Vol Right, %	0%	100%	0%	100%	3%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	102	4	140	539	190	314
LT Vol	97	0	76	0	117	9
Through Vol	5	0	64	0	67	212
RT Vol	0	4	0	539	6	93
Lane Flow Rate	112	4	154	592	209	345
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.27	0.009	0.306	1	0.456	0.71
Departure Headway (Hd)	8.67	7.567	7.151	6.159	7.861	7.3
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	417	480	502	586	466	497
Service Time	6.37	5.194	4.903	3.911	5.773	5.3
HCM Lane V/C Ratio	0.269	0.008	0.307	1.01	0.448	0.694
HCM Control Delay	14.5	10.3	13	61.8	17.1	26.2
HCM Lane LOS	B	B	B	F	C	D
HCM 95th-tile Q	1.1	0	1.3	14.7	2.3	5.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	9	212	93
Future Vol, veh/h	0	9	212	93
Peak Hour Factor	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	233	102
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	26.2
HCM LOS	D

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	217	204	319	64	95	14	163	33	23	13	82	69
Future Volume (vph)	217	204	319	64	95	14	163	33	23	13	82	69
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
Hourly flow rate (vph)	224	210	329	66	98	14	168	34	24	13	85	71

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	434	329	178	202	24	169
Volume Left (vph)	224	0	66	168	0	13
Volume Right (vph)	0	329	14	0	24	71
Hadj (s)	0.14	-0.57	0.06	0.45	-0.67	-0.20
Departure Headway (s)	5.7	3.2	6.1	7.1	5.9	6.2
Degree Utilization, x	0.68	0.29	0.30	0.40	0.04	0.29
Capacity (veh/h)	610	1113	530	463	546	516
Control Delay (s)	20.0	7.5	11.6	13.5	8.0	11.7
Approach Delay (s)	14.6		11.6	12.9		11.7
Approach LOS	B		B	B		B

Intersection Summary			
Delay	13.5		
Level of Service	B		
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	19.8
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	217	204	319	0	64	95	14	0	163	33	23
Future Vol, veh/h	0	217	204	319	0	64	95	14	0	163	33	23
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	224	210	329	0	66	98	14	0	168	34	24
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	23.5	14.3	16
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	83%	0%	52%	0%	37%	8%
Vol Thru, %	17%	0%	48%	0%	55%	50%
Vol Right, %	0%	100%	0%	100%	8%	42%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	196	23	421	319	173	164
LT Vol	163	0	217	0	64	13
Through Vol	33	0	204	0	95	82
RT Vol	0	23	0	319	14	69
Lane Flow Rate	202	24	434	329	178	169
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.443	0.044	0.794	0.513	0.359	0.344
Departure Headway (Hd)	7.887	6.759	6.701	5.727	7.238	7.325
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	533	543	635	498	492
Service Time	5.603	4.459	4.401	3.427	5.265	5.347
HCM Lane V/C Ratio	0.44	0.045	0.799	0.518	0.357	0.343
HCM Control Delay	16.7	9.8	30.4	14.3	14.3	14.2
HCM Lane LOS	C	A	D	B	B	B
HCM 95th-tile Q	2.2	0.1	7.5	2.9	1.6	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	13	82	69
Future Vol, veh/h	0	13	82	69
Peak Hour Factor	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	13	85	71
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	14.2
HCM LOS	B

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	76	64	539	117	67	6	99	5	4	9	212	93
Future Volume (vph)	76	64	539	117	67	6	99	5	4	9	212	93
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
Hourly flow rate (vph)	84	70	592	129	74	7	109	5	4	10	233	102

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	154	592	210	114	4	345
Volume Left (vph)	84	0	129	109	0	10
Volume Right (vph)	0	592	7	0	4	102
Hadj (s)	0.14	-0.57	0.14	0.51	-0.67	-0.14
Departure Headway (s)	5.7	3.2	5.6	6.5	5.4	5.2
Degree Utilization, x	0.24	0.53	0.33	0.21	0.01	0.49
Capacity (veh/h)	572	1117	586	497	607	661
Control Delay (s)	10.5	9.7	11.3	10.1	7.2	13.1
Approach Delay (s)	9.9		11.3	10.0		13.1
Approach LOS	A		B	A		B

Intersection Summary			
Delay	10.9		
Level of Service	B		
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	37.2
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	76	64	539	0	117	67	6	0	99	5	4
Future Vol, veh/h	0	76	64	539	0	117	67	6	0	99	5	4
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	84	70	592	0	129	74	7	0	109	5	4
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	51.7	17.1	14.4
HCM LOS	F	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	95%	0%	54%	0%	62%	3%
Vol Thru, %	5%	0%	46%	0%	35%	68%
Vol Right, %	0%	100%	0%	100%	3%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	104	4	140	539	190	314
LT Vol	99	0	76	0	117	9
Through Vol	5	0	64	0	67	212
RT Vol	0	4	0	539	6	93
Lane Flow Rate	114	4	154	592	209	345
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.275	0.009	0.306	1	0.457	0.701
Departure Headway (Hd)	8.673	7.574	7.166	6.174	7.764	7.318
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	417	481	503	586	468	497
Service Time	6.358	5.182	4.895	3.902	5.764	5.311
HCM Lane V/C Ratio	0.273	0.008	0.306	1.01	0.447	0.694
HCM Control Delay	14.6	10.2	13	61.7	17.1	25.7
HCM Lane LOS	B	B	B	F	C	D
HCM 95th-tile Q	1.1	0	1.3	14.8	2.3	5.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	9	212	93
Future Vol, veh/h	0	9	212	93
Peak Hour Factor	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	233	102
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	25.7
HCM LOS	D

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	217	204	319	64	95	14	164	33	23	13	82	69
Future Volume (vph)	217	204	319	64	95	14	164	33	23	13	82	69
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
Hourly flow rate (vph)	224	210	329	66	98	14	169	34	24	13	85	71

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	434	329	178	203	24	169
Volume Left (vph)	224	0	66	169	0	13
Volume Right (vph)	0	329	14	0	24	71
Hadj (s)	0.14	-0.57	0.06	0.45	-0.67	-0.20
Departure Headway (s)	5.7	3.2	6.1	7.1	6.0	6.2
Degree Utilization, x	0.68	0.29	0.30	0.40	0.04	0.29
Capacity (veh/h)	609	1113	529	463	546	515
Control Delay (s)	20.0	7.5	11.7	13.5	8.0	11.7
Approach Delay (s)	14.6		11.7	12.9		11.7
Approach LOS	B		B	B		B

Intersection Summary			
Delay	13.6		
Level of Service	B		
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	217	204	319	0	64	95	14	0	164	33	23
Future Vol, veh/h	0	217	204	319	0	64	95	14	0	164	33	23
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	224	210	329	0	66	98	14	0	169	34	24
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	23.6	14.3	16.1
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	83%	0%	52%	0%	37%	8%
Vol Thru, %	17%	0%	48%	0%	55%	50%
Vol Right, %	0%	100%	0%	100%	8%	42%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	197	23	421	319	173	164
LT Vol	164	0	217	0	64	13
Through Vol	33	0	204	0	95	82
RT Vol	0	23	0	319	14	69
Lane Flow Rate	203	24	434	329	178	169
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.445	0.044	0.795	0.513	0.359	0.344
Departure Headway (Hd)	7.89	6.747	6.705	5.731	7.244	7.331
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	533	543	635	498	492
Service Time	5.604	4.461	4.405	3.431	5.27	5.351
HCM Lane V/C Ratio	0.442	0.045	0.799	0.518	0.357	0.343
HCM Control Delay	16.8	9.8	30.6	14.3	14.3	14.2
HCM Lane LOS	C	A	D	B	B	B
HCM 95th-tile Q	2.2	0.1	7.5	2.9	1.6	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	13	82	69
Future Vol, veh/h	0	13	82	69
Peak Hour Factor	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	13	85	71
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	14.2
HCM LOS	B

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	85	93	579	121	91	6	120	6	4	9	223	103
Future Volume (vph)	85	93	579	121	91	6	120	6	4	9	223	103
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
Hourly flow rate (vph)	93	102	636	133	100	7	132	7	4	10	245	113

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	195	636	240	139	4	368
Volume Left (vph)	93	0	133	132	0	10
Volume Right (vph)	0	636	7	0	4	113
Hadj (s)	0.13	-0.57	0.13	0.51	-0.67	-0.14
Departure Headway (s)	6.0	3.2	5.9	6.9	5.7	5.5
Degree Utilization, x	0.33	0.57	0.40	0.27	0.01	0.56
Capacity (veh/h)	539	1117	554	465	557	618
Control Delay (s)	11.9	10.3	12.8	11.2	7.6	15.3
Approach Delay (s)	10.7		12.8	11.1		15.3
Approach LOS	B		B	B		C

Intersection Summary			
Delay	12.1		
Level of Service	B		
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	39.1
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	85	93	579	0	121	91	6	0	120	6	4
Future Vol, veh/h	0	85	93	579	0	121	91	6	0	120	6	4
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	93	102	636	0	133	100	7	0	132	7	4
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	52.2	20	15.9
HCM LOS	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	95%	0%	48%	0%	56%	3%
Vol Thru, %	5%	0%	52%	0%	42%	67%
Vol Right, %	0%	100%	0%	100%	3%	31%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	126	4	178	579	218	335
LT Vol	120	0	85	0	121	9
Through Vol	6	0	93	0	91	223
RT Vol	0	4	0	579	6	103
Lane Flow Rate	138	4	196	636	240	368
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.339	0.009	0.408	1	0.537	0.764
Departure Headway (Hd)	8.918	7.741	7.516	6.553	8.068	7.471
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	406	465	481	560	450	482
Service Time	6.618	5.441	5.227	4.265	6.068	5.557
HCM Lane V/C Ratio	0.34	0.009	0.407	1.136	0.533	0.763
HCM Control Delay	16.1	10.5	15.3	63.6	20	31.1
HCM Lane LOS	C	B	C	F	C	D
HCM 95th-tile Q	1.5	0	2	14.3	3.1	6.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	9	223	103
Future Vol, veh/h	0	9	223	103
Peak Hour Factor	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	245	113
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	31.1
HCM LOS	D

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	233	240	353	67	129	15	195	37	24	14	88	80
Future Volume (vph)	233	240	353	67	129	15	195	37	24	14	88	80
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
Hourly flow rate (vph)	240	247	364	69	133	15	201	38	25	14	91	82

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	487	364	217	239	25	187
Volume Left (vph)	240	0	69	201	0	14
Volume Right (vph)	0	364	15	0	25	82
Hadj (s)	0.13	-0.57	0.06	0.45	-0.67	-0.21
Departure Headway (s)	6.1	3.2	6.7	7.7	6.5	6.8
Degree Utilization, x	0.83	0.32	0.40	0.51	0.05	0.36
Capacity (veh/h)	487	1113	494	433	501	477
Control Delay (s)	32.2	7.7	14.1	17.1	8.6	13.6
Approach Delay (s)	21.8		14.1	16.3		13.6
Approach LOS	C		B	C		B

Intersection Summary			
Delay	18.7		
Level of Service	C		
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	31.4
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	233	240	353	0	67	129	15	0	195	37	24
Future Vol, veh/h	0	233	240	353	0	67	129	15	0	195	37	24
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	240	247	364	0	69	133	15	0	201	38	25
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	41.7	17.6	20.1
HCM LOS	E	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	84%	0%	49%	0%	32%	8%
Vol Thru, %	16%	0%	51%	0%	61%	48%
Vol Right, %	0%	100%	0%	100%	7%	44%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	232	24	473	353	211	182
LT Vol	195	0	233	0	67	14
Through Vol	37	0	240	0	129	88
RT Vol	0	24	0	353	15	80
Lane Flow Rate	239	25	488	364	218	188
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.556	0.05	0.967	0.624	0.47	0.411
Departure Headway (Hd)	8.364	7.211	7.138	6.171	7.774	7.894
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	431	496	507	586	463	456
Service Time	6.115	4.961	4.888	3.92	5.831	5.951
HCM Lane V/C Ratio	0.555	0.05	0.963	0.621	0.471	0.412
HCM Control Delay	21.1	10.3	58.9	18.7	17.6	16.4
HCM Lane LOS	C	B	F	C	C	C
HCM 95th-tile Q	3.3	0.2	12.5	4.3	2.5	2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	14	88	80
Future Vol, veh/h	0	14	88	80
Peak Hour Factor	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	14	91	82
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	16.4
HCM LOS	C

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	85	93	579	121	91	6	122	6	4	9	223	103
Future Volume (vph)	85	93	579	121	91	6	122	6	4	9	223	103
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
Hourly flow rate (vph)	93	102	636	133	100	7	134	7	4	10	245	113

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	195	636	240	141	4	368
Volume Left (vph)	93	0	133	134	0	10
Volume Right (vph)	0	636	7	0	4	113
Hadj (s)	0.13	-0.57	0.13	0.51	-0.67	-0.14
Departure Headway (s)	6.0	3.2	5.9	6.9	5.7	5.5
Degree Utilization, x	0.33	0.57	0.40	0.27	0.01	0.56
Capacity (veh/h)	538	1117	553	465	557	618
Control Delay (s)	11.9	10.3	12.8	11.3	7.6	15.4
Approach Delay (s)	10.7		12.8	11.2		15.4
Approach LOS	B		B	B		C

Intersection Summary			
Delay	12.1		
Level of Service	B		
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	39.2
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	85	93	579	0	121	91	6	0	122	6	4
Future Vol, veh/h	0	85	93	579	0	121	91	6	0	122	6	4
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	93	102	636	0	133	100	7	0	134	7	4
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	52.3	20.1	16
HCM LOS	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	95%	0%	48%	0%	56%	3%
Vol Thru, %	5%	0%	52%	0%	42%	67%
Vol Right, %	0%	100%	0%	100%	3%	31%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	4	178	579	218	335
LT Vol	122	0	85	0	121	9
Through Vol	6	0	93	0	91	223
RT Vol	0	4	0	579	6	103
Lane Flow Rate	141	4	196	636	240	368
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.344	0.009	0.409	1	0.538	0.765
Departure Headway (Hd)	8.922	7.744	7.529	6.566	8.083	7.482
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	405	465	481	560	448	482
Service Time	6.622	5.444	5.24	4.278	6.083	5.569
HCM Lane V/C Ratio	0.348	0.009	0.407	1.136	0.536	0.763
HCM Control Delay	16.2	10.5	15.4	63.7	20.1	31.2
HCM Lane LOS	C	B	C	F	C	D
HCM 95th-tile Q	1.5	0	2	14.3	3.1	6.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	9	223	103
Future Vol, veh/h	0	9	223	103
Peak Hour Factor	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	245	113
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	31.2
HCM LOS	D

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	233	240	353	67	129	15	196	37	24	14	88	80
Future Volume (vph)	233	240	353	67	129	15	196	37	24	14	88	80
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
Hourly flow rate (vph)	240	247	364	69	133	15	202	38	25	14	91	82

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	487	364	217	240	25	187
Volume Left (vph)	240	0	69	202	0	14
Volume Right (vph)	0	364	15	0	25	82
Hadj (s)	0.13	-0.57	0.06	0.45	-0.67	-0.21
Departure Headway (s)	6.1	3.2	6.7	7.7	6.5	6.8
Degree Utilization, x	0.83	0.32	0.40	0.51	0.05	0.36
Capacity (veh/h)	487	1113	494	433	500	476
Control Delay (s)	32.3	7.7	14.1	17.2	8.6	13.6
Approach Delay (s)	21.8		14.1	16.4		13.6
Approach LOS	C		B	C		B

Intersection Summary			
Delay	18.8		
Level of Service	C		
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	31.4
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	233	240	353	0	67	129	15	0	196	37	24
Future Vol, veh/h	0	233	240	353	0	67	129	15	0	196	37	24
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	240	247	364	0	69	133	15	0	202	38	25
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	41.8	17.6	20.2
HCM LOS	E	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	84%	0%	49%	0%	32%	8%
Vol Thru, %	16%	0%	51%	0%	61%	48%
Vol Right, %	0%	100%	0%	100%	7%	44%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	233	24	473	353	211	182
LT Vol	196	0	233	0	67	14
Through Vol	37	0	240	0	129	88
RT Vol	0	24	0	353	15	80
Lane Flow Rate	240	25	488	364	218	188
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.558	0.05	0.968	0.625	0.47	0.412
Departure Headway (Hd)	8.37	7.217	7.147	6.18	7.785	7.903
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	432	496	507	582	463	456
Service Time	6.118	4.964	4.893	3.926	5.839	5.956
HCM Lane V/C Ratio	0.556	0.05	0.963	0.625	0.471	0.412
HCM Control Delay	21.2	10.3	59.1	18.7	17.6	16.4
HCM Lane LOS	C	B	F	C	C	C
HCM 95th-tile Q	3.3	0.2	12.5	4.3	2.5	2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	14	88	80
Future Vol, veh/h	0	14	88	80
Peak Hour Factor	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	14	91	82
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	16.4
HCM LOS	C

Lane

APPENDIX C

CALTRANS ANALYSIS WORKSHEETS

BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*7/28/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4536*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1249*	pc/h/ln
S	*70.0*	mph
D = v_p / S	*17.8*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7241*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1993*	pc/h/ln
S	*62.7*	mph
D = v_p / S	*31.8*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*7/28/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5189*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1428*	pc/h/ln
S	*69.4*	mph
D = v_p / S	*20.6*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5901*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1624*	pc/h/ln
S	*67.9*	mph
D = v_p / S	*23.9*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*8/11/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4542*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1250*	pc/h/ln
S	*70.0*	mph
D = v_p / S	*17.9*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7265*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2000*	pc/h/ln
S	*62.6*	mph
D = v_p / S	*32.0*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*8/11/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5216*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1436*	pc/h/ln
S	*69.4*	mph
D = v_p / S	*20.7*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5911*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1627*	pc/h/ln
S	*67.9*	mph
D = v_p / S	*24.0*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
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LOS, S, FFS, v_p - Exhibits 11-2, 11-3
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f_{LC} - Exhibit 11-9
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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4717*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1298*	pc/h/ln
S	*69.9*	mph
D = v_p / S	*18.6*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
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f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7531*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2073*	pc/h/ln
S	*61.2*	mph
D = v_p / S	*33.9*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5397*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1486*	pc/h/ln
S	*69.1*	mph
D = v_p / S	*21.5*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

