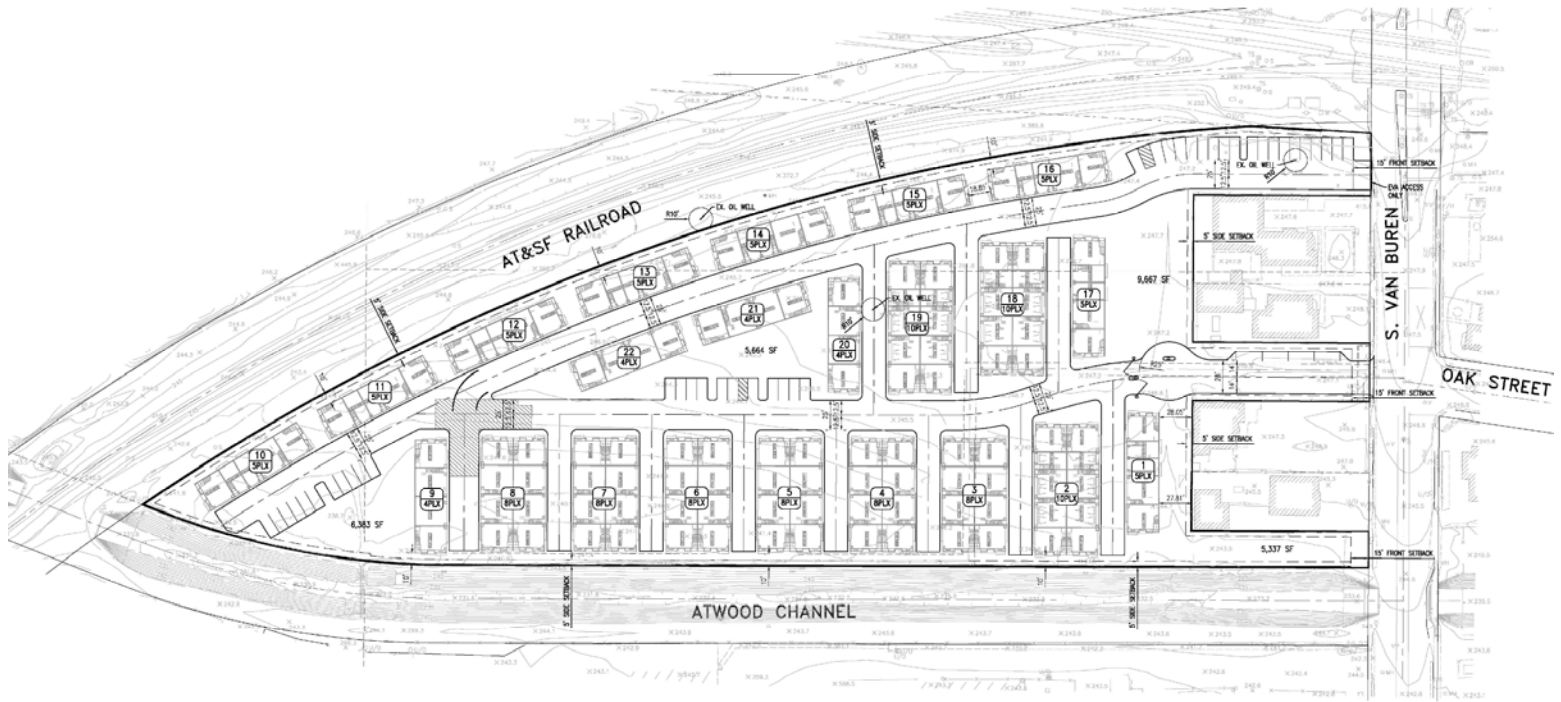


VAN BUREN & ORANGETHORPE RESIDENTIAL DEVELOPMENT TRAFFIC IMPACT STUDY City of Placentia



**VAN BUREN & ORANGETHORPE
RESIDENTIAL DEVELOPMENT
TRAFFIC IMPACT STUDY
City of Placentia, California**

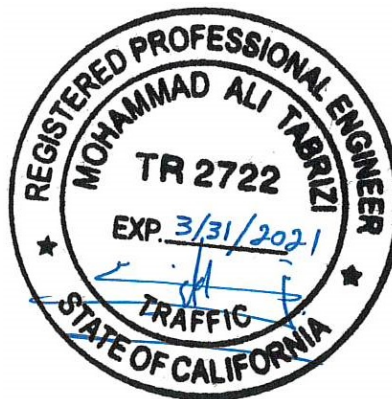
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June 23, 2020

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1.0 Introduction

1.1 Purpose of Report & Study Objectives

The purpose of this traffic study is to assess the impacts of the proposed Van Buren & Orangethorpe Residential development from a traffic and circulation standpoint.

The project site is located west of the intersection of South Van Buren Street at Oak Street, in the City of Placentia and is currently occupied by an automotive center which will be displaced by the proposed project.

The proposed project is planned to consist of the following land use:

- 139-Units of Multifamily Housing.

The project will be evaluated in a single phase and is planned to open in 2020.

This traffic study has been prepared in accordance with the traffic study guidelines, requirements and thresholds of significance for the City of Placentia and Orange County.

This analysis evaluates the potential traffic impacts associated with the proposed project in accordance with the City of Placentia and Orange County requirements and thresholds of significance.

This study is prepared in accordance with the scope of work approved by the City of Placentia staff.

1.2 Site Location & Project Description

The project site located west of the intersection of South Van Buren Street at Oak Street, in the City of Placentia and is currently occupied by an automotive center which will be displaced by the proposed project.

The proposed project is planned to consist of the following land use:

- 139-Units of Multifamily Housing.

The project will be evaluated in a single phase and is planned to open in 2020.

Access for the proposed project will continue to be provided via an existing unsignalized driveway at the Van Buren Street / Oak Street intersection.

The location of the project site is presented on Exhibit 1-1. The site plan is shown on Exhibit 1-2.

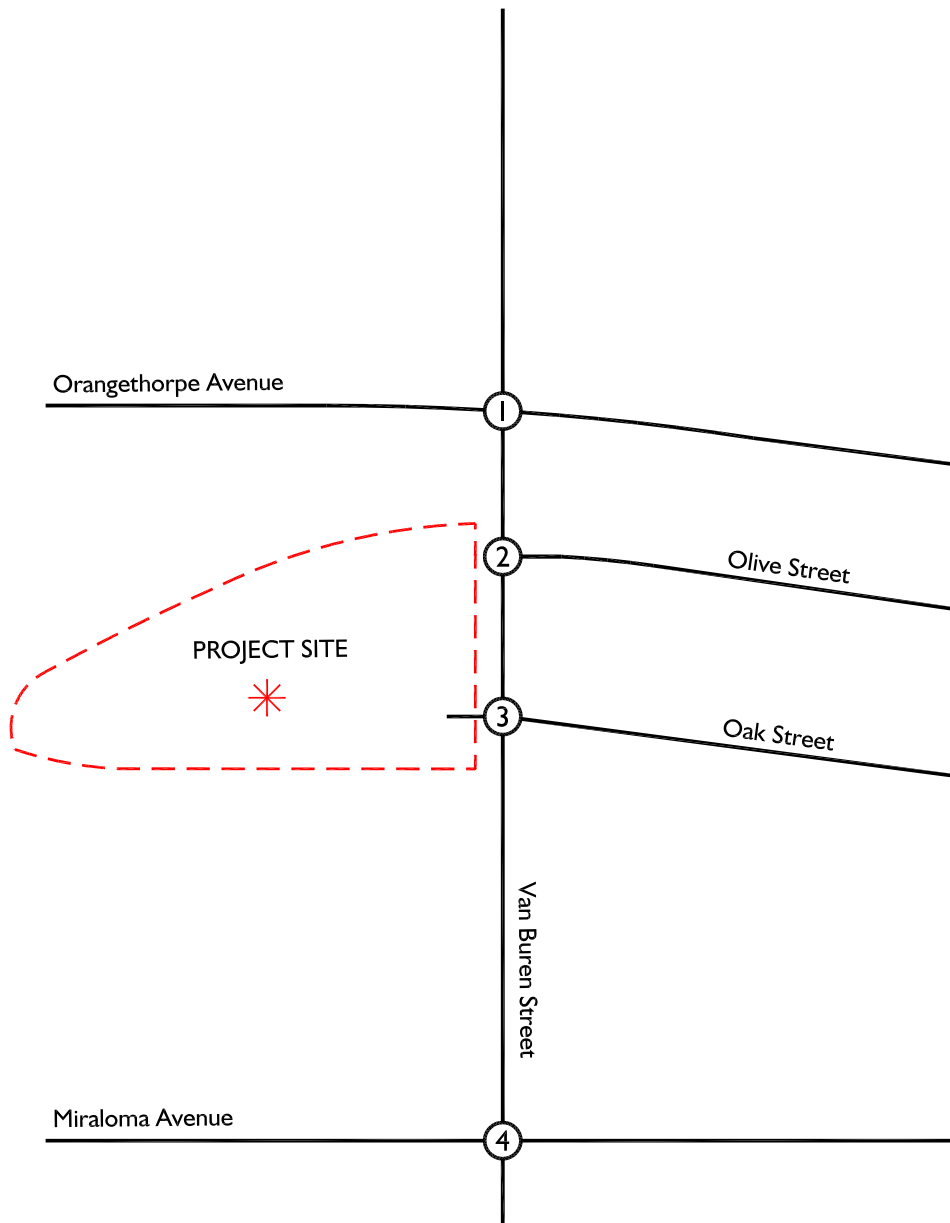
1.3 Traffic Study Area & Analysis Scenarios

Exhibit 1-1 illustrates the site location map and traffic analysis study area. The study area consists of the following intersections:

North-South Street	East-West Street
1. Van Buren Street	Orangethorpe Avenue
2. Van Buren Street	Olive Street
3. Van Buren Street	Oak Street
4. Van Buren Street	Miraloma Avenue

The analysis evaluates traffic conditions of the study intersections for the following scenarios in accordance with the City of Placentia and Orange County and the approved scope of work:

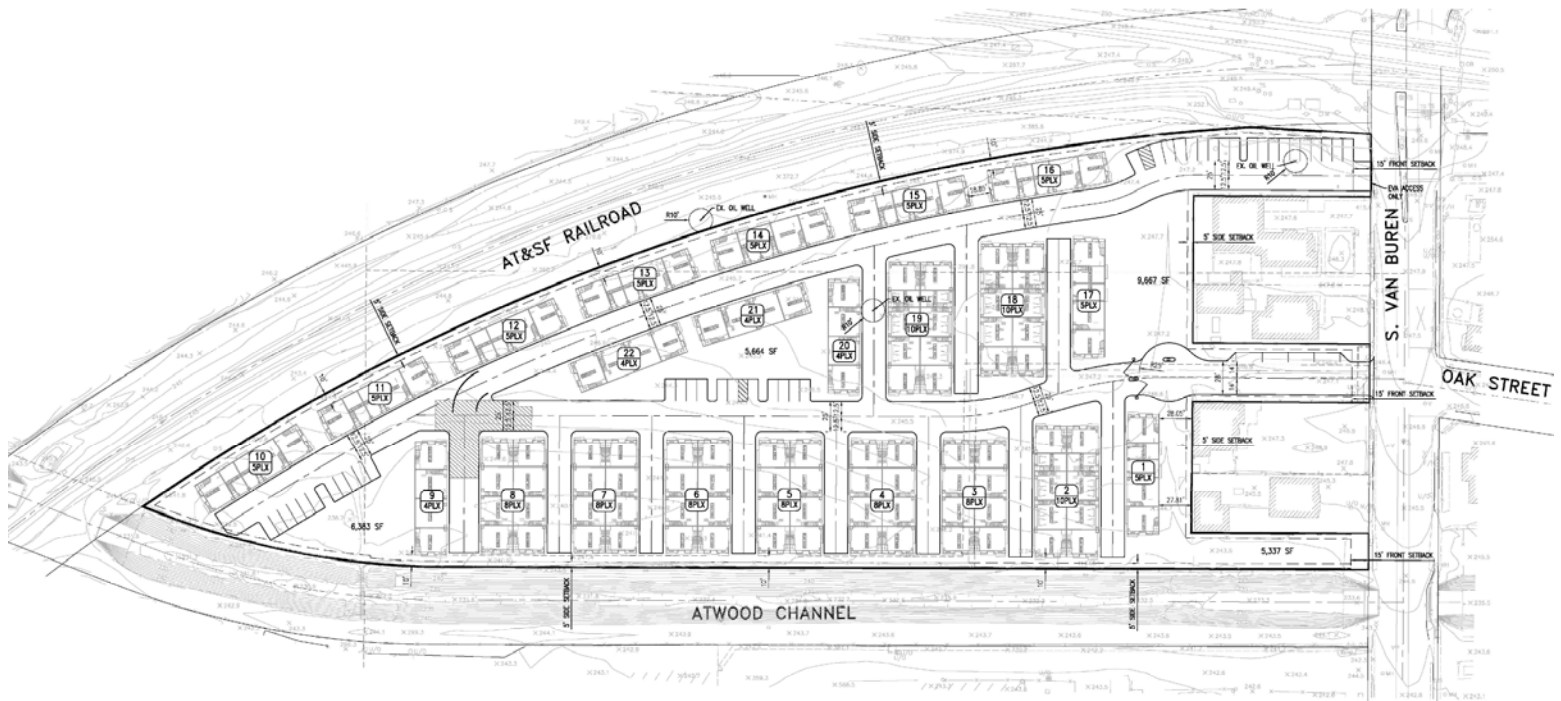
- Existing Conditions;
- Existing Plus Project Conditions;
- Existing Plus Ambient Growth (2020) Conditions;
- Existing Plus Ambient Growth (2020) Plus Project Conditions;
- Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions; and
- Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions.



Legend:

① = Study Area Intersection





2.0 Analysis Methodologies, Performance Criteria, & Thresholds of Significance

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report in accordance with the City of Placentia and Orange County requirements.

This section also discusses the agency-established applicable performance criteria and thresholds of significance for the study facilities.

2.1 Intersection Peak Hour Level of Service Analysis Methodology

Level of service (LOS) is commonly used as a qualitative description of intersection operation and is based on the capacity of the intersection and the volume of traffic using the intersection.

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

- LOS A represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.
- LOS B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.
- LOS C is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.
- LOS D represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.

- LOS E represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.
- LOS F is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations.

The *Intersection Capacity Utilization (ICU)* analysis method is utilized by the City of Placentia and Orange County to determine the operating LOS of signalized intersections.

To calculate the ICU, the volume of traffic using the intersection is compared with the capacity of the intersection. ICU is usually expressed as a ratio. This ratio represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity. The ICU analysis methodology utilizes the following parameters consistent with the governing agencies' requirements and guidelines:

The ICU analysis methodology describes the operation of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on the corresponding ranges of volume-to-capacity at intersections. The following thresholds are used in assigning a letter value to the resulting Levels of Service.

Table 4
ICU Intersection LOS & V/C Ranges

LOS	CRITICAL VOLUME TO CAPACITY RATIO
A	0.00 - 0.60
B	0.61 - 0.70
C	0.71 - 0.80
D	0.81 - 0.90
E	0.91 - 1.00
F	>1.00

A saturation flow rate of 1,600 vehicles per hour and a loss time of twenty (20) percent was assumed for the signalized study intersection of Van Buren Street / Orangethorpe Avenue to account for the possible delay experienced by the railroad crossing interruptions throughout the day.

The Highway Capacity Manual (HCM) methodology is the adopted methodology for evaluation of State Highway facilities by The State of California Department of Transportation (Caltrans).

This methodology is also utilized for evaluation of unsignalized study intersections and driveways in the City of Placentia jurisdiction.

The HCM methodology defines level of service as a qualitative measure which describes operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate LOS (Level of Service) conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted.

For signalized intersections and all-way stop-controlled intersections, average control delay per vehicle is used to determine the level of service. For intersections and driveways with stop control on the minor approach only, the calculation of level of service is dependent on the occurrence of gaps occurring in the free-flow traffic movement of the main street, and the level of service is determined based on the worst individual movements on the stop-controlled minor approach or movements sharing a single lane on the stop-controlled minor approach.

The HCM analysis methodology describes the operation of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on the corresponding ranges of stopped delay experienced per vehicle for signalized and unsignalized intersections. The following thresholds are used in assigning a letter value to the resulting Levels of Service.

Table 5

HCM Intersection LOS & Delay Ranges

LOS	Average Control Delay Per Vehicle (Seconds)
	Unsignalized
A	0.00 - 10.00
B	10.01 - 15.00
C	15.01 - 25.00
D	25.01 - 35.00
E	35.01 - 50.00
F	>50.00

All analysis parameters utilized in this analysis are in accordance with the City of Placentia and Orange County Traffic Study Guidelines.

Existing conditions peak hour factors have been calculated based upon the traffic counts collected at the study area intersections. Existing peak hour factors have been used for all analysis scenarios.

2.2 Level of Service Performance Criteria & Thresholds of Significance

The acceptable Level of Service (LOS) for intersections within the City of Placentia is LOS D or better.

Any intersection operating at a LOS E or LOS F will be considered deficient and will be considered impacted and would require mitigations to achieve acceptable operations when any of the following changes in the volume to capacity (V/C) ratios occur between the “without Project” and the “with Project” conditions as shown on the following page:

Pre-Project LOS	Pre-Project V/C	Project V/C Increase
C	0.71 – 0.80	0.04 or more
D	0.81 – 0.90	0.02 or more
E/F	0.91 or more	0.01 or more

The City of Placentia Traffic Impact Study Guidelines do not contain any significant impact criteria for unsignalized intersections. The analysis utilizes the following criteria to determine if a project results in significant traffic impact at unsignalized intersections:

- For unsignalized intersections, the impact is considered significant if the project related increase in traffic results in a deficient operations (LOS E or worse), or adds traffic to a deficiently operating intersection and the intersection satisfies the Manual of Uniform Traffic Control Devices (MUTCD) peak hour signal warrants during one or more of the peak hours.

3.0 Existing Traffic Volumes & Circulation System

This section provides a discussion of existing study area conditions and traffic volumes.

3.1 Existing Traffic Controls & Intersection Geometrics

Exhibit 3-1 identifies the existing roadway conditions for the study area roadways. The number of through traffic lanes for existing roadways and the existing intersection controls are identified.

3.2 Existing Conditions Traffic Volumes

Existing conditions intersection level of service calculations are based upon manual AM and PM peak hour turning movement counts taken in February 2018 for all the study intersections with the exception of the Van Buren Street / Orangethorpe Avenue which the traffic counts were provided by the City staff for use in the analysis. The AM peak hour traffic volumes were determined by counting the two-hour period between 7:00 AM and 9:00 AM. Similarly, the PM peak hour traffic volumes were identified by counting the two-hour period between 4:00 PM and 6:00 PM. The traffic counts collected by RK were collected by vehicle classification and converted to Passenger Car Equivalents (PCE) utilizing the following PCE factors:

- Passenger Vehicles: 1.0 PCE;
- 2-Axle Trucks: 1.5 PCE;
- 3-Axle Trucks: 2.0 PCE; and
- 4 or more-Axle Trucks: 3.0 PCE.

The traffic count worksheets are included in Appendix A.

Existing traffic volumes for the study area intersections are shown on Exhibit 3-2.

Existing average daily traffic (ADT) volumes on arterial highways in the study area are shown on Exhibit 3-2 as well. Per standard practice, ADT volumes for the roadway segments within the study area are factored up from the PM peak hour counts, using the following formula for each intersection leg:

$$\text{Peak Hour (Approach Volume + Exit Volume)} * 12 = \text{Leg Volume}$$

Exhibit 3-1 Existing Lane Geometry and Traffic Controls

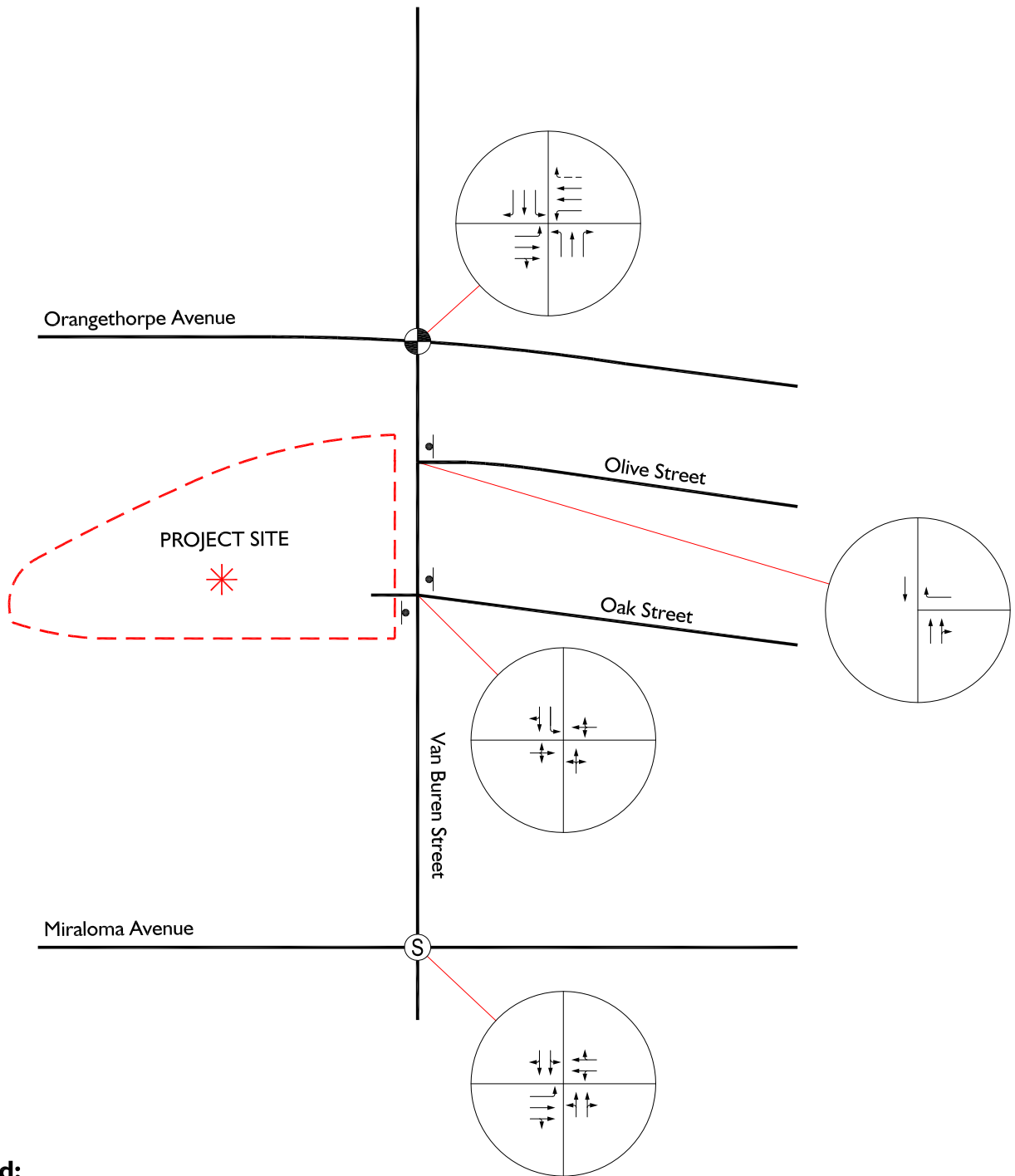
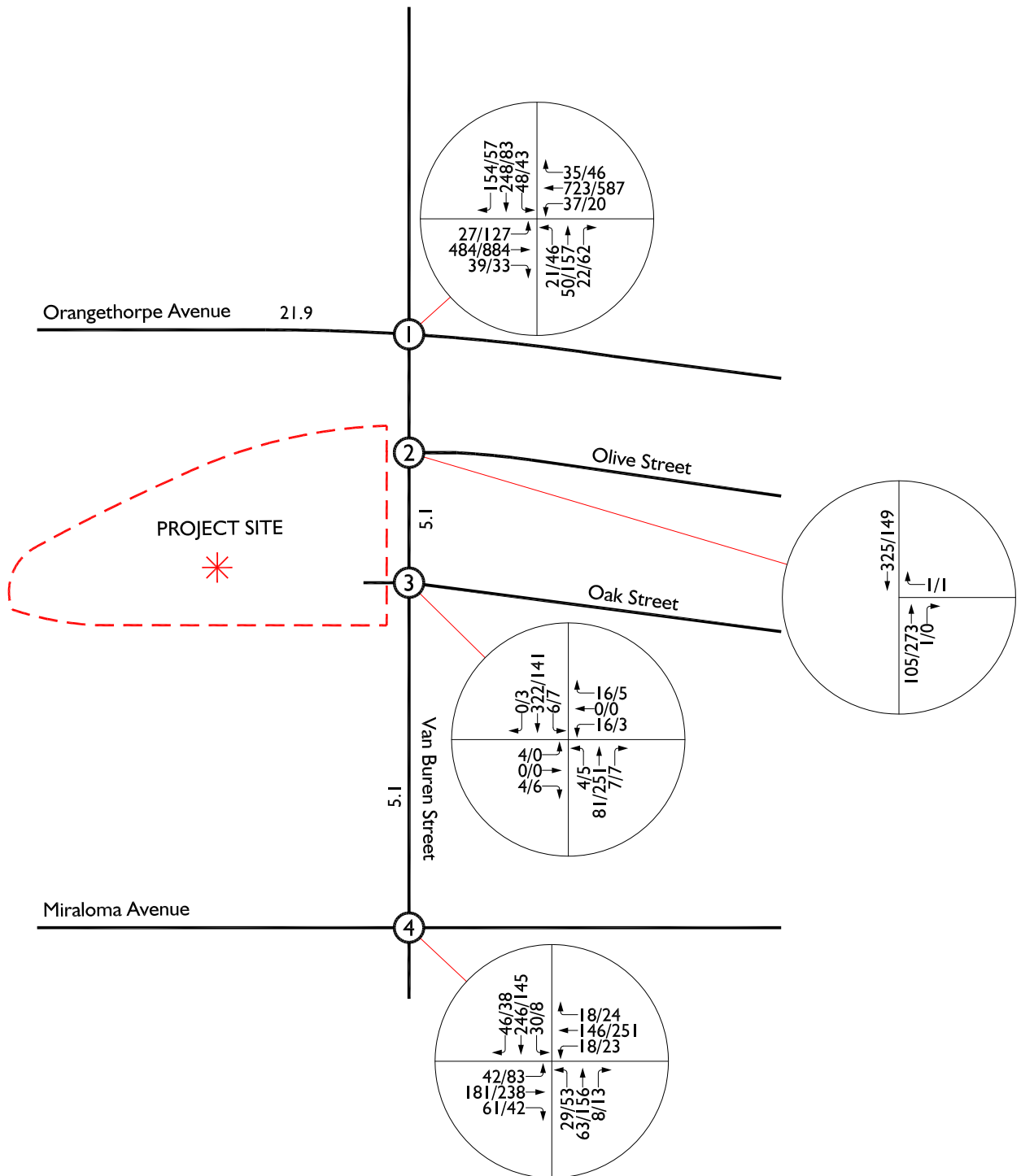


Exhibit 3-2 Existing Traffic Volumes



Legend:

10/20 = AM/PM Peak Hour Volumes
10.0 = Average Daily Traffic (1000's)



4.0 Projected & Future Traffic Volumes

This section provides a discussion on methodologies utilized to derive future traffic volumes for the study area.