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f_{LC} - Exhibit 11-9
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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6137*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1689*	pc/h/ln
S	*67.2*	mph
D = v_p / S	*25.1*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
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f_{LC} - Exhibit 11-9
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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4723*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1300*	pc/h/ln
S	*69.9*	mph
D = v_p / S	*18.6*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7555*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2080*	pc/h/ln
S	*61.0*	mph
D = v_p / S	*34.1*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
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f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5424*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1493*	pc/h/ln
S	*69.0*	mph
D = v_p / S	*21.6*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of Ramona Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6147*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1692*	pc/h/ln
S	*67.2*	mph
D = v_p / S	*25.2*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*7/28/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5433*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1496*	pc/h/ln
S	*69.0*	mph
D = v_p / S	*21.7*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7663*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*4.5*	mph
FFS	*70.9*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2109*	pc/h/ln
S	*60.4*	mph
D = v_p / S	*34.9*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*7/28/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6105*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1680*	pc/h/ln
S	*67.3*	mph
D = v_p / S	*25.0*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6397*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*4.5*	mph
FFS	*70.9*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1761*	pc/h/ln
S	*66.3*	mph
D = v_p / S	*26.5*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*8/11/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5457*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1502*	pc/h/ln
S	*68.9*	mph
D = v_p / S	*21.8*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
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f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7669*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*4.5*	mph
FFS	*70.9*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2111*	pc/h/ln
S	*60.4*	mph
D = v_p / S	*35.0*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
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LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*8/11/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6115*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1683*	pc/h/ln
S	*67.3*	mph
D = v_p / S	*25.0*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6426*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*4.5*	mph
FFS	*70.9*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1769*	pc/h/ln
S	*66.2*	mph
D = v_p / S	*26.7*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5650*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1555*	pc/h/ln
S	*68.5*	mph
D = v_p / S	*22.7*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7970*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*4.5*	mph
FFS	*70.9*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2194*	pc/h/ln
S	*58.5*	mph
D = v_p / S	*37.5*	pc/mi/ln
LOS	*E*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6349*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1748*	pc/h/ln
S	*66.5*	mph
D = v_p / S	*26.3*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6653*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*4.5*	mph
FFS	*70.9*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1831*	pc/h/ln
S	*65.4*	mph
D = v_p / S	*28.0*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
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LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5674*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1562*	pc/h/ln
S	*68.5*	mph
D = v_p / S	*22.8*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
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LOS, S, FFS, v_p - Exhibits 11-2, 11-3
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f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7976*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*4.5*	mph
FFS	*70.9*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2196*	pc/h/ln
S	*58.5*	mph
D = v_p / S	*37.5*	pc/mi/ln
LOS	*E*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

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f_{LC} - Exhibit 11-9
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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6359*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.0*	mph
FFS	*70.4*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1750*	pc/h/ln
S	*66.5*	mph
D = v_p / S	*26.3*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

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f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*North of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6682*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*7*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.966*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*1.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*4.5*	mph
FFS	*70.9*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1839*	pc/h/ln
S	*65.3*	mph
D = v_p / S	*28.2*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
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f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6057*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.17*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*6.2*	mph
FFS	*69.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1691*	pc/h/ln
S	*67.2*	mph
D = v_p / S	*25.2*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*7/28/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6382*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1782*	pc/h/ln
S	*66.1*	mph
D = v_p / S	*27.0*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6281*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.17*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*6.2*	mph
FFS	*69.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1754*	pc/h/ln
S	*66.4*	mph
D = v_p / S	*26.4*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*7/28/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6000*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1676*	pc/h/ln
S	*67.4*	mph
D = v_p / S	*24.9*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6070*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.17*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*6.2*	mph
FFS	*69.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1695*	pc/h/ln
S	*67.2*	mph
D = v_p / S	*25.2*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*8/11/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6385*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1783*	pc/h/ln
S	*66.1*	mph
D = v_p / S	*27.0*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6287*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.17*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*6.2*	mph
FFS	*69.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1756*	pc/h/ln
S	*66.4*	mph
D = v_p / S	*26.4*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*8/11/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6014*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1679*	pc/h/ln
S	*67.3*	mph
D = v_p / S	*24.9*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
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f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6299*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.17*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*6.2*	mph
FFS	*69.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1759*	pc/h/ln
S	*66.4*	mph
D = v_p / S	*26.5*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6637*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1853*	pc/h/ln
S	*65.1*	mph
D = v_p / S	*28.5*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6532*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.17*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*6.2*	mph
FFS	*69.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1824*	pc/h/ln
S	*65.5*	mph
D = v_p / S	*27.9*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6240*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1743*	pc/h/ln
S	*66.6*	mph
D = v_p / S	*26.2*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6312*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.17*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*6.2*	mph
FFS	*69.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1763*	pc/h/ln
S	*66.3*	mph
D = v_p / S	*26.6*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6640*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1854*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*28.5*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Northbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6538*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.17*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*6.2*	mph
FFS	*69.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1826*	pc/h/ln
S	*65.5*	mph
D = v_p / S	*27.9*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-605 Southbound*
Agency or Company	*LLG Engineers*	From/To	*South of I-10*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permanente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6254*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*5.8*	mph
FFS	*69.6*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1746*	pc/h/ln
S	*66.5*	mph
D = v_p / S	*26.2*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5729*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*8.1*	mph
FFS	*67.3*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1547*	pc/h/ln
S	*64.7*	mph
D = v_p / S	*23.9*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*7/28/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7125*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1923*	pc/h/ln
S	*61.1*	mph
D = v_p / S	*31.5*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5772*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*8.1*	mph
FFS	*67.3*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1558*	pc/h/ln
S	*64.6*	mph
D = v_p / S	*24.1*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*7/28/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6007*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1622*	pc/h/ln
S	*64.3*	mph
D = v_p / S	*25.2*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5739*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*8.1*	mph
FFS	*67.3*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1549*	pc/h/ln
S	*64.7*	mph
D = v_p / S	*23.9*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*8/11/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7127*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1924*	pc/h/ln
S	*61.1*	mph
D = v_p / S	*31.5*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5776*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*8.1*	mph
FFS	*67.3*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1559*	pc/h/ln
S	*64.6*	mph
D = v_p / S	*24.1*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*8/11/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6018*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1625*	pc/h/ln
S	*64.3*	mph
D = v_p / S	*25.3*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5958*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*8.1*	mph
FFS	*67.3*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1608*	pc/h/ln
S	*64.4*	mph
D = v_p / S	*25.0*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
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LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7410*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2000*	pc/h/ln
S	*59.9*	mph
D = v_p / S	*33.4*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6003*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*8.1*	mph
FFS	*67.3*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1620*	pc/h/ln
S	*64.3*	mph
D = v_p / S	*25.2*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
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f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6247*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1686*	pc/h/ln
S	*63.8*	mph
D = v_p / S	*26.4*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5968*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*8.1*	mph
FFS	*67.3*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1611*	pc/h/ln
S	*64.4*	mph
D = v_p / S	*25.0*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7412*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2001*	pc/h/ln
S	*59.9*	mph
D = v_p / S	*33.4*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6007*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.00*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*8.1*	mph
FFS	*67.3*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1622*	pc/h/ln
S	*64.3*	mph
D = v_p / S	*25.2*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*West of I-605*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6258*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1689*	pc/h/ln
S	*63.8*	mph
D = v_p / S	*26.5*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*7/28/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4790*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*7.3*	mph
FFS	*68.1*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1312*	pc/h/ln
S	*69.9*	mph
D = v_p / S	*18.8*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5884*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1612*	pc/h/ln
S	*64.4*	mph
D = v_p / S	*25.0*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*7/28/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3747*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*7.3*	mph
FFS	*68.1*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1026*	pc/h/ln
S	*70.0*	mph
D = v_p / S	*14.7*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing Year 2015*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5887*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1613*	pc/h/ln
S	*64.4*	mph
D = v_p / S	*25.1*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*8/11/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4792*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*7.3*	mph
FFS	*68.1*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1313*	pc/h/ln
S	*69.9*	mph
D = v_p / S	*18.8*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5892*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1614*	pc/h/ln
S	*64.4*	mph
D = v_p / S	*25.1*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*8/11/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3758*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*7.3*	mph
FFS	*68.1*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1029*	pc/h/ln
S	*70.0*	mph
D = v_p / S	*14.7*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*8/31/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Existing (2015) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5890*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1613*	pc/h/ln
S	*64.4*	mph
D = v_p / S	*25.1*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4982*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*7.3*	mph
FFS	*68.1*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1365*	pc/h/ln
S	*69.7*	mph
D = v_p / S	*19.6*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6119*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1676*	pc/h/ln
S	*63.9*	mph
D = v_p / S	*26.2*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3897*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*7.3*	mph
FFS	*68.1*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1068*	pc/h/ln
S	*70.0*	mph
D = v_p / S	*15.3*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future Year 2019 Pre-Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6122*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1677*	pc/h/ln
S	*63.9*	mph
D = v_p / S	*26.2*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4984*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*7.3*	mph
FFS	*68.1*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1365*	pc/h/ln
S	*69.7*	mph
D = v_p / S	*19.6*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
f_p - Page 11-18	TRD - Page 11-11
LOS, S, FFS, v_p - Exhibits 11-2, 11-3	

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday AM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6127*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1678*	pc/h/ln
S	*63.9*	mph
D = v_p / S	*26.3*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Eastbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3908*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*2.67*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*7.3*	mph
FFS	*68.1*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1071*	pc/h/ln
S	*70.0*	mph
D = v_p / S	*15.3*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*GT*	Highway/Direction of Travel	*I-10 Westbound*
Agency or Company	*LLG Engineers*	From/To	*East of Baldwin Park Boulevard*
Date Performed	*9/1/2015*	Jurisdiction	*Caltrans*
Analysis Time Period	*Weekday PM Peak Hour*	Analysis Year	*Future (2019) with Project*

Project Description *Kaiser Permenente Irwindale MOB Project/1-15-4118-1*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6125*	veh/h	Peak-Hour Factor, PHF	*0.94*
AADT		veh/day	%Trucks and Buses, P_T	*6*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.971*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Side Lat. Clearance	*6.0*	ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD	*3.50*	ramps/mi
FFS (measured)		mph
Base free-flow Speed, BFFS	*75.4*	mph

Calc Speed Adj and FFS

f_{LW}	*0.0*	mph
f_{LC}	*0.0*	mph
TRD Adjustment	*9.2*	mph
FFS	*66.2*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1678*	pc/h/ln
S	*63.9*	mph
D = v_p / S	*26.3*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	mph
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	483	295	603	929	0	0	0	0	185	10	231
Future Volume (veh/h)	0	483	295	603	929	0	0	0	0	185	10	231
Number	5	2	12	1	6	16				7	4	14
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	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	531	324	663	1021	0				203	11	254
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	690	309	869	2584	0				295	16	277
Arrive On Green	0.00	0.19	0.19	0.98	1.00	0.00				0.17	0.17	0.17
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1687	91	1583
Grp Volume(v), veh/h	0	531	324	663	1021	0				214	0	254
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1778	0	1583
Q Serve(g_s), s	0.0	14.2	19.5	3.0	0.0	0.0				11.3	0.0	15.8
Cycle Q Clear(g_c), s	0.0	14.2	19.5	3.0	0.0	0.0				11.3	0.0	15.8
Prop In Lane	0.00		1.00	1.00		0.00				0.95		1.00
Lane Grp Cap(c), veh/h	0	690	309	869	2584	0				311	0	277
V/C Ratio(X)	0.00	0.77	1.05	0.76	0.40	0.00				0.69	0.00	0.92
Avail Cap(c_a), veh/h	0	690	309	869	2584	0				311	0	277
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.24	0.24	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	38.1	40.3	0.5	0.0	0.0				38.7	0.0	40.5
Incr Delay (d2), s/veh	0.0	8.1	64.7	1.6	0.1	0.0				6.2	0.0	33.0
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(95%),veh/ln	0.0	12.3	25.3	1.4	0.1	0.0				10.1	0.0	14.5
LnGrp Delay(d),s/veh	0.0	46.2	105.0	2.1	0.1	0.0				44.9	0.0	73.6
LnGrp LOS		D	F	A	A					D		E
Approach Vol, veh/h		855			1684						468	
Approach Delay, s/veh		68.5			0.9						60.5	
Approach LOS		E			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	53.5	24.5		22.0		78.0		
Change Period (Y+Rc), s	4.5	5.0		4.5		5.0		
Max Green Setting (Gmax), s	49.0	19.5		17.5		73.0		
Max Q Clear Time (g_c+I1), s	5.0	21.5		17.8		2.0		
Green Ext Time (p_c), s	6.8	0.0		0.0		44.1		

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	972	145	339	587	0	0	0	0	415	0	156
Future Volume (veh/h)	0	972	145	339	587	0	0	0	0	415	0	156
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1002	149	349	605	0				428	0	161
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1239	545	461	2318	0				444	0	396
Arrive On Green	0.00	0.35	0.35	0.52	1.00	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	3632	1556	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	1002	149	349	605	0				428	0	161
Grp Sat Flow(s),veh/h/ln	0	1770	1556	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	25.7	6.9	15.6	0.0	0.0				23.8	0.0	8.5
Cycle Q Clear(g_c), s	0.0	25.7	6.9	15.6	0.0	0.0				23.8	0.0	8.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1239	545	461	2318	0				444	0	396
V/C Ratio(X)	0.00	0.81	0.27	0.76	0.26	0.00				0.97	0.00	0.41
Avail Cap(c_a), veh/h	0	1239	545	461	2318	0				444	0	396
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.61	0.61	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.5	23.4	21.5	0.0	0.0				37.1	0.0	31.3
Incr Delay (d2), s/veh	0.0	5.8	1.2	7.0	0.2	0.0				33.7	0.0	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
%ile BackOfQ(95%),veh/ln	0.0	19.5	5.6	11.9	0.1	0.0				22.3	0.0	6.8
LnGrp Delay(d),s/veh	0.0	35.2	24.6	28.5	0.2	0.0				70.8	0.0	32.0
LnGrp LOS		D	C	C	A					E		C
Approach Vol, veh/h		1151			954						589	
Approach Delay, s/veh		33.9			10.5						60.2	
Approach LOS		C			B						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	30.5	40.0		29.5		70.5		
Change Period (Y+Rc), s	4.5	5.0		4.5		5.0		
Max Green Setting (Gmax), s	26.0	35.0		25.0		65.0		
Max Q Clear Time (g_c+I1), s	17.6	27.7		25.8		2.0		
Green Ext Time (p_c), s	1.5	6.6		0.0		39.0		

Intersection Summary	
HCM 2010 Ctrl Delay	31.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	515	295	609	937	0	0	0	0	209	10	231
Future Volume (veh/h)	0	515	295	609	937	0	0	0	0	209	10	231
Number	5	2	12	1	6	16				7	4	14
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	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	566	324	669	1030	0				230	11	254
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	690	309	869	2584	0				297	14	277
Arrive On Green	0.00	0.19	0.19	0.98	1.00	0.00				0.17	0.17	0.17
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1697	81	1583
Grp Volume(v), veh/h	0	566	324	669	1030	0				241	0	254
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1778	0	1583
Q Serve(g_s), s	0.0	15.3	19.5	3.1	0.0	0.0				12.9	0.0	15.8
Cycle Q Clear(g_c), s	0.0	15.3	19.5	3.1	0.0	0.0				12.9	0.0	15.8
Prop In Lane	0.00		1.00	1.00		0.00				0.95		1.00
Lane Grp Cap(c), veh/h	0	690	309	869	2584	0				311	0	277
V/C Ratio(X)	0.00	0.82	1.05	0.77	0.40	0.00				0.77	0.00	0.92
Avail Cap(c_a), veh/h	0	690	309	869	2584	0				311	0	277
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.22	0.22	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	38.6	40.3	0.5	0.0	0.0				39.4	0.0	40.5
Incr Delay (d2), s/veh	0.0	10.5	64.7	1.5	0.1	0.0				11.5	0.0	33.0
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(95%),veh/ln	0.0	13.3	25.3	1.3	0.1	0.0				11.8	0.0	14.5
LnGrp Delay(d),s/veh	0.0	49.1	105.0	2.0	0.1	0.0				50.9	0.0	73.6
LnGrp LOS		D	F	A	A					D		E
Approach Vol, veh/h		890			1699						495	
Approach Delay, s/veh		69.4			0.9						62.5	
Approach LOS		E			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	53.5	24.5		22.0		78.0		
Change Period (Y+Rc), s	4.5	5.0		4.5		5.0		
Max Green Setting (Gmax), s	49.0	19.5		17.5		73.0		
Max Q Clear Time (g_c+I1), s	5.1	21.5		17.8		2.0		
Green Ext Time (p_c), s	6.9	0.0		0.0		45.5		

Intersection Summary	
HCM 2010 Ctrl Delay	30.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	986	145	368	623	0	0	0	0	425	0	156
Future Volume (veh/h)	0	986	145	368	623	0	0	0	0	425	0	156
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1016	149	379	642	0				438	0	161
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1239	545	461	2318	0				444	0	396
Arrive On Green	0.00	0.35	0.35	0.35	0.87	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	3632	1556	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	1016	149	379	642	0				438	0	161
Grp Sat Flow(s),veh/h/ln	0	1770	1556	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	26.2	6.9	19.5	3.1	0.0				24.6	0.0	8.5
Cycle Q Clear(g_c), s	0.0	26.2	6.9	19.5	3.1	0.0				24.6	0.0	8.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1239	545	461	2318	0				444	0	396
V/C Ratio(X)	0.00	0.82	0.27	0.82	0.28	0.00				0.99	0.00	0.41
Avail Cap(c_a), veh/h	0	1239	545	461	2318	0				444	0	396
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.52	0.52	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.6	23.4	30.6	2.4	0.0				37.3	0.0	31.3
Incr Delay (d2), s/veh	0.0	6.2	1.2	8.5	0.2	0.0				39.4	0.0	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
%ile BackOfQ(95%),veh/ln	0.0	19.8	5.6	14.5	2.7	0.0				23.6	0.0	6.8
LnGrp Delay(d),s/veh	0.0	35.8	24.6	39.1	2.6	0.0				76.7	0.0	32.0
LnGrp LOS		D	C	D	A					E		C
Approach Vol, veh/h		1165			1021						599	
Approach Delay, s/veh		34.4			16.1						64.7	
Approach LOS		C			B						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	30.5	40.0		29.5		70.5		
Change Period (Y+Rc), s	4.5	5.0		4.5		5.0		
Max Green Setting (Gmax), s	26.0	35.0		25.0		65.0		
Max Q Clear Time (g_c+I1), s	21.5	28.2		26.6		5.1		
Green Ext Time (p_c), s	1.1	6.3		0.0		39.2		

Intersection Summary	
HCM 2010 Ctrl Delay	34.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	550	322	632	986	0	0	0	0	195	10	244
Future Volume (veh/h)	0	550	322	632	986	0	0	0	0	195	10	244
Number	5	2	12	1	6	16				7	4	14
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	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	604	354	695	1084	0				214	11	268
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	690	309	869	2584	0				296	15	277
Arrive On Green	0.00	0.19	0.19	0.98	1.00	0.00				0.17	0.17	0.17
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1691	87	1583
Grp Volume(v), veh/h	0	604	354	695	1084	0				225	0	268
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1778	0	1583
Q Serve(g_s), s	0.0	16.6	19.5	3.6	0.0	0.0				12.0	0.0	16.8
Cycle Q Clear(g_c), s	0.0	16.6	19.5	3.6	0.0	0.0				12.0	0.0	16.8
Prop In Lane	0.00		1.00	1.00		0.00				0.95		1.00
Lane Grp Cap(c), veh/h	0	690	309	869	2584	0				311	0	277
V/C Ratio(X)	0.00	0.88	1.15	0.80	0.42	0.00				0.72	0.00	0.97
Avail Cap(c_a), veh/h	0	690	309	869	2584	0				311	0	277
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	39.1	40.3	0.5	0.0	0.0				39.0	0.0	41.0
Incr Delay (d2), s/veh	0.0	14.5	97.0	0.7	0.0	0.0				8.0	0.0	44.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	14.5	30.3	0.9	0.0	0.0				10.8	0.0	16.2
LnGrp Delay(d),s/veh	0.0	53.6	137.2	1.3	0.0	0.0				47.0	0.0	85.9
LnGrp LOS		D	F	A	A					D		F
Approach Vol, veh/h		958			1779						493	
Approach Delay, s/veh		84.5			0.5						68.1	
Approach LOS		F			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	53.5	24.5		22.0		78.0		
Change Period (Y+Rc), s	4.5	5.0		4.5		5.0		
Max Green Setting (Gmax), s	49.0	19.5		17.5		73.0		
Max Q Clear Time (g_c+I1), s	5.6	21.5		18.8		2.0		
Green Ext Time (p_c), s	7.3	0.0		0.0		49.0		

Intersection Summary	
HCM 2010 Ctrl Delay	35.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1045	160	355	665	0	0	0	0	436	0	178
Future Volume (veh/h)	0	1045	160	355	665	0	0	0	0	436	0	178
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1077	165	366	686	0				449	0	184
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1239	545	461	2318	0				444	0	396
Arrive On Green	0.00	0.35	0.35	0.35	0.87	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	3632	1556	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	1077	165	366	686	0				449	0	184
Grp Sat Flow(s),veh/h/ln	0	1770	1556	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	28.4	7.7	18.6	3.4	0.0				25.0	0.0	9.9
Cycle Q Clear(g_c), s	0.0	28.4	7.7	18.6	3.4	0.0				25.0	0.0	9.9
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1239	545	461	2318	0				444	0	396
V/C Ratio(X)	0.00	0.87	0.30	0.79	0.30	0.00				1.01	0.00	0.46
Avail Cap(c_a), veh/h	0	1239	545	461	2318	0				444	0	396
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.52	0.52	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.4	23.6	30.3	2.4	0.0				37.5	0.0	31.8
Incr Delay (d2), s/veh	0.0	8.5	1.4	7.3	0.2	0.0				45.9	0.0	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
%ile BackOfQ(95%),veh/ln	0.0	21.6	6.3	13.8	2.9	0.0				32.1	0.0	7.8
LnGrp Delay(d),s/veh	0.0	38.8	25.1	37.6	2.6	0.0				83.4	0.0	32.7
LnGrp LOS		D	C	D	A					F		C
Approach Vol, veh/h		1242			1052						633	
Approach Delay, s/veh		37.0			14.8						68.7	
Approach LOS		D			B						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	30.5	40.0		29.5		70.5		
Change Period (Y+Rc), s	4.5	5.0		4.5		5.0		
Max Green Setting (Gmax), s	26.0	35.0		25.0		65.0		
Max Q Clear Time (g_c+I1), s	20.6	30.4		27.0		5.4		
Green Ext Time (p_c), s	1.2	4.3		0.0		42.0		

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	582	322	638	994	0	0	0	0	219	10	244
Future Volume (veh/h)	0	582	322	638	994	0	0	0	0	219	10	244
Number	5	2	12	1	6	16				7	4	14
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	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	640	354	701	1092	0				241	11	268
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	690	309	869	2584	0				298	14	277
Arrive On Green	0.00	0.19	0.19	0.98	1.00	0.00				0.17	0.17	0.17
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1700	78	1583
Grp Volume(v), veh/h	0	640	354	701	1092	0				252	0	268
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1778	0	1583
Q Serve(g_s), s	0.0	17.8	19.5	3.8	0.0	0.0				13.6	0.0	16.8
Cycle Q Clear(g_c), s	0.0	17.8	19.5	3.8	0.0	0.0				13.6	0.0	16.8
Prop In Lane	0.00		1.00	1.00		0.00				0.96		1.00
Lane Grp Cap(c), veh/h	0	690	309	869	2584	0				311	0	277
V/C Ratio(X)	0.00	0.93	1.15	0.81	0.42	0.00				0.81	0.00	0.97
Avail Cap(c_a), veh/h	0	690	309	869	2584	0				311	0	277
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	39.6	40.3	0.5	0.0	0.0				39.7	0.0	41.0
Incr Delay (d2), s/veh	0.0	20.5	97.0	0.8	0.0	0.0				14.8	0.0	44.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	16.0	30.3	0.9	0.0	0.0				12.5	0.0	16.2
LnGrp Delay(d),s/veh	0.0	60.0	137.2	1.3	0.0	0.0				54.4	0.0	85.9
LnGrp LOS		E	F	A	A					D		F
Approach Vol, veh/h		994			1793						520	
Approach Delay, s/veh		87.5			0.5						70.6	
Approach LOS		F			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	53.5	24.5		22.0		78.0		
Change Period (Y+Rc), s	4.5	5.0		4.5		5.0		
Max Green Setting (Gmax), s	49.0	19.5		17.5		73.0		
Max Q Clear Time (g_c+I1), s	5.8	21.5		18.8		2.0		
Green Ext Time (p_c), s	7.4	0.0		0.0		50.3		

Intersection Summary	
HCM 2010 Ctrl Delay	37.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1059	160	384	701	0	0	0	0	446	0	178
Future Volume (veh/h)	0	1059	160	384	701	0	0	0	0	446	0	178
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1092	165	396	723	0				460	0	184
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1239	545	461	2318	0				444	0	396
Arrive On Green	0.00	0.35	0.35	0.35	0.87	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	3632	1556	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	1092	165	396	723	0				460	0	184
Grp Sat Flow(s),veh/h/ln	0	1770	1556	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	29.0	7.7	20.8	3.6	0.0				25.0	0.0	9.9
Cycle Q Clear(g_c), s	0.0	29.0	7.7	20.8	3.6	0.0				25.0	0.0	9.9
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1239	545	461	2318	0				444	0	396
V/C Ratio(X)	0.00	0.88	0.30	0.86	0.31	0.00				1.04	0.00	0.46
Avail Cap(c_a), veh/h	0	1239	545	461	2318	0				444	0	396
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.42	0.42	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.6	23.6	31.0	2.5	0.0				37.5	0.0	31.8
Incr Delay (d2), s/veh	0.0	9.2	1.4	8.7	0.1	0.0				52.7	0.0	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
%ile BackOfQ(95%),veh/ln	0.0	22.2	6.3	14.8	3.0	0.0				33.6	0.0	7.8
LnGrp Delay(d),s/veh	0.0	39.8	25.1	39.7	2.6	0.0				90.2	0.0	32.7
LnGrp LOS		D	C	D	A					F		C
Approach Vol, veh/h		1257			1119						644	
Approach Delay, s/veh		37.8			15.7						73.8	
Approach LOS		D			B						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	30.5	40.0		29.5		70.5		
Change Period (Y+Rc), s	4.5	5.0		4.5		5.0		
Max Green Setting (Gmax), s	26.0	35.0		25.0		65.0		
Max Q Clear Time (g_c+I1), s	22.8	31.0		27.0		5.6		
Green Ext Time (p_c), s	0.8	3.8		0.0		43.1		

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	582	322	638	994	0	0	0	0	219	10	244
Future Volume (veh/h)	0	582	322	638	994	0	0	0	0	219	10	244
Number	5	2	12	1	6	16				7	4	14
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	0	1863	1863	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	640	354	701	1092	0				241	11	268
Adj No. of Lanes	0	2	1	1	2	0				1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	726	325	860	2601	0				302	11	260
Arrive On Green	0.00	0.20	0.20	0.97	1.00	0.00				0.17	0.17	0.17
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	63	1530
Grp Volume(v), veh/h	0	640	354	701	1092	0				241	0	279
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1593
Q Serve(g_s), s	0.0	17.5	20.5	5.7	0.0	0.0				13.0	0.0	17.0
Cycle Q Clear(g_c), s	0.0	17.5	20.5	5.7	0.0	0.0				13.0	0.0	17.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		0.96
Lane Grp Cap(c), veh/h	0	726	325	860	2601	0				302	0	271
V/C Ratio(X)	0.00	0.88	1.09	0.81	0.42	0.00				0.80	0.00	1.03
Avail Cap(c_a), veh/h	0	726	325	860	2601	0				302	0	271
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	38.6	39.8	0.9	0.0	0.0				39.9	0.0	41.5
Incr Delay (d2), s/veh	0.0	14.6	76.4	0.8	0.0	0.0				14.1	0.0	62.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	15.2	28.5	1.9	0.0	0.0				12.0	0.0	21.9
LnGrp Delay(d),s/veh	0.0	53.1	116.2	1.7	0.0	0.0				53.9	0.0	104.3
LnGrp LOS		D	F	A	A					D		F
Approach Vol, veh/h		994			1793						520	
Approach Delay, s/veh		75.6			0.7						81.0	
Approach LOS		E			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	53.0	25.5		21.5		78.5		
Change Period (Y+Rc), s	4.5	5.0		4.5		5.0		
Max Green Setting (Gmax), s	48.5	20.5		17.0		73.5		
Max Q Clear Time (g_c+I1), s	7.7	22.5		19.0		2.0		
Green Ext Time (p_c), s	7.3	0.0		0.0		50.5		

Intersection Summary	
HCM 2010 Ctrl Delay	35.8
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1059	160	384	701	0	0	0	0	446	0	178
Future Volume (veh/h)	0	1059	160	384	701	0	0	0	0	446	0	178
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	0	1863	1863	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	1092	165	396	723	0				322	193	184
Adj No. of Lanes	0	2	1	1	2	0				1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1273	560	461	2353	0				426	211	201
Arrive On Green	0.00	0.36	0.36	0.35	0.88	0.00				0.24	0.24	0.24
Sat Flow, veh/h	0	3632	1557	1774	3632	0				1774	878	837
Grp Volume(v), veh/h	0	1092	165	396	723	0				322	0	377
Grp Sat Flow(s),veh/h/ln	0	1770	1557	1774	1770	0				1774	0	1715
Q Serve(g_s), s	0.0	28.6	7.6	20.8	3.2	0.0				16.8	0.0	21.4
Cycle Q Clear(g_c), s	0.0	28.6	7.6	20.8	3.2	0.0				16.8	0.0	21.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		0.49
Lane Grp Cap(c), veh/h	0	1273	560	461	2353	0				426	0	412
V/C Ratio(X)	0.00	0.86	0.29	0.86	0.31	0.00				0.76	0.00	0.92
Avail Cap(c_a), veh/h	0	1273	560	461	2353	0				444	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.47	0.47	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.6	22.9	31.0	2.1	0.0				35.3	0.0	37.0
Incr Delay (d2), s/veh	0.0	7.6	1.3	9.7	0.2	0.0				7.0	0.0	23.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	21.7	6.2	15.1	2.8	0.0				14.0	0.0	18.7
LnGrp Delay(d),s/veh	0.0	37.2	24.3	40.7	2.3	0.0				42.3	0.0	60.6
LnGrp LOS		D	C	D	A					D		E
Approach Vol, veh/h		1257			1119						699	
Approach Delay, s/veh		35.5			15.9						52.2	
Approach LOS		D			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	30.5	41.0		28.5		71.5		
Change Period (Y+Rc), s	4.5	5.0		4.5		5.0		
Max Green Setting (Gmax), s	26.0	35.0		25.0		65.0		
Max Q Clear Time (g_c+I1), s	22.8	30.6		23.4		5.2		
Green Ext Time (p_c), s	0.8	4.2		0.6		43.3		