4.1. Project Traffic Conditions

4.1.1 Trip Generation

Trip generation represents the amount of traffic that is attracted and produced by a development.

Trip generation for the proposed project is determined based on ITE 10th Edition trip generation rates for the proposed land uses as shown in Table 4-1.

Utilizing the ITE trip generation rates shown in Table 4-1, Table 4-2 summarizes the daily and peak hour trip generation for the proposed project.

Since the proposed project will displace the existing use of the project site, the trip generation for the proposed project has been adjusted to account for the trips currently being generated by the Placentia Automotive Center which will be displaced by the proposed project.

To determine the trip generation associated with the existing use of the project site, 24-hour average daily traffic (ADT) counts were collected at the existing project site driveway during typical weekday conditions in February 2018. The traffic count worksheets are included in Appendix A.

As shown in Table 4-2, after accounting for the existing use on the project site that will be displaced by the proposed project, the proposed project is forecast to generate approximately 832 net daily trips which include approximately 52 net AM peak hour trip and approximately 64 net PM peak hour trips.

4.1.2 Trip Distribution

Trip distribution represents the directional orientation of traffic to and from the project. Trip distribution is heavily influenced by the geographical location of the site, the location of retail, employment, recreational opportunities, and the proximity to the regional freeway system. The directional orientation of traffic was determined by evaluating existing and proposed land uses and highways within the community.

Forecast trip distribution for the proposed project has been developed through discussions with the City during the scoping process.

Exhibit 4-1 shows the trip distribution for the proposed project.

4.1.3 Modal Split

Modal split denotes the proportion of traffic generated by a project that would use any of the transportation modes, namely buses, cars, bicycles, motorcycles, trains, carpools, etc. The traffic reducing potential of public transit and other modes is significant. However, the traffic projections in this study are conservative in that public transit and alternative transportation may be able to reduce the traffic volumes, but, no modal split reduction is applied to the projections. With the implementation of transit service and provision of alternative transportation ideas and incentives, the automobile traffic demand can be reduced significantly.

4.1.4 Project Peak Hour Traffic Volumes/Assignment

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

Project traffic volumes are shown on Exhibit 4-2.

4.2 Existing Plus Project Traffic Volumes

Existing Plus Project Conditions traffic volumes are derived by adding the project traffic volumes shown in Exhibit 4-2 to the existing traffic volumes shown in Exhibit 3-2.

Existing Plus Project Conditions traffic volumes are shown in Exhibit 4-3.

4.3 Background Traffic

4.3.1 Method of Projection

To assess future conditions, project traffic is combined with existing traffic, area-wide growth, and cumulative projects' traffic.

For opening year (2020) conditions, to account for area wide/ambient growth in the study area, an annual growth rate of one percent (1%) has been applied to existing traffic volumes over a two-year period, as directed by City Staff.

4.3.2 Cumulative Projects Traffic

Information on future projects in the vicinity of study area has been obtained from the City of Placentia staff for inclusion in this analysis and shown in Table 4-3.

"Probable future projects" include projects that have been filed with the City but are not yet approved or projects that the City reasonably anticipates will be submitted in the foreseeable future.

Table 4-3 shows the proposed land uses for the nearby cumulative projects provided by the City staff.

Exhibit 4-4 shows the location of the cumulative projects.

Table 4-3 also shows the peak hour and daily trip generation for the cumulative projects.

Cumulative Projects traffic volumes are shown on Exhibit 4-5.

In reality, some of the cumulative projects may be downsized or may not be developed by project opening year (2020). In addition, many of the related projects have been or will be subject to a variety of mitigation measures that will reduce the potential environmental impacts associated with those projects. However, those mitigation measures have not been taken into account in projecting the environmental impact of the related projects.

Therefore, the cumulative analyses set forth below are conservative and could result in greater impacts than actually anticipated. Additionally, the analysis utilizes a growth rate of one (1) percent per year for project opening year (2020) conditions, which would already capture and account for most projects in the area. The growth rate methodology is considered conservative since it is applied to all movements of the study intersections.

4.4 Existing Plus Ambient Growth (2020) Conditions Traffic Volumes

Existing Plus Ambient Growth (2020) Conditions traffic volumes consist of existing traffic volumes and a 2% growth rate (to account for two years of annual growth at 1%).

Existing Plus Ambient Growth (2020) Conditions traffic volumes do not include cumulative projects or proposed project traffic.

Existing Plus Ambient Growth (2020) Conditions traffic volumes are shown on Exhibit 4-6.

4.5 Existing Plus Ambient Growth (2020) Plus Project Conditions Traffic Volumes

Existing Plus Ambient Growth (2020) Plus Project Conditions traffic volumes consist of existing traffic volumes and a 2% growth rate (to account for two years of annual growth at 1%) and also the traffic associated with the proposed project.

Existing Plus Ambient Growth (2020) Plus Project Conditions traffic volumes are shown on Exhibit 4-7.

4.6 Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions Traffic Volumes

Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions traffic volumes consist of existing traffic volumes and a 2% growth rate (to account for two years of annual growth at 1%) and also the traffic associated with cumulative projects in year 2020.

Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions traffic volumes are shown on Exhibit 4-8.

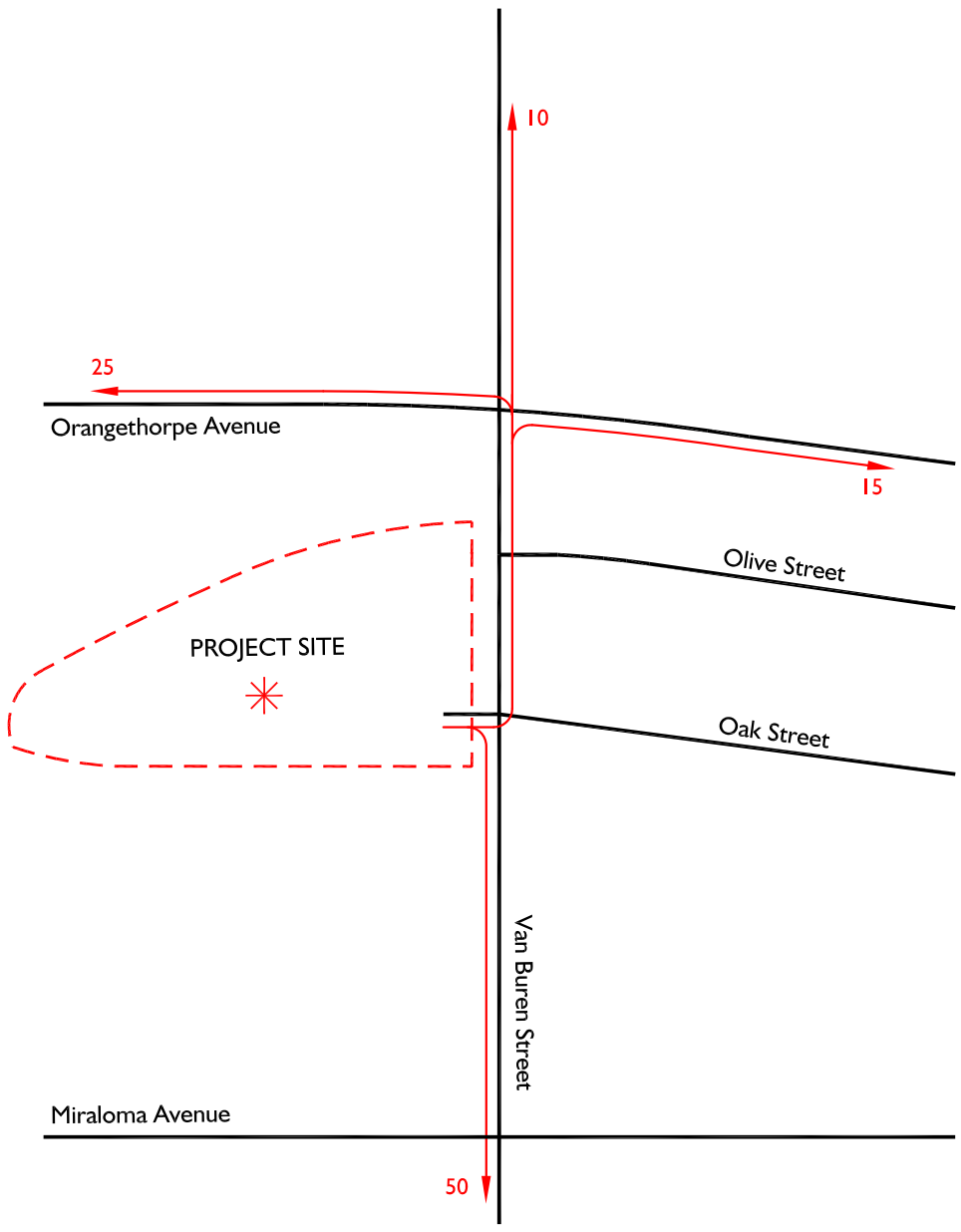
4.7 Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions Traffic Volumes

Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions traffic volumes consist of existing traffic volumes and a 2% growth rate (to account for two years of annual growth at 1%), the traffic associated with cumulative projects in year 2020, and also the traffic generated by the proposed project.

Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions traffic volumes are shown on Exhibit 4-9.

Exhibit 4-1

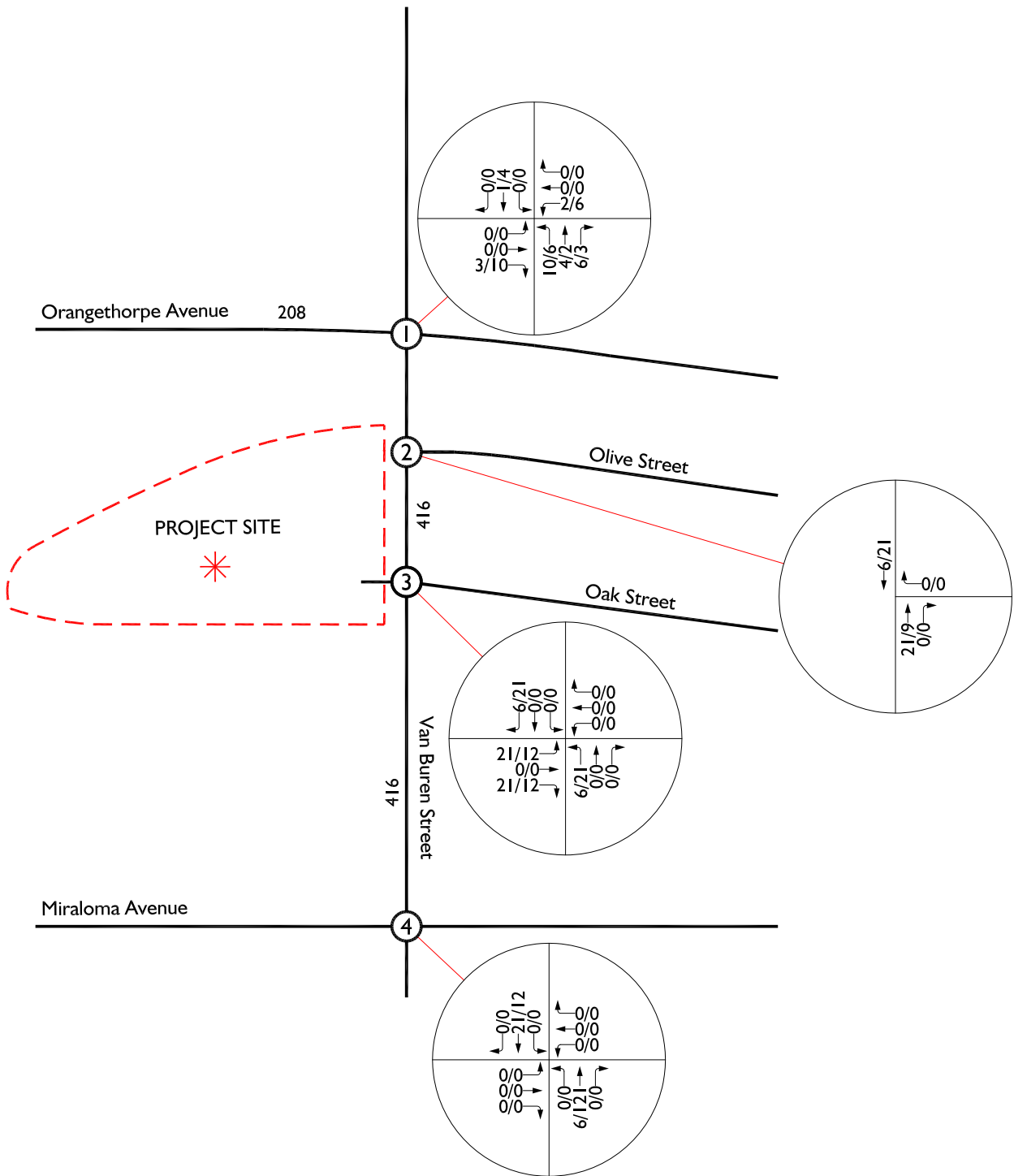
Project Trip Distribution



Legend:

- * = Project Site
- 10 = Percent to Zone





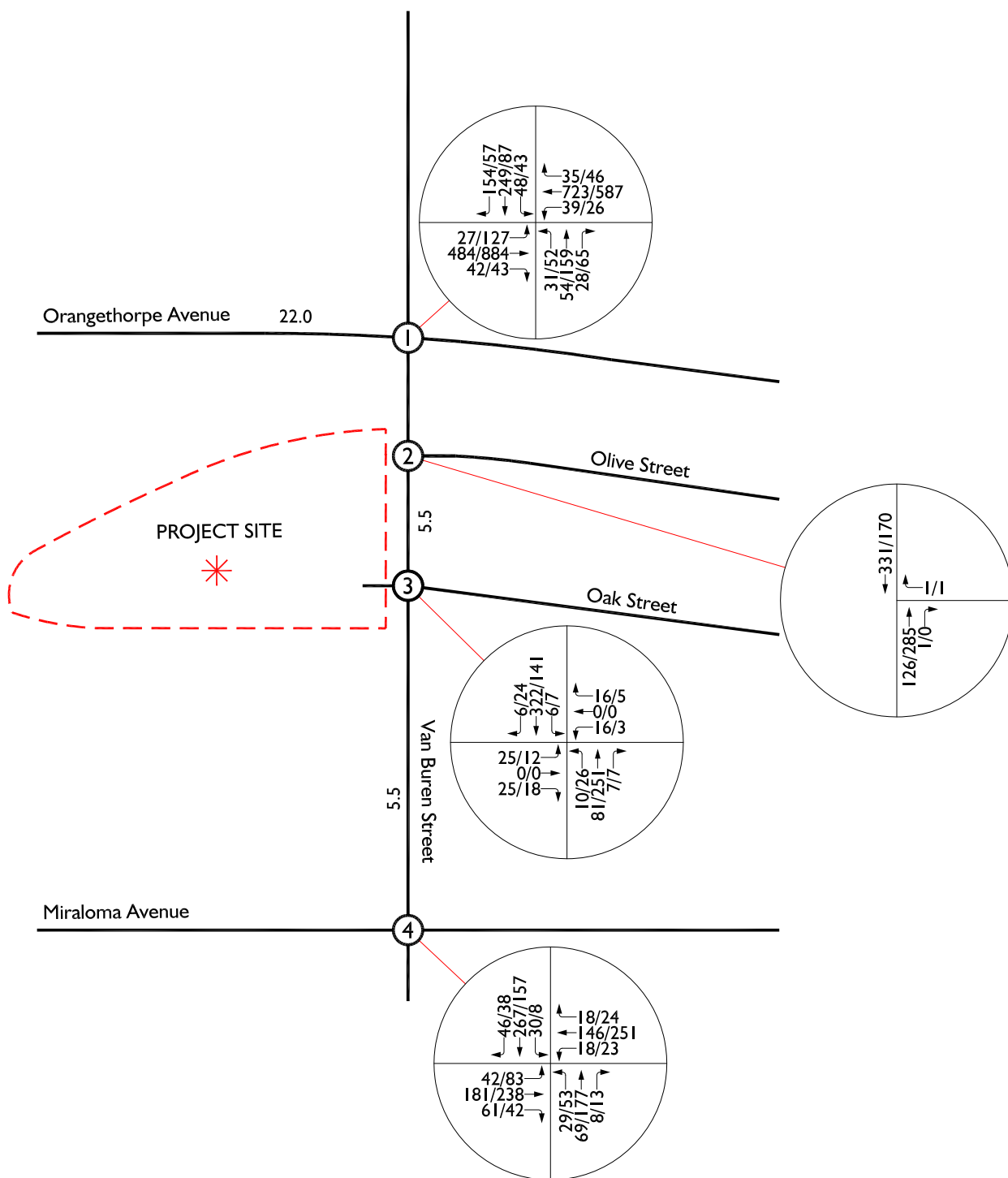
Legend:

10/20 = AM/PM Peak Hour Volumes

10.0 = Average Daily Traffic



Existing Plus Project Conditions Traffic Volumes

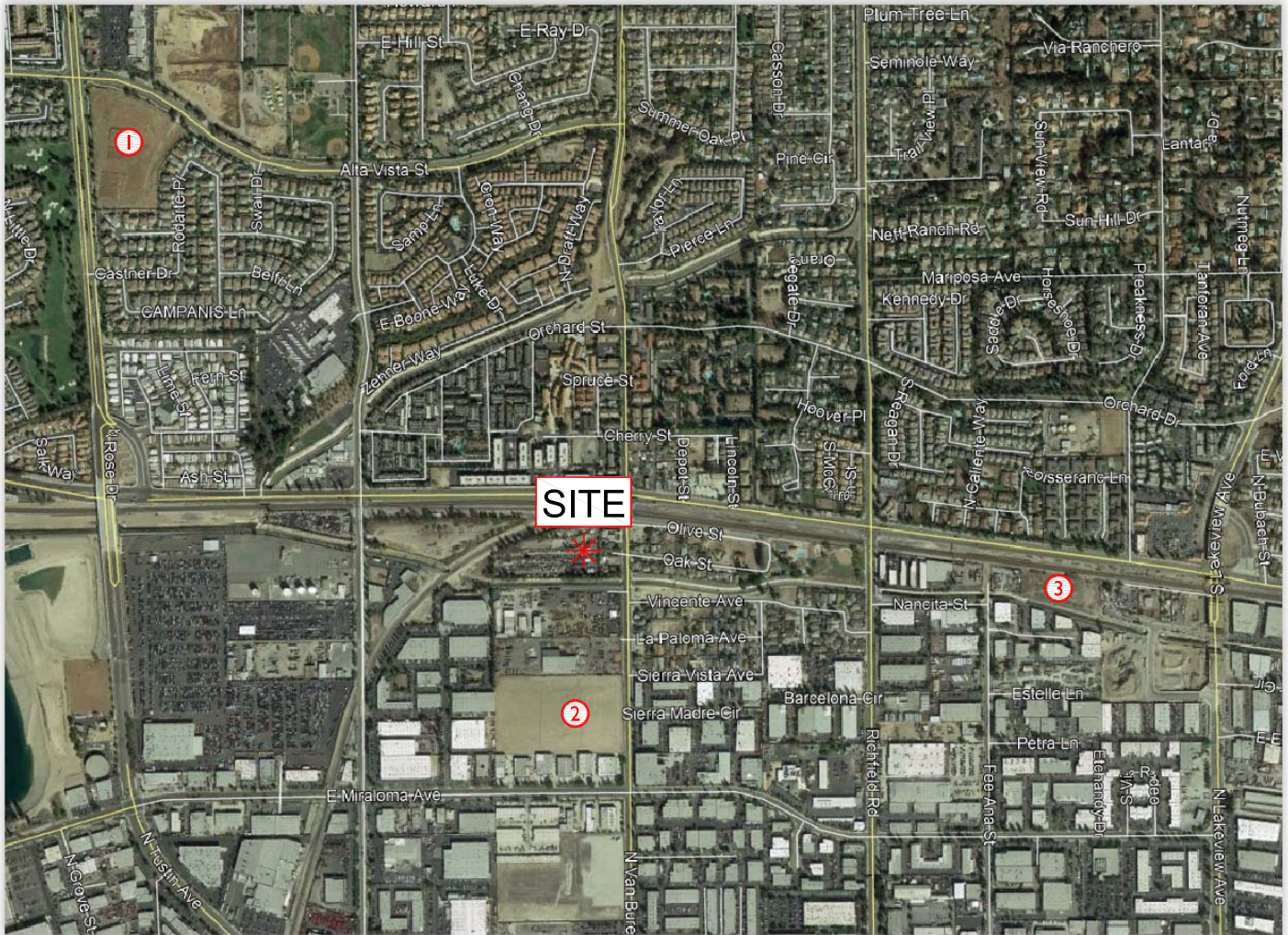


Legend:

10/20 = AM/PM Peak Hour Volumes
10.0 = Average Daily Traffic (1000's)



Exhibit 4-4 Cumulative Projects Location Map

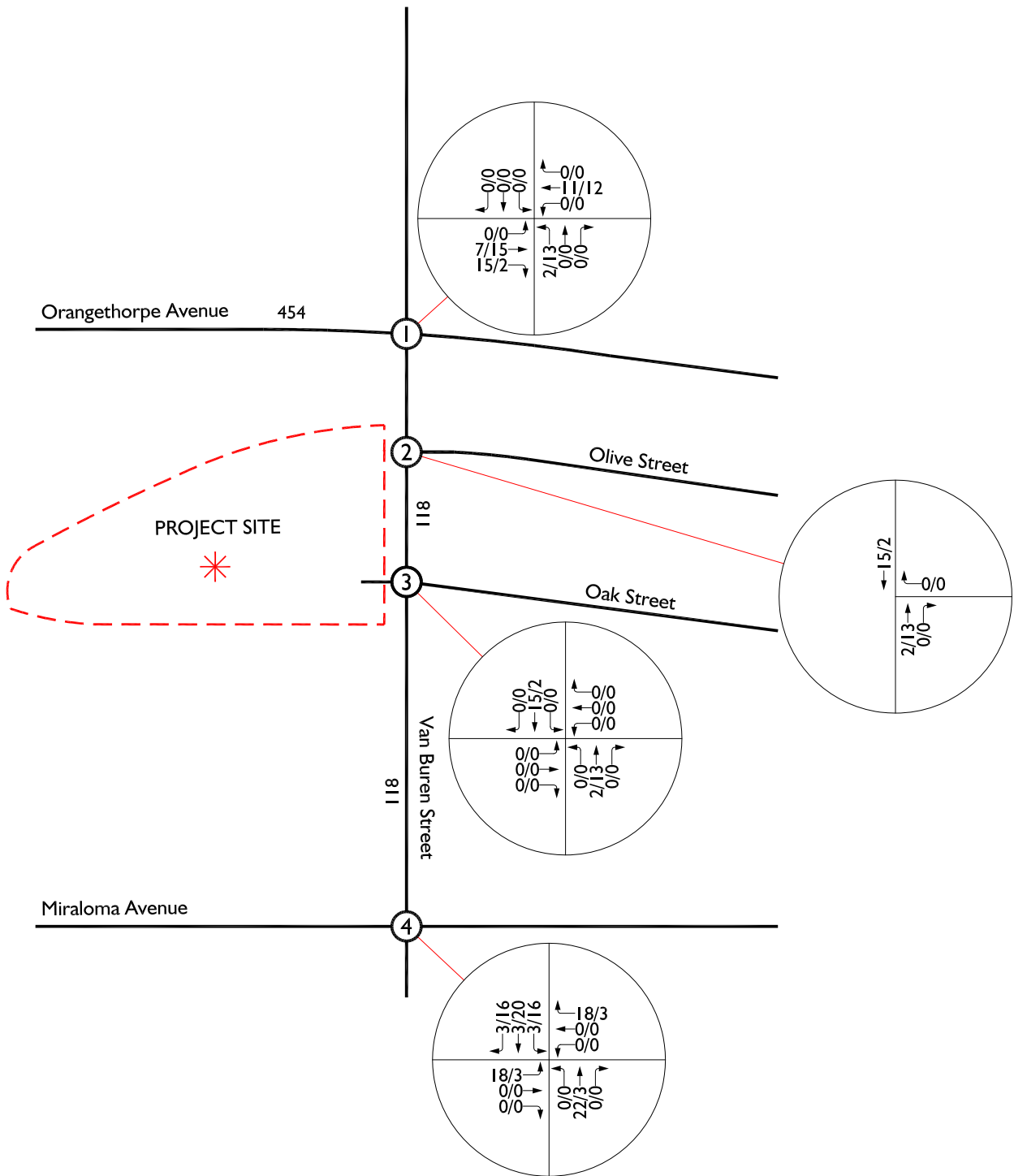


- ① = DPR 2017 - 03 - Multifamily Housing (Low-Rise), Retail
- ② = DPR 2017 - 02 - General Light Industrial
- ③ = DPR 2016 - 01 - Multifamily Housing (Los-Rise)