Intersection Summary	
HCM 2010 Ctrl Delay	32.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	534	0	0	1301	340	237	1	264	0	0	0
Future Volume (veh/h)	149	534	0	0	1301	340	237	1	264	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	1863	1863	0	0	1863	1900	1900	1863	1863			
Adj Flow Rate, veh/h	164	587	0	0	1430	374	260	1	290			
Adj No. of Lanes	1	2	0	0	2	0	0	1	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	198	2584	0	0	1618	410	309	1	277			
Arrive On Green	0.04	0.24	0.00	0.00	0.58	0.58	0.17	0.17	0.17			
Sat Flow, veh/h	1774	3632	0	0	2891	709	1768	7	1583			
Grp Volume(v), veh/h	164	587	0	0	888	916	261	0	290			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1737	1774	0	1583			
Q Serve(g_s), s	9.2	13.3	0.0	0.0	42.4	47.1	14.2	0.0	17.5			
Cycle Q Clear(g_c), s	9.2	13.3	0.0	0.0	42.4	47.1	14.2	0.0	17.5			
Prop In Lane	1.00		0.00	0.00		0.41	1.00		1.00			
Lane Grp Cap(c), veh/h	198	2584	0	0	1023	1004	311	0	277			
V/C Ratio(X)	0.83	0.23	0.00	0.00	0.87	0.91	0.84	0.00	1.05			
Avail Cap(c_a), veh/h	319	2584	0	0	1023	1004	311	0	277			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.54	0.54	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	47.2	15.3	0.0	0.0	17.8	18.8	39.9	0.0	41.3			
Incr Delay (d2), s/veh	2.4	0.1	0.0	0.0	9.9	13.8	19.8	0.0	66.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	7.3	9.7	0.0	0.0	31.2	34.7	13.5	0.0	23.0			
LnGrp Delay(d),s/veh	49.6	15.4	0.0	0.0	27.7	32.7	59.7	0.0	108.0			
LnGrp LOS	D	B			C	C	E		F			
Approach Vol, veh/h		751			1804			551				
Approach Delay, s/veh		22.9			30.2			85.2				
Approach LOS		C			C			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		78.0			15.2	62.8		22.0
Change Period (Y+Rc), s		5.0			4.0	5.0		4.5
Max Green Setting (Gmax), s		73.0			18.0	51.0		17.5
Max Q Clear Time (g_c+I1), s		15.3			11.2	49.1		19.5
Green Ext Time (p_c), s		51.9			0.1	1.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1242	0	0	667	158	259	2	767	0	0	0
Future Volume (veh/h)	125	1242	0	0	667	158	259	2	767	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	1863	1863	0	0	1863	1900	1900	1863	1863			
Adj Flow Rate, veh/h	128	1267	0	0	681	161	264	2	783			
Adj No. of Lanes	1	2	0	0	2	0	0	1	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	159	1770	0	0	1052	249	713	5	641			
Arrive On Green	0.03	0.17	0.00	0.00	0.37	0.37	0.41	0.41	0.41			
Sat Flow, veh/h	1774	3632	0	0	2935	671	1761	13	1583			
Grp Volume(v), veh/h	128	1267	0	0	424	418	266	0	783			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1744	1775	0	1583			
Q Serve(g_s), s	7.2	33.9	0.0	0.0	19.8	19.9	10.5	0.0	40.5			
Cycle Q Clear(g_c), s	7.2	33.9	0.0	0.0	19.8	19.9	10.5	0.0	40.5			
Prop In Lane	1.00		0.00	0.00		0.38	0.99		1.00			
Lane Grp Cap(c), veh/h	159	1770	0	0	655	646	719	0	641			
V/C Ratio(X)	0.80	0.72	0.00	0.00	0.65	0.65	0.37	0.00	1.22			
Avail Cap(c_a), veh/h	257	1770	0	0	655	646	719	0	641			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.46	0.46	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	47.6	35.0	0.0	0.0	26.1	26.1	20.8	0.0	29.8			
Incr Delay (d2), s/veh	1.7	1.2	0.0	0.0	4.9	5.0	0.7	0.0	113.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	5.7	21.5	0.0	0.0	15.9	15.7	9.0	0.0	68.0			
LnGrp Delay(d),s/veh	49.3	36.2	0.0	0.0	31.0	31.0	21.5	0.0	142.9			
LnGrp LOS	D	D			C	C	C		F			
Approach Vol, veh/h		1395			842			1049				
Approach Delay, s/veh		37.4			31.0			112.1				
Approach LOS		D			C			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		55.0			13.0	42.0		45.0
Change Period (Y+Rc), s		5.0			4.0	5.0		4.5
Max Green Setting (Gmax), s		50.0			14.5	31.5		40.5
Max Q Clear Time (g_c+I1), s		35.9			9.2	21.9		42.5
Green Ext Time (p_c), s		13.1			0.1	9.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	590	0	0	1315	346	237	1	288	0	0	0
Future Volume (veh/h)	149	590	0	0	1315	346	237	1	288	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	1863	1863	0	0	1863	1900	1900	1863	1863			
Adj Flow Rate, veh/h	164	648	0	0	1445	380	260	1	316			
Adj No. of Lanes	1	2	0	0	2	0	0	1	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	197	2584	0	0	1618	411	309	1	277			
Arrive On Green	0.07	0.49	0.00	0.00	0.58	0.58	0.17	0.17	0.17			
Sat Flow, veh/h	1774	3632	0	0	2888	711	1768	7	1583			
Grp Volume(v), veh/h	164	648	0	0	897	928	261	0	316			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1736	1774	0	1583			
Q Serve(g_s), s	9.1	10.7	0.0	0.0	43.3	48.4	14.2	0.0	17.5			
Cycle Q Clear(g_c), s	9.1	10.7	0.0	0.0	43.3	48.4	14.2	0.0	17.5			
Prop In Lane	1.00		0.00	0.00		0.41	1.00		1.00			
Lane Grp Cap(c), veh/h	197	2584	0	0	1024	1005	311	0	277			
V/C Ratio(X)	0.83	0.25	0.00	0.00	0.88	0.92	0.84	0.00	1.14			
Avail Cap(c_a), veh/h	319	2584	0	0	1024	1005	311	0	277			
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.46	0.46	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	45.4	9.6	0.0	0.0	18.0	19.1	39.9	0.0	41.3			
Incr Delay (d2), s/veh	2.1	0.1	0.0	0.0	10.4	15.0	19.8	0.0	97.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	7.0	7.8	0.0	0.0	31.9	35.7	13.5	0.0	27.2			
LnGrp Delay(d),s/veh	47.5	9.7	0.0	0.0	28.4	34.1	59.7	0.0	138.7			
LnGrp LOS	D	A			C	C	E		F			
Approach Vol, veh/h		812			1825			577				
Approach Delay, s/veh		17.4			31.3			103.0				
Approach LOS		B			C			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		78.0			15.1	62.9		22.0
Change Period (Y+Rc), s		5.0			4.0	5.0		4.5
Max Green Setting (Gmax), s		73.0			18.0	51.0		17.5
Max Q Clear Time (g_c+I1), s		12.7			11.1	50.4		19.5
Green Ext Time (p_c), s		54.9			0.1	0.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1266	0	0	732	185	259	2	777	0	0	0
Future Volume (veh/h)	125	1266	0	0	732	185	259	2	777	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	1863	1863	0	0	1863	1900	1900	1863	1863			
Adj Flow Rate, veh/h	128	1292	0	0	747	189	264	2	793			
Adj No. of Lanes	1	2	0	0	2	0	0	1	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	159	1770	0	0	1036	262	713	5	641			
Arrive On Green	0.03	0.17	0.00	0.00	0.37	0.37	0.41	0.41	0.41			
Sat Flow, veh/h	1774	3632	0	0	2892	708	1761	13	1583			
Grp Volume(v), veh/h	128	1292	0	0	472	464	266	0	793			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1738	1775	0	1583			
Q Serve(g_s), s	7.2	34.7	0.0	0.0	22.9	22.9	10.5	0.0	40.5			
Cycle Q Clear(g_c), s	7.2	34.7	0.0	0.0	22.9	22.9	10.5	0.0	40.5			
Prop In Lane	1.00		0.00	0.00		0.41	0.99		1.00			
Lane Grp Cap(c), veh/h	159	1770	0	0	655	643	719	0	641			
V/C Ratio(X)	0.80	0.73	0.00	0.00	0.72	0.72	0.37	0.00	1.24			
Avail Cap(c_a), veh/h	257	1770	0	0	655	643	719	0	641			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.45	0.45	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	47.6	35.3	0.0	0.0	27.0	27.0	20.8	0.0	29.8			
Incr Delay (d2), s/veh	1.6	1.2	0.0	0.0	6.7	6.8	0.7	0.0	119.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	5.7	21.9	0.0	0.0	18.1	17.9	9.0	0.0	70.1			
LnGrp Delay(d),s/veh	49.3	36.6	0.0	0.0	33.8	33.9	21.5	0.0	149.3			
LnGrp LOS	D	D			C	C	C		F			
Approach Vol, veh/h		1420			936			1059				
Approach Delay, s/veh		37.7			33.8			117.2				
Approach LOS		D			C			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		55.0			13.0	42.0		45.0
Change Period (Y+Rc), s		5.0			4.0	5.0		4.5
Max Green Setting (Gmax), s		50.0			14.5	31.5		40.5
Max Q Clear Time (g_c+I1), s		36.7			9.2	24.9		42.5
Green Ext Time (p_c), s		12.6			0.1	6.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	592	0	0	1373	358	250	1	278	0	0	0
Future Volume (veh/h)	169	592	0	0	1373	358	250	1	278	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	1863	1863	0	0	1863	1900	1900	1863	1863			
Adj Flow Rate, veh/h	186	651	0	0	1509	393	275	1	305			
Adj No. of Lanes	1	2	0	0	2	0	0	1	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	220	2584	0	0	1588	398	309	1	277			
Arrive On Green	0.08	0.49	0.00	0.00	0.57	0.57	0.17	0.17	0.17			
Sat Flow, veh/h	1774	3632	0	0	2898	702	1768	6	1583			
Grp Volume(v), veh/h	186	651	0	0	930	972	276	0	305			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1738	1774	0	1583			
Q Serve(g_s), s	10.3	10.7	0.0	0.0	48.0	55.1	15.2	0.0	17.5			
Cycle Q Clear(g_c), s	10.3	10.7	0.0	0.0	48.0	55.1	15.2	0.0	17.5			
Prop In Lane	1.00		0.00	0.00		0.40	1.00		1.00			
Lane Grp Cap(c), veh/h	220	2584	0	0	1002	984	311	0	277			
V/C Ratio(X)	0.85	0.25	0.00	0.00	0.93	0.99	0.89	0.00	1.10			
Avail Cap(c_a), veh/h	319	2584	0	0	1002	984	311	0	277			
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.36	0.36	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	44.9	9.6	0.0	0.0	19.8	21.4	40.3	0.0	41.3			
Incr Delay (d2), s/veh	3.6	0.1	0.0	0.0	15.6	26.0	26.6	0.0	83.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	7.6	7.5	0.0	0.0	36.2	42.8	14.9	0.0	25.3			
LnGrp Delay(d),s/veh	48.5	9.7	0.0	0.0	35.5	47.4	66.9	0.0	125.0			
LnGrp LOS	D	A			D	D	E		F			
Approach Vol, veh/h		837			1902			581				
Approach Delay, s/veh		18.3			41.6			97.4				
Approach LOS		B			D			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		78.0			16.4	61.6		22.0
Change Period (Y+Rc), s		5.0			4.0	5.0		4.5
Max Green Setting (Gmax), s		73.0			18.0	51.0		17.5
Max Q Clear Time (g_c+I1), s		12.7			12.3	57.1		19.5
Green Ext Time (p_c), s		55.9			0.1	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	1325	0	0	735	167	285	2	803	0	0	0
Future Volume (veh/h)	139	1325	0	0	735	167	285	2	803	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	1863	1863	0	0	1863	1900	1900	1863	1863			
Adj Flow Rate, veh/h	142	1352	0	0	750	170	291	2	819			
Adj No. of Lanes	1	2	0	0	2	0	0	1	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	174	1770	0	0	1037	235	714	5	641			
Arrive On Green	0.03	0.17	0.00	0.00	0.36	0.36	0.41	0.41	0.41			
Sat Flow, veh/h	1774	3632	0	0	2961	650	1763	12	1583			
Grp Volume(v), veh/h	142	1352	0	0	463	457	293	0	819			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1748	1775	0	1583			
Q Serve(g_s), s	8.0	36.5	0.0	0.0	22.6	22.6	11.8	0.0	40.5			
Cycle Q Clear(g_c), s	8.0	36.5	0.0	0.0	22.6	22.6	11.8	0.0	40.5			
Prop In Lane	1.00		0.00	0.00		0.37	0.99		1.00			
Lane Grp Cap(c), veh/h	174	1770	0	0	640	632	719	0	641			
V/C Ratio(X)	0.81	0.76	0.00	0.00	0.72	0.72	0.41	0.00	1.28			
Avail Cap(c_a), veh/h	257	1770	0	0	640	632	719	0	641			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.37	0.37	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	47.5	36.1	0.0	0.0	27.6	27.6	21.2	0.0	29.8			
Incr Delay (d2), s/veh	2.9	1.2	0.0	0.0	7.0	7.0	0.8	0.0	136.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	6.1	22.5	0.0	0.0	18.0	17.9	9.9	0.0	75.5			
LnGrp Delay(d),s/veh	50.3	37.3	0.0	0.0	34.5	34.6	22.0	0.0	166.3			
LnGrp LOS	D	D			C	C	C		F			
Approach Vol, veh/h		1494			920			1112				
Approach Delay, s/veh		38.6			34.6			128.3				
Approach LOS		D			C			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		55.0			13.8	41.2		45.0
Change Period (Y+Rc), s		5.0			4.0	5.0		4.5
Max Green Setting (Gmax), s		50.0			14.5	31.5		40.5
Max Q Clear Time (g_c+I1), s		38.5			10.0	24.6		42.5
Green Ext Time (p_c), s		11.0			0.1	6.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	648	0	0	1387	364	250	1	302	0	0	0
Future Volume (veh/h)	169	648	0	0	1387	364	250	1	302	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	1863	1863	0	0	1863	1900	1900	1863	1863			
Adj Flow Rate, veh/h	186	712	0	0	1524	400	275	1	332			
Adj No. of Lanes	1	2	0	0	2	0	0	1	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	220	2584	0	0	1586	399	309	1	277			
Arrive On Green	0.08	0.49	0.00	0.00	0.57	0.57	0.17	0.17	0.17			
Sat Flow, veh/h	1774	3632	0	0	2895	705	1768	6	1583			
Grp Volume(v), veh/h	186	712	0	0	939	985	276	0	332			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1737	1774	0	1583			
Q Serve(g_s), s	10.3	11.9	0.0	0.0	49.0	56.6	15.2	0.0	17.5			
Cycle Q Clear(g_c), s	10.3	11.9	0.0	0.0	49.0	56.6	15.2	0.0	17.5			
Prop In Lane	1.00		0.00	0.00		0.41	1.00		1.00			
Lane Grp Cap(c), veh/h	220	2584	0	0	1002	984	311	0	277			
V/C Ratio(X)	0.85	0.28	0.00	0.00	0.94	1.00	0.89	0.00	1.20			
Avail Cap(c_a), veh/h	319	2584	0	0	1002	984	311	0	277			
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.26	0.26	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	44.9	9.9	0.0	0.0	20.1	21.7	40.3	0.0	41.3			
Incr Delay (d2), s/veh	2.6	0.1	0.0	0.0	16.8	29.1	26.6	0.0	118.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	7.1	7.8	0.0	0.0	37.2	62.5	14.9	0.0	30.2			
LnGrp Delay(d),s/veh	47.5	10.0	0.0	0.0	36.9	50.8	66.9	0.0	159.9			
LnGrp LOS	D	A			D	F	E		F			
Approach Vol, veh/h		898			1924			608				
Approach Delay, s/veh		17.8			44.0			117.7				
Approach LOS		B			D			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		78.0			16.4	61.6		22.0
Change Period (Y+Rc), s		5.0			4.0	5.0		4.5
Max Green Setting (Gmax), s		73.0			18.0	51.0		17.5
Max Q Clear Time (g_c+I1), s		13.9			12.3	58.6		19.5
Green Ext Time (p_c), s		55.5			0.1	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	50.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	1349	0	0	800	194	285	2	813	0	0	0
Future Volume (veh/h)	139	1349	0	0	800	194	285	2	813	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	1863	1863	0	0	1863	1900	1900	1863	1863			
Adj Flow Rate, veh/h	142	1377	0	0	816	198	291	2	830			
Adj No. of Lanes	1	2	0	0	2	0	0	1	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	174	1770	0	0	1022	248	714	5	641			
Arrive On Green	0.03	0.17	0.00	0.00	0.36	0.36	0.41	0.41	0.41			
Sat Flow, veh/h	1774	3632	0	0	2919	686	1763	12	1583			
Grp Volume(v), veh/h	142	1377	0	0	511	503	293	0	830			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1742	1775	0	1583			
Q Serve(g_s), s	8.0	37.3	0.0	0.0	25.9	25.9	11.8	0.0	40.5			
Cycle Q Clear(g_c), s	8.0	37.3	0.0	0.0	25.9	25.9	11.8	0.0	40.5			
Prop In Lane	1.00		0.00	0.00		0.39	0.99		1.00			
Lane Grp Cap(c), veh/h	174	1770	0	0	640	630	719	0	641			
V/C Ratio(X)	0.81	0.78	0.00	0.00	0.80	0.80	0.41	0.00	1.29			
Avail Cap(c_a), veh/h	257	1770	0	0	640	630	719	0	641			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.35	0.35	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	47.5	36.4	0.0	0.0	28.6	28.6	21.2	0.0	29.8			