Exhibit 4-5

Cumulative Projects Traffic Volumes

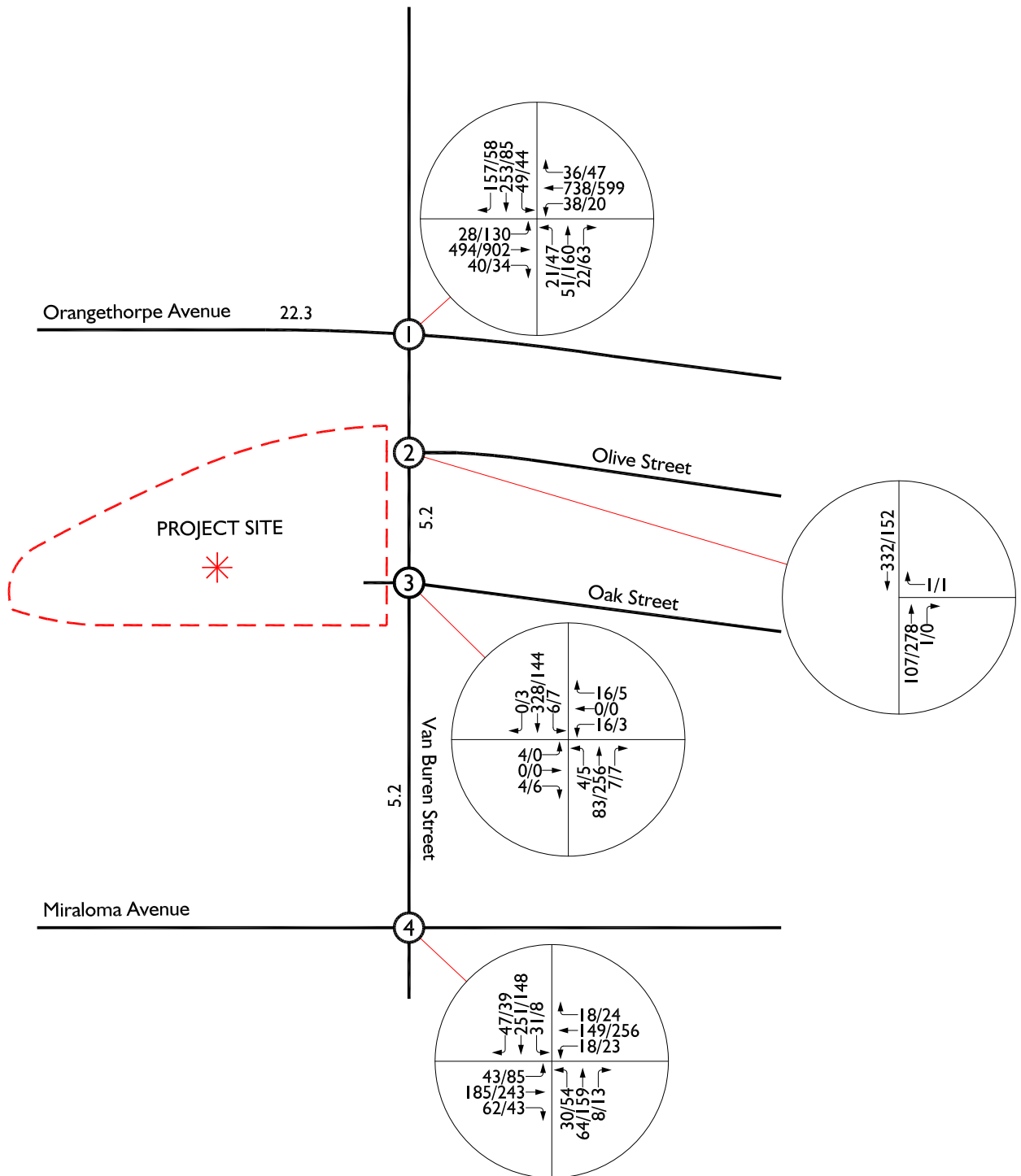


Legend:

10/20 = AM/PM Peak Hour Volumes
 10.0 = Average Daily Traffic



Exhibit 4-6 Existing Plus Ambient Growth (2020) Conditions Traffic Volumes

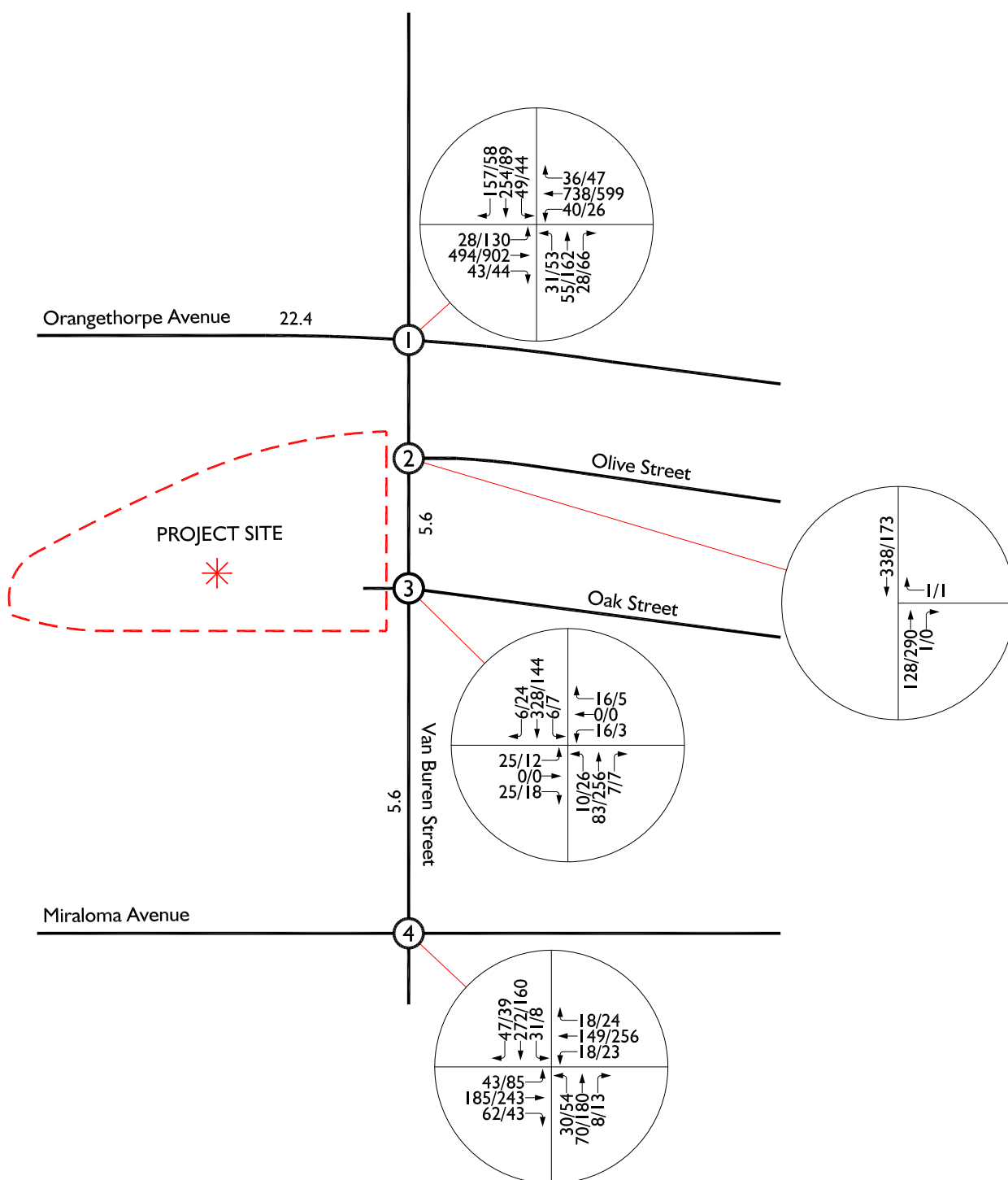


Legend:

10/20 = AM/PM Peak Hour Volumes
10.0 = Average Daily Traffic (1000's)



Existing Plus Ambient Growth (2020) Plus Project Conditions Traffic Volumes

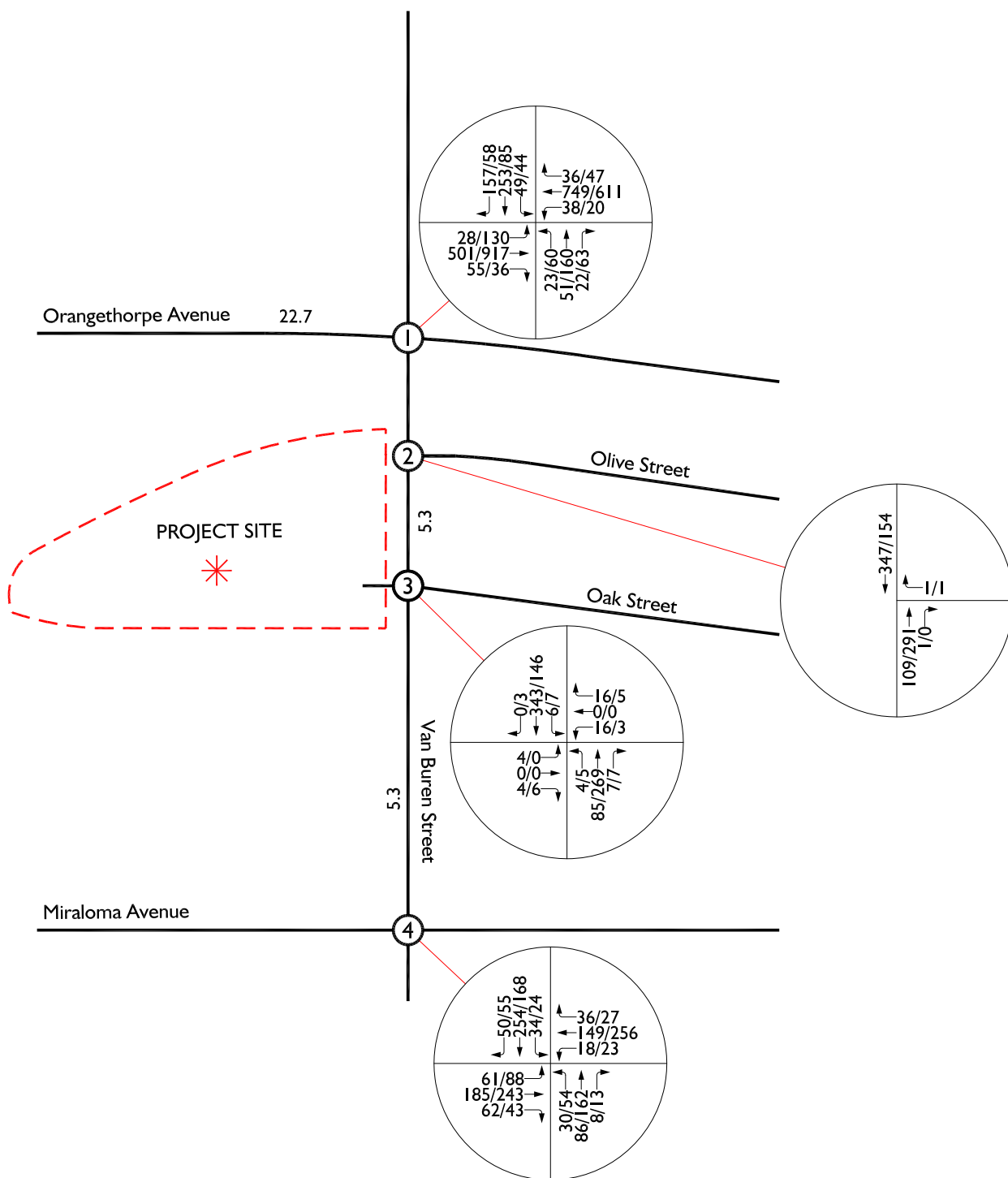


Legend:

10/20 = AM/PM Peak Hour Volumes
10.0 = Average Daily Traffic (1000's)



Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions Traffic Volumes

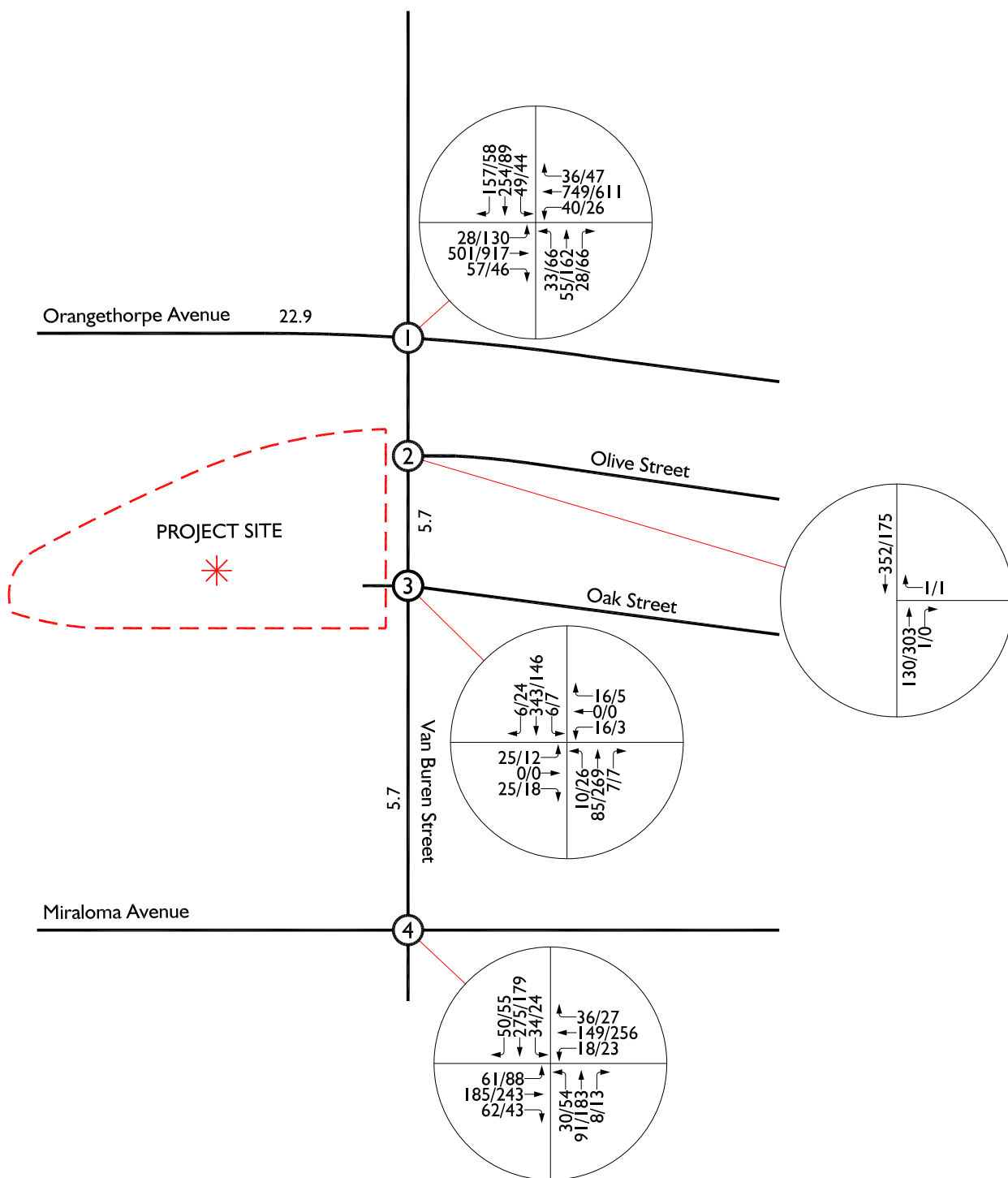


Legend:

10/20 = AM/PM Peak Hour Volumes
10.0 = Average Daily Traffic (1000's)



Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions Traffic Volumes



Legend:

10/20 = AM/PM Peak Hour Volumes
10.0 = Average Daily Traffic (1000's)



TABLE 4-1
ITE Trip Generation Rates for Proposed Project ¹

Land Use	Units ²	ITE Code	AM			PM			Daily
			In	Out	Total	In	Out	Total	
Multifamily Housing (Low-Rise)	DU	220	0.11	0.35	0.46	0.35	0.21	0.56	7.32

¹ Source: 2017 ITE Trip Generation Manual (10th Edition)

² DU = Dwelling Unit

Table 4-2
Project Trip Generation Summary¹

Land Use (ITE Code)	Quantity	Units ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Multifamily Housing (Low-Rise) (220)	139	DU	15	49	64	49	29	78	1,017
<i>Existing Use to be Displaced (PCE -Adjusted)</i> ³			-4	-8	-12	-8	-6	-14	-185
Total NET Trips			11	41	52	41	23	64	832

¹ Source: 2017 ITE Trip Generation Manual (10th Edition)

² DU = Dwelling Units

³ Source = Collected traffic count data

TABLE 4-3
Related Projects Trip Generation¹

#	Jurisdiction	Project	Land Use	Quantity	Units ²	Peak Hour						Daily
						AM			PM			
						In	Out	Total	In	Out	Total	
1	Placentia	DPR 2017 - 03	Multifamily Housing (Low-Rise)	54	DU	6	19	25	19	11	30	395
			Shopping Center Rate	10.000	TSF	6	4	10	18	20	38	378
Subtotal						12	23	35	37	31	68	773
2	Placentia	DPR 2017 - 02	General Light Industrial	118.410	TSF	73	10	83	10	65	75	587
3	Placentia	DPR 2016 - 01	Multifamily Housing (Low-Rise)	50	DU	5	18	23	18	10	28	366
Total Cumulative Project Trip Generation						90	51	141	65	106	171	1,726

¹ Other Developments provided by the City of Placentia.

² TSF = Thousand Square Feet

DU = Dwelling Units

5.0 Study Intersection LOS Analysis

This section provides a discussion on the study intersection peak hour level of service analysis and findings.

5.1 Existing Conditions Level of Service

Existing Conditions Level of Service (LOS) calculations for the study intersections are shown in Table 5-1 and are based upon the existing traffic volumes shown in Exhibit 3-2 and the existing geometry shown in Exhibit 3-1.

As shown in Table 5-1, all study area intersections are currently operating at an acceptable level of service (LOS D or better) during the peak hours for Existing Conditions.

Detailed LOS analysis sheets for Existing Conditions are contained in Appendix B.

5.2 Existing Plus Project Conditions Level of Service

Existing Plus Project Conditions Level of Service (LOS) calculations for the study intersections are shown in Table 5-2 and are based upon the Existing Plus Project Conditions traffic volumes shown in Exhibit 4-3 and the existing geometry shown in Exhibit 3-1.

As shown in Table 5-2, all study area intersections are forecast to continue to operate at an acceptable level of service (LOS D or better) during the peak hours for Existing Plus Project Conditions.

As also shown in Table 5-2, based on agency-established thresholds of significance, the proposed project is forecast to not result in a significant traffic impact at any study area intersections for Existing Plus Project Conditions.

Detailed LOS analysis sheets for Existing Plus Project Conditions are contained in Appendix C.

5.3 Existing Plus Ambient Growth (2020) Conditions Level of Service

Existing Plus Ambient Growth (2020) Conditions Level of Service (LOS) calculations for the study intersections are shown in Table 5-3 and are based upon the Existing Plus Ambient Growth (2020) Conditions traffic volumes shown in Exhibit 4-6 and the existing geometry shown in Exhibit 3-1.

As shown in Table 5-3, all study area intersections are forecast to continue to operate at an acceptable level of service (LOS D or better) during the peak hours for Existing Plus Ambient Growth (2020) Conditions.

Detailed LOS analysis sheets for Existing Plus Ambient Growth (2020) Conditions are contained in Appendix D.

5.4 Existing Plus Ambient Growth (2020) Plus Project Conditions Level of Service

Existing Plus Ambient Growth (2020) Plus Project Conditions Level of Service (LOS) calculations for the study intersections are shown in Table 5-4 and are based upon the Existing Plus Ambient Growth (2020) Plus Project Conditions traffic volumes shown in Exhibit 4-7 and the existing geometry shown in Exhibit 3-1.

As shown in Table 5-4, all study area intersections are forecast to continue to operate at an acceptable level of service (LOS D or better) during the peak hours for Existing Plus Ambient Growth (2020) Plus Project Conditions.

As also shown in Table 5-4, based on agency-established thresholds of significance, the proposed project is forecast to not result in a significant traffic impact at any study area intersections for Existing Plus Ambient Growth (2020) Plus Project Conditions.

Detailed LOS analysis sheets for Existing Plus Ambient Growth (2020) Plus Project Conditions are contained in Appendix E.

5.5 Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions Level of Service

Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions Level of Service (LOS) calculations for the study intersections are shown in Table 5-5 and are based upon

the Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions traffic volumes shown in Exhibit 4-8 and the existing geometry shown in Exhibit 3-1.

As shown in Table 5-5, all study area intersections are forecast to continue to operate at an acceptable level of service (LOS D or better) during the peak hours for Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions.

Detailed LOS analysis sheets for Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions are contained in Appendix F.

5.6 Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions Level of Service

Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions Level of Service (LOS) calculations for the study intersections are shown in Table 5-6 and are based upon the Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions traffic volumes shown in Exhibit 4-9 and the existing geometry shown in Exhibit 3-1.

As shown in Table 5-6, all study area intersections are forecast to continue to operate at an acceptable level of service (LOS D or better) during the peak hours for Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions.

As also shown in Table 5-6, based on agency-established thresholds of significance, the proposed project is forecast to not result in a significant traffic impact at any study area intersections for Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions.

Detailed LOS analysis sheets for Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions are contained in Appendix G.

TABLE 5-1
Existing Conditions
Study Intersection LOS Analysis Summary

Intersection	Traffic Control ³	Intersection Approach Lane(s) ¹												Existing Conditions					
		Northbound			Southbound			Eastbound			Westbound			AM Peak Hour			PM Peak Hour		
		L	T	R	L	T	R	L	T	R	L	T	R	Delay ² (Secs)	V/C ³ Ratio	LOS	Delay ² (Secs)	V/C ³ Ratio	LOS
1 Van Buren St / Orangethorpe Ave	TS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	0.5	1.0	2.0	1.0	-	0.611	B	-	0.624	B
2 Van Buren St / Olive St	CSS	0.0	1.5	0.5	0.0	1.0	0.0	-	-	-	0.0	0.0	1.0	8.6	-	A	9.2	-	A
3 Van Buren St / Oak St	CSS	0.0	1!	0.0	1.0	0.5	0.5	0.0	1!	0.0	0.0	1!	0	11.4	-	B	10.9	-	B
4 Van Buren St / Miraloma Ave	AWS	0.5	1.0	0.5	0.5	1.0	0.5	1.0	1.5	0.5	0.5	1.0	0.5	11.4	-	B	14.9	-	B

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

Deficient operation shown in **Bold**; N/A = Not applicable.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn;

! = Indicates general purpose lane.

² Analysis Software: Delay based on HCM 2010 Methodology and Synchro analysis software. V/C based on Traffix, Version 8.0. Per the 2000 Highway Capacity Manual.

³ V/C = Volume to Capacity Ratio. It should be noted that the V/C is not calculated for unsignalized intersections.

⁴ TS = Traffic Signal

CSS = Cross-Street Stop

TABLE 5-2
Existing Plus Project Conditions
Study Intersection LOS Analysis Summary

Intersection	Traffic Control ³	Intersection Approach Lane(s) ¹												Existing Conditions						Existing Plus Project Conditions						Change in V/C or Delay		Significant Impact?
		Northbound			Southbound			Eastbound			Westbound			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour					
		L	T	R	L	T	R	L	T	R	L	T	R	Delay ² (Secs)	V/C ³ Ratio	LOS	Delay ² (Secs)	V/C ³ Ratio	LOS	Delay ² (Secs)	V/C ³ Ratio	LOS	Delay ² (Secs)	V/C ³ Ratio	LOS	AM	PM	
1 Van Buren St / Orangethorpe Ave	TS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	0.5	1.0	2.0	1.0	-	0.611	B	-	0.624	B	-	0.618	B	0.0	0.632	B	0.007	0.008	No
2 Van Buren St / Olive St	CSS	0.0	1.5	0.5	0.0	1.0	0.0	-	-	-	0.0	0.0	1.0	8.6	-	A	9.2	-	A	8.7	-	A	9.2	-	A	0.1	0.0	No
3 Van Buren St / Oak St	CSS	0.0	1!	0.0	1.0	0.5	0.5	0.0	1!	0.0	0.0	1!	0	11.4	-	B	10.9	-	B	12.1	-	B	11.3	-	B	0.7	0.4	No
4 Van Buren St / Miraloma Ave	AWS	0.5	1.0	0.5	0.5	1.0	0.5	1.0	1.5	0.5	0.5	1.0	0.5	11.4	-	B	14.9	-	B	11.6	-	B	15.6	-	C	0.2	0.7	No

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s a indicated for R/L movements, the R and/or L turns are shared with the through movement.

Deficient operation shown in **Bold**; N/A = Not applicable.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn;

! = Indicates general purpose lane.

² Analysis Software: Delay based on HCM 2010 Methodology and Synchro analysis software. V/C based on Traffix, Version 8.0. Per the 2000 Highway Capacity Manual.

³ V/C = Volume to Capacity Ratio. It should be noted that the V/C is not calculated for unsignalized intersections.

⁴ TS = Traffic Signal
CSS = Cross-Street Stop

TABLE 5-3
Existing Plus Ambient Growth (2020) Conditions
Study Intersection LOS Analysis Summary

Intersection	Traffic Control ³	Intersection Approach Lane(s) ¹												Existing Plus Ambient Growth (2020) Conditions					
		Northbound			Southbound			Eastbound			Westbound			AM Peak Hour			PM Peak Hour		
		L	T	R	L	T	R	L	T	R	L	T	R	Delay ² (Secs)	V/C ³ Ratio	LOS	Delay ² (Secs)	V/C ³ Ratio	LOS
1 Van Buren St / Orangethorpe Ave	TS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	0.5	1.0	2.0	1.0	-	0.619	B	-	0.633	B
2 Van Buren St / Olive St	CSS	0.0	1.5	0.5	0.0	1.0	0.0	-	-	-	0.0	0.0	1.0	8.6	-	A	9.2	-	A
3 Van Buren St / Oak St	CSS	0.0	1!	0.0	1.0	0.5	0.5	0.0	1!	0.0	0.0	1!	0	11.4	-	B	10.9	-	B
4 Van Buren St / Miraloma Ave	AWS	0.5	1.0	0.5	0.5	1.0	0.5	1.0	1.5	0.5	0.5	1.0	0.5	11.5	-	B	15.3	-	C

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

Deficient operation shown in **Bold**; N/A = Not applicable.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn;

! = Indicates general purpose lane.

² Analysis Software: Delay based on HCM 2010 Methodology and Synchro analysis software. V/C based on Traffix, Version 8.0. Per the 2000 Highway Capacity Manual.

³ V/C = Volume to Capacity Ratio. It should be noted that the V/C is not calculated for unsignalized intersections.

⁴ TS = Traffic Signal

CSS = Cross-Street Stop

TABLE 5-4
Existing Plus Ambient Growth (2020) Plus Project Conditions
Study Intersection LOS Analysis Summary

Intersection	Traffic Control ³	Intersection Approach Lane(s) ¹												Existing Plus Ambient Growth (2020) Conditions						Existing Plus Ambient Growth (2020) Plus Project Conditions						Change in V/C or Delay		Significant Impact?
		Northbound			Southbound			Eastbound			Westbound			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour					
		L	T	R	L	T	R	L	T	R	L	T	R	Delay ² (Secs)	V/C ³ Ratio	LOS	Delay ² (Secs)	V/C ³ Ratio	LOS	Delay ² (Secs)	V/C ³ Ratio	LOS	Delay ² (Secs)	V/C ³ Ratio	LOS	AM	PM	
1 Van Buren St / Orangethorpe Ave	TS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	0.5	1.0	2.0	1.0	-	0.619	B	-	0.633	B	-	0.626	B	-	0.641	B	0.007	0.008	No
2 Van Buren St / Olive St	CSS	0.0	1.5	0.5	0.0	1.0	0.0	-	-	-	0.0	0.0	1.0	8.6	-	A	9.2	-	A	8.7	-	A	9.2	-	A	0.1	0.0	No
3 Van Buren St / Oak St	CSS	0.0	1!	0.0	1.0	0.5	0.5	0.0	1!	0.0	0.0	1!	0	11.4	-	B	10.9	-	B	12.2	-	B	11.4	-	B	0.8	0.5	No
4 Van Buren St / Miraloma Ave	AWS	0.5	1.0	0.5	0.5	1.0	0.5	1.0	1.5	0.5	0.5	1.0	0.5	11.5	-	B	15.3	-	C	11.8	-	B	16.1	-	C	0.3	0.8	No

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

Deficient operation shown in **Bold**; N/A = Not applicable.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn;

! = Indicates general purpose lane.