Incr Delay (d2), s/veh	2.7	1.2	0.0	0.0	10.0	10.2	0.8	0.0	143.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	6.0	22.8	0.0	0.0	20.6	20.4	9.9	0.0	77.9			
LnGrp Delay(d),s/veh	50.2	37.7	0.0	0.0	38.7	38.8	22.0	0.0	173.6			
LnGrp LOS	D	D			D	D	C		F			
Approach Vol, veh/h		1519			1014			1123				
Approach Delay, s/veh		38.8			38.7			134.0				
Approach LOS		D			D			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		55.0			13.8	41.2		45.0
Change Period (Y+Rc), s		5.0			4.0	5.0		4.5
Max Green Setting (Gmax), s		50.0			14.5	31.5		40.5
Max Q Clear Time (g_c+I1), s		39.3			10.0	27.9		42.5
Green Ext Time (p_c), s		10.4			0.1	3.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	68.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	648	0	0	1387	364	250	1	302	0	0	0
Future Volume (veh/h)	169	648	0	0	1387	364	250	1	302	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	1863	1863	0	0	1863	1900	1900	1863	1863			
Adj Flow Rate, veh/h	186	712	0	0	1524	400	275	43	304			
Adj No. of Lanes	1	2	0	0	2	0	0	1	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	220	2566	0	0	1572	396	278	43	285			
Arrive On Green	0.08	0.49	0.00	0.00	0.56	0.56	0.18	0.18	0.18			
Sat Flow, veh/h	1774	3632	0	0	2895	705	1544	241	1583			
Grp Volume(v), veh/h	186	712	0	0	939	985	318	0	304			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1737	1786	0	1583			
Q Serve(g_s), s	10.3	12.0	0.0	0.0	49.6	56.1	17.8	0.0	18.0			
Cycle Q Clear(g_c), s	10.3	12.0	0.0	0.0	49.6	56.1	17.8	0.0	18.0			
Prop In Lane	1.00		0.00	0.00		0.41	0.86		1.00			
Lane Grp Cap(c), veh/h	220	2566	0	0	993	975	321	0	285			
V/C Ratio(X)	0.85	0.28	0.00	0.00	0.95	1.01	0.99	0.00	1.07			
Avail Cap(c_a), veh/h	310	2566	0	0	993	975	321	0	285			
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.38	0.38	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	44.9	10.1	0.0	0.0	20.5	21.9	40.9	0.0	41.0			
Incr Delay (d2), s/veh	4.3	0.1	0.0	0.0	18.1	31.4	47.3	0.0	72.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	7.7	8.3	0.0	0.0	37.8	63.1	18.9	0.0	24.4			
LnGrp Delay(d),s/veh	49.2	10.2	0.0	0.0	38.6	53.4	88.2	0.0	113.1			
LnGrp LOS	D	B			D	F	F		F			
Approach Vol, veh/h		898			1924			622				
Approach Delay, s/veh		18.3			46.2			100.4				
Approach LOS		B			D			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		77.5			16.4	61.1		22.5
Change Period (Y+Rc), s		5.0			4.0	5.0		4.5
Max Green Setting (Gmax), s		72.5			17.5	51.0		18.0
Max Q Clear Time (g_c+I1), s		14.0			12.3	58.1		20.0
Green Ext Time (p_c), s		55.0			0.1	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	1349	0	0	800	194	285	2	813	0	0	0
Future Volume (veh/h)	139	1349	0	0	800	194	285	2	813	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	1863	1863	0	0	1863	1900	1900	1863	1863			
Adj Flow Rate, veh/h	142	1377	0	0	816	198	291	405	562			
Adj No. of Lanes	1	2	0	0	2	0	0	1	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	174	1778	0	0	1029	250	307	427	637			
Arrive On Green	0.03	0.17	0.00	0.00	0.36	0.36	0.40	0.40	0.40			
Sat Flow, veh/h	1774	3632	0	0	2919	686	763	1062	1583			
Grp Volume(v), veh/h	142	1377	0	0	511	503	696	0	562			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1742	1825	0	1583			
Q Serve(g_s), s	8.0	37.2	0.0	0.0	25.8	25.8	36.8	0.0	32.9			
Cycle Q Clear(g_c), s	8.0	37.2	0.0	0.0	25.8	25.8	36.8	0.0	32.9			
Prop In Lane	1.00		0.00	0.00		0.39	0.42		1.00			
Lane Grp Cap(c), veh/h	174	1778	0	0	644	634	734	0	637			
V/C Ratio(X)	0.81	0.77	0.00	0.00	0.79	0.79	0.95	0.00	0.88			
Avail Cap(c_a), veh/h	257	1778	0	0	644	634	739	0	641			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.36	0.36	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	47.5	36.3	0.0	0.0	28.4	28.4	28.9	0.0	27.7			
Incr Delay (d2), s/veh	2.8	1.2	0.0	0.0	9.7	9.8	21.7	0.0	14.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	6.0	22.8	0.0	0.0	20.6	20.3	30.8	0.0	23.7			
LnGrp Delay(d),s/veh	50.3	37.5	0.0	0.0	38.1	38.3	50.5	0.0	42.1			
LnGrp LOS	D	D			D	D	D		D			
Approach Vol, veh/h		1519			1014			1258				
Approach Delay, s/veh		38.7			38.2			46.7				
Approach LOS		D			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		55.2			13.8	41.4		44.8
Change Period (Y+Rc), s		5.0			4.0	5.0		4.5
Max Green Setting (Gmax), s		50.0			14.5	31.5		40.5
Max Q Clear Time (g_c+I1), s		39.2			10.0	27.8		38.8
Green Ext Time (p_c), s		10.4			0.1	3.6		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	41.2
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	25	44	0	317	31	80	0	0	0	0
Future Vol, veh/h	0	5	25	44	0	317	31	80	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	27	47	0	337	33	85	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9.4	19.1
HCM LOS	A	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	74%	20%
Vol Thru, %	34%	7%	75%
Vol Right, %	59%	19%	4%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	74	428	411
LT Vol	5	317	84
Through Vol	25	31	309
RT Vol	44	80	18
Lane Flow Rate	79	455	437
Geometry Grp	1	1	1
Degree of Util (X)	0.122	0.679	0.659
Departure Headway (Hd)	5.588	5.37	5.423
Convergence, Y/N	Yes	Yes	Yes
Cap	639	674	665
Service Time	3.64	3.407	3.457
HCM Lane V/C Ratio	0.124	0.675	0.657
HCM Control Delay	9.4	19.1	18.4
HCM Lane LOS	A	C	C
HCM 95th-tile Q	0.4	5.3	4.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	84	309	18
Future Vol, veh/h	0	84	309	18
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	89	329	19
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	18.4
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	37	19	0	94	30	152	0	0	0	0
Future Vol, veh/h	0	5	37	19	0	94	30	152	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	39	20	0	100	32	162	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	8.8	10.9
HCM LOS	A	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	34%	50%
Vol Thru, %	61%	11%	42%
Vol Right, %	31%	55%	7%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	61	276	387
LT Vol	5	94	195
Through Vol	37	30	164
RT Vol	19	152	28
Lane Flow Rate	65	294	412
Geometry Grp	1	1	1
Degree of Util (X)	0.093	0.391	0.554
Departure Headway (Hd)	5.185	4.798	4.846
Convergence, Y/N	Yes	Yes	Yes
Cap	684	746	737
Service Time	3.272	2.861	2.913
HCM Lane V/C Ratio	0.095	0.394	0.559
HCM Control Delay	8.8	10.9	13.8
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.3	1.9	3.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	195	164	28
Future Vol, veh/h	0	195	164	28
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	207	174	30
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	13.8
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	18.1
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	25	44	0	317	31	82	0	0	0	0
Future Vol, veh/h	0	5	25	44	0	317	31	82	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	27	47	0	337	33	87	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9.4	19.2
HCM LOS	A	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	74%	20%
Vol Thru, %	34%	7%	75%
Vol Right, %	59%	19%	4%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	74	430	412
LT Vol	5	317	84
Through Vol	25	31	310
RT Vol	44	82	18
Lane Flow Rate	79	457	438
Geometry Grp	1	1	1
Degree of Util (X)	0.122	0.683	0.661
Departure Headway (Hd)	5.598	5.373	5.429
Convergence, Y/N	Yes	Yes	Yes
Cap	638	672	666
Service Time	3.649	3.408	3.464
HCM Lane V/C Ratio	0.124	0.68	0.658
HCM Control Delay	9.4	19.2	18.5
HCM Lane LOS	A	C	C
HCM 95th-tile Q	0.4	5.4	5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	84	310	18
Future Vol, veh/h	0	84	310	18
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	89	330	19
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	18.5
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	37	19	0	94	30	153	0	0	0	0
Future Vol, veh/h	0	5	37	19	0	94	30	153	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	39	20	0	100	32	163	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	8.8	11
HCM LOS	A	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	34%	50%
Vol Thru, %	61%	11%	43%
Vol Right, %	31%	55%	7%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	61	277	391
LT Vol	5	94	195
Through Vol	37	30	168
RT Vol	19	153	28
Lane Flow Rate	65	295	416
Geometry Grp	1	1	1
Degree of Util (X)	0.094	0.394	0.561
Departure Headway (Hd)	5.198	4.808	4.851
Convergence, Y/N	Yes	Yes	Yes
Cap	681	743	736
Service Time	3.29	2.875	2.919
HCM Lane V/C Ratio	0.095	0.397	0.565
HCM Control Delay	8.8	11	14
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.3	1.9	3.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	195	168	28
Future Vol, veh/h	0	195	168	28
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	207	179	30
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	14
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	26	46	0	330	32	83	0	0	0	0
Future Vol, veh/h	0	5	26	46	0	330	32	83	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	28	49	0	351	34	88	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9.6	21.3
HCM LOS	A	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	74%	21%
Vol Thru, %	34%	7%	75%
Vol Right, %	60%	19%	4%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	77	445	432
LT Vol	5	330	89
Through Vol	26	32	324
RT Vol	46	83	19
Lane Flow Rate	82	473	460
Geometry Grp	1	1	1
Degree of Util (X)	0.13	0.719	0.702
Departure Headway (Hd)	5.72	5.464	5.502
Convergence, Y/N	Yes	Yes	Yes
Cap	624	663	657
Service Time	3.78	3.503	3.544
HCM Lane V/C Ratio	0.131	0.713	0.7
HCM Control Delay	9.6	21.3	20.5
HCM Lane LOS	A	C	C
HCM 95th-tile Q	0.4	6.1	5.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	89	324	19
Future Vol, veh/h	0	89	324	19
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	95	345	20
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	20.5
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	38	20	0	98	31	163	0	0	0	0
Future Vol, veh/h	0	5	38	20	0	98	31	163	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	40	21	0	104	33	173	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9	11.4
HCM LOS	A	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	34%	50%
Vol Thru, %	60%	11%	42%
Vol Right, %	32%	56%	7%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	63	292	403
LT Vol	5	98	203
Through Vol	38	31	171
RT Vol	20	163	29
Lane Flow Rate	67	311	429
Geometry Grp	1	1	1
Degree of Util (X)	0.1	0.418	0.583
Departure Headway (Hd)	5.359	4.847	4.897
Convergence, Y/N	Yes	Yes	Yes
Cap	673	736	729
Service Time	3.359	2.921	2.975
HCM Lane V/C Ratio	0.1	0.423	0.588
HCM Control Delay	9	11.4	14.7
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.3	2.1	3.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	203	171	29
Future Vol, veh/h	0	203	171	29
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	216	182	31
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	14.7
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	20.2
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	26	46	0	330	32	85	0	0	0	0
Future Vol, veh/h	0	5	26	46	0	330	32	85	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	28	49	0	351	34	90	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9.7	21.5
HCM LOS	A	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	74%	21%
Vol Thru, %	34%	7%	75%
Vol Right, %	60%	19%	4%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	77	447	433
LT Vol	5	330	89
Through Vol	26	32	325
RT Vol	46	85	19
Lane Flow Rate	82	476	461
Geometry Grp	1	1	1
Degree of Util (X)	0.13	0.722	0.705
Departure Headway (Hd)	5.729	5.465	5.51
Convergence, Y/N	Yes	Yes	Yes
Cap	623	661	654
Service Time	3.79	3.506	3.549
HCM Lane V/C Ratio	0.132	0.72	0.705
HCM Control Delay	9.7	21.5	20.7
HCM Lane LOS	A	C	C
HCM 95th-tile Q	0.4	6.1	5.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	89	325	19
Future Vol, veh/h	0	89	325	19
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	95	346	20
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	20.7
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	5	38	20	0	98	31	164	0	0	0	0
Future Vol, veh/h	0	5	38	20	0	98	31	164	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	40	21	0	104	33	174	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9	11.5
HCM LOS	A	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	33%	50%
Vol Thru, %	60%	11%	43%
Vol Right, %	32%	56%	7%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	63	293	407
LT Vol	5	98	203
Through Vol	38	31	175
RT Vol	20	164	29
Lane Flow Rate	67	312	433
Geometry Grp	1	1	1
Degree of Util (X)	0.1	0.421	0.589
Departure Headway (Hd)	5.375	4.858	4.9
Convergence, Y/N	Yes	Yes	Yes
Cap	671	736	727
Service Time	3.375	2.932	2.981
HCM Lane V/C Ratio	0.1	0.424	0.596
HCM Control Delay	9	11.5	14.9
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.3	2.1	3.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	203	175	29
Future Vol, veh/h	0	203	175	29
Peak Hour Factor	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	216	186	31
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	14.9
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	113	0	0	387	38	9
Future Vol, veh/h	113	0	0	387	38	9
Conflicting Peds, #/hr	0	4	0	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	135	0	0	461	45	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	137	0	598	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	461	-
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	-	-	1447	-	465	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	635	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1447	-	462	909
Mov Cap-2 Maneuver	-	-	-	-	462	-
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	633	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	462	909	-	-	1447	-
HCM Lane V/C Ratio	0.098	0.012	-	-	-	-
HCM Control Delay (s)	13.6	9	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	238	0	0	172	111	32
Future Vol, veh/h	238	0	0	172	111	32
Conflicting Peds, #/hr	0	13	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	0	0	191	123	36