² Analysis Software: Delay based on HCM 2010 Methodology and Synchro analysis software. V/C based on Traffix, Version 8.0. Per the 2000 Highway Capacity Manual.

³ V/C = Volume to Capacity Ratio. It should be noted that the V/C is not calculated for unsignalized intersections.

⁴ TS = Traffic Signal

CSS = Cross-Street Stop

TABLE 5-5
Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions
Study Intersection LOS Analysis Summary

Intersection	Traffic Control ³	Intersection Approach Lane(s) ¹												Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions					
		Northbound			Southbound			Eastbound			Westbound			AM Peak Hour			PM Peak Hour		
		L	T	R	L	T	R	L	T	R	L	T	R	Delay ² (Secs)	V/C ³ Ratio	LOS	Delay ² (Secs)	V/C ³ Ratio	LOS
1 Van Buren St / Orangethorpe Ave	TS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	0.5	1.0	2.0	1.0	-	0.624	B	-	0.638	B
2 Van Buren St / Olive St	CSS	0.0	1.5	0.5	0.0	1.0	0.0	-	-	-	0.0	0.0	1.0	8.6	-	A	9.2	-	A
3 Van Buren St / Oak St	CSS	0.0	1!	0.0	1.0	0.5	0.5	0.0	1!	0.0	0.0	1!	0	11.6	-	B	11.1	-	B
4 Van Buren St / Miraloma Ave	AWS	0.5	1.0	0.5	0.5	1.0	0.5	1.0	1.5	0.5	0.5	1.0	0.5	12.1	-	B	16.7	-	C

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

Deficient operation shown in **Bold**; N/A = Not applicable.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn;

! = Indicates general purpose lane.

² Analysis Software: Delay based on HCM 2010 Methodology and Synchro analysis software. V/C based on Traffix, Version 8.0. Per the 2000 Highway Capacity Manual.

³ V/C = Volume to Capacity Ratio. It should be noted that the V/C is not calculated for unsignalized intersections.

⁴ TS = Traffic Signal

CSS = Cross-Street Stop

TABLE 5-6
Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions
Study Intersection LOS Analysis Summary

Intersection	Traffic Control ³	Intersection Approach Lane(s) ¹												Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions						Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions						Change in V/C or Delay		Significant Impact?
		Northbound			Southbound			Eastbound			Westbound			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM	PM	
		L	T	R	L	T	R	L	T	R	L	T	R	Delay ² (Secs)	V/C ³ Ratio	LOS	Delay ² (Secs)	V/C ³ Ratio	LOS	Delay ² (Secs)	V/C ³ Ratio	LOS	Delay ² (Secs)	V/C ³ Ratio	LOS			
1 Van Buren St / Orangethorpe Ave	TS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	0.5	1.0	2.0	1.0	-	0.624	B	-	0.638	B	-	0.631	A	-	0.646	B	0.007	0.008	No
2 Van Buren St / Olive St	CSS	0.0	1.5	0.5	0.0	1.0	0.0	-	-	-	0.0	0.0	1.0	8.6	-	A	9.2	-	A	8.7	-	A	9.3	-	A	0.1	0.1	No
3 Van Buren St / Oak St	CSS	0.0	1!	0.0	1.0	0.5	0.5	0.0	1!	0.0	0.0	1!	0	11.6	-	B	11.1	-	B	12.4	-	B	11.5	-	B	0.8	0.4	No
4 Van Buren St / Miraloma Ave	AWS	0.5	1.0	0.5	0.5	1.0	0.5	1.0	1.5	0.5	0.5	1.0	0.5	12.1	-	B	16.7	-	C	12.5	-	B	17.4	-	C	0.4	0.7	No

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

Deficient operation shown in **Bold**; N/A = Not applicable.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn;

! = Indicates general purpose lane.

² Analysis Software: Delay based on HCM 2010 Methodology and Synchro analysis software. V/C based on Traffix, Version 8.0. Per the 2000 Highway Capacity Manual.

³ V/C = Volume to Capacity Ratio. It should be noted that the V/C is not calculated for unsignalized intersections.

⁴ TS = Traffic Signal

CSS = Cross-Street Stop

6.0 Study Roadway Segment LOS Analysis

This section provides a discussion on the study roadway segment level of service analysis and findings.

The study evaluates the following three (3) study roadway segments:

1. Van Buren St from Olive St to Oak St;
2. Van Buren St from Oak St to Vincente Ave; and
3. Orangethorpe Ave West of Van Buren St.

Table 6-1 summarizes the results of the study roadway segment analysis for all analysis scenarios evaluated as part of this study utilizing existing roadway segment geometry and capacities.

It should be noted the roadway segment analysis has been provided for informational purposes only and the City of Placentia does not have established thresholds of significance for roadway segment operations.

As shown in Table 6-1, all of the existing study roadway segments are currently operating at an acceptable LOS (LOS D or better) for Existing Conditions and are forecast to continue to operate at an acceptable LOS for all the future analysis scenarios evaluated as part of this report.

TABLE 6-1
Study Roadway Segment Analysis Summary¹

Study Roadway Segment	Classification	LOS E Capacity	Daily Traffic Volume						VIC Ratio						LOS					
			Existing	Existing Plus Project	Existing Plus Ambient Growth (2020) Plus Conditions	Existing Plus Ambient Growth (2020) Plus Cumulative Projects	Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions	Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions	Existing	Existing Plus Project	Existing Plus Ambient Growth (2020) Plus Conditions	Existing Plus Ambient Growth (2020) Plus Cumulative Projects	Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions	Existing Plus Ambient Growth (2020) Plus Project Conditions	Existing Plus Ambient Growth (2020) Plus Project Conditions	Existing Plus Ambient Growth (2020) Plus Project Conditions	Existing Plus Ambient Growth (2020) Plus Project Conditions	Existing Plus Ambient Growth (2020) Plus Project Conditions	Existing Plus Ambient Growth (2020) Plus Project Conditions	
South Van Buren Street:																				
Olive St. to Oak St.	2 Lane / Collector	12,500	5,088	5,504	5,190	5,606	5,308	5,724	0.41	0.44	0.42	0.45	0.42	0.46	A	A	A	A	A	A
Oak St. to Vincente Ave.	2 Lane / Collector	12,500	5,123	5,539	5,225	5,641	5,343	5,759	0.41	0.44	0.42	0.45	0.43	0.46	A	A	A	A	A	A
East Orangethorpe Avenue:																				
West of South Van Buren Street	4 Lane / Arterial	37,500	21,852	22,060	22,289	22,497	22,743	22,951	0.58	0.59	0.59	0.60	0.61	0.61	A	A	A	A	B	B

¹ Lane Capacity and Roadway Classification based on City of Placentia Circulation Element.

7.0 Construction Traffic

This section provides a discussion on the construction traffic for the proposed project.

The construction traffic estimates for the proposed project is based on the air quality analysis prepared for the proposed project.

The 7-1 shows the expected daily construction traffic activities for the proposed project.

Table 7-1
Proposed Project Number of Vehicles Per Day
During Construction Phases

Construction Phase	Trip Type Per Day				
	Worker Vehicles	Trucks	Vendor Vehicles	Total Vehicles	Total Two-Way Trips (Inbound & Outbound)
Demolition	15	55	0	70	140
Site Preparation	18	0	0	18	36
Grading	15	147	0	162	324
Building	79	0	12	91	182
Paving	15	0	0	15	30
Coating	1	0	0	1	2
Total	143	202	12	357	714

As shown in Table 7-1, during construction phase, the proposed project is expected to generate approximately 714 trips per day.

As previously shown in Table 4-2, during operations, the proposed project is expected to generate approximately 832 net new trips per day, including 52 AM peak hour trips and 64 PM peak hour trips.

Based on the analysis contained in this report and the agency-established thresholds of significance, the proposed project is forecast to not results in a significant traffic impact.

Since the project is expected to generate less number of trips during the construction phase, the project is expected to not result in any significant traffic impacts during the construction phase as well.

The following are recommendations to further reduce the project-related traffic activities during construction phase:

- Promote use of car-pool and can pool by the construction workers;
- Reduce inbound and outbound construction trips during the weekday peak traffic periods of between 7:00 AM to 9:00 AM to maintain 52 or less (inbound and outbound combined) AM trips per hour.
- Reduce inbound and outbound construction trips during the weekday peak traffic periods of between 4:00 PM to 6:00 PM to maintain 64 or less (inbound and outbound combined) PM trips per hour.
- Provide unrestricted access to schools for school buses;
- Avoid delays to transported students resulted by truck and construction traffic.
- Avoid adverse impacts on school buses' on-time performance and passenger safety resulting from changed traffic patterns, lane adjustment, traffic light patterns, and altered bus stops during and after construction
- Construction trucks and other vehicles are required to stop when encountering school buses using red-flashing-lights must-stop-indicators per the California Vehicle Code.
- Contractors must install and maintain appropriate traffic controls (signs and signals) to ensure vehicular safety.
- Contractors must maintain safe and convenient pedestrian routes to all nearby schools.
- Contractors must install and maintain appropriate traffic controls (signs and signals) to ensure pedestrian and vehicular safety.

- Haul routes should not pass by any school, except when school is not in session.
- Barriers and/or fencing must be installed to secure construction equipment and to minimize trespassing, vandalism, short-cut attractions, and attractive nuisances.
- Contractors are required to provide security patrols (at their expense) to minimize trespassing, vandalism, and short-cut attractions.

8.0 Findings, Recommendations & Conclusions

The purpose of this traffic study is to assess the impacts of the proposed Van Buren & Orangethorpe Residential development from a traffic and circulation standpoint.

8.1 Proposed Project

The project site located west of the intersection of South Van Buren Street at Oak Street, in the City of Placentia and is currently occupied by an automotive center which will be displaced by the proposed project.

The proposed project is planned to consist of the following land use:

- 139-Units of Multifamily Housing.

The project will be evaluated in a single phase and is planned to open in 2020.

Access for the proposed project will continue to be provided via an existing unsignalized driveway at the Van Buren Street / Oak Street intersection.

8.2 Project Trip Generation

After accounting for the existing use on the project site that will be displaced by the proposed project, the proposed project is forecast to generate approximately 620 net daily trips which include approximately 39 net AM peak hour trip and approximately 48 net PM peak hour trips.

8.3 Study Area & Conditions

This traffic study has been prepared in accordance with the traffic study guidelines, requirements and thresholds of significance for the City of Placentia and Orange County.

This analysis evaluates the potential traffic impacts associated with the proposed project in accordance with the City of Placentia and Orange County requirements and thresholds of significance.

The study area consists of the following intersections:

North-South Street	East-West Street
1. Van Buren Street	Orangethorpe Avenue
2. Van Buren Street	Olive Street
3. Van Buren Street	Oak Street
4. Van Buren Street	Miraloma Avenue

The analysis evaluates traffic conditions of the study intersections for the following scenarios in accordance with the City of Placentia and Orange County and the approved scope of work:

- Existing Conditions;
- Existing Plus Project Conditions;
- Existing Plus Ambient Growth (2020) Conditions;
- Existing Plus Ambient Growth (2020) Plus Project Conditions;
- Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions; and
- Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project Conditions.

8.4 LOS Analysis & Significant Impact Summary

All study area intersections are currently operating at an acceptable level of service (LOS D or better) during the peak hours for Existing Conditions and are forecast to continue to operate at an acceptable LOS (LOS D or better) for all the future analysis scenarios evaluated as part of this report.

Based on agency-established thresholds of significance, the proposed project is forecast to not result in a significant traffic impact at any study area intersections for the analysis scenarios evaluated as part of this report.

Hence, no mitigation measures are required for the proposed project.

8.5 Site Access Recommendations

- I. Sight distance at all project access points should be reviewed with respect to City of Placentia sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.
- II. Provide appropriate signage and pavement markings at the project site driveways, including stop bars and stop signs and restrict project access through clear signage and other means.

Appendix A

Existing Traffic Count Worksheets

City of Placentia
N/S: Van Buren Street
E/W: Orangethorpe Avenue
Weather: Clear

File Name : 38PLAVBORAM
Site Code : 22117718
Start Date : 11/2/2017
Page No : 1

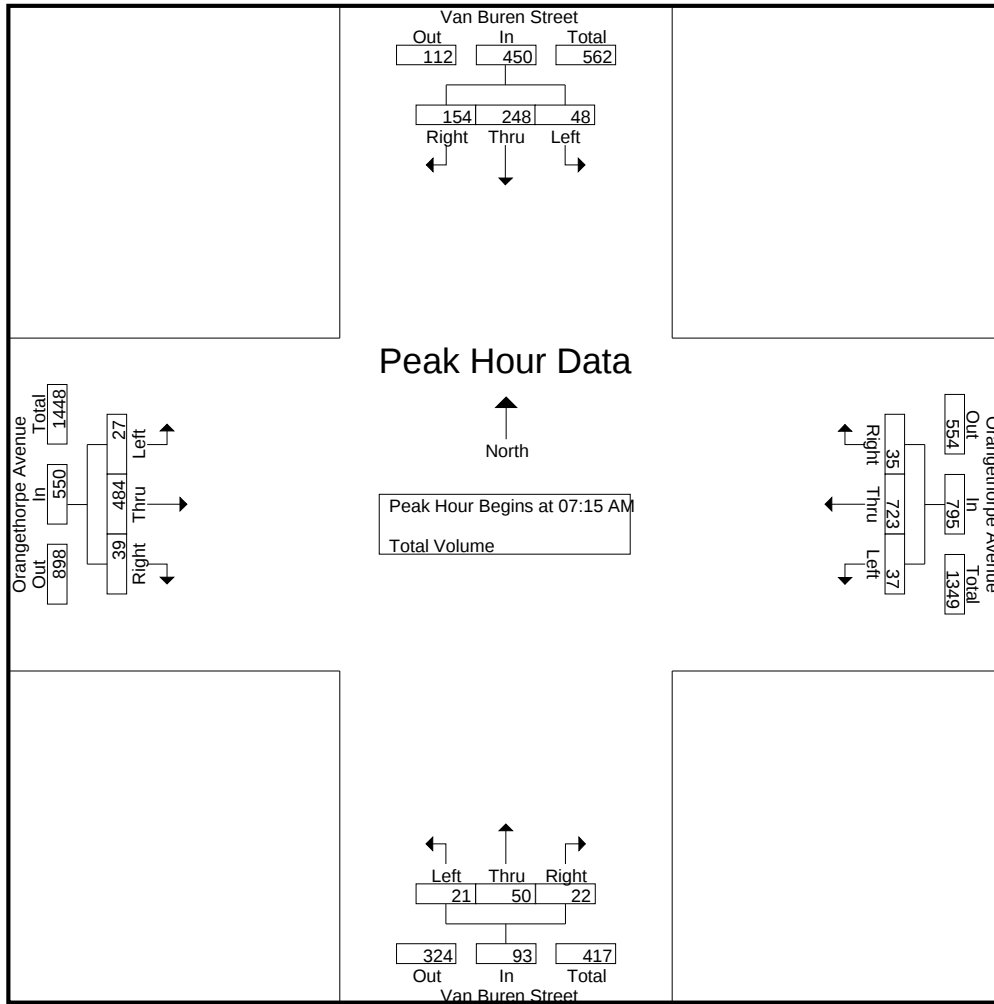
Groups Printed- Total Volume

	Van Buren Street Southbound				Orangethorpe Avenue Westbound				Van Buren Street Northbound				Orangethorpe Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	6	36	29	71	3	102	7	112	1	10	3	14	10	67	11	88	285
07:15 AM	4	75	42	121	11	122	5	138	8	11	6	25	2	97	10	109	393
07:30 AM	17	53	37	107	4	205	5	214	5	15	11	31	9	130	6	145	497
07:45 AM	17	59	39	115	12	222	9	243	3	9	2	14	3	155	13	171	543
Total	44	223	147	414	30	651	26	707	17	45	22	84	24	449	40	513	1718
08:00 AM	10	61	36	107	10	174	16	200	5	15	3	23	13	102	10	125	455
08:15 AM	11	49	25	85	3	129	3	135	6	14	4	24	11	119	9	139	383
08:30 AM	12	26	42	80	6	120	6	132	2	10	6	18	9	95	12	116	346
08:45 AM	12	36	14	62	9	126	7	142	5	8	9	22	11	85	6	102	328
Total	45	172	117	334	28	549	32	609	18	47	22	87	44	401	37	482	1512
Grand Total	89	395	264	748	58	1200	58	1316	35	92	44	171	68	850	77	995	3230
Apprch %	11.9	52.8	35.3		4.4	91.2	4.4		20.5	53.8	25.7		6.8	85.4	7.7		
Total %	2.8	12.2	8.2	23.2	1.8	37.2	1.8	40.7	1.1	2.8	1.4	5.3	2.1	26.3	2.4	30.8	

	Van Buren Street Southbound				Orangethorpe Avenue Westbound				Van Buren Street Northbound				Orangethorpe Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	4	75	42	121	11	122	5	138	8	11	6	25	2	97	10	109	393
07:30 AM	17	53	37	107	4	205	5	214	5	15	11	31	9	130	6	145	497
07:45 AM	17	59	39	115	12	222	9	243	3	9	2	14	3	155	13	171	543
08:00 AM	10	61	36	107	10	174	16	200	5	15	3	23	13	102	10	125	455
Total Volume	48	248	154	450	37	723	35	795	21	50	22	93	27	484	39	550	1888
% App. Total	10.7	55.1	34.2		4.7	90.9	4.4		22.6	53.8	23.7		4.9	88	7.1		
PHF	.706	.827	.917	.930	.771	.814	.547	.818	.656	.833	.500	.750	.519	.781	.750	.804	.869

City of Placentia
N/S: Van Buren Street
E/W: Orangethorpe Avenue
Weather: Clear

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

	07:15 AM				07:15 AM				07:15 AM				07:30 AM			
+0 mins.	4	75	42	121	11	122	5	138	8	11	6	25	9	130	6	145
+15 mins.	17	53	37	107	4	205	5	214	5	15	11	31	3	155	13	171
+30 mins.	17	59	39	115	12	222	9	243	3	9	2	14	13	102	10	125
+45 mins.	10	61	36	107	10	174	16	200	5	15	3	23	11	119	9	139
Total Volume	48	248	154	450	37	723	35	795	21	50	22	93	36	506	38	580
% App. Total	10.7	55.1	34.2		4.7	90.9	4.4		22.6	53.8	23.7		6.2	87.2	6.6	
PHF	.706	.827	.917	.930	.771	.814	.547	.818	.656	.833	.500	.750	.692	.816	.731	.848

City of Placentia
N/S: Van Buren Street
E/W: Orangethorpe Avenue
Weather: Clear

File Name : 38PLAVBORPM
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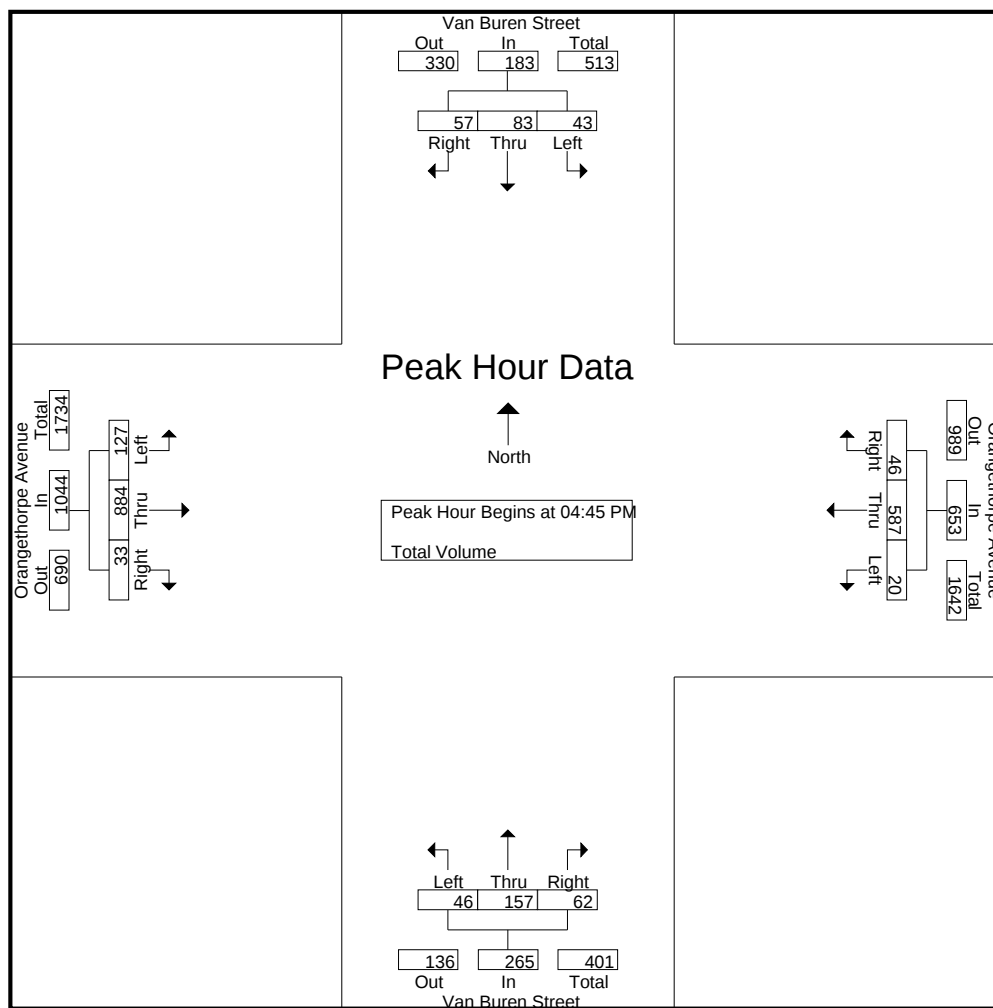
Groups Printed- Total Volume

	Van Buren Street Southbound				Orangethorpe Avenue Westbound				Van Buren Street Northbound				Orangethorpe Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	14	18	15	47	5	129	12	146	11	37	5	53	24	156	18	198	444
04:15 PM	7	24	22	53	5	118	7	130	8	41	17	66	22	186	8	216	465
04:30 PM	12	23	12	47	4	113	17	134	15	44	15	74	31	190	12	233	488
04:45 PM	9	23	15	47	5	137	13	155	12	34	12	58	28	233	8	269	529
Total	42	88	64	194	19	497	49	565	46	156	49	251	105	765	46	916	1926
05:00 PM	14	21	13	48	2	158	12	172	14	48	11	73	41	204	5	250	543
05:15 PM	11	19	16	46	3	148	12	163	9	40	24	73	33	231	13	277	559
05:30 PM	9	20	13	42	10	144	9	163	11	35	15	61	25	216	7	248	514
05:45 PM	9	26	19	54	4	125	11	140	6	34	13	53	37	198	16	251	498
Total	43	86	61	190	19	575	44	638	40	157	63	260	136	849	41	1026	2114
Grand Total	85	174	125	384	38	1072	93	1203	86	313	112	511	241	1614	87	1942	4040
Apprch %	22.1	45.3	32.6		3.2	89.1	7.7		16.8	61.3	21.9		12.4	83.1	4.5		
Total %	2.1	4.3	3.1	9.5	0.9	26.5	2.3	29.8	2.1	7.7	2.8	12.6	6	40	2.2	48.1	

	Van Buren Street Southbound				Orangethorpe Avenue Westbound				Van Buren Street Northbound				Orangethorpe Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	9	23	15	47	5	137	13	155	12	34	12	58	28	233	8	269	529
05:00 PM	14	21	13	48	2	158	12	172	14	48	11	73	41	204	5	250	543
05:15 PM	11	19	16	46	3	148	12	163	9	40	24	73	33	231	13	277	559
05:30 PM	9	20	13	42	10	144	9	163	11	35	15	61	25	216	7	248	514
Total Volume	43	83	57	183	20	587	46	653	46	157	62	265	127	884	33	1044	2145
% App. Total	23.5	45.4	31.1		3.1	89.9	7		17.4	59.2	23.4		12.2	84.7	3.2		
PHF	.768	.902	.891	.953	.500	.929	.885	.949	.821	.818	.646	.908	.774	.948	.635	.942	.959

City of Placentia
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM				04:45 PM				04:30 PM				04:45 PM			
+0 mins.	7	24	22	53	5	137	13	155	15	44	15	74	28	233	8	269
+15 mins.	12	23	12	47	2	158	12	172	12	34	12	58	41	204	5	250
+30 mins.	9	23	15	47	3	148	12	163	14	48	11	73	33	231	13	277
+45 mins.	14	21	13	48	10	144	9	163	9	40	24	73	25	216	7	248
Total Volume	42	91	62	195	20	587	46	653	50	166	62	278	127	884	33	1044
% App. Total	21.5	46.7	31.8		3.1	89.9	7		18	59.7	22.3		12.2	84.7	3.2	
PHF	.750	.948	.705	.920	.500	.929	.885	.949	.833	.865	.646	.939	.774	.948	.635	.942