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	264	0	455	264
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	191	-
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	-	-	1300	-	563	775
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	841	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1300	-	556	775
Mov Cap-2 Maneuver	-	-	-	-	556	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	831	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	556	775	-	-	1300	-
HCM Lane V/C Ratio	0.222	0.046	-	-	-	-
HCM Control Delay (s)	13.3	9.9	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	113	0	0	387	40	9
Future Vol, veh/h	113	0	0	387	40	9
Conflicting Peds, #/hr	0	4	0	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	135	0	0	461	48	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	137	0	598	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	461	-
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	-	-	1447	-	465	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	635	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1447	-	462	909
Mov Cap-2 Maneuver	-	-	-	-	462	-
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	633	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	462	909	-	-	1447	-
HCM Lane V/C Ratio	0.103	0.012	-	-	-	-
HCM Control Delay (s)	13.7	9	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	238	0	0	172	112	32
Future Vol, veh/h	238	0	0	172	112	32
Conflicting Peds, #/hr	0	13	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	0	0	191	124	36

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	264	0	455	264
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	191	-
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	-	-	1300	-	563	775
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	841	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1300	-	556	775
Mov Cap-2 Maneuver	-	-	-	-	556	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	831	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	556	775	-	-	1300	-
HCM Lane V/C Ratio	0.224	0.046	-	-	-	-
HCM Control Delay (s)	13.3	9.9	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	120	0	0	402	40	9
Future Vol, veh/h	120	0	0	402	40	9
Conflicting Peds, #/hr	0	4	0	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	0	0	479	48	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	145	0	624	145
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	479	-
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	-	-	1437	-	449	902
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	623	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1437	-	446	900
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	621	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	446	900	-	-	1437	-
HCM Lane V/C Ratio	0.107	0.012	-	-	-	-
HCM Control Delay (s)	14	9	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	248	0	0	182	118	33
Future Vol, veh/h	248	0	0	182	118	33
Conflicting Peds, #/hr	0	13	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	276	0	0	202	131	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	276	0	478	276
Stage 1	-	-	-	-	276	-
Stage 2	-	-	-	-	202	-
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	-	-	1287	-	546	763
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	832	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1287	-	539	763
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	539	763	-	-	1287	-
HCM Lane V/C Ratio	0.243	0.048	-	-	-	-
HCM Control Delay (s)	13.8	10	-	-	0	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	120	0	0	402	42	9
Future Vol, veh/h	120	0	0	402	42	9
Conflicting Peds, #/hr	0	4	0	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	0	0	479	50	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	145	0	624	145
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	479	-
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	-	-	1437	-	449	902
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	623	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1437	-	446	900
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	621	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	446	900	-	-	1437	-
HCM Lane V/C Ratio	0.112	0.012	-	-	-	-
HCM Control Delay (s)	14.1	9	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	248	0	0	182	119	33
Future Vol, veh/h	248	0	0	182	119	33
Conflicting Peds, #/hr	0	13	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	276	0	0	202	132	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	276	0	478	276
Stage 1	-	-	-	-	276	-
Stage 2	-	-	-	-	202	-
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	-	-	1287	-	546	763
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	832	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1287	-	539	763
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	539	763	-	-	1287	-
HCM Lane V/C Ratio	0.245	0.048	-	-	-	-
HCM Control Delay (s)	13.8	10	-	-	0	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	1	0.2	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	110	73	343	75	184	65	809	127	188	726	270
Future Volume (veh/h)	86	110	73	343	75	184	65	809	127	188	726	270
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	88	112	74	350	77	188	66	826	130	192	741	276
Adj No. of Lanes	1	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	298	244	361	80	582	144	876	138	215	819	305
Arrive On Green	0.16	0.16	0.16	0.25	0.25	0.25	0.08	0.29	0.29	0.12	0.33	0.33
Sat Flow, veh/h	1774	1863	1524	1467	323	1583	1774	3048	480	1774	2502	932
Grp Volume(v), veh/h	88	112	74	427	0	188	66	480	476	192	524	493
Grp Sat Flow(s),veh/h/ln	1774	1863	1524	1789	0	1583	1774	1770	1758	1774	1770	1664
Q Serve(g_s), s	4.6	5.7	4.5	24.9	0.0	9.0	3.7	28.0	28.0	11.3	29.9	29.9
Cycle Q Clear(g_c), s	4.6	5.7	4.5	24.9	0.0	9.0	3.7	28.0	28.0	11.3	29.9	29.9
Prop In Lane	1.00		1.00	0.82		1.00	1.00		0.27	1.00		0.56
Lane Grp Cap(c), veh/h	284	298	244	441	0	582	144	508	505	215	580	545
V/C Ratio(X)	0.31	0.38	0.30	0.97	0.00	0.32	0.46	0.94	0.94	0.89	0.90	0.90
Avail Cap(c_a), veh/h	521	547	448	441	0	582	168	515	511	215	580	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	39.6	39.1	39.4	0.0	23.9	46.3	36.8	36.8	45.7	33.9	33.9
Incr Delay (d2), s/veh	0.6	0.8	0.7	34.6	0.0	0.3	0.8	28.1	28.2	33.0	20.0	21.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.2	5.4	3.5	23.3	0.0	7.1	3.4	24.4	24.3	11.9	24.7	23.6
LnGrp Delay(d),s/veh	39.8	40.4	39.8	74.0	0.0	24.3	47.1	64.8	65.0	78.7	53.9	54.9
LnGrp LOS	D	D	D	E		C	D	E	E	E	D	D
Approach Vol, veh/h		274			615			1022			1209	
Approach Delay, s/veh		40.0			58.8			63.7			58.3	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.3	35.3		21.9	13.1	39.6		31.0
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0
Max Green Setting (Gmax), s	12.8	30.7		31.0	10.0	33.5		26.0
Max Q Clear Time (g_c+I1), s	13.3	30.0		7.7	5.7	31.9		26.9
Green Ext Time (p_c), s	0.0	0.4		1.1	0.0	1.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	58.6
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	210	109	232	27	303	30	929	207	122	575	106
Future Volume (veh/h)	261	210	109	232	27	303	30	929	207	122	575	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	242	253	112	239	28	312	31	958	213	126	593	109
Adj No. of Lanes	1	1	1	0	1	1	1	2	0	1	2	0
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	358	376	310	324	38	499	101	844	187	199	1043	191
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.06	0.30	0.30	0.11	0.35	0.35
Sat Flow, veh/h	1774	1863	1536	1596	187	1583	1774	2860	635	1774	2973	545
Grp Volume(v), veh/h	242	253	112	267	0	312	31	592	579	126	352	350
Grp Sat Flow(s),veh/h/ln	1774	1863	1536	1783	0	1583	1774	1770	1725	1774	1770	1748
Q Serve(g_s), s	13.1	13.0	6.5	14.6	0.0	17.5	1.7	30.7	30.7	7.1	16.8	16.9
Cycle Q Clear(g_c), s	13.1	13.0	6.5	14.6	0.0	17.5	1.7	30.7	30.7	7.1	16.8	16.9
Prop In Lane	1.00		1.00	0.90		1.00	1.00		0.37	1.00		0.31
Lane Grp Cap(c), veh/h	358	376	310	362	0	499	101	523	509	199	621	613
V/C Ratio(X)	0.68	0.67	0.36	0.74	0.00	0.63	0.31	1.13	1.14	0.63	0.57	0.57
Avail Cap(c_a), veh/h	529	555	458	446	0	574	171	523	509	218	621	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	38.3	35.7	38.9	0.0	30.4	47.1	36.6	36.6	44.1	27.4	27.4
Incr Delay (d2), s/veh	2.2	2.1	0.7	5.0	0.0	1.7	0.6	81.5	83.2	3.4	3.7	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.8	11.2	5.1	12.2	0.0	12.5	1.6	48.2	47.4	6.6	13.7	13.7
LnGrp Delay(d),s/veh	40.6	40.4	36.4	43.9	0.0	32.1	47.7	118.1	119.9	47.5	31.1	31.2
LnGrp LOS	D	D	D	D		C	D	F	F	D	C	C
Approach Vol, veh/h		607			579			1202			828	
Approach Delay, s/veh		39.7			37.5			117.1			33.6	
Approach LOS		D			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.2	35.7		26.0	10.4	41.5		26.1
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0
Max Green Setting (Gmax), s	12.8	30.7		31.0	10.0	33.5		26.0
Max Q Clear Time (g_c+I1), s	9.1	32.7		15.1	3.7	18.9		19.5
Green Ext Time (p_c), s	0.0	0.0		2.5	0.0	14.3		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	66.7
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	110	73	343	75	186	65	814	127	189	727	270
Future Volume (veh/h)	86	110	73	343	75	186	65	814	127	189	727	270
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	88	112	74	350	77	190	66	831	130	193	742	276
Adj No. of Lanes	1	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	298	244	361	79	582	144	879	137	215	821	305
Arrive On Green	0.16	0.16	0.16	0.25	0.25	0.25	0.08	0.29	0.29	0.12	0.33	0.33
Sat Flow, veh/h	1774	1863	1524	1467	323	1583	1774	3051	477	1774	2503	931
Grp Volume(v), veh/h	88	112	74	427	0	190	66	482	479	193	525	493
Grp Sat Flow(s),veh/h/ln	1774	1863	1524	1789	0	1583	1774	1770	1758	1774	1770	1664
Q Serve(g_s), s	4.6	5.7	4.5	25.0	0.0	9.1	3.8	28.2	28.2	11.3	29.9	29.9
Cycle Q Clear(g_c), s	4.6	5.7	4.5	25.0	0.0	9.1	3.8	28.2	28.2	11.3	29.9	29.9
Prop In Lane	1.00		1.00	0.82		1.00	1.00		0.27	1.00		0.56
Lane Grp Cap(c), veh/h	284	298	244	440	0	582	144	510	506	215	581	546
V/C Ratio(X)	0.31	0.38	0.30	0.97	0.00	0.33	0.46	0.95	0.95	0.90	0.90	0.90
Avail Cap(c_a), veh/h	521	547	447	440	0	582	168	514	511	215	581	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	39.6	39.2	39.4	0.0	24.0	46.3	36.8	36.8	45.8	33.9	33.9
Incr Delay (d2), s/veh	0.6	0.8	0.7	34.9	0.0	0.3	0.9	28.5	28.6	34.2	19.9	20.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.2	5.4	3.5	23.3	0.0	7.2	3.4	24.7	24.6	12.1	24.7	23.6
LnGrp Delay(d),s/veh	39.8	40.4	39.9	74.3	0.0	24.3	47.2	65.3	65.4	80.0	53.8	54.8
LnGrp LOS	D	D	D	E		C	D	E	E	F	D	D
Approach Vol, veh/h		274			617			1027			1211	
Approach Delay, s/veh		40.1			58.9			64.2			58.4	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.3	35.4		21.9	13.1	39.7		31.0
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0
Max Green Setting (Gmax), s	12.8	30.7		31.0	10.0	33.5		26.0
Max Q Clear Time (g_c+I1), s	13.3	30.2		7.7	5.8	31.9		27.0
Green Ext Time (p_c), s	0.0	0.3		1.1	0.0	1.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	58.8
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	210	109	232	27	304	30	931	207	126	580	106
Future Volume (veh/h)	261	210	109	232	27	304	30	931	207	126	580	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	242	253	112	239	28	313	31	960	213	130	598	109
Adj No. of Lanes	1	1	1	0	1	1	1	2	0	1	2	0
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	358	376	310	324	38	500	101	844	187	200	1044	190
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.06	0.29	0.29	0.11	0.35	0.35
Sat Flow, veh/h	1774	1863	1536	1596	187	1583	1774	2861	634	1774	2977	541
Grp Volume(v), veh/h	242	253	112	267	0	313	31	593	580	130	355	352
Grp Sat Flow(s),veh/h/ln	1774	1863	1536	1783	0	1583	1774	1770	1725	1774	1770	1749
Q Serve(g_s), s	13.1	13.1	6.5	14.6	0.0	17.5	1.7	30.7	30.7	7.3	16.9	17.0
Cycle Q Clear(g_c), s	13.1	13.1	6.5	14.6	0.0	17.5	1.7	30.7	30.7	7.3	16.9	17.0
Prop In Lane	1.00		1.00	0.90		1.00	1.00		0.37	1.00		0.31
Lane Grp Cap(c), veh/h	358	376	310	362	0	500	101	522	509	200	621	613
V/C Ratio(X)	0.68	0.67	0.36	0.74	0.00	0.63	0.31	1.14	1.14	0.65	0.57	0.57
Avail Cap(c_a), veh/h	528	555	458	445	0	574	170	522	509	218	621	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	38.4	35.8	38.9	0.0	30.4	47.1	36.7	36.7	44.2	27.4	27.5
Incr Delay (d2), s/veh	2.2	2.1	0.7	5.0	0.0	1.7	0.6	82.7	84.4	4.2	3.8	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.9	11.3	5.1	12.2	0.0	12.5	1.6	48.5	47.7	6.9	13.8	13.8
LnGrp Delay(d),s/veh	40.6	40.5	36.5	43.8	0.0	32.1	47.7	119.3	121.1	48.4	31.2	31.4
LnGrp LOS	D	D	D	D		C	D	F	F	D	C	C
Approach Vol, veh/h		607			580			1204			837	
Approach Delay, s/veh		39.8			37.5			118.4			34.0	
Approach LOS		D			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.2	35.7		26.0	10.4	41.5		26.1
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0
Max Green Setting (Gmax), s	12.8	30.7		31.0	10.0	33.5		26.0
Max Q Clear Time (g_c+I1), s	9.3	32.7		15.1	3.7	19.0		19.5
Green Ext Time (p_c), s	0.0	0.0		2.5	0.0	14.1		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	67.2
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	117	76	357	84	194	67	855	136	202	790	304
Future Volume (veh/h)	97	117	76	357	84	194	67	855	136	202	790	304
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	99	119	78	364	86	198	68	872	139	206	806	310
Adj No. of Lanes	1	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	298	243	355	84	580	145	882	141	214	815	313
Arrive On Green	0.16	0.16	0.16	0.25	0.25	0.25	0.08	0.29	0.29	0.12	0.33	0.33
Sat Flow, veh/h	1774	1863	1524	1448	342	1583	1774	3042	485	1774	2478	951
Grp Volume(v), veh/h	99	119	78	450	0	198	68	507	504	206	575	541
Grp Sat Flow(s),veh/h/ln	1774	1863	1524	1790	0	1583	1774	1770	1757	1774	1770	1660
Q Serve(g_s), s	5.3	6.1	4.8	26.0	0.0	9.6	3.9	30.2	30.2	12.2	34.2	34.3
Cycle Q Clear(g_c), s	5.3	6.1	4.8	26.0	0.0	9.6	3.9	30.2	30.2	12.2	34.2	34.3
Prop In Lane	1.00		1.00	0.81		1.00	1.00		0.28	1.00		0.57
Lane Grp Cap(c), veh/h	283	298	243	439	0	580	145	513	509	214	582	546
V/C Ratio(X)	0.35	0.40	0.32	1.02	0.00	0.34	0.47	0.99	0.99	0.96	0.99	0.99
Avail Cap(c_a), veh/h	519	545	446	439	0	580	167	513	509	214	582	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	39.9	39.4	40.0	0.0	24.3	46.4	37.4	37.4	46.3	35.3	35.4
Incr Delay (d2), s/veh	0.7	0.9	0.8	49.2	0.0	0.3	0.9	37.2	37.3	49.9	34.5	36.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.8	5.8	3.7	33.9	0.0	7.6	3.5	27.4	27.3	13.9	29.9	28.6
LnGrp Delay(d),s/veh	40.3	40.8	40.2	89.1	0.0	24.7	47.3	74.6	74.8	96.2	69.8	71.6
LnGrp LOS	D	D	D	F		C	D	E	E	F	E	E
Approach Vol, veh/h		296			648			1079			1322	
Approach Delay, s/veh		40.5			69.4			73.0			74.6	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.3	35.7		21.9	13.1	39.9		31.0
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0
Max Green Setting (Gmax), s	12.8	30.7		31.0	10.0	33.5		26.0
Max Q Clear Time (g_c+I1), s	14.2	32.2		8.1	5.9	36.3		28.0
Green Ext Time (p_c), s	0.0	0.0		1.2	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	70.1
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	223	113	241	30	320	31	999	226	134	614	118
Future Volume (veh/h)	295	223	113	241	30	320	31	999	226	134	614	118
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	267	282	116	248	31	330	32	1030	233	138	633	122
Adj No. of Lanes	1	1	1	0	1	1	1	2	0	1	2	0
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	375	394	325	333	42	507	102	816	184	195	999	192
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.06	0.29	0.29	0.11	0.34	0.34
Sat Flow, veh/h	1774	1863	1538	1585	198	1583	1774	2850	642	1774	2946	567
Grp Volume(v), veh/h	267	282	116	279	0	330	32	638	625	138	380	375
Grp Sat Flow(s),veh/h/ln	1774	1863	1538	1783	0	1583	1774	1770	1722	1774	1770	1743
Q Serve(g_s), s	15.0	15.1	6.9	15.7	0.0	19.2	1.9	30.7	30.7	8.0	19.4	19.4
Cycle Q Clear(g_c), s	15.0	15.1	6.9	15.7	0.0	19.2	1.9	30.7	30.7	8.0	19.4	19.4
Prop In Lane	1.00		1.00	0.89		1.00	1.00		0.37	1.00		0.33
Lane Grp Cap(c), veh/h	375	394	325	375	0	507	102	507	493	195	600	591
V/C Ratio(X)	0.71	0.72	0.36	0.74	0.00	0.65	0.31	1.26	1.27	0.71	0.63	0.63
Avail Cap(c_a), veh/h	513	539	445	432	0	558	165	507	493	212	600	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	39.3	36.1	39.6	0.0	31.3	48.5	38.3	38.3	46.0	29.8	29.8
Incr Delay (d2), s/veh	2.9	2.9	0.7	5.9	0.0	2.3	0.7	131.9	135.8	7.5	5.0	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.2	12.7	5.4	13.1	0.0	13.5	1.7	60.3	59.6	7.8	15.6	15.5
LnGrp Delay(d),s/veh	42.1	42.1	36.7	45.5	0.0	33.6	49.2	170.1	174.0	53.6	34.8	35.0
LnGrp LOS	D	D	D	D		C	D	F	F	D	C	C
Approach Vol, veh/h		665			609			1295			893	
Approach Delay, s/veh		41.2			39.1			169.0			37.8	
Approach LOS		D			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.3	35.7		27.7	10.6	41.4		27.6
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0
Max Green Setting (Gmax), s	12.8	30.7		31.0	10.0	33.5		26.0
Max Q Clear Time (g_c+I1), s	10.0	32.7		17.1	3.9	21.4		21.2
Green Ext Time (p_c), s	0.0	0.0		2.6	0.0	11.9		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	87.8
HCM 2010 LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	117	76	357	84	196	67	860	136	203	791	304
Future Volume (veh/h)	97	117	76	357	84	196	67	860	136	203	791	304
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	99	119	78	364	86	200	68	878	139	207	807	310
Adj No. of Lanes	1	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	298	243	355	84	580	145	883	140	214	816	313
Arrive On Green	0.16	0.16	0.16	0.25	0.25	0.25	0.08	0.29	0.29	0.12	0.33	0.33
Sat Flow, veh/h	1774	1863	1524	1448	342	1583	1774	3045	482	1774	2479	951
Grp Volume(v), veh/h	99	119	78	450	0	200	68	510	507	207	576	541
Grp Sat Flow(s),veh/h/ln	1774	1863	1524	1790	0	1583	1774	1770	1757	1774	1770	1660
Q Serve(g_s), s	5.3	6.1	4.8	26.0	0.0	9.7	3.9	30.5	30.5	12.3	34.3	34.4
Cycle Q Clear(g_c), s	5.3	6.1	4.8	26.0	0.0	9.7	3.9	30.5	30.5	12.3	34.3	34.4
Prop In Lane	1.00		1.00	0.81		1.00	1.00		0.27	1.00		0.57
Lane Grp Cap(c), veh/h	283	298	243	439	0	580	145	513	509	214	582	546
V/C Ratio(X)	0.35	0.40	0.32	1.02	0.00	0.34	0.47	0.99	0.99	0.97	0.99	0.99
Avail Cap(c_a), veh/h	519	545	446	439	0	580	167	513	509	214	582	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	39.9	39.4	40.0	0.0	24.3	46.4	37.5	37.5	46.3	35.3	35.4
Incr Delay (d2), s/veh	0.7	0.9	0.8	49.2	0.0	0.4	0.9	38.5	38.7	51.2	34.6	36.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.8	5.8	3.7	33.9	0.0	7.7	3.5	27.8	27.6	14.0	30.0	28.9
LnGrp Delay(d),s/veh	40.3	40.8	40.2	89.1	0.0	24.7	47.3	76.0	76.2	97.6	70.0	71.8
LnGrp LOS	D	D	D	F		C	D	E	E	F	E	E
Approach Vol, veh/h		296			650			1085			1324	
Approach Delay, s/veh		40.5			69.3			74.3			75.0	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.3	35.7		21.9	13.1	39.9		31.0
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0
Max Green Setting (Gmax), s	12.8	30.7		31.0	10.0	33.5		26.0
Max Q Clear Time (g_c+I1), s	14.3	32.5		8.1	5.9	36.4		28.0
Green Ext Time (p_c), s	0.0	0.0		1.2	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	70.6
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	223	113	241	30	321	31	1001	226	138	619	118
Future Volume (veh/h)	295	223	113	241	30	321	31	1001	226	138	619	118
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	267	282	116	248	31	331	32	1032	233	142	638	122
Adj No. of Lanes	1	1	1	0	1	1	1	2	0	1	2	0
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	375	394	325	334	42	508	102	816	183	195	1000	191
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.06	0.29	0.29	0.11	0.34	0.34
Sat Flow, veh/h	1774	1863	1538	1585	198	1583	1774	2851	641	1774	2950	563
Grp Volume(v), veh/h	267	282	116	279	0	331	32	639	626	142	382	378
Grp Sat Flow(s),veh/h/ln	1774	1863	1538	1783	0	1583	1774	1770	1722	1774	1770	1743
Q Serve(g_s), s	15.0	15.1	6.9	15.7	0.0	19.3	1.9	30.7	30.7	8.3	19.5	19.6
Cycle Q Clear(g_c), s	15.0	15.1	6.9	15.7	0.0	19.3	1.9	30.7	30.7	8.3	19.5	19.6
Prop In Lane	1.00		1.00	0.89		1.00	1.00		0.37	1.00		0.32
Lane Grp Cap(c), veh/h	375	394	325	376	0	508	102	506	493	195	600	591
V/C Ratio(X)	0.71	0.72	0.36	0.74	0.00	0.65	0.31	1.26	1.27	0.73	0.64	0.64
Avail Cap(c_a), veh/h	512	538	444	432	0	558	165	506	493	212	600	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	39.3	36.1	39.6	0.0	31.3	48.6	38.3	38.3	46.2	29.9	29.9
Incr Delay (d2), s/veh	2.9	2.9	0.7	5.8	0.0	2.4	0.7	133.1	137.1	9.0	5.1	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.2	12.7	5.4	13.1	0.0	13.5	1.7	60.5	59.9	8.1	15.7	15.6
LnGrp Delay(d),s/veh	42.2	42.2	36.8	45.5	0.0	33.6	49.2	171.4	175.4	55.2	35.0	35.2
LnGrp LOS	D	D	D	D		C	D	F	F	E	D	D
Approach Vol, veh/h		665			610			1297			902	
Approach Delay, s/veh		41.2			39.1			170.3			38.3	
Approach LOS		D			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.3	35.7		27.7	10.6	41.4		27.6
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0
Max Green Setting (Gmax), s	12.8	30.7		31.0	10.0	33.5		26.0
Max Q Clear Time (g_c+I1), s	10.3	32.7		17.1	3.9	21.6		21.3
Green Ext Time (p_c), s	0.0	0.0		2.6	0.0	11.7		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	88.3
HCM 2010 LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	241	0	40	0	573	532	0	927	638
Future Volume (vph)	0	0	0	241	0	40	0	573	532	0	927	638
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5		4.5		5.0			4.0	
Lane Util. Factor				1.00		1.00		0.95			0.95	
Frpb, ped/bikes				1.00		1.00		0.96			1.00	
Flpb, ped/bikes				1.00		1.00		1.00			1.00	
Frt				1.00		0.85		0.93			0.94	
Flt Protected				0.95		1.00		1.00			1.00	
Satd. Flow (prot)				1770		1583		3146			3323	
Flt Permitted				0.95		1.00		1.00			1.00	
Satd. Flow (perm)				1770		1583		3146			3323	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	256	0	43	0	610	566	0	986	679
RTOR Reduction (vph)	0	0	0	0	0	35	0	94	0	0	0	0
Lane Group Flow (vph)	0	0	0	256	0	8	0	1082	0	0	1665	0
Confl. Peds. (#/hr)									20			
Turn Type				Prot		Perm		NA			NA	
Protected Phases				7				6			4 6	
Permitted Phases						7						
Actuated Green, G (s)				27.0		27.0		65.7			113.5	
Effective Green, g (s)				27.0		27.0		65.7			113.5	
Actuated g/C Ratio				0.18		0.18		0.44			0.76	
Clearance Time (s)				4.5		4.5		5.0				
Vehicle Extension (s)				2.5		2.5		6.0				
Lane Grp Cap (vph)				318		284		1377			2514	
v/s Ratio Prot				c0.14				c0.34			c0.50	
v/s Ratio Perm						0.00						
v/c Ratio				0.81		0.03		0.79			0.66	
Uniform Delay, d1				59.0		50.7		36.1			8.9	
Progression Factor				1.00		1.00		1.00			0.55	
Incremental Delay, d2				13.4		0.0		4.6			0.5	
Delay (s)				72.4		50.7		40.7			5.4	
Level of Service				E		D		D			A	
Approach Delay (s)		0.0			69.2			40.7			5.4	
Approach LOS		A			E			D			A	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	256	43	1176	1665
v/c Ratio	0.81	0.12	0.80	0.66
Control Delay	77.3	2.4	37.8	6.5
Queue Delay	0.0	0.0	0.0	0.4
Total Delay	77.3	2.4	37.8	6.8
Queue Length 50th (ft)	243	0	468	98
Queue Length 95th (ft)	325	8	#716	162
Internal Link Dist (ft)			683	188
Turn Bay Length (ft)		80		
Base Capacity (vph)	595	583	1473	2537
Starvation Cap Reductn	0	0	0	338
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.07	0.80	0.76

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	150	0	124	0	1045	404	0	608	248
Future Volume (vph)	0	0	0	150	0	124	0	1045	404	0	608	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5		4.5		5.0			4.0	
Lane Util. Factor				1.00		1.00		0.95			0.95	
Frpb, ped/bikes				1.00		1.00		0.98			1.00	
Flpb, ped/bikes				1.00		1.00		1.00			1.00	
Frt				1.00		0.85		0.96			0.96	
Flt Protected				0.95		1.00		1.00			1.00	
Satd. Flow (prot)				1770		1583		3309			3385	
Flt Permitted				0.95		1.00		1.00			1.00	
Satd. Flow (perm)				1770		1583		3309			3385	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	160	0	132	0	1112	430	0	647	264
RTOR Reduction (vph)	0	0	0	0	0	110	0	16	0	0	0	0
Lane Group Flow (vph)	0	0	0	160	0	23	0	1526	0	0	911	0
Confl. Peds. (#/hr)									20			
Turn Type				Prot		Perm		NA			NA	
Protected Phases				7				6			4 6	
Permitted Phases						7						
Actuated Green, G (s)				18.6		18.6		90.9			121.9	
Effective Green, g (s)				18.6		18.6		90.9			121.9	
Actuated g/C Ratio				0.12		0.12		0.61			0.81	
Clearance Time (s)				4.5		4.5		5.0				
Vehicle Extension (s)				2.5		2.5		6.0				
Lane Grp Cap (vph)				219		196		2005			2750	
v/s Ratio Prot				c0.09				c0.46			c0.27	
v/s Ratio Perm						0.01						
v/c Ratio				0.73		0.11		0.76			0.33	
Uniform Delay, d1				63.3		58.4		21.6			3.6	
Progression Factor				1.00		1.00		1.00			0.24	
Incremental Delay, d2				11.2		0.2		2.8			0.0	
Delay (s)				74.5		58.6		24.4			0.9	
Level of Service				E		E		C			A	
Approach Delay (s)		0.0			67.3			24.4			0.9	
Approach LOS		A			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	160	132	1542	911
v/c Ratio	0.73	0.43	0.76	0.33
Control Delay	81.6	14.7	26.6	1.2
Queue Delay	0.0	0.0	0.2	0.2
Total Delay	81.6	14.8	26.8	1.4
Queue Length 50th (ft)	153	6	541	20
Queue Length 95th (ft)	224	68	#914	27
Internal Link Dist (ft)			683	188
Turn Bay Length (ft)		80		
Base Capacity (vph)	595	615	2020	2774
Starvation Cap Reductn	0	0	0	1029
Spillback Cap Reductn	0	20	76	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.22	0.79	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	241	0	42	0	579	532	0	929	638
Future Volume (vph)	0	0	0	241	0	42	0	579	532	0	929	638
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5		4.5		5.0			4.0	
Lane Util. Factor				1.00		1.00		0.95			0.95	
Frpb, ped/bikes				1.00		1.00		0.96			1.00	
Flpb, ped/bikes				1.00		1.00		1.00			1.00	
Frt				1.00		0.85		0.93			0.94	
Flt Protected				0.95		1.00		1.00			1.00	
Satd. Flow (prot)				1770		1583		3148			3323	
Flt Permitted				0.95		1.00		1.00			1.00	
Satd. Flow (perm)				1770		1583		3148			3323	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	256	0	45	0	616	566	0	988	679
RTOR Reduction (vph)	0	0	0	0	0	37	0	93	0	0	0	0
Lane Group Flow (vph)	0	0	0	256	0	8	0	1089	0	0	1667	0
Confl. Peds. (#/hr)									20			
Turn Type				Prot		Perm		NA			NA	
Protected Phases				7				6			4 6	
Permitted Phases						7						
Actuated Green, G (s)				27.0		27.0		65.7			113.5	
Effective Green, g (s)				27.0		27.0		65.7			113.5	
Actuated g/C Ratio				0.18		0.18		0.44			0.76	
Clearance Time (s)				4.5		4.5		5.0				
Vehicle Extension (s)				2.5		2.5		6.0				
Lane Grp Cap (vph)				318		284		1378			2514	
v/s Ratio Prot				c0.14				c0.35			c0.50	
v/s Ratio Perm						0.01						
v/c Ratio				0.81		0.03		0.79			0.66	
Uniform Delay, d1				59.0		50.7		36.2			8.9	
Progression Factor				1.00		1.00		1.00			0.56	
Incremental Delay, d2				13.4		0.0		4.7			0.5	
Delay (s)				72.4		50.7		40.9			5.4	
Level of Service				E		D		D			A	
Approach Delay (s)		0.0			69.1			40.9			5.4	
Approach LOS		A			E			D			A	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	256	45	1182	1667
v/c Ratio	0.81	0.13	0.80	0.66
Control Delay	77.3	2.9	38.1	6.5
Queue Delay	0.0	0.0	0.0	0.4
Total Delay	77.3	2.9	38.1	6.9
Queue Length 50th (ft)	243	0	474	98
Queue Length 95th (ft)	325	10	#724	166
Internal Link Dist (ft)			683	188
Turn Bay Length (ft)		80		
Base Capacity (vph)	595	583	1473	2537
Starvation Cap Reductn	0	0	0	339
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.08	0.80	0.76

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	150	0	125	0	1048	404	0	617	248
Future Volume (vph)	0	0	0	150	0	125	0	1048	404	0	617	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5		4.5		5.0			4.0	
Lane Util. Factor				1.00		1.00		0.95			0.95	
Frpb, ped/bikes				1.00		1.00		0.98			1.00	
Flpb, ped/bikes				1.00		1.00		1.00			1.00	
Frt				1.00		0.85		0.96			0.96	
Flt Protected				0.95		1.00		1.00			1.00	
Satd. Flow (prot)				1770		1583		3310			3387	
Flt Permitted				0.95		1.00		1.00			1.00	
Satd. Flow (perm)				1770		1583		3310			3387	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	160	0	133	0	1115	430	0	656	264
RTOR Reduction (vph)	0	0	0	0	0	110	0	16	0	0	0	0
Lane Group Flow (vph)	0	0	0	160	0	23	0	1529	0	0	920	0
Confl. Peds. (#/hr)									20			
Turn Type				Prot		Perm		NA			NA	
Protected Phases				7				6			4 6	
Permitted Phases						7						
Actuated Green, G (s)				18.6		18.6		90.9			121.9	
Effective Green, g (s)				18.6		18.6		90.9			121.9	
Actuated g/C Ratio				0.12		0.12		0.61			0.81	
Clearance Time (s)				4.5		4.5		5.0				
Vehicle Extension (s)				2.5		2.5		6.0				
Lane Grp Cap (vph)				219		196		2005			2752	
v/s Ratio Prot				c0.09				c0.46			c0.27	
v/s Ratio Perm						0.01						
v/c Ratio				0.73		0.12		0.76			0.33	
Uniform Delay, d1				63.3		58.4		21.6			3.6	
Progression Factor				1.00		1.00		1.00			0.24	
Incremental Delay, d2				11.2		0.2		2.8			0.0	
Delay (s)				74.5		58.6		24.5			0.9	
Level of Service				E		E		C			A	
Approach Delay (s)		0.0			67.3			24.5			0.9	
Approach LOS		A			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	160	133	1545	920
v/c Ratio	0.73	0.43	0.76	0.33
Control Delay	81.6	14.7	26.6	1.2
Queue Delay	0.0	0.0	0.2	0.2
Total Delay	81.6	14.7	26.9	1.4
Queue Length 50th (ft)	153	6	543	20
Queue Length 95th (ft)	224	67	#918	27
Internal Link Dist (ft)			683	188
Turn Bay Length (ft)		80		
Base Capacity (vph)	595	616	2021	2774
Starvation Cap Reductn	0	0	0	1011
Spillback Cap Reductn	0	20	79	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.22	0.80	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	267	0	51	0	616	559	0	1011	673
Future Volume (vph)	0	0	0	267	0	51	0	616	559	0	1011	673
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5		4.5		5.0			4.0	
Lane Util. Factor				1.00		1.00		0.95			0.95	
Frpb, ped/bikes				1.00		1.00		0.96			1.00	
Flpb, ped/bikes				1.00		1.00		1.00			1.00	
Frt				1.00		0.85		0.93			0.94	
Flt Protected				0.95		1.00		1.00			1.00	
Satd. Flow (prot)				1770		1583		3151			3327	
Flt Permitted				0.95		1.00		1.00			1.00	
Satd. Flow (perm)				1770		1583		3151			3327	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	284	0	54	0	655	595	0	1076	716
RTOR Reduction (vph)	0	0	0	0	0	43	0	99	0	0	0	0
Lane Group Flow (vph)	0	0	0	284	0	11	0	1151	0	0	1792	0
Confl. Peds. (#/hr)									20			
Turn Type				Prot		Perm		NA			NA	
Protected Phases				7				6			4 6	
Permitted Phases						7						
Actuated Green, G (s)				29.4		29.4		59.3			111.1	
Effective Green, g (s)				29.4		29.4		59.3			111.1	
Actuated g/C Ratio				0.20		0.20		0.40			0.74	
Clearance Time (s)				4.5		4.5		5.0				
Vehicle Extension (s)				2.5		2.5		6.0				
Lane Grp Cap (vph)				346		310		1245			2464	
v/s Ratio Prot				c0.16				c0.37			c0.54	
v/s Ratio Perm						0.01						
v/c Ratio				0.82		0.03		0.92			0.73	
Uniform Delay, d1				57.8		48.8		43.2			10.9	
Progression Factor				1.00		1.00		1.00			0.69	
Incremental Delay, d2				14.1		0.0		12.8			0.9	
Delay (s)				71.9		48.8		56.0			8.4	
Level of Service				E		D		E			A	
Approach Delay (s)		0.0			68.2			56.0			8.4	
Approach LOS		A			E			E			A	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	284	54	1250	1792
v/c Ratio	0.82	0.15	0.93	0.72
Control Delay	76.1	4.6	50.9	9.8
Queue Delay	0.0	0.0	0.0	1.0
Total Delay	76.1	4.6	50.9	10.7
Queue Length 50th (ft)	269	0	~652	195
Queue Length 95th (ft)	352	19	#799	335
Internal Link Dist (ft)			683	188
Turn Bay Length (ft)		80		
Base Capacity (vph)	595	583	1345	2475
Starvation Cap Reductn	0	0	0	388
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.09	0.93	0.86

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	162	0	139	0	1131	438	0	657	268
Future Volume (vph)	0	0	0	162	0	139	0	1131	438	0	657	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5		4.5		5.0			4.0	
Lane Util. Factor				1.00		1.00		0.95			0.95	
Frpb, ped/bikes				1.00		1.00		0.98			1.00	
Flpb, ped/bikes				1.00		1.00		1.00			1.00	
Frt				1.00		0.85		0.96			0.96	
Flt Protected				0.95		1.00		1.00			1.00	
Satd. Flow (prot)				1770		1583		3309			3385	
Flt Permitted				0.95		1.00		1.00			1.00	
Satd. Flow (perm)				1770		1583		3309			3385	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	172	0	148	0	1203	466	0	699	285
RTOR Reduction (vph)	0	0	0	0	0	113	0	17	0	0	0	0
Lane Group Flow (vph)	0	0	0	172	0	35	0	1652	0	0	984	0
Confl. Peds. (#/hr)									20			
Turn Type				Prot		Perm		NA			NA	
Protected Phases				7				6			4 6	
Permitted Phases						7						
Actuated Green, G (s)				20.8		20.8		87.5			119.7	
Effective Green, g (s)				20.8		20.8		87.5			119.7	
Actuated g/C Ratio				0.14		0.14		0.58			0.80	
Clearance Time (s)				4.5		4.5		5.0				
Vehicle Extension (s)				2.5		2.5		6.0				
Lane Grp Cap (vph)				245		219		1930			2701	
v/s Ratio Prot				c0.10				c0.50			c0.29	
v/s Ratio Perm						0.02						
v/c Ratio				0.70		0.16		0.86			0.36	
Uniform Delay, d1				61.6		56.9		26.0			4.3	
Progression Factor				1.00		1.00		1.00			0.21	
Incremental Delay, d2				8.2		0.3		5.1			0.0	
Delay (s)				69.8		57.2		31.1			1.0	
Level of Service				E		E		C			A	
Approach Delay (s)		0.0			64.0			31.1			1.0	
Approach LOS		A			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	172	148	1669	984
v/c Ratio	0.70	0.45	0.86	0.36
Control Delay	75.8	15.5	32.9	1.3
Queue Delay	0.0	0.0	1.4	0.2
Total Delay	75.8	15.5	34.2	1.6
Queue Length 50th (ft)	165	15	660	22
Queue Length 95th (ft)	228	76	#1134	32
Internal Link Dist (ft)			683	188
Turn Bay Length (ft)		80		
Base Capacity (vph)	595	619	1946	2718
Starvation Cap Reductn	0	0	0	848
Spillback Cap Reductn	0	20	125	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.29	0.25	0.92	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	267	0	53	0	622	559	0	1013	673
Future Volume (vph)	0	0	0	267	0	53	0	622	559	0	1013	673
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5		4.5		5.0			4.0	
Lane Util. Factor				1.00		1.00		0.95			0.95	
Frpb, ped/bikes				1.00		1.00		0.96			1.00	
Flpb, ped/bikes				1.00		1.00		1.00			1.00	
Frt				1.00		0.85		0.93			0.94	
Flt Protected				0.95		1.00		1.00			1.00	
Satd. Flow (prot)				1770		1583		3153			3327	
Flt Permitted				0.95		1.00		1.00			1.00	
Satd. Flow (perm)				1770		1583		3153			3327	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	284	0	56	0	662	595	0	1078	716
RTOR Reduction (vph)	0	0	0	0	0	45	0	98	0	0	0	0
Lane Group Flow (vph)	0	0	0	284	0	11	0	1159	0	0	1794	0
Confl. Peds. (#/hr)									20			
Turn Type				Prot		Perm		NA			NA	
Protected Phases				7				6			4 6	
Permitted Phases						7						
Actuated Green, G (s)				29.4		29.4		59.2			111.1	
Effective Green, g (s)				29.4		29.4		59.2			111.1	
Actuated g/C Ratio				0.20		0.20		0.39			0.74	
Clearance Time (s)				4.5		4.5		5.0				
Vehicle Extension (s)				2.5		2.5		6.0				
Lane Grp Cap (vph)				346		310		1244			2464	
v/s Ratio Prot				c0.16				c0.37			c0.54	
v/s Ratio Perm						0.01						
v/c Ratio				0.82		0.04		0.93			0.73	
Uniform Delay, d1				57.8		48.8		43.5			10.9	
Progression Factor				1.00		1.00		1.00			0.70	
Incremental Delay, d2				14.1		0.0		13.7			0.9	
Delay (s)				71.9		48.9		57.1			8.5	
Level of Service				E		D		E			A	
Approach Delay (s)		0.0			68.1			57.1			8.5	
Approach LOS		A			E			E			A	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	284	56	1257	1794
v/c Ratio	0.82	0.15	0.94	0.72
Control Delay	76.1	4.9	51.9	9.9
Queue Delay	0.0	0.0	0.0	1.0
Total Delay	76.1	4.9	51.9	10.8
Queue Length 50th (ft)	269	0	~662	204
Queue Length 95th (ft)	352	21	#808	338
Internal Link Dist (ft)			683	188
Turn Bay Length (ft)		80		
Base Capacity (vph)	595	583	1343	2474
Starvation Cap Reductn	0	0	0	390
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.10	0.94	0.86

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	162	0	140	0	1134	438	0	666	268
Future Volume (vph)	0	0	0	162	0	140	0	1134	438	0	666	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5		4.5		5.0			4.0	
Lane Util. Factor				1.00		1.00		0.95			0.95	
Frpb, ped/bikes				1.00		1.00		0.98			1.00	
Flpb, ped/bikes				1.00		1.00		1.00			1.00	
Frt				1.00		0.85		0.96			0.96	
Flt Protected				0.95		1.00		1.00			1.00	
Satd. Flow (prot)				1770		1583		3309			3387	
Flt Permitted				0.95		1.00		1.00			1.00	
Satd. Flow (perm)				1770		1583		3309			3387	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	172	0	149	0	1206	466	0	709	285
RTOR Reduction (vph)	0	0	0	0	0	114	0	17	0	0	0	0
Lane Group Flow (vph)	0	0	0	172	0	35	0	1655	0	0	994	0
Confl. Peds. (#/hr)									20			
Turn Type				Prot		Perm		NA			NA	
Protected Phases				7				6			4 6	
Permitted Phases						7						
Actuated Green, G (s)				21.0		21.0		87.3			119.5	
Effective Green, g (s)				21.0		21.0		87.3			119.5	
Actuated g/C Ratio				0.14		0.14		0.58			0.80	
Clearance Time (s)				4.5		4.5		5.0				
Vehicle Extension (s)				2.5		2.5		6.0				
Lane Grp Cap (vph)				247		221		1925			2698	
v/s Ratio Prot				c0.10				c0.50			c0.29	
v/s Ratio Perm						0.02						
v/c Ratio				0.70		0.16		0.86			0.37	
Uniform Delay, d1				61.5		56.7		26.2			4.4	
Progression Factor				1.00		1.00		1.00			0.21	
Incremental Delay, d2				7.6		0.2		5.3			0.0	
Delay (s)				69.1		57.0		31.5			1.0	
Level of Service				E		E		C			A	
Approach Delay (s)		0.0			63.5			31.5			1.0	
Approach LOS		A			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	172	149	1672	994
v/c Ratio	0.70	0.45	0.86	0.37
Control Delay	75.3	15.4	33.1	1.4
Queue Delay	0.0	0.0	1.4	0.2
Total Delay	75.3	15.4	34.5	1.6
Queue Length 50th (ft)	164	15	665	22
Queue Length 95th (ft)	227	75	#1141	32
Internal Link Dist (ft)			683	188
Turn Bay Length (ft)		80		
Base Capacity (vph)	595	620	1944	2715
Starvation Cap Reductn	0	0	0	830
Spillback Cap Reductn	0	20	123	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.29	0.25	0.92	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	76	64	539	117	67	6	97	5	4	9	212	93
Future Volume (vph)	76	64	539	117	67	6	97	5	4	9	212	93
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
Hourly flow rate (vph)	84	70	592	129	74	7	107	5	4	10	233	102