City of Placentia
N/S: Van Buren Street
E/W: Olive Street
Weather: Clear

File Name : 02_PLA_VB_Olive AM
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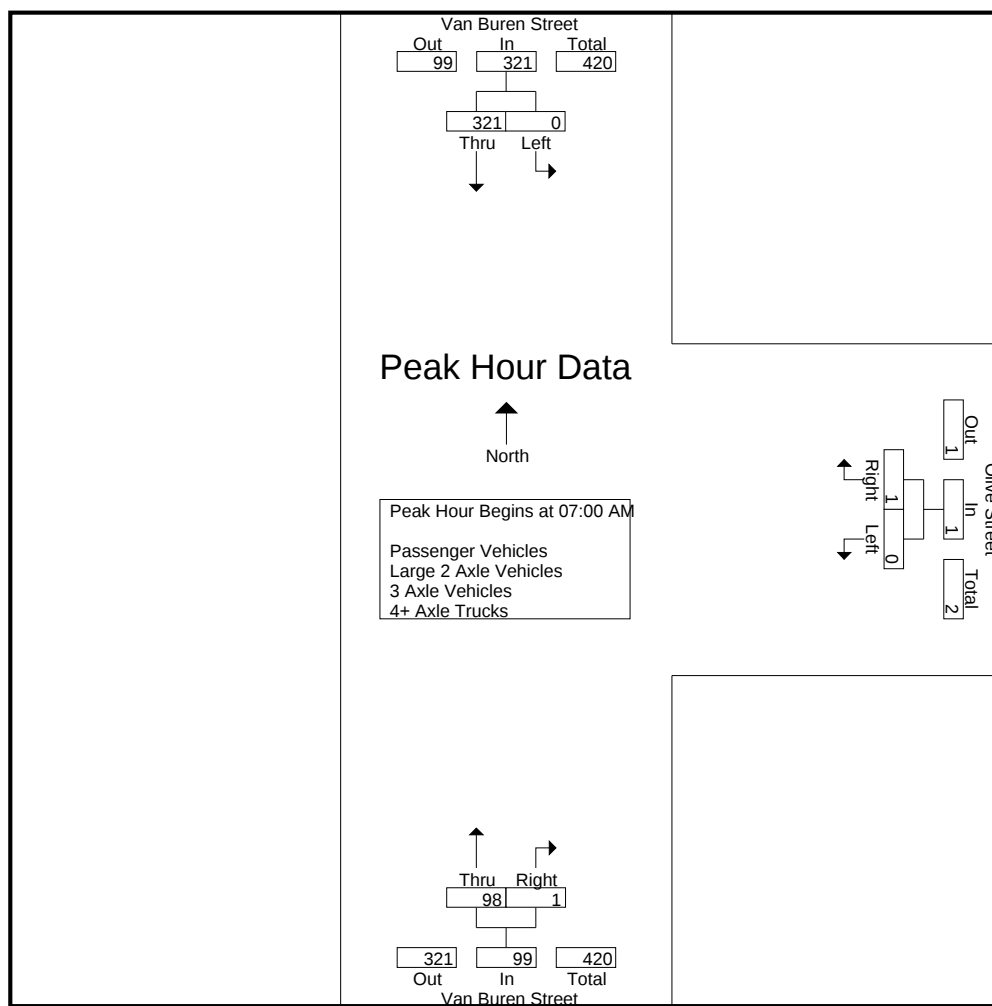
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	69	69	0	1	1	23	0	23	93
07:15 AM	0	80	80	0	0	0	17	1	18	98
07:30 AM	0	80	80	0	0	0	38	0	38	118
07:45 AM	0	92	92	0	0	0	20	0	20	112
Total	0	321	321	0	1	1	98	1	99	421
08:00 AM	0	70	70	0	0	0	21	0	21	91
08:15 AM	0	65	65	0	0	0	18	0	18	83
08:30 AM	0	80	80	0	0	0	33	0	33	113
08:45 AM	0	61	61	0	0	0	22	0	22	83
Total	0	276	276	0	0	0	94	0	94	370
Grand Total	0	597	597	0	1	1	192	1	193	791
Apprch %	0	100		0	100		99.5	0.5		
Total %	0	75.5	75.5	0	0.1	0.1	24.3	0.1	24.4	
Passenger Vehicles	0	587	587	0	1	1	181	1	182	770
% Passenger Vehicles	0	98.3	98.3	0	100	100	94.3	100	94.3	97.3
Large 2 Axle Vehicles	0	9	9	0	0	0	8	0	8	17
% Large 2 Axle Vehicles	0	1.5	1.5	0	0	0	4.2	0	4.1	2.1
3 Axle Vehicles	0	1	1	0	0	0	2	0	2	3
% 3 Axle Vehicles	0	0.2	0.2	0	0	0	1	0	1	0.4
4+ Axle Trucks	0	0	0	0	0	0	1	0	1	1
% 4+ Axle Trucks	0	0	0	0	0	0	0.5	0	0.5	0.1

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	69	69	0	1	1	23	0	23	93
07:15 AM	0	80	80	0	0	0	17	1	18	98
07:30 AM	0	80	80	0	0	0	38	0	38	118
07:45 AM	0	92	92	0	0	0	20	0	20	112
Total Volume	0	321	321	0	1	1	98	1	99	421
% App. Total	0	100		0	100		99	1		
PHF	.000	.872	.872	.000	.250	.250	.645	.250	.651	.892

City of Placentia
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Weather: Clear

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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM			07:00 AM			07:00 AM		
+0 mins.	0	80	80	0	1	1	23	0	23
+15 mins.	0	80	80	0	0	0	17	1	18
+30 mins.	0	92	92	0	0	0	38	0	38
+45 mins.	0	70	70	0	0	0	20	0	20
Total Volume	0	322	322	0	1	1	98	1	99
% App. Total	0	100		0	100		99	1	
PHF	.000	.875	.875	.000	.250	.250	.645	.250	.651

City of Placentia
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E/W: Olive Street
Weather: Clear

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Groups Printed- Passenger Vehicles

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	67	67	0	1	1	21	0	21	89
07:15 AM	0	77	77	0	0	0	16	1	17	94
07:30 AM	0	79	79	0	0	0	35	0	35	114
07:45 AM	0	92	92	0	0	0	18	0	18	110
Total	0	315	315	0	1	1	90	1	91	407
08:00 AM	0	69	69	0	0	0	20	0	20	89
08:15 AM	0	64	64	0	0	0	16	0	16	80
08:30 AM	0	80	80	0	0	0	33	0	33	113
08:45 AM	0	59	59	0	0	0	22	0	22	81
Total	0	272	272	0	0	0	91	0	91	363
Grand Total	0	587	587	0	1	1	181	1	182	770
Apprch %	0	100		0	100		99.5	0.5		
Total %	0	76.2	76.2	0	0.1	0.1	23.5	0.1	23.6	

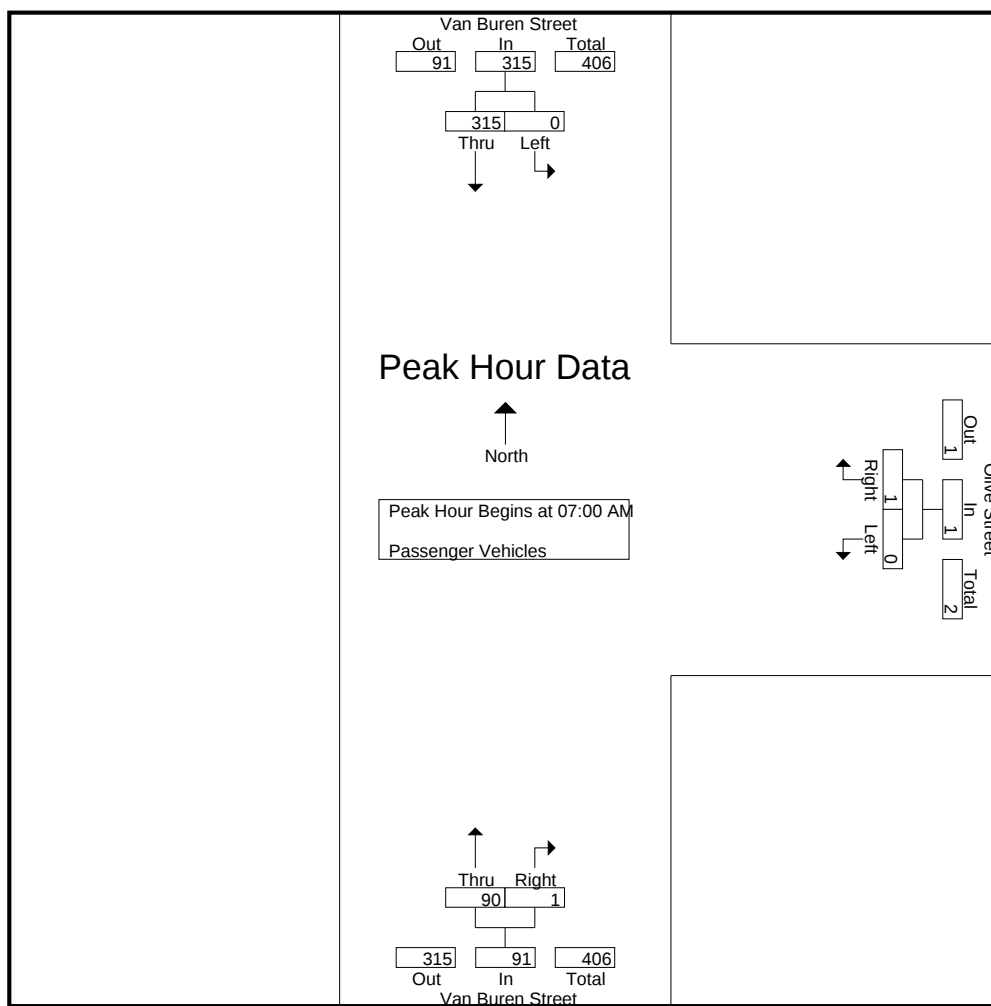
	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	67	67	0	1	1	21	0	21	89
07:15 AM	0	77	77	0	0	0	16	1	17	94
07:30 AM	0	79	79	0	0	0	35	0	35	114
07:45 AM	0	92	92	0	0	0	18	0	18	110
Total Volume	0	315	315	0	1	1	90	1	91	407
% App. Total	0	100		0	100		98.9	1.1		
PHF	.000	.856	.856	.000	.250	.250	.643	.250	.650	.893

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:00 AM

City of Placentia
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Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	67	67	0	1	1	21	0	21
+15 mins.	0	77	77	0	0	0	16	1	17
+30 mins.	0	79	79	0	0	0	35	0	35
+45 mins.	0	92	92	0	0	0	18	0	18
Total Volume	0	315	315	0	1	1	90	1	91
% App. Total	0	100		0	100		98.9	1.1	
PHF	.000	.856	.856	.000	.250	.250	.643	.250	.650

City of Placentia
N/S: Van Buren Street
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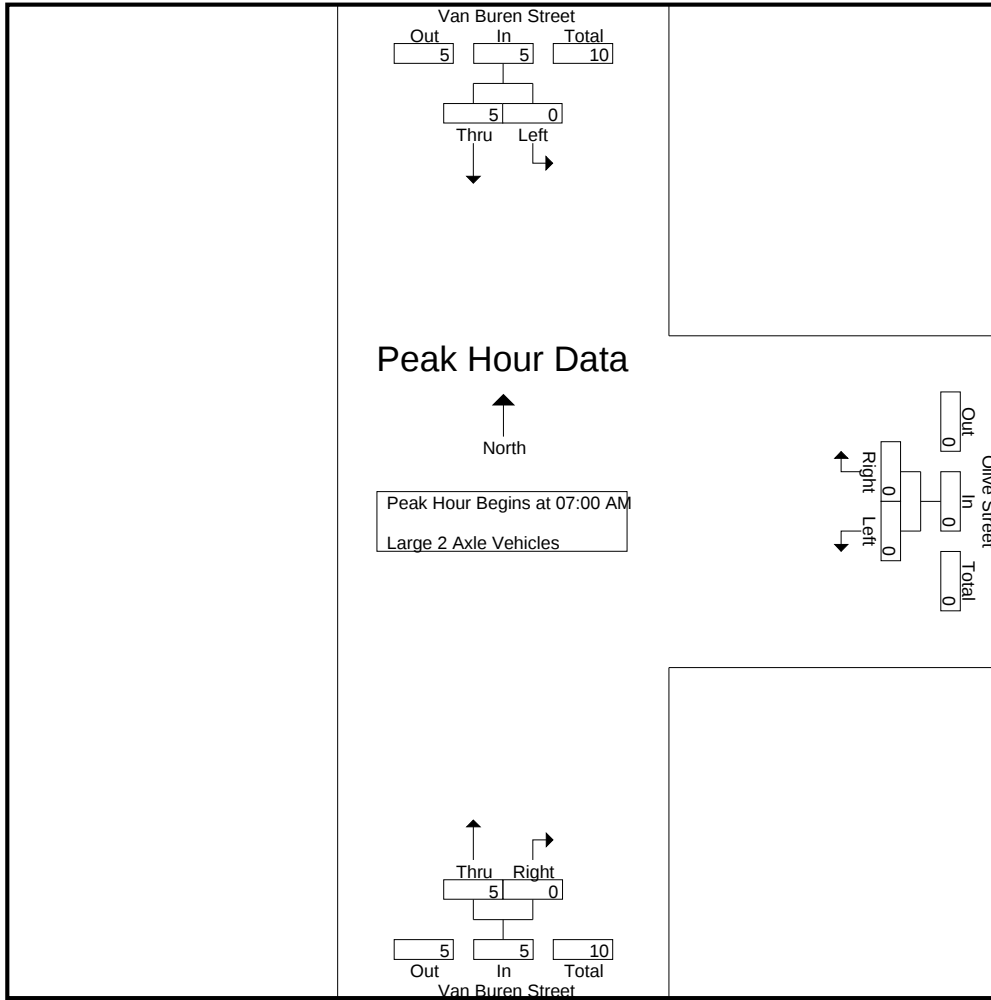
Groups Printed- Large 2 Axle Vehicles

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	2	2	0	0	0	1	0	1	3
07:15 AM	0	2	2	0	0	0	1	0	1	3
07:30 AM	0	1	1	0	0	0	2	0	2	3
07:45 AM	0	0	0	0	0	0	1	0	1	1
Total	0	5	5	0	0	0	5	0	5	10
08:00 AM	0	1	1	0	0	0	1	0	1	2
08:15 AM	0	1	1	0	0	0	2	0	2	3
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	2	2	0	0	0	0	0	0	2
Total	0	4	4	0	0	0	3	0	3	7
Grand Total	0	9	9	0	0	0	8	0	8	17
Apprch %	0	100		0	0		100	0		
Total %	0	52.9	52.9	0	0	0	47.1	0	47.1	

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	2	2	0	0	0	1	0	1	3
07:15 AM	0	2	2	0	0	0	1	0	1	3
07:30 AM	0	1	1	0	0	0	2	0	2	3
07:45 AM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	5	5	0	0	0	5	0	5	10
% App. Total	0	100		0	0		100	0		
PHF	.000	.625	.625	.000	.000	.000	.625	.000	.625	.833

City of Placentia
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Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	2	2	0	0	0	1	0	1
+15 mins.	0	2	2	0	0	0	1	0	1
+30 mins.	0	1	1	0	0	0	2	0	2
+45 mins.	0	0	0	0	0	0	1	0	1
Total Volume	0	5	5	0	0	0	5	0	5
% App. Total	0	100		0	0		100	0	
PHF	.000	.625	.625	.000	.000	.000	.625	.000	.625

City of Placentia
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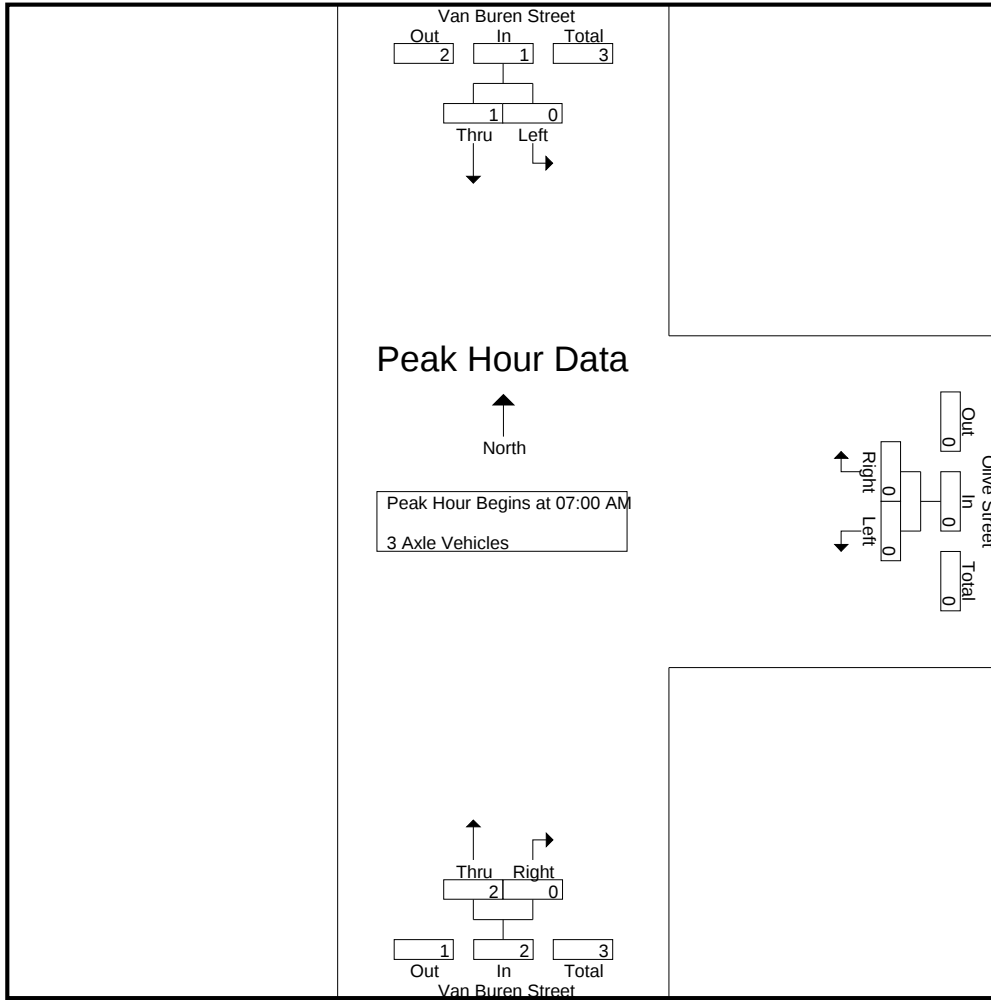
Groups Printed- 3 Axle Vehicles

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	0	0	0	0	0	1	0	1	1
Total	0	1	1	0	0	0	2	0	2	3
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	0	0	0	2	0	2	3
Apprch %	0	100		0	0		100	0		
Total %	0	33.3	33.3	0	0	0	66.7	0	66.7	

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	1	1	0	0	0	2	0	2	3
% App. Total	0	100		0	0		100	0		
PHF	.000	.250	.250	.000	.000	.000	.500	.000	.500	.750

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

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	1	1	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	0	1	0	1
Total Volume	0	1	1	0	0	0	2	0	2
% App. Total	0	100		0	0		100	0	
PHF	.000	.250	.250	.000	.000	.000	.500	.000	.500

City of Placentia
N/S: Van Buren Street
E/W: Olive Street
Weather: Clear

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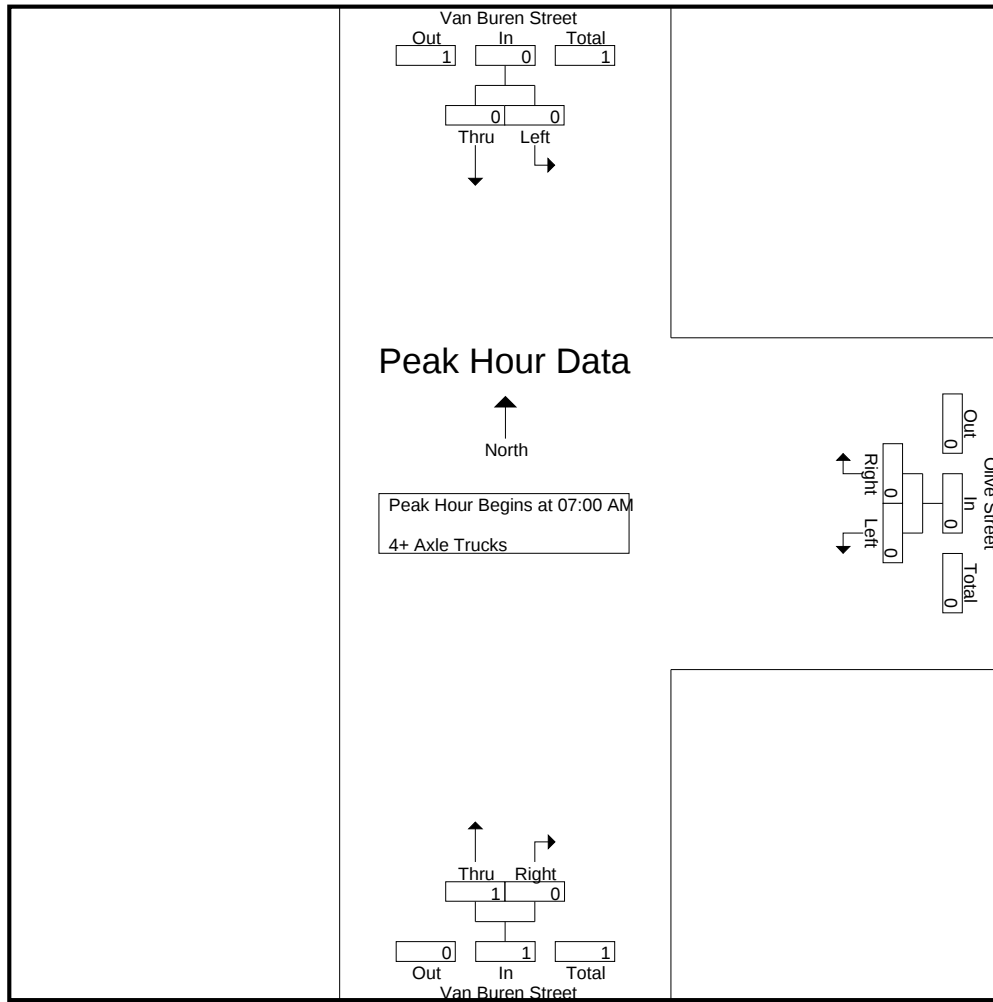
Groups Printed- 4+ Axle Trucks

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	1	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	1	0	1	1
Apprch %	0	0		0	0		100	0		
Total %	0	0	0	0	0	0	100	0	100	

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	1	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

City of Placentia
N/S: Van Buren Street
E/W: Olive Street
Weather: Clear

File Name : 02_PLA_VB_Olive AM
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Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1
% App. Total	0	0	0	0	0	0	100	0	100
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250

City of Placentia
N/S: Van Buren Street
E/W: Olive Street
Weather: Clear

File Name : 02_PLA_VB_Olive PM
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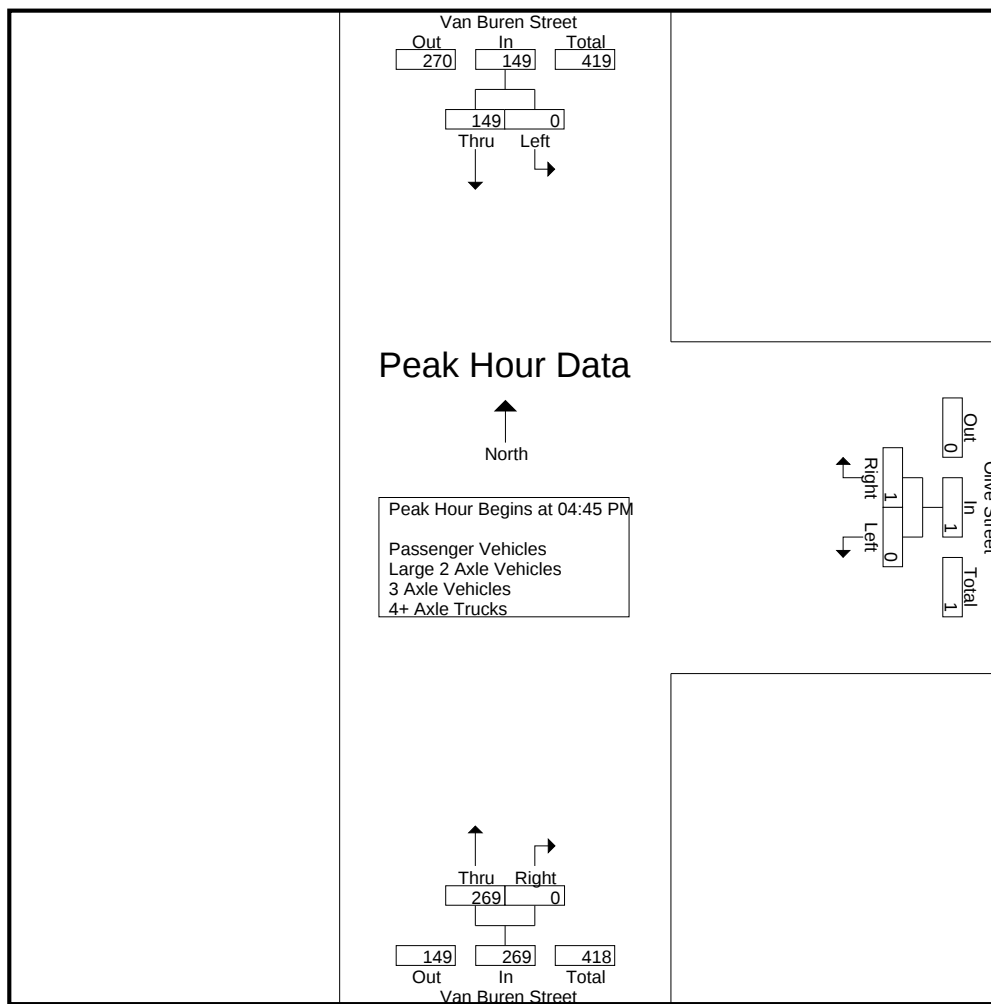
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	31	31	0	0	0	56	1	57	88
04:15 PM	0	37	37	0	0	0	40	0	40	77
04:30 PM	0	42	42	0	0	0	50	0	50	92
04:45 PM	0	34	34	0	0	0	61	0	61	95
Total	0	144	144	0	0	0	207	1	208	352
05:00 PM	0	33	33	0	1	1	85	0	85	119
05:15 PM	0	39	39	0	0	0	65	0	65	104
05:30 PM	0	43	43	0	0	0	58	0	58	101
05:45 PM	0	45	45	0	1	1	39	0	39	85
Total	0	160	160	0	2	2	247	0	247	409
Grand Total	0	304	304	0	2	2	454	1	455	761
Apprch %	0	100		0	100		99.8	0.2		
Total %	0	39.9	39.9	0	0.3	0.3	59.7	0.1	59.8	
Passenger Vehicles	0	302	302	0	2	2	448	1	449	753
% Passenger Vehicles	0	99.3	99.3	0	100	100	98.7	100	98.7	98.9
Large 2 Axle Vehicles	0	2	2	0	0	0	3	0	3	5
% Large 2 Axle Vehicles	0	0.7	0.7	0	0	0	0.7	0	0.7	0.7
3 Axle Vehicles	0	0	0	0	0	0	2	0	2	2
% 3 Axle Vehicles	0	0	0	0	0	0	0.4	0	0.4	0.3
4+ Axle Trucks	0	0	0	0	0	0	1	0	1	1
% 4+ Axle Trucks	0	0	0	0	0	0	0.2	0	0.2	0.1

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	34	34	0	0	0	61	0	61	95
05:00 PM	0	33	33	0	1	1	85	0	85	119
05:15 PM	0	39	39	0	0	0	65	0	65	104
05:30 PM	0	43	43	0	0	0	58	0	58	101
Total Volume	0	149	149	0	1	1	269	0	269	419
% App. Total	0	100		0	100		100	0		
PHF	.000	.866	.866	.000	.250	.250	.791	.000	.791	.880