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	154	592	210	112	4	345
Volume Left (vph)	84	0	129	107	0	10
Volume Right (vph)	0	592	7	0	4	102
Hadj (s)	0.14	-0.57	0.14	0.51	-0.67	-0.14
Departure Headway (s)	5.7	3.2	5.6	6.5	5.4	5.2
Degree Utilization, x	0.24	0.53	0.33	0.20	0.01	0.49
Capacity (veh/h)	573	1117	587	497	607	662
Control Delay (s)	10.5	9.7	11.3	10.0	7.2	13.1
Approach Delay (s)	9.9		11.3	9.9		13.1
Approach LOS	A		B	A		B

Intersection Summary				
Delay	10.9			
Level of Service	B			
Intersection Capacity Utilization	72.5%	ICU Level of Service	C	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	37.3
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	76	64	539	0	117	67	6	0	97	5	4
Future Vol, veh/h	0	76	64	539	0	117	67	6	0	97	5	4
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	84	70	592	0	129	74	7	0	107	5	4
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	51.7	17.1	14.3
HCM LOS	F	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	95%	0%	54%	0%	62%	3%
Vol Thru, %	5%	0%	46%	0%	35%	68%
Vol Right, %	0%	100%	0%	100%	3%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	102	4	140	539	190	314
LT Vol	97	0	76	0	117	9
Through Vol	5	0	64	0	67	212
RT Vol	0	4	0	539	6	93
Lane Flow Rate	112	4	154	592	209	345
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.27	0.009	0.306	1	0.456	0.71
Departure Headway (Hd)	8.67	7.567	7.151	6.159	7.861	7.3
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	417	480	502	586	466	497
Service Time	6.37	5.194	4.903	3.911	5.773	5.3
HCM Lane V/C Ratio	0.269	0.008	0.307	1.01	0.448	0.694
HCM Control Delay	14.5	10.3	13	61.8	17.1	26.2
HCM Lane LOS	B	B	B	F	C	D
HCM 95th-tile Q	1.1	0	1.3	14.7	2.3	5.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	9	212	93
Future Vol, veh/h	0	9	212	93
Peak Hour Factor	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	233	102
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	26.2
HCM LOS	D

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	217	204	319	64	95	14	163	33	23	13	82	69
Future Volume (vph)	217	204	319	64	95	14	163	33	23	13	82	69
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
Hourly flow rate (vph)	224	210	329	66	98	14	168	34	24	13	85	71

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	434	329	178	202	24	169
Volume Left (vph)	224	0	66	168	0	13
Volume Right (vph)	0	329	14	0	24	71
Hadj (s)	0.14	-0.57	0.06	0.45	-0.67	-0.20
Departure Headway (s)	5.7	3.2	6.1	7.1	5.9	6.2
Degree Utilization, x	0.68	0.29	0.30	0.40	0.04	0.29
Capacity (veh/h)	610	1113	530	463	546	516
Control Delay (s)	20.0	7.5	11.6	13.5	8.0	11.7
Approach Delay (s)	14.6		11.6	12.9		11.7
Approach LOS	B		B	B		B

Intersection Summary			
Delay	13.5		
Level of Service	B		
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	19.8
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	217	204	319	0	64	95	14	0	163	33	23
Future Vol, veh/h	0	217	204	319	0	64	95	14	0	163	33	23
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	224	210	329	0	66	98	14	0	168	34	24
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	23.5	14.3	16
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	83%	0%	52%	0%	37%	8%
Vol Thru, %	17%	0%	48%	0%	55%	50%
Vol Right, %	0%	100%	0%	100%	8%	42%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	196	23	421	319	173	164
LT Vol	163	0	217	0	64	13
Through Vol	33	0	204	0	95	82
RT Vol	0	23	0	319	14	69
Lane Flow Rate	202	24	434	329	178	169
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.443	0.044	0.794	0.513	0.359	0.344
Departure Headway (Hd)	7.887	6.759	6.701	5.727	7.238	7.325
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	533	543	635	498	492
Service Time	5.603	4.459	4.401	3.427	5.265	5.347
HCM Lane V/C Ratio	0.44	0.045	0.799	0.518	0.357	0.343
HCM Control Delay	16.7	9.8	30.4	14.3	14.3	14.2
HCM Lane LOS	C	A	D	B	B	B
HCM 95th-tile Q	2.2	0.1	7.5	2.9	1.6	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	13	82	69
Future Vol, veh/h	0	13	82	69
Peak Hour Factor	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	13	85	71
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	14.2
HCM LOS	B

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	76	64	539	117	67	6	99	5	4	9	212	93
Future Volume (vph)	76	64	539	117	67	6	99	5	4	9	212	93
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
Hourly flow rate (vph)	84	70	592	129	74	7	109	5	4	10	233	102

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	154	592	210	114	4	345
Volume Left (vph)	84	0	129	109	0	10
Volume Right (vph)	0	592	7	0	4	102
Hadj (s)	0.14	-0.57	0.14	0.51	-0.67	-0.14
Departure Headway (s)	5.7	3.2	5.6	6.5	5.4	5.2
Degree Utilization, x	0.24	0.53	0.33	0.21	0.01	0.49
Capacity (veh/h)	572	1117	586	497	607	661
Control Delay (s)	10.5	9.7	11.3	10.1	7.2	13.1
Approach Delay (s)	9.9		11.3	10.0		13.1
Approach LOS	A		B	A		B

Intersection Summary			
Delay	10.9		
Level of Service	B		
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	37.2
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	76	64	539	0	117	67	6	0	99	5	4
Future Vol, veh/h	0	76	64	539	0	117	67	6	0	99	5	4
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	84	70	592	0	129	74	7	0	109	5	4
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	51.7	17.1	14.4
HCM LOS	F	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	95%	0%	54%	0%	62%	3%
Vol Thru, %	5%	0%	46%	0%	35%	68%
Vol Right, %	0%	100%	0%	100%	3%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	104	4	140	539	190	314
LT Vol	99	0	76	0	117	9
Through Vol	5	0	64	0	67	212
RT Vol	0	4	0	539	6	93
Lane Flow Rate	114	4	154	592	209	345
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.275	0.009	0.306	1	0.457	0.701
Departure Headway (Hd)	8.673	7.574	7.166	6.174	7.764	7.318
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	417	481	503	586	468	497
Service Time	6.358	5.182	4.895	3.902	5.764	5.311
HCM Lane V/C Ratio	0.273	0.008	0.306	1.01	0.447	0.694
HCM Control Delay	14.6	10.2	13	61.7	17.1	25.7
HCM Lane LOS	B	B	B	F	C	D
HCM 95th-tile Q	1.1	0	1.3	14.8	2.3	5.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	9	212	93
Future Vol, veh/h	0	9	212	93
Peak Hour Factor	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	233	102
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	25.7
HCM LOS	D

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	217	204	319	64	95	14	164	33	23	13	82	69
Future Volume (vph)	217	204	319	64	95	14	164	33	23	13	82	69
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
Hourly flow rate (vph)	224	210	329	66	98	14	169	34	24	13	85	71

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	434	329	178	203	24	169
Volume Left (vph)	224	0	66	169	0	13
Volume Right (vph)	0	329	14	0	24	71
Hadj (s)	0.14	-0.57	0.06	0.45	-0.67	-0.20
Departure Headway (s)	5.7	3.2	6.1	7.1	6.0	6.2
Degree Utilization, x	0.68	0.29	0.30	0.40	0.04	0.29
Capacity (veh/h)	609	1113	529	463	546	515
Control Delay (s)	20.0	7.5	11.7	13.5	8.0	11.7
Approach Delay (s)	14.6		11.7	12.9		11.7
Approach LOS	B		B	B		B

Intersection Summary			
Delay	13.6		
Level of Service	B		
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	217	204	319	0	64	95	14	0	164	33	23
Future Vol, veh/h	0	217	204	319	0	64	95	14	0	164	33	23
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	224	210	329	0	66	98	14	0	169	34	24
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	23.6	14.3	16.1
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	83%	0%	52%	0%	37%	8%
Vol Thru, %	17%	0%	48%	0%	55%	50%
Vol Right, %	0%	100%	0%	100%	8%	42%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	197	23	421	319	173	164
LT Vol	164	0	217	0	64	13
Through Vol	33	0	204	0	95	82
RT Vol	0	23	0	319	14	69
Lane Flow Rate	203	24	434	329	178	169
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.445	0.044	0.795	0.513	0.359	0.344
Departure Headway (Hd)	7.89	6.747	6.705	5.731	7.244	7.331
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	533	543	635	498	492
Service Time	5.604	4.461	4.405	3.431	5.27	5.351
HCM Lane V/C Ratio	0.442	0.045	0.799	0.518	0.357	0.343
HCM Control Delay	16.8	9.8	30.6	14.3	14.3	14.2
HCM Lane LOS	C	A	D	B	B	B
HCM 95th-tile Q	2.2	0.1	7.5	2.9	1.6	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	13	82	69
Future Vol, veh/h	0	13	82	69
Peak Hour Factor	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	13	85	71
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	14.2
HCM LOS	B

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	85	93	579	121	91	6	120	6	4	9	223	103
Future Volume (vph)	85	93	579	121	91	6	120	6	4	9	223	103
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
Hourly flow rate (vph)	93	102	636	133	100	7	132	7	4	10	245	113

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	195	636	240	139	4	368
Volume Left (vph)	93	0	133	132	0	10
Volume Right (vph)	0	636	7	0	4	113
Hadj (s)	0.13	-0.57	0.13	0.51	-0.67	-0.14
Departure Headway (s)	6.0	3.2	5.9	6.9	5.7	5.5
Degree Utilization, x	0.33	0.57	0.40	0.27	0.01	0.56
Capacity (veh/h)	539	1117	554	465	557	618
Control Delay (s)	11.9	10.3	12.8	11.2	7.6	15.3
Approach Delay (s)	10.7		12.8	11.1		15.3
Approach LOS	B		B	B		C

Intersection Summary			
Delay	12.1		
Level of Service	B		
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	39.1
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	85	93	579	0	121	91	6	0	120	6	4
Future Vol, veh/h	0	85	93	579	0	121	91	6	0	120	6	4
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	93	102	636	0	133	100	7	0	132	7	4
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	52.2	20	15.9
HCM LOS	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	95%	0%	48%	0%	56%	3%
Vol Thru, %	5%	0%	52%	0%	42%	67%
Vol Right, %	0%	100%	0%	100%	3%	31%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	126	4	178	579	218	335
LT Vol	120	0	85	0	121	9
Through Vol	6	0	93	0	91	223
RT Vol	0	4	0	579	6	103
Lane Flow Rate	138	4	196	636	240	368
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.339	0.009	0.408	1	0.537	0.764
Departure Headway (Hd)	8.918	7.741	7.516	6.553	8.068	7.471
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	406	465	481	560	450	482
Service Time	6.618	5.441	5.227	4.265	6.068	5.557
HCM Lane V/C Ratio	0.34	0.009	0.407	1.136	0.533	0.763
HCM Control Delay	16.1	10.5	15.3	63.6	20	31.1
HCM Lane LOS	C	B	C	F	C	D
HCM 95th-tile Q	1.5	0	2	14.3	3.1	6.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	9	223	103
Future Vol, veh/h	0	9	223	103
Peak Hour Factor	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	245	113
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	31.1
HCM LOS	D

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	233	240	353	67	129	15	195	37	24	14	88	80
Future Volume (vph)	233	240	353	67	129	15	195	37	24	14	88	80
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
Hourly flow rate (vph)	240	247	364	69	133	15	201	38	25	14	91	82

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	487	364	217	239	25	187
Volume Left (vph)	240	0	69	201	0	14
Volume Right (vph)	0	364	15	0	25	82
Hadj (s)	0.13	-0.57	0.06	0.45	-0.67	-0.21
Departure Headway (s)	6.1	3.2	6.7	7.7	6.5	6.8
Degree Utilization, x	0.83	0.32	0.40	0.51	0.05	0.36
Capacity (veh/h)	487	1113	494	433	501	477
Control Delay (s)	32.2	7.7	14.1	17.1	8.6	13.6
Approach Delay (s)	21.8		14.1	16.3		13.6
Approach LOS	C		B	C		B

Intersection Summary			
Delay	18.7		
Level of Service	C		
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	31.4
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	233	240	353	0	67	129	15	0	195	37	24
Future Vol, veh/h	0	233	240	353	0	67	129	15	0	195	37	24
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	240	247	364	0	69	133	15	0	201	38	25
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	41.7	17.6	20.1
HCM LOS	E	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	84%	0%	49%	0%	32%	8%
Vol Thru, %	16%	0%	51%	0%	61%	48%
Vol Right, %	0%	100%	0%	100%	7%	44%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	232	24	473	353	211	182
LT Vol	195	0	233	0	67	14
Through Vol	37	0	240	0	129	88
RT Vol	0	24	0	353	15	80
Lane Flow Rate	239	25	488	364	218	188
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.556	0.05	0.967	0.624	0.47	0.411
Departure Headway (Hd)	8.364	7.211	7.138	6.171	7.774	7.894
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	431	496	507	586	463	456
Service Time	6.115	4.961	4.888	3.92	5.831	5.951
HCM Lane V/C Ratio	0.555	0.05	0.963	0.621	0.471	0.412
HCM Control Delay	21.1	10.3	58.9	18.7	17.6	16.4
HCM Lane LOS	C	B	F	C	C	C
HCM 95th-tile Q	3.3	0.2	12.5	4.3	2.5	2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	14	88	80
Future Vol, veh/h	0	14	88	80
Peak Hour Factor	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	14	91	82
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	16.4
HCM LOS	C

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	85	93	579	121	91	6	122	6	4	9	223	103
Future Volume (vph)	85	93	579	121	91	6	122	6	4	9	223	103
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
Hourly flow rate (vph)	93	102	636	133	100	7	134	7	4	10	245	113

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	195	636	240	141	4	368
Volume Left (vph)	93	0	133	134	0	10
Volume Right (vph)	0	636	7	0	4	113
Hadj (s)	0.13	-0.57	0.13	0.51	-0.67	-0.14
Departure Headway (s)	6.0	3.2	5.9	6.9	5.7	5.5
Degree Utilization, x	0.33	0.57	0.40	0.27	0.01	0.56
Capacity (veh/h)	538	1117	553	465	557	618
Control Delay (s)	11.9	10.3	12.8	11.3	7.6	15.4
Approach Delay (s)	10.7		12.8	11.2		15.4
Approach LOS	B		B	B		C

Intersection Summary			
Delay	12.1		
Level of Service	B		
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	39.2
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	85	93	579	0	121	91	6	0	122	6	4
Future Vol, veh/h	0	85	93	579	0	121	91	6	0	122	6	4
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	93	102	636	0	133	100	7	0	134	7	4
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	52.3	20.1	16
HCM LOS	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	95%	0%	48%	0%	56%	3%
Vol Thru, %	5%	0%	52%	0%	42%	67%
Vol Right, %	0%	100%	0%	100%	3%	31%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	4	178	579	218	335
LT Vol	122	0	85	0	121	9
Through Vol	6	0	93	0	91	223
RT Vol	0	4	0	579	6	103
Lane Flow Rate	141	4	196	636	240	368
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.344	0.009	0.409	1	0.538	0.765
Departure Headway (Hd)	8.922	7.744	7.529	6.566	8.083	7.482
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	405	465	481	560	448	482
Service Time	6.622	5.444	5.24	4.278	6.083	5.569
HCM Lane V/C Ratio	0.348	0.009	0.407	1.136	0.536	0.763
HCM Control Delay	16.2	10.5	15.4	63.7	20.1	31.2
HCM Lane LOS	C	B	C	F	C	D
HCM 95th-tile Q	1.5	0	2	14.3	3.1	6.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	9	223	103
Future Vol, veh/h	0	9	223	103
Peak Hour Factor	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	245	113
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	31.2
HCM LOS	D

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	233	240	353	67	129	15	196	37	24	14	88	80
Future Volume (vph)	233	240	353	67	129	15	196	37	24	14	88	80
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
Hourly flow rate (vph)	240	247	364	69	133	15	202	38	25	14	91	82

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	487	364	217	240	25	187
Volume Left (vph)	240	0	69	202	0	14
Volume Right (vph)	0	364	15	0	25	82
Hadj (s)	0.13	-0.57	0.06	0.45	-0.67	-0.21
Departure Headway (s)	6.1	3.2	6.7	7.7	6.5	6.8
Degree Utilization, x	0.83	0.32	0.40	0.51	0.05	0.36
Capacity (veh/h)	487	1113	494	433	500	476
Control Delay (s)	32.3	7.7	14.1	17.2	8.6	13.6
Approach Delay (s)	21.8		14.1	16.4		13.6
Approach LOS	C		B	C		B

Intersection Summary			
Delay	18.8		
Level of Service	C		
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	31.4
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	233	240	353	0	67	129	15	0	196	37	24
Future Vol, veh/h	0	233	240	353	0	67	129	15	0	196	37	24
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	240	247	364	0	69	133	15	0	202	38	25
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	41.8	17.6	20.2
HCM LOS	E	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	84%	0%	49%	0%	32%	8%
Vol Thru, %	16%	0%	51%	0%	61%	48%
Vol Right, %	0%	100%	0%	100%	7%	44%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	233	24	473	353	211	182
LT Vol	196	0	233	0	67	14
Through Vol	37	0	240	0	129	88
RT Vol	0	24	0	353	15	80
Lane Flow Rate	240	25	488	364	218	188
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.558	0.05	0.968	0.625	0.47	0.412
Departure Headway (Hd)	8.37	7.217	7.147	6.18	7.785	7.903
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	432	496	507	582	463	456
Service Time	6.118	4.964	4.893	3.926	5.839	5.956
HCM Lane V/C Ratio	0.556	0.05	0.963	0.625	0.471	0.412
HCM Control Delay	21.2	10.3	59.1	18.7	17.6	16.4
HCM Lane LOS	C	B	F	C	C	C
HCM 95th-tile Q	3.3	0.2	12.5	4.3	2.5	2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	14	88	80
Future Vol, veh/h	0	14	88	80
Peak Hour Factor	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	14	91	82
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	16.4
HCM LOS	C

Lane