City of Placentia
N/S: Van Buren Street
E/W: Olive Street
Weather: Clear

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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM			05:00 PM			04:45 PM		
+0 mins.	0	33	33	0	1	1	61	0	61
+15 mins.	0	39	39	0	0	0	85	0	85
+30 mins.	0	43	43	0	0	0	65	0	65
+45 mins.	0	45	45	0	1	1	58	0	58
Total Volume	0	160	160	0	2	2	269	0	269
% App. Total	0	100		0	100		100	0	
PHF	.000	.889	.889	.000	.500	.500	.791	.000	.791

City of Placentia
N/S: Van Buren Street
E/W: Olive Street
Weather: Clear

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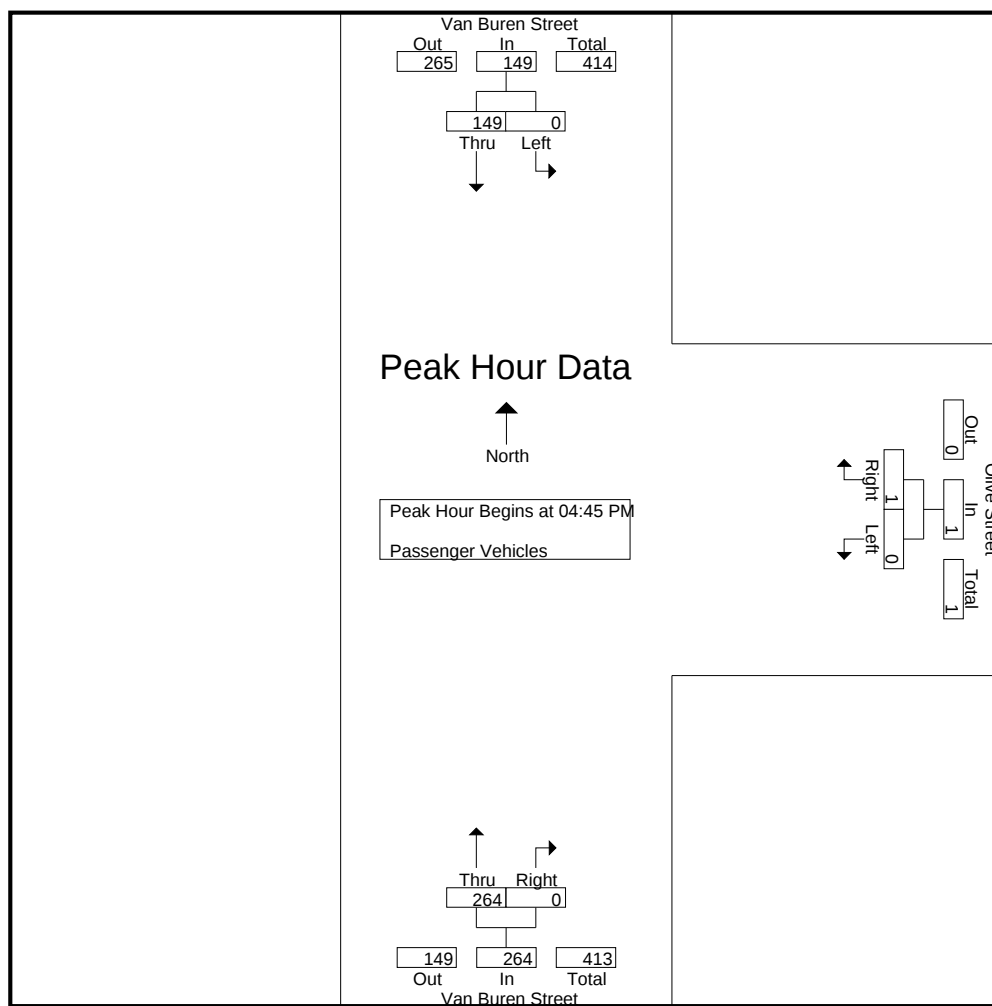
Groups Printed- Passenger Vehicles

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	31	31	0	0	0	56	1	57	88
04:15 PM	0	37	37	0	0	0	39	0	39	76
04:30 PM	0	41	41	0	0	0	50	0	50	91
04:45 PM	0	34	34	0	0	0	61	0	61	95
Total	0	143	143	0	0	0	206	1	207	350
05:00 PM	0	33	33	0	1	1	84	0	84	118
05:15 PM	0	39	39	0	0	0	63	0	63	102
05:30 PM	0	43	43	0	0	0	56	0	56	99
05:45 PM	0	44	44	0	1	1	39	0	39	84
Total	0	159	159	0	2	2	242	0	242	403
Grand Total	0	302	302	0	2	2	448	1	449	753
Apprch %	0	100		0	100		99.8	0.2		
Total %	0	40.1	40.1	0	0.3	0.3	59.5	0.1	59.6	

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	34	34	0	0	0	61	0	61	95
05:00 PM	0	33	33	0	1	1	84	0	84	118
05:15 PM	0	39	39	0	0	0	63	0	63	102
05:30 PM	0	43	43	0	0	0	56	0	56	99
Total Volume	0	149	149	0	1	1	264	0	264	414
% App. Total	0	100		0	100		100	0		
PHF	.000	.866	.866	.000	.250	.250	.786	.000	.786	.877

City of Placentia
N/S: Van Buren Street
E/W: Olive Street
Weather: Clear

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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			04:45 PM		
+0 mins.	0	34	34	0	0	0	61	0	61
+15 mins.	0	33	33	0	1	1	84	0	84
+30 mins.	0	39	39	0	0	0	63	0	63
+45 mins.	0	43	43	0	0	0	56	0	56
Total Volume	0	149	149	0	1	1	264	0	264
% App. Total	0	100		0	100		100	0	
PHF	.000	.866	.866	.000	.250	.250	.786	.000	.786

City of Placentia
N/S: Van Buren Street
E/W: Olive Street
Weather: Clear

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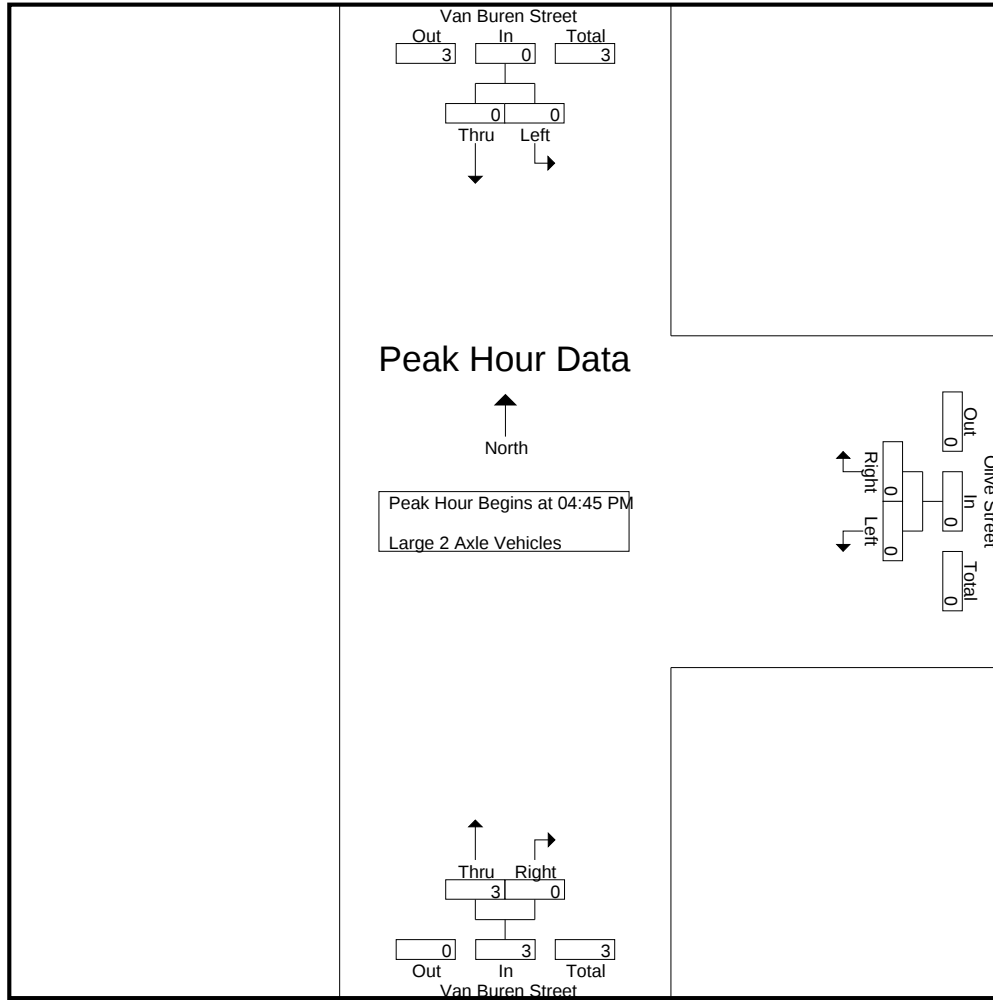
Groups Printed- Large 2 Axle Vehicles

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	1	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	2	0	2	2
05:45 PM	0	1	1	0	0	0	0	0	0	1
Total	0	1	1	0	0	0	3	0	3	4
Grand Total	0	2	2	0	0	0	3	0	3	5
Apprch %	0	100		0	0		100	0		
Total %	0	40	40	0	0	0	60	0	60	

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	1	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	2	0	2	2
Total Volume	0	0	0	0	0	0	3	0	3	3
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.375	.000	.375	.375

City of Placentia
N/S: Van Buren Street
E/W: Olive Street
Weather: Clear

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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			04:45 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	2	0	2
Total Volume	0	0	0	0	0	0	3	0	3
% App. Total	0	0	0	0	0	0	100	0	3
PHF	.000	.000	.000	.000	.000	.000	.375	.000	.375

City of Placentia
N/S: Van Buren Street
E/W: Olive Street
Weather: Clear

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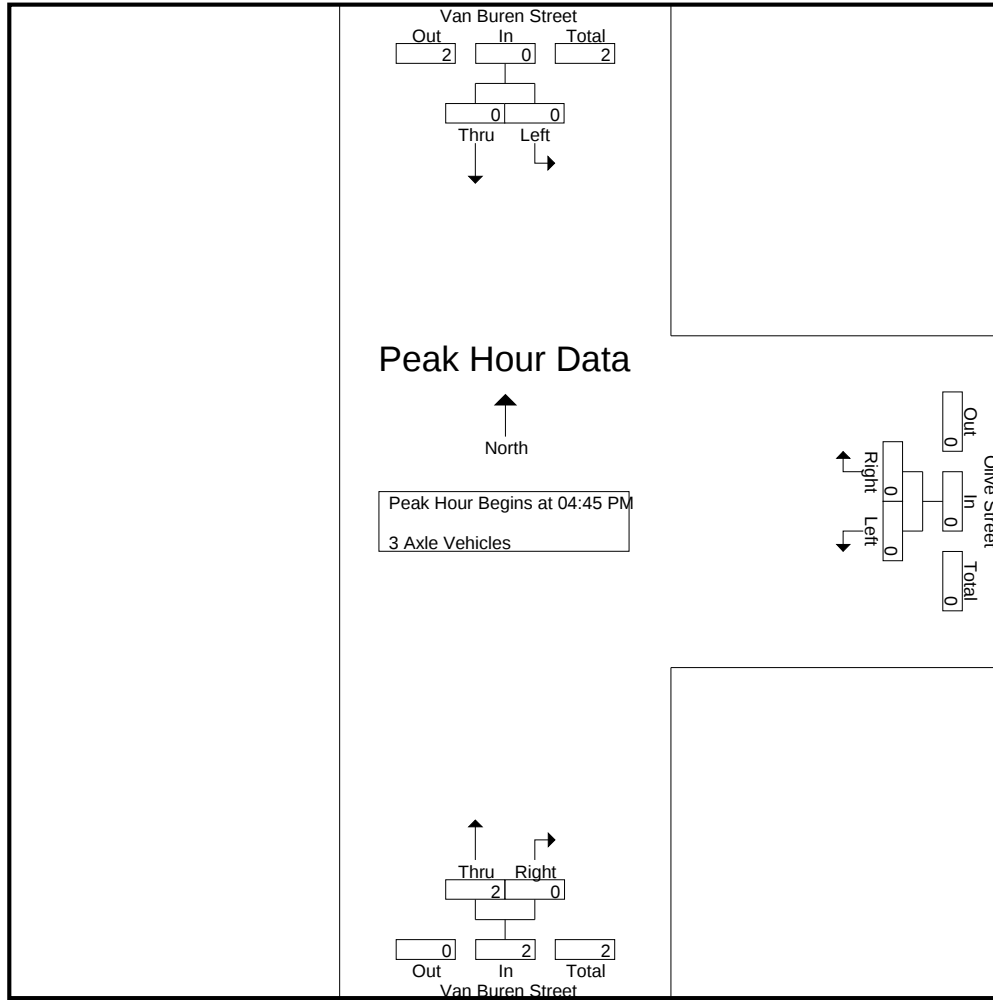
Groups Printed- 3 Axle Vehicles

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	2	0	2	2
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2	0	2	2
Grand Total	0	0	0	0	0	0	2	0	2	2
Apprch %	0	0		0	0		100	0		
Total %	0	0		0	0		100	0	100	

	Van Buren Street Southbound			Olive Street Westbound			Van Buren Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	2	0	2	2
05:30 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	2	0	2	2
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

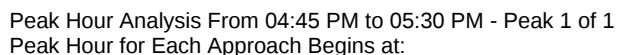
City of Placentia
N/S: Van Buren Street
E/W: Olive Street
Weather: Clear

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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			04:45 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	2	0	2
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	2	0	2
% App. Total	0	0	0	0	0	0	100	0	100
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250

[illegible]

City of Placentia
N/S: Van Buren Street
E/W: Placentia Auto Center DW/Oak Street
Weather: Clear

File Name : 03_PLA_VB_Oak AM
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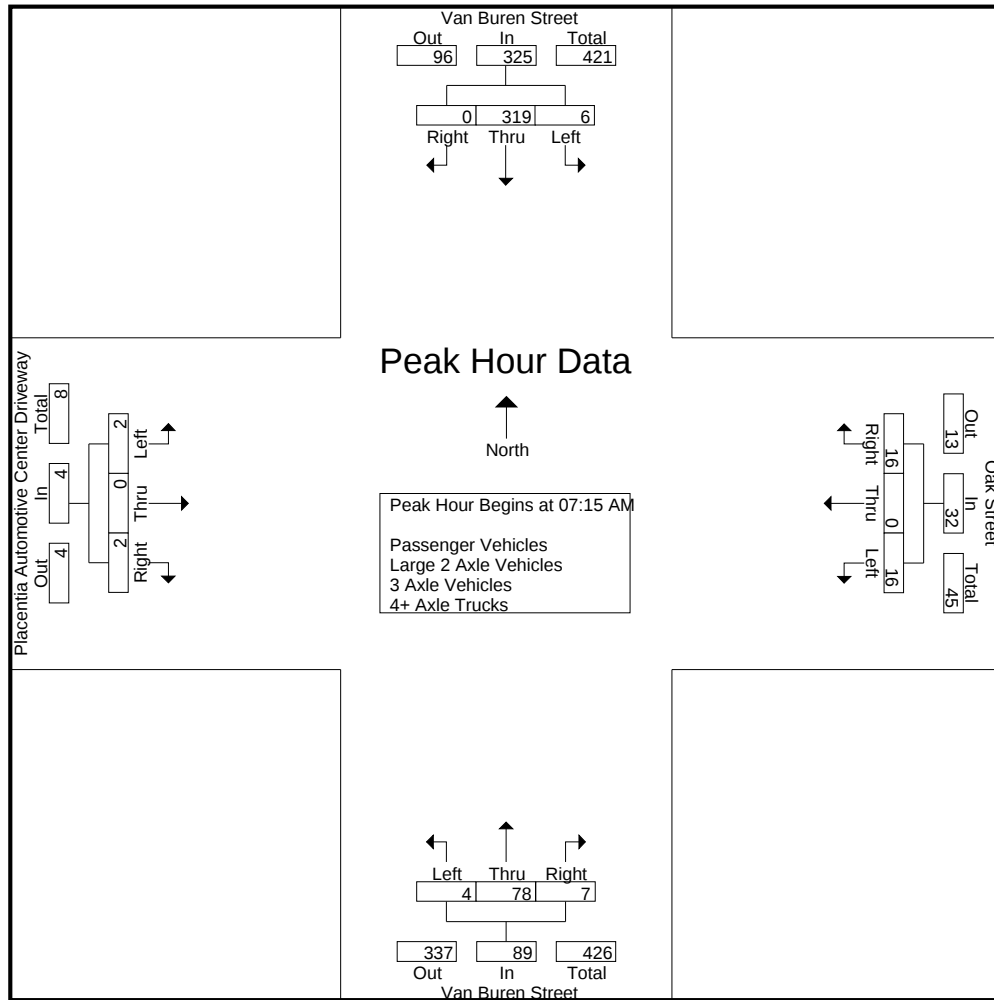
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	61	0	61	1	0	0	1	1	23	1	25	0	0	0	0	87
07:15 AM	0	82	0	82	3	0	5	8	0	15	1	16	0	0	0	0	106
07:30 AM	2	76	0	78	4	0	8	12	2	27	0	29	1	0	0	1	120
07:45 AM	3	88	0	91	6	0	2	8	2	16	5	23	1	0	0	1	123
Total	5	307	0	312	14	0	15	29	5	81	7	93	2	0	0	2	436
08:00 AM	1	73	0	74	3	0	1	4	0	20	1	21	0	0	2	2	101
08:15 AM	0	55	0	55	2	0	1	3	1	20	1	22	0	0	0	0	80
08:30 AM	1	73	0	74	2	0	0	2	1	29	0	30	0	0	1	1	107
08:45 AM	4	48	0	52	3	0	0	3	0	20	0	20	0	0	0	0	75
Total	6	249	0	255	10	0	2	12	2	89	2	93	0	0	3	3	363
Grand Total	11	556	0	567	24	0	17	41	7	170	9	186	2	0	3	5	799
Apprch %	1.9	98.1	0		58.5	0	41.5		3.8	91.4	4.8		40	0	60		
Total %	1.4	69.6	0	71	3	0	2.1	5.1	0.9	21.3	1.1	23.3	0.3	0	0.4	0.6	
Passenger Vehicles	10	547	0	557	23	0	17	40	7	161	8	176	0	0	1	1	774
% Passenger Vehicles	90.9	98.4	0	98.2	95.8	0	100	97.6	100	94.7	88.9	94.6	0	0	33.3	20	96.9
Large 2 Axle Vehicles	1	8	0	9	1	0	0	1	0	8	1	9	0	0	1	1	20
% Large 2 Axle Vehicles	9.1	1.4	0	1.6	4.2	0	0	2.4	0	4.7	11.1	4.8	0	0	33.3	20	2.5
3 Axle Vehicles	0	1	0	1	0	0	0	0	0	0	0	0	2	0	1	3	4
% 3 Axle Vehicles	0	0.2	0	0.2	0	0	0	0	0	0	0	0	100	0	33.3	60	0.5
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0.6	0	0.5	0	0	0	0	0.1

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	82	0	82	3	0	5	8	0	15	1	16	0	0	0	0	106
07:30 AM	2	76	0	78	4	0	8	12	2	27	0	29	1	0	0	1	120
07:45 AM	3	88	0	91	6	0	2	8	2	16	5	23	1	0	0	1	123
08:00 AM	1	73	0	74	3	0	1	4	0	20	1	21	0	0	2	2	101
Total Volume	6	319	0	325	16	0	16	32	4	78	7	89	2	0	2	4	450
% App. Total	1.8	98.2	0		50	0	50		4.5	87.6	7.9		50	0	50		
PHF	.500	.906	.000	.893	.667	.000	.500	.667	.500	.722	.350	.767	.500	.000	.250	.500	.915

City of Placentia
N/S: Van Buren Street
E/W: Placentia Auto Center DW/Oak Street
Weather: Clear

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

	07:15 AM				07:15 AM				07:45 AM				07:15 AM			
+0 mins.	0	82	0	82	3	0	5	8	2	16	5	23	0	0	0	0
+15 mins.	2	76	0	78	4	0	8	12	0	20	1	21	1	0	0	1
+30 mins.	3	88	0	91	6	0	2	8	1	20	1	22	1	0	0	1
+45 mins.	1	73	0	74	3	0	1	4	1	29	0	30	0	0	2	2
Total Volume	6	319	0	325	16	0	16	32	4	85	7	96	2	0	2	4
% App. Total	1.8	98.2	0		50	0	50		4.2	88.5	7.3		50	0	50	
PHF	.500	.906	.000	.893	.667	.000	.500	.667	.500	.733	.350	.800	.500	.000	.250	.500

City of Placentia
N/S: Van Buren Street
E/W: Placentia Auto Center DW/Oak Street
Weather: Clear

File Name : 03_PLA_VB_Oak AM
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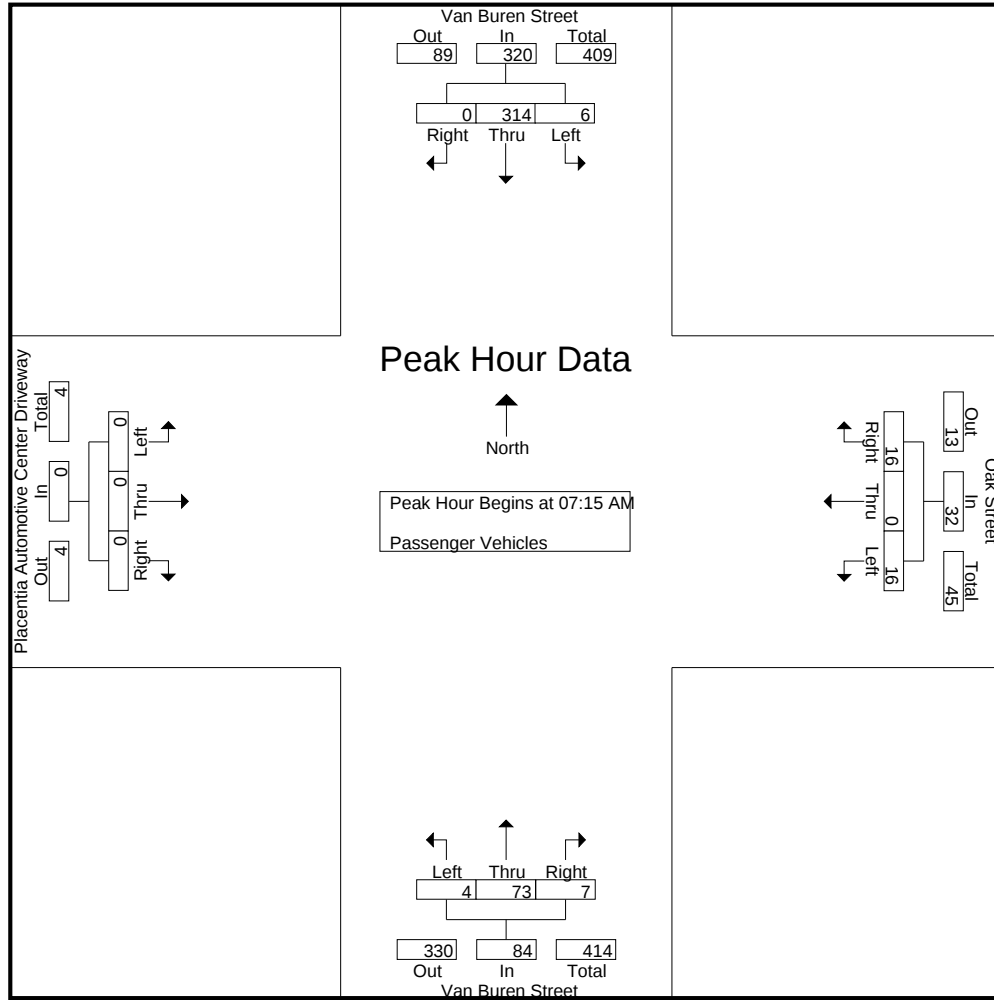
Groups Printed- Passenger Vehicles

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	59	0	59	1	0	0	1	1	21	0	22	0	0	0	0	82
07:15 AM	0	79	0	79	3	0	5	8	0	14	1	15	0	0	0	0	102
07:30 AM	2	75	0	77	4	0	8	12	2	25	0	27	0	0	0	0	116
07:45 AM	3	88	0	91	6	0	2	8	2	15	5	22	0	0	0	0	121
Total	5	301	0	306	14	0	15	29	5	75	6	86	0	0	0	0	421
08:00 AM	1	72	0	73	3	0	1	4	0	19	1	20	0	0	0	0	97
08:15 AM	0	54	0	54	2	0	1	3	1	18	1	20	0	0	0	0	77
08:30 AM	1	73	0	74	2	0	0	2	1	29	0	30	0	0	1	1	107
08:45 AM	3	47	0	50	2	0	0	2	0	20	0	20	0	0	0	0	72
Total	5	246	0	251	9	0	2	11	2	86	2	90	0	0	1	1	353
Grand Total	10	547	0	557	23	0	17	40	7	161	8	176	0	0	1	1	774
Apprch %	1.8	98.2	0		57.5	0	42.5		4	91.5	4.5		0	0	100		
Total %	1.3	70.7	0	72	3	0	2.2	5.2	0.9	20.8	1	22.7	0	0	0.1	0.1	

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	79	0	79	3	0	5	8	0	14	1	15	0	0	0	0	102
07:30 AM	2	75	0	77	4	0	8	12	2	25	0	27	0	0	0	0	116
07:45 AM	3	88	0	91	6	0	2	8	2	15	5	22	0	0	0	0	121
08:00 AM	1	72	0	73	3	0	1	4	0	19	1	20	0	0	0	0	97
Total Volume	6	314	0	320	16	0	16	32	4	73	7	84	0	0	0	0	436
% App. Total	1.9	98.1	0		50	0	50		4.8	86.9	8.3		0	0	0		
PHF	.500	.892	.000	.879	.667	.000	.500	.667	.500	.730	.350	.778	.000	.000	.000	.000	.901

City of Placentia
N/S: Van Buren Street
E/W: Placentia Auto Center DW/Oak Street
Weather: Clear

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

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	79	0	79	3	0	5	8	0	14	1	15	0	0	0	0
+15 mins.	2	75	0	77	4	0	8	12	2	25	0	27	0	0	0	0
+30 mins.	3	88	0	91	6	0	2	8	2	15	5	22	0	0	0	0
+45 mins.	1	72	0	73	3	0	1	4	0	19	1	20	0	0	0	0
Total Volume	6	314	0	320	16	0	16	32	4	73	7	84	0	0	0	0
% App. Total	1.9	98.1	0		50	0	50		4.8	86.9	8.3		0	0	0	
PHF	.500	.892	.000	.879	.667	.000	.500	.667	.500	.730	.350	.778	.000	.000	.000	.000

City of Placentia
N/S: Van Buren Street
E/W: Placentia Auto Center DW/Oak Street
Weather: Clear

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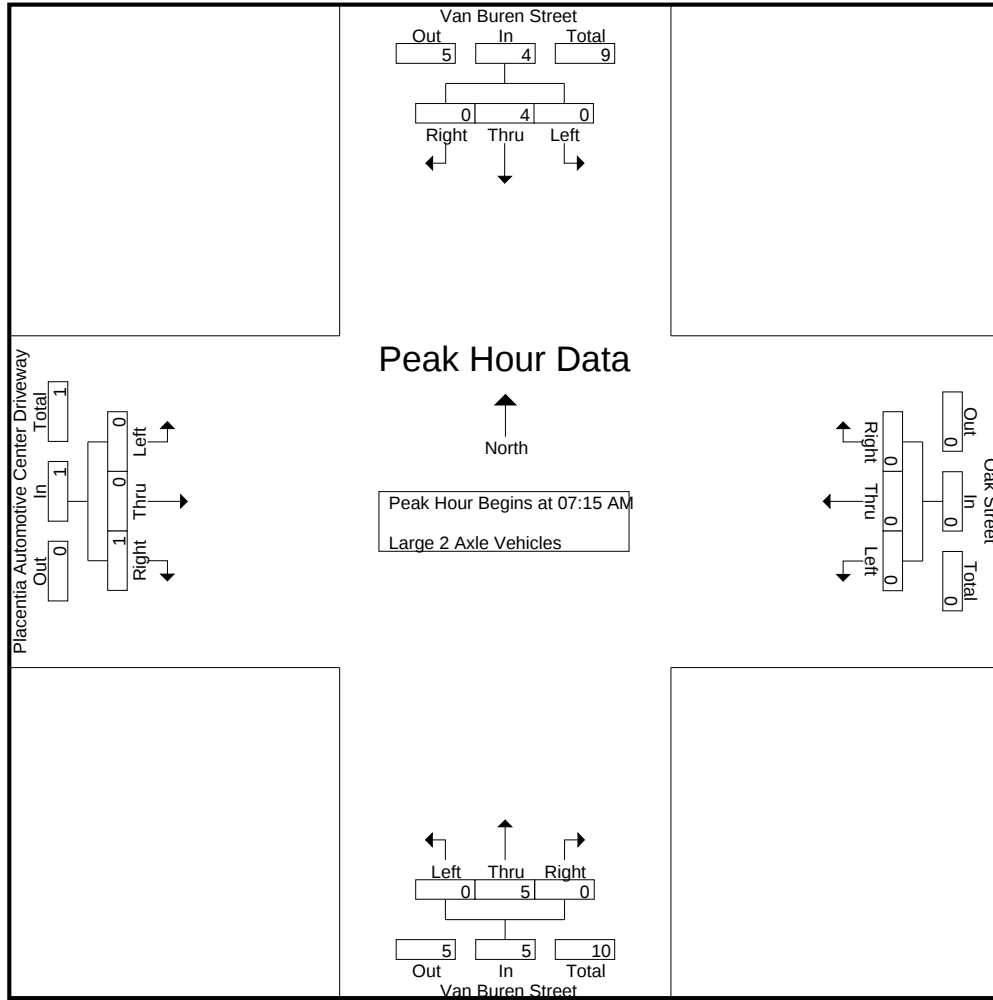
Groups Printed- Large 2 Axle Vehicles

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	2	0	2	0	0	0	0	0	1	1	2	0	0	0	0	4
07:15 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
07:30 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	5	0	5	0	0	0	0	0	5	1	6	0	0	0	0	11
08:00 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1	3
08:15 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	1	1	0	2	1	0	0	1	0	0	0	0	0	0	0	0	3
Total	1	3	0	4	1	0	0	1	0	3	0	3	0	0	1	1	9
Grand Total	1	8	0	9	1	0	0	1	0	8	1	9	0	0	1	1	20
Apprch %	11.1	88.9	0		100	0	0		0	88.9	11.1		0	0	100		
Total %	5	40	0	45	5	0	0	5	0	40	5	45	0	0	5	5	

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
07:30 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:00 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1	3
Total Volume	0	4	0	4	0	0	0	0	0	5	0	5	0	0	1	1	10
% App. Total	0	100	0		0	0	0		0	100	0		0	0	100		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.625	.000	.625	.000	.000	.250	.250	.833

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

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1
Total Volume	0	4	0	4	0	0	0	0	0	5	0	5	0	0	1	1
% App. Total	0	100	0	0	0	0	0	0	0	100	0	0	0	0	100	0
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.625	.000	.625	.000	.000	.250	.250

City of Placentia
N/S: Van Buren Street
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Weather: Clear

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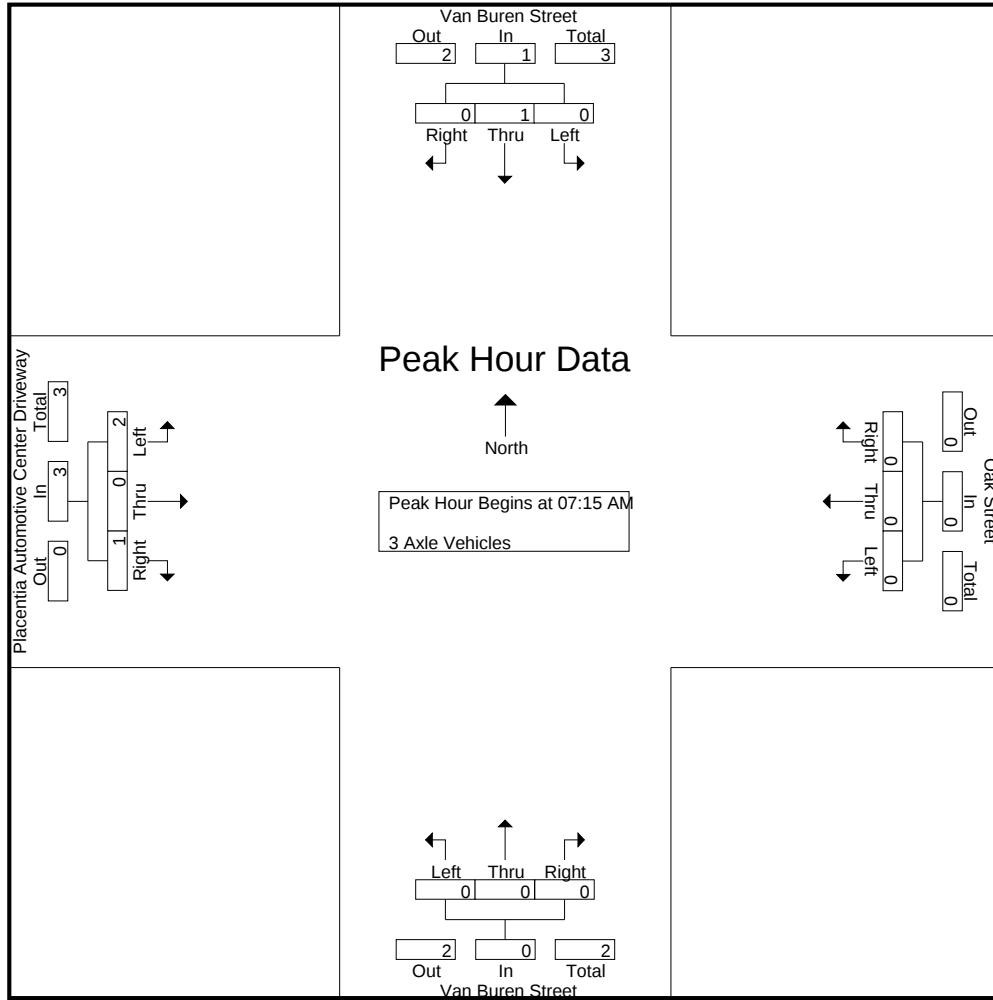
Groups Printed- 3 Axle Vehicles

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	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	1	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	1	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Grand Total	0	1	0	1	0	0	0	0	0	0	0	0	2	0	1	3	4
Apprch %	0	100	0		0	0	0		0	0	0		66.7	0	33.3		
Total %	0	25	0	25	0	0	0	0	0	0	0	0	50	0	25	75	

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	1	0	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	1	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	2	0	1	3	4
% App. Total	0	100	0		0	0	0		0	0	0		66.7	0	33.3		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.250	.750	1.00

City of Placentia
N/S: Van Buren Street
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Weather: Clear

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

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	2	0	1	3
% App. Total	0	100	0	0	0	0	0	0	0	0	0	0	66.7	0	33.3	0
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.250	.750

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City of Placentia
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Weather: Clear

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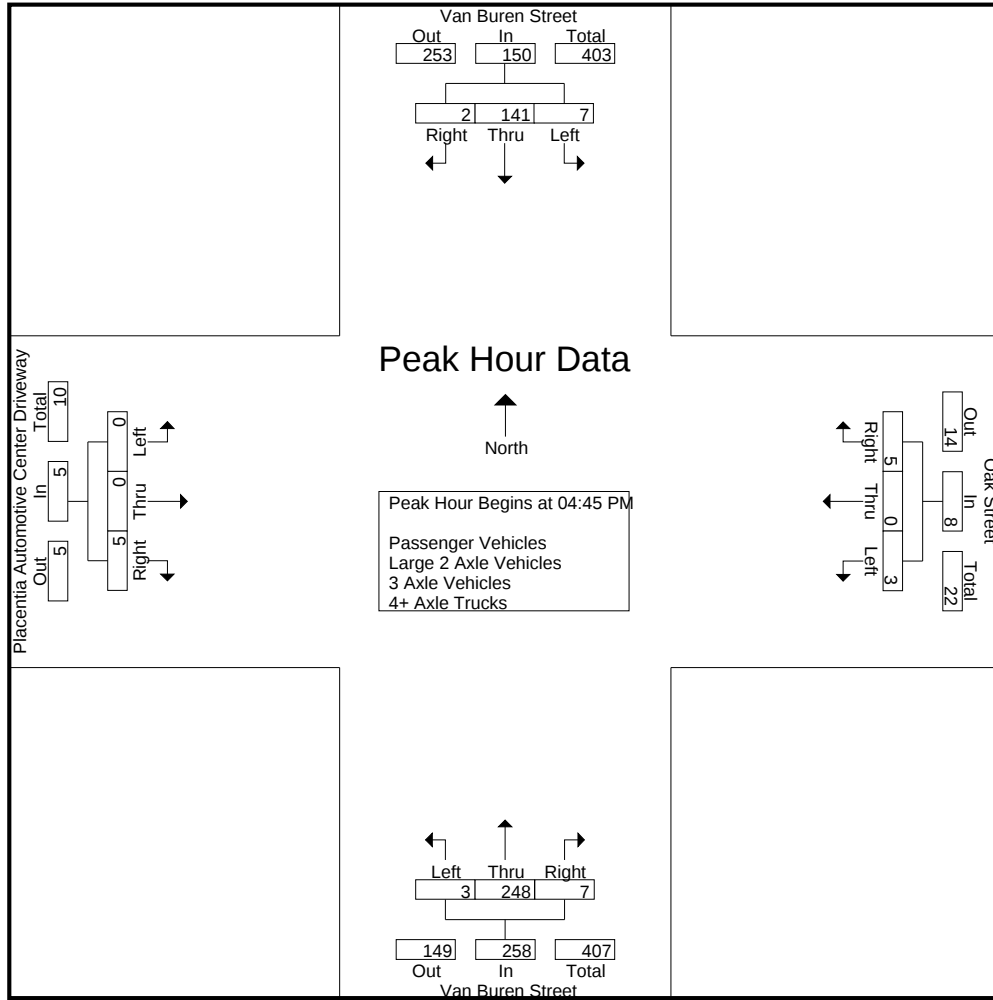
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	4	25	0	29	2	0	1	3	0	53	1	54	0	0	1	1	87
04:15 PM	2	33	2	37	3	0	0	3	1	39	2	42	1	0	3	4	86
04:30 PM	2	42	0	44	2	0	0	2	0	51	2	53	1	0	1	2	101
04:45 PM	1	33	0	34	0	0	2	2	0	56	1	57	0	0	2	2	95
Total	9	133	2	144	7	0	3	10	1	199	6	206	2	0	7	9	369
05:00 PM	2	33	0	35	2	0	1	3	0	78	3	81	0	0	0	0	119
05:15 PM	3	31	2	36	1	0	0	1	3	64	0	67	0	0	1	1	105
05:30 PM	1	44	0	45	0	0	2	2	0	50	3	53	0	0	2	2	102
05:45 PM	1	42	0	43	4	0	1	5	0	37	2	39	0	0	0	0	87
Total	7	150	2	159	7	0	4	11	3	229	8	240	0	0	3	3	413
Grand Total	16	283	4	303	14	0	7	21	4	428	14	446	2	0	10	12	782
Apprch %	5.3	93.4	1.3		66.7	0	33.3		0.9	96	3.1		16.7	0	83.3		
Total %	2	36.2	0.5	38.7	1.8	0	0.9	2.7	0.5	54.7	1.8	57	0.3	0	1.3	1.5	
Passenger Vehicles	16	281	3	300	14	0	7	21	2	423	14	439	2	0	9	11	771
% Passenger Vehicles	100	99.3	75	99	100	0	100	100	50	98.8	100	98.4	100	0	90	91.7	98.6
Large 2 Axle Vehicles	0	2	0	2	0	0	0	0	1	3	0	4	0	0	1	1	7
% Large 2 Axle Vehicles	0	0.7	0	0.7	0	0	0	0	25	0.7	0	0.9	0	0	10	8.3	0.9
3 Axle Vehicles	0	0	1	1	0	0	0	0	1	1	0	2	0	0	0	0	3
% 3 Axle Vehicles	0	0	25	0.3	0	0	0	0	25	0.2	0	0.4	0	0	0	0	0.4
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0.2	0	0.2	0	0	0	0	0.1

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	33	0	34	0	0	2	2	0	56	1	57	0	0	2	2	95
05:00 PM	2	33	0	35	2	0	1	3	0	78	3	81	0	0	0	0	119
05:15 PM	3	31	2	36	1	0	0	1	3	64	0	67	0	0	1	1	105
05:30 PM	1	44	0	45	0	0	2	2	0	50	3	53	0	0	2	2	102
Total Volume	7	141	2	150	3	0	5	8	3	248	7	258	0	0	5	5	421
% App. Total	4.7	94	1.3		37.5	0	62.5		1.2	96.1	2.7		0	0	100		
PHF	.583	.801	.250	.833	.375	.000	.625	.667	.250	.795	.583	.796	.000	.000	.625	.625	.884

City of Placentia
N/S: Van Buren Street
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:30 PM				04:00 PM			
+0 mins.	2	33	0	35	2	0	1	3	0	51	2	53	0	0	1	1
+15 mins.	3	31	2	36	1	0	0	1	0	56	1	57	1	0	3	4
+30 mins.	1	44	0	45	0	0	2	2	0	78	3	81	1	0	1	2
+45 mins.	1	42	0	43	4	0	1	5	3	64	0	67	0	0	2	2
Total Volume	7	150	2	159	7	0	4	11	3	249	6	258	2	0	7	9
% App. Total	4.4	94.3	1.3		63.6	0	36.4		1.2	96.5	2.3		22.2	0	77.8	
PHF	.583	.852	.250	.883	.438	.000	.500	.550	.250	.798	.500	.796	.500	.000	.583	.563

City of Placentia
N/S: Van Buren Street
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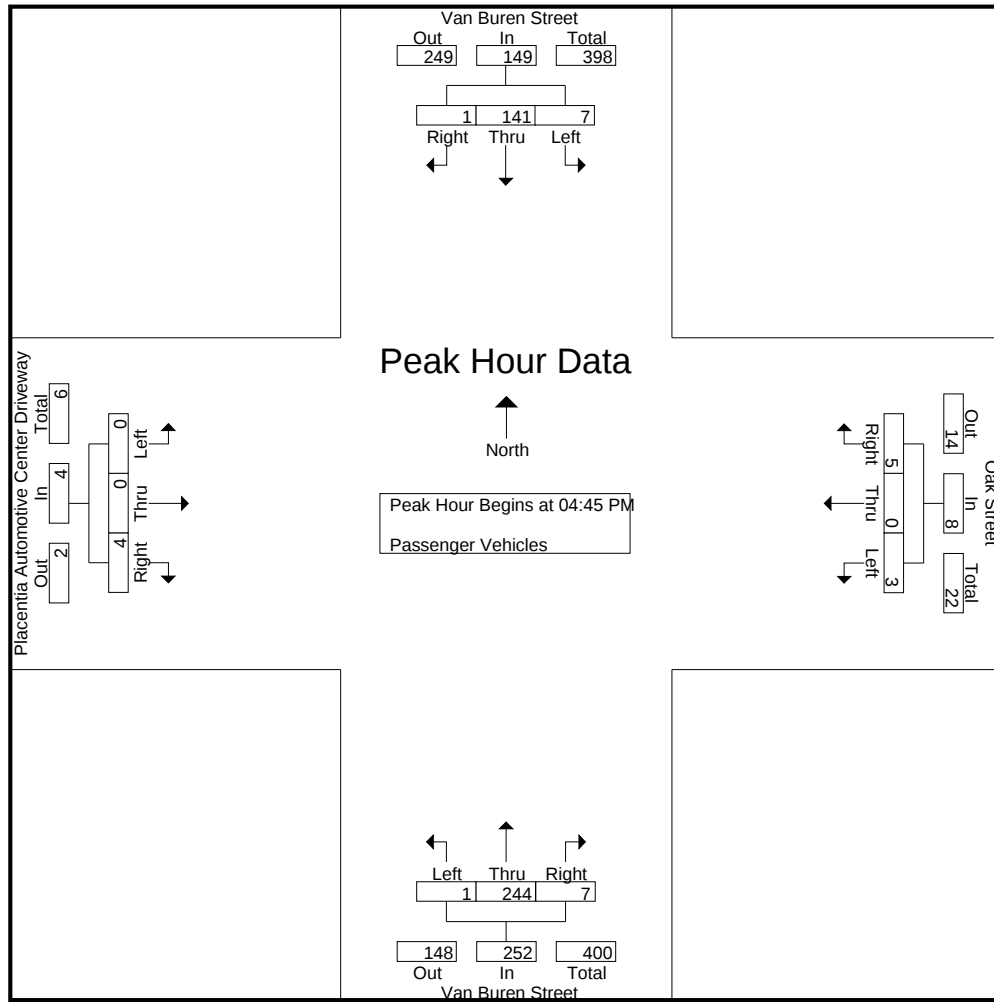
Groups Printed- Passenger Vehicles

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	4	25	0	29	2	0	1	3	0	53	1	54	0	0	1	1	87
04:15 PM	2	33	2	37	3	0	0	3	1	38	2	41	1	0	3	4	85
04:30 PM	2	41	0	43	2	0	0	2	0	51	2	53	1	0	1	2	100
04:45 PM	1	33	0	34	0	0	2	2	0	56	1	57	0	0	2	2	95
Total	9	132	2	143	7	0	3	10	1	198	6	205	2	0	7	9	367
05:00 PM	2	33	0	35	2	0	1	3	0	77	3	80	0	0	0	0	118
05:15 PM	3	31	1	35	1	0	0	1	1	63	0	64	0	0	0	0	100
05:30 PM	1	44	0	45	0	0	2	2	0	48	3	51	0	0	2	2	100
05:45 PM	1	41	0	42	4	0	1	5	0	37	2	39	0	0	0	0	86
Total	7	149	1	157	7	0	4	11	1	225	8	234	0	0	2	2	404
Grand Total	16	281	3	300	14	0	7	21	2	423	14	439	2	0	9	11	771
Apprch %	5.3	93.7	1		66.7	0	33.3		0.5	96.4	3.2		18.2	0	81.8		
Total %	2.1	36.4	0.4	38.9	1.8	0	0.9	2.7	0.3	54.9	1.8	56.9	0.3	0	1.2	1.4	

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	33	0	34	0	0	2	2	0	56	1	57	0	0	2	2	95
05:00 PM	2	33	0	35	2	0	1	3	0	77	3	80	0	0	0	0	118
05:15 PM	3	31	1	35	1	0	0	1	1	63	0	64	0	0	0	0	100
05:30 PM	1	44	0	45	0	0	2	2	0	48	3	51	0	0	2	2	100
Total Volume	7	141	1	149	3	0	5	8	1	244	7	252	0	0	4	4	413
% App. Total	4.7	94.6	0.7		37.5	0	62.5		0.4	96.8	2.8		0	0	100		
PHF	.583	.801	.250	.828	.375	.000	.625	.667	.250	.792	.583	.788	.000	.000	.500	.500	.875

City of Placentia
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Weather: Clear

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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	1	33	0	34	0	0	2	2	0	56	1	57	0	0	2	2
+15 mins.	2	33	0	35	2	0	1	3	0	77	3	80	0	0	0	0
+30 mins.	3	31	1	35	1	0	0	1	1	63	0	64	0	0	0	0
+45 mins.	1	44	0	45	0	0	2	2	0	48	3	51	0	0	2	2
Total Volume	7	141	1	149	3	0	5	8	1	244	7	252	0	0	4	4
% App. Total	4.7	94.6	0.7		37.5	0	62.5		0.4	96.8	2.8		0	0	100	
PHF	.583	.801	.250	.828	.375	.000	.625	.667	.250	.792	.583	.788	.000	.000	.500	.500

City of Placentia
N/S: Van Buren Street
E/W: Placentia Auto Center DW/Oak Street
Weather: Clear

File Name : 03_PLA_VB_Oak PM
Site Code : 10518117
Start Date : 2/15/2018
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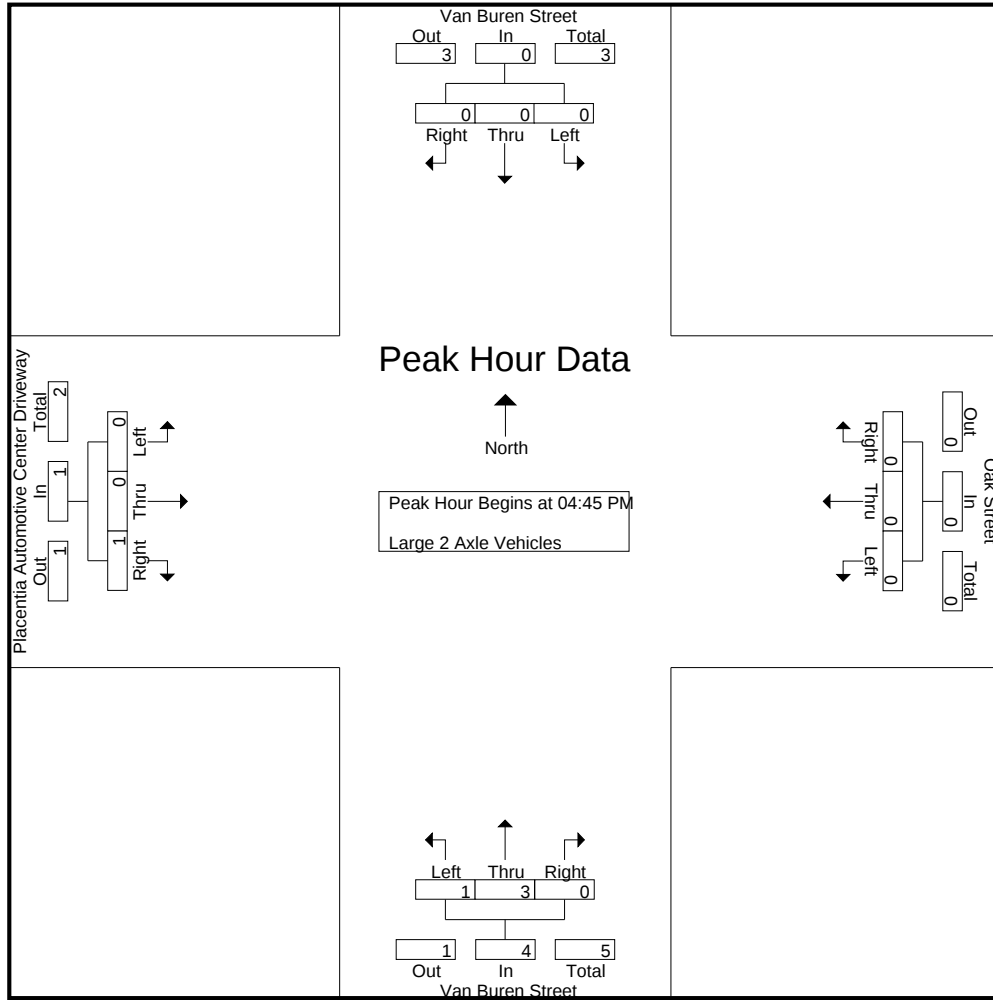
Groups Printed- Large 2 Axle Vehicles

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	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	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	1	0	0	0	0	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
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	2
05:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
05:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	1	3	0	4	0	0	1	1	6
Grand Total	0	2	0	2	0	0	0	0	1	3	0	4	0	0	1	1	7
Apprch %	0	100	0		0	0	0		25	75	0		0	0	100		
Total %	0	28.6	0	28.6	0	0	0	0	14.3	42.9	0	57.1	0	0	14.3	14.3	

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
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	0	0	0	0	0	1	0	1	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	2
05:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	1	3	0	4	0	0	1	1	5
% App. Total	0	0	0		0	0	0		25	75	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.375	.000	.500	.000	.000	.250	.250	.625

City of Placentia
N/S: Van Buren Street
E/W: Placentia Auto Center DW/Oak Street
Weather: Clear

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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1
+45 mins.	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	1	3	0	4	0	0	1	1
% App. Total	0	0	0	0	0	0	0	0	25	75	0		0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.375	.000	.500	.000	.000	.250	.250

City of Placentia
N/S: Van Buren Street
E/W: Placentia Auto Center DW/Oak Street
Weather: Clear

File Name : 03_PLA_VB_Oak PM
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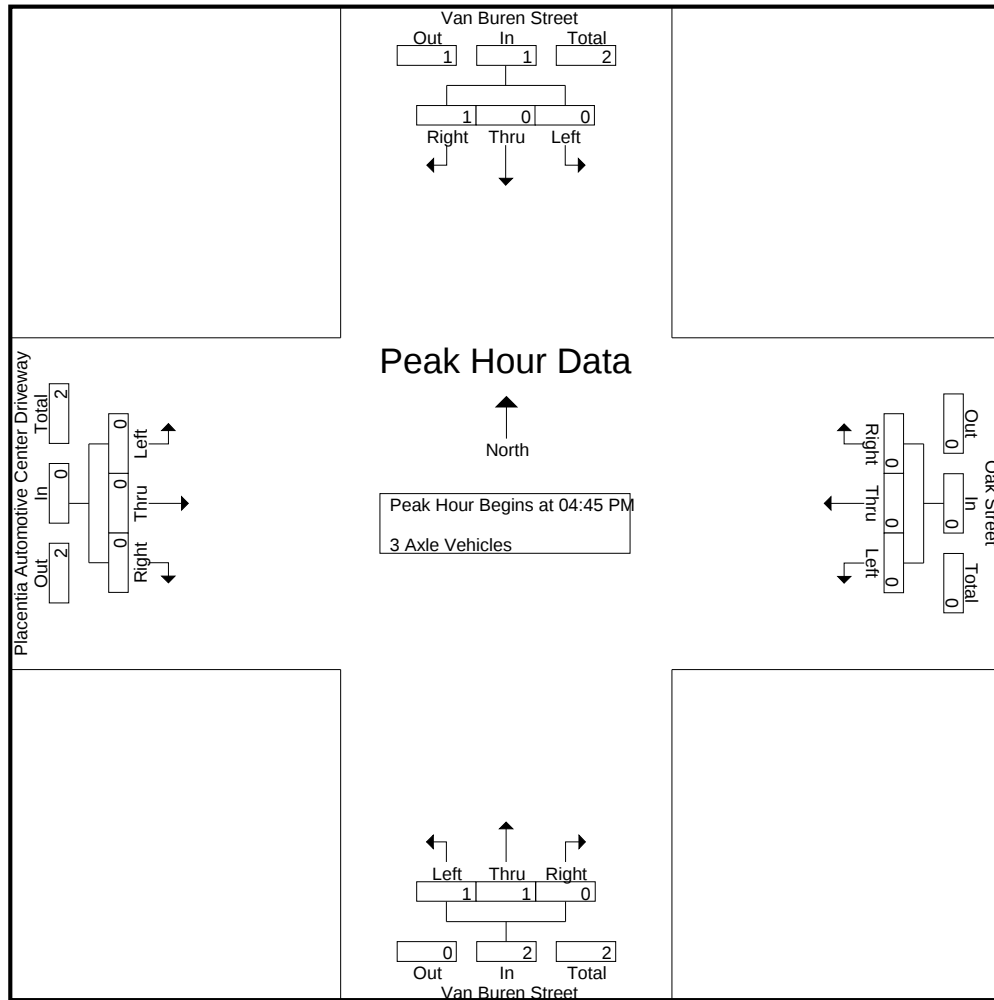
Groups Printed- 3 Axle Vehicles

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	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	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	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	1	1	0	0	0	0	1	1	0	2	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0	1	1	0	2	0	0	0	0	3
Grand Total	0	0	1	1	0	0	0	0	1	1	0	2	0	0	0	0	3
Apprch %	0	0	100		0	0	0		50	50	0		0	0	0		
Total %	0	0	33.3	33.3	0	0	0	0	33.3	33.3	0	66.7	0	0	0	0	

	Van Buren Street Southbound				Oak Street Westbound				Van Buren Street Northbound				Placentia Automotive Center Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
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	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	1	1	0	0	0	0	1	1	0	2	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	1	1	0	2	0	0	0	0	3
% App. Total	0	0	100		0	0	0		50	50	0		0	0	0		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.250	.250	.000	.250	.000	.000	.000	.000	.250

City of Placentia
N/S: Van Buren Street
E/W: Placentia Auto Center DW/Oak Street
Weather: Clear

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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	1	1	0	0	0	0	1	1	0	2	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	1	1	0	2	0	0	0	0
% App. Total	0	0	100		0	0	0		50	50	0		0	0	0	
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.250	.250	.000	.250	.000	.000	.000	.000

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[illegible]

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
Weather: Clear

File Name : 04_PLA_VB_Miraloma AM
Site Code : 10518117
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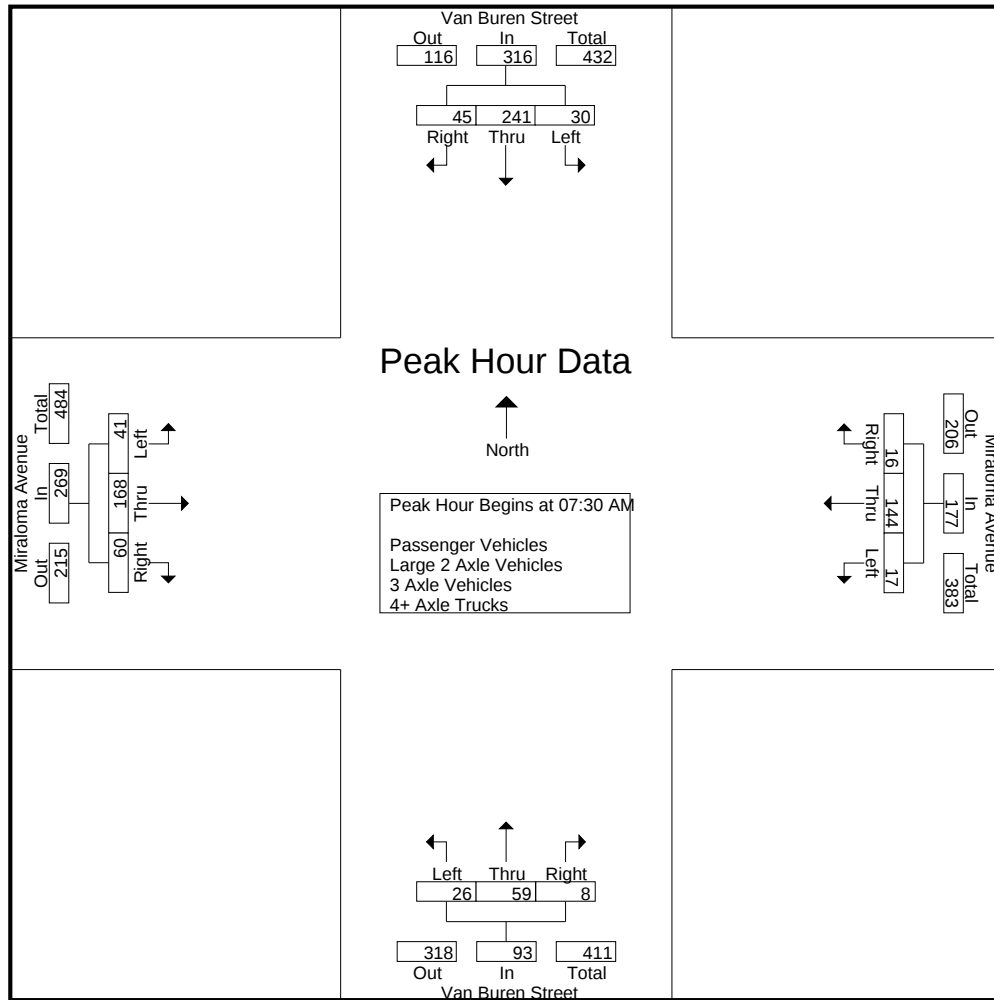
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	63	6	73	6	24	1	31	2	16	3	21	8	44	12	64	189
07:15 AM	9	68	13	90	3	26	3	32	3	12	3	18	6	37	11	54	194
07:30 AM	7	60	14	81	7	45	6	58	8	13	1	22	11	39	13	63	224
07:45 AM	9	62	13	84	8	27	6	41	6	12	0	18	9	54	25	88	231
Total	29	253	46	328	24	122	16	162	19	53	7	79	34	174	61	269	838
08:00 AM	7	61	11	79	2	35	3	40	6	19	4	29	7	32	11	50	198
08:15 AM	7	58	7	72	0	37	1	38	6	15	3	24	14	43	11	68	202
08:30 AM	8	67	14	89	6	25	2	33	5	20	4	29	6	44	9	59	210
08:45 AM	5	53	12	70	2	27	8	37	9	14	2	25	4	34	15	53	185
Total	27	239	44	310	10	124	14	148	26	68	13	107	31	153	46	230	795
Grand Total	56	492	90	638	34	246	30	310	45	121	20	186	65	327	107	499	1633
Apprch %	8.8	77.1	14.1		11	79.4	9.7		24.2	65.1	10.8		13	65.5	21.4		
Total %	3.4	30.1	5.5	39.1	2.1	15.1	1.8	19	2.8	7.4	1.2	11.4	4	20	6.6	30.6	
Passenger Vehicles	56	477	84	617	32	232	26	290	43	116	17	176	62	302	104	468	1551
% Passenger Vehicles	100	97	93.3	96.7	94.1	94.3	86.7	93.5	95.6	95.9	85	94.6	95.4	92.4	97.2	93.8	95
Large 2 Axle Vehicles	0	9	6	15	2	10	4	16	1	3	2	6	2	19	3	24	61
% Large 2 Axle Vehicles	0	1.8	6.7	2.4	5.9	4.1	13.3	5.2	2.2	2.5	10	3.2	3.1	5.8	2.8	4.8	3.7
3 Axle Vehicles	0	2	0	2	0	2	0	2	0	0	0	0	1	3	0	4	8
% 3 Axle Vehicles	0	0.4	0	0.3	0	0.8	0	0.6	0	0	0	0	1.5	0.9	0	0.8	0.5
4+ Axle Trucks	0	4	0	4	0	2	0	2	1	2	1	4	0	3	0	3	13
% 4+ Axle Trucks	0	0.8	0	0.6	0	0.8	0	0.6	2.2	1.7	5	2.2	0	0.9	0	0.6	0.8

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	7	60	14	81	7	45	6	58	8	13	1	22	11	39	13	63	224
07:45 AM	9	62	13	84	8	27	6	41	6	12	0	18	9	54	25	88	231
08:00 AM	7	61	11	79	2	35	3	40	6	19	4	29	7	32	11	50	198
08:15 AM	7	58	7	72	0	37	1	38	6	15	3	24	14	43	11	68	202
Total Volume	30	241	45	316	17	144	16	177	26	59	8	93	41	168	60	269	855
% App. Total	9.5	76.3	14.2		9.6	81.4	9		28	63.4	8.6		15.2	62.5	22.3		
PHF	.833	.972	.804	.940	.531	.800	.667	.763	.813	.776	.500	.802	.732	.778	.600	.764	.925

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
Weather: Clear

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

	07:15 AM				07:30 AM				08:00 AM				07:00 AM			
+0 mins.	9	68	13	90	7	45	6	58	6	19	4	29	8	44	12	64
+15 mins.	7	60	14	81	8	27	6	41	6	15	3	24	6	37	11	54
+30 mins.	9	62	13	84	2	35	3	40	5	20	4	29	11	39	13	63
+45 mins.	7	61	11	79	0	37	1	38	9	14	2	25	9	54	25	88
Total Volume	32	251	51	334	17	144	16	177	26	68	13	107	34	174	61	269
% App. Total	9.6	75.1	15.3		9.6	81.4	9		24.3	63.6	12.1		12.6	64.7	22.7	
PHF	.889	.923	.911	.928	.531	.800	.667	.763	.722	.850	.813	.922	.773	.806	.610	.764

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
Weather: Clear

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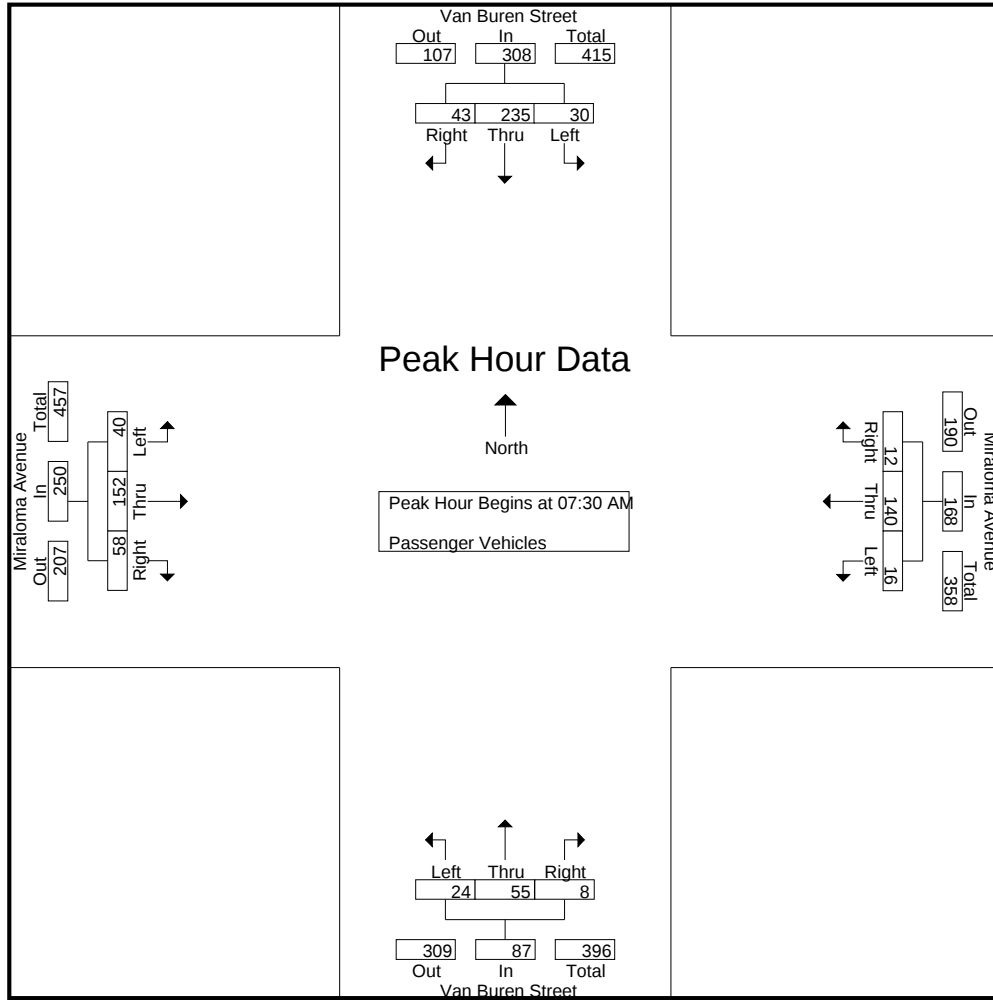
Groups Printed- Passenger Vehicles

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	62	6	72	6	21	1	28	2	16	3	21	7	44	12	63	184
07:15 AM	9	64	11	84	3	25	3	31	3	11	3	17	6	31	11	48	180
07:30 AM	7	58	12	77	6	44	4	54	8	12	1	21	11	35	13	59	211
07:45 AM	9	62	13	84	8	26	5	39	4	12	0	16	9	51	23	83	222
Total	29	246	42	317	23	116	13	152	17	51	7	75	33	161	59	253	797
08:00 AM	7	58	11	76	2	34	3	39	6	18	4	28	6	28	11	45	188
08:15 AM	7	57	7	71	0	36	0	36	6	13	3	22	14	38	11	63	192
08:30 AM	8	65	13	86	6	23	2	31	5	20	2	27	6	41	9	56	200
08:45 AM	5	51	11	67	1	23	8	32	9	14	1	24	3	34	14	51	174
Total	27	231	42	300	9	116	13	138	26	65	10	101	29	141	45	215	754
Grand Total	56	477	84	617	32	232	26	290	43	116	17	176	62	302	104	468	1551
Apprch %	9.1	77.3	13.6		11	80	9		24.4	65.9	9.7		13.2	64.5	22.2		
Total %	3.6	30.8	5.4	39.8	2.1	15	1.7	18.7	2.8	7.5	1.1	11.3	4	19.5	6.7	30.2	

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	7	58	12	77	6	44	4	54	8	12	1	21	11	35	13	59	211
07:45 AM	9	62	13	84	8	26	5	39	4	12	0	16	9	51	23	83	222
08:00 AM	7	58	11	76	2	34	3	39	6	18	4	28	6	28	11	45	188
08:15 AM	7	57	7	71	0	36	0	36	6	13	3	22	14	38	11	63	192
Total Volume	30	235	43	308	16	140	12	168	24	55	8	87	40	152	58	250	813
% App. Total	9.7	76.3	14		9.5	83.3	7.1		27.6	63.2	9.2		16	60.8	23.2		
PHF	.833	.948	.827	.917	.500	.795	.600	.778	.750	.764	.500	.777	.714	.745	.630	.753	.916

City of Placentia
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	7	58	12	77	6	44	4	54	8	12	1	21	11	35	13	59
+15 mins.	9	62	13	84	8	26	5	39	4	12	0	16	9	51	23	83
+30 mins.	7	58	11	76	2	34	3	39	6	18	4	28	6	28	11	45
+45 mins.	7	57	7	71	0	36	0	36	6	13	3	22	14	38	11	63
Total Volume	30	235	43	308	16	140	12	168	24	55	8	87	40	152	58	250
% App. Total	9.7	76.3	14		9.5	83.3	7.1		27.6	63.2	9.2		16	60.8	23.2	
PHF	.833	.948	.827	.917	.500	.795	.600	.778	.750	.764	.500	.777	.714	.745	.630	.753

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
Weather: Clear

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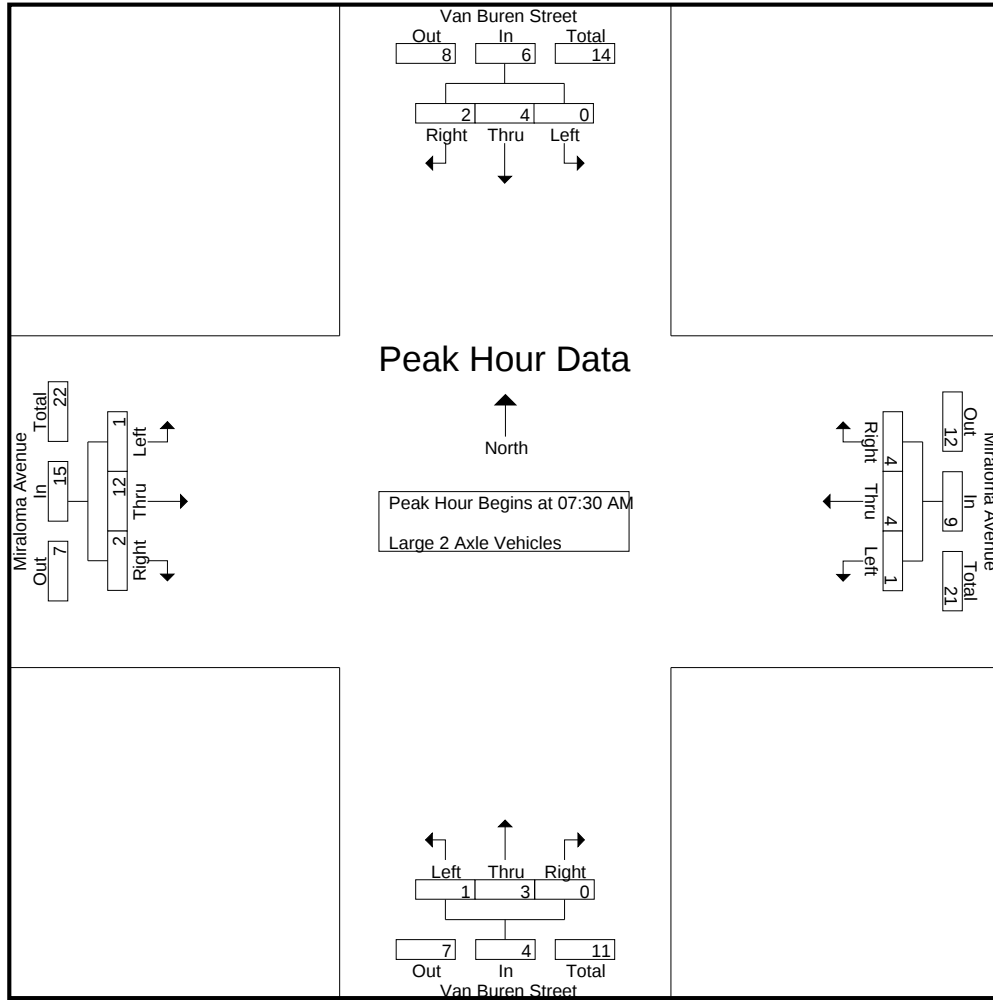
Groups Printed- Large 2 Axle Vehicles

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	3	0	3	0	0	0	0	1	0	0	1	5
07:15 AM	0	2	2	4	0	0	0	0	0	0	0	0	0	5	0	5	9
07:30 AM	0	1	2	3	1	1	2	4	0	1	0	1	0	2	0	2	10
07:45 AM	0	0	0	0	0	1	1	2	1	0	0	1	0	2	2	4	7
Total	0	4	4	8	1	5	3	9	1	1	0	2	1	9	2	12	31
08:00 AM	0	2	0	2	0	1	0	1	0	0	0	0	1	3	0	4	7
08:15 AM	0	1	0	1	0	1	1	2	0	2	0	2	0	5	0	5	10
08:30 AM	0	1	1	2	0	2	0	2	0	0	1	1	0	2	0	2	7
08:45 AM	0	1	1	2	1	1	0	2	0	0	1	1	0	0	1	1	6
Total	0	5	2	7	1	5	1	7	0	2	2	4	1	10	1	12	30
Grand Total	0	9	6	15	2	10	4	16	1	3	2	6	2	19	3	24	61
Apprch %	0	60	40		12.5	62.5	25		16.7	50	33.3		8.3	79.2	12.5		
Total %	0	14.8	9.8	24.6	3.3	16.4	6.6	26.2	1.6	4.9	3.3	9.8	3.3	31.1	4.9	39.3	

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	1	2	3	1	1	2	4	0	1	0	1	0	2	0	2	10
07:45 AM	0	0	0	0	0	1	1	2	1	0	0	1	0	2	2	4	7
08:00 AM	0	2	0	2	0	1	0	1	0	0	0	0	1	3	0	4	7
08:15 AM	0	1	0	1	0	1	1	2	0	2	0	2	0	5	0	5	10
Total Volume	0	4	2	6	1	4	4	9	1	3	0	4	1	12	2	15	34
% App. Total	0	66.7	33.3		11.1	44.4	44.4		25	75	0		6.7	80	13.3		
PHF	.000	.500	.250	.500	.250	1.00	.500	.563	.250	.375	.000	.500	.250	.600	.250	.750	.850

City of Placentia
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Weather: Clear

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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	1	2	3	1	1	2	4	0	1	0	1	0	2	0	2
+15 mins.	0	0	0	0	0	1	1	2	1	0	0	1	0	2	2	4
+30 mins.	0	2	0	2	0	1	0	1	0	0	0	0	1	3	0	4
+45 mins.	0	1	0	1	0	1	1	2	0	2	0	2	0	5	0	5
Total Volume	0	4	2	6	1	4	4	9	1	3	0	4	1	12	2	15
% App. Total	0	66.7	33.3		11.1	44.4	44.4		25	75	0		6.7	80	13.3	
PHF	.000	.500	.250	.500	.250	1.000	.500	.563	.250	.375	.000	.500	.250	.600	.250	.750

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
Weather: Clear

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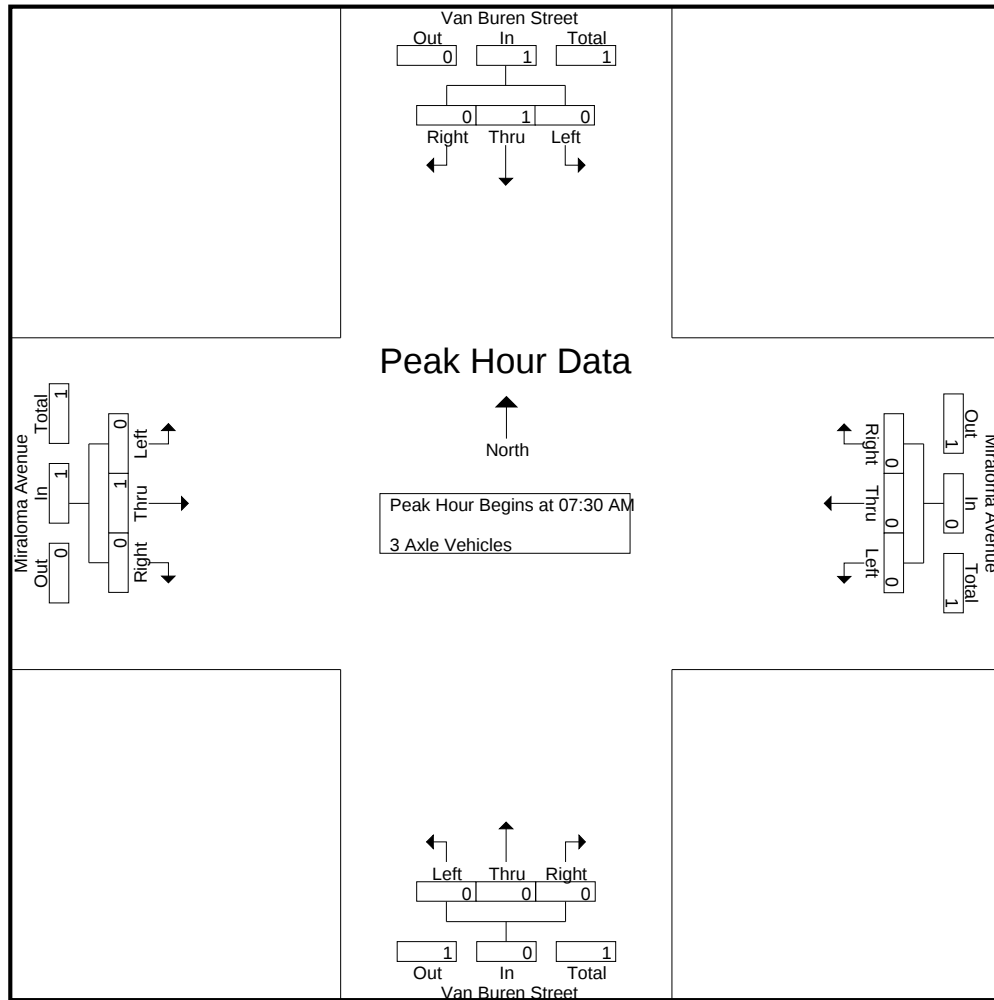
Groups Printed- 3 Axle Vehicles

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	1	0	1	0	1	0	0	0	0	0	1	0	1	3
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	0	0	0
Total	0	1	0	1	0	1	0	1	0	0	0	0	0	1	0	1	3
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
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	1	0	1	1
08:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	2
Total	0	1	0	1	0	1	0	1	0	0	0	0	1	2	0	3	5
Grand Total	0	2	0	2	0	2	0	2	0	0	0	0	1	3	0	4	8
Apprch %	0	100	0		0	100	0		0	0	0		25	75	0		
Total %	0	25	0	25	0	25	0	25	0	0	0	0	12.5	37.5	0	50	

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
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	0	0	0
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
% App. Total	0	100	0		0	0	0		0	0	0		0	100	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

City of Placentia
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	100	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
Weather: Clear

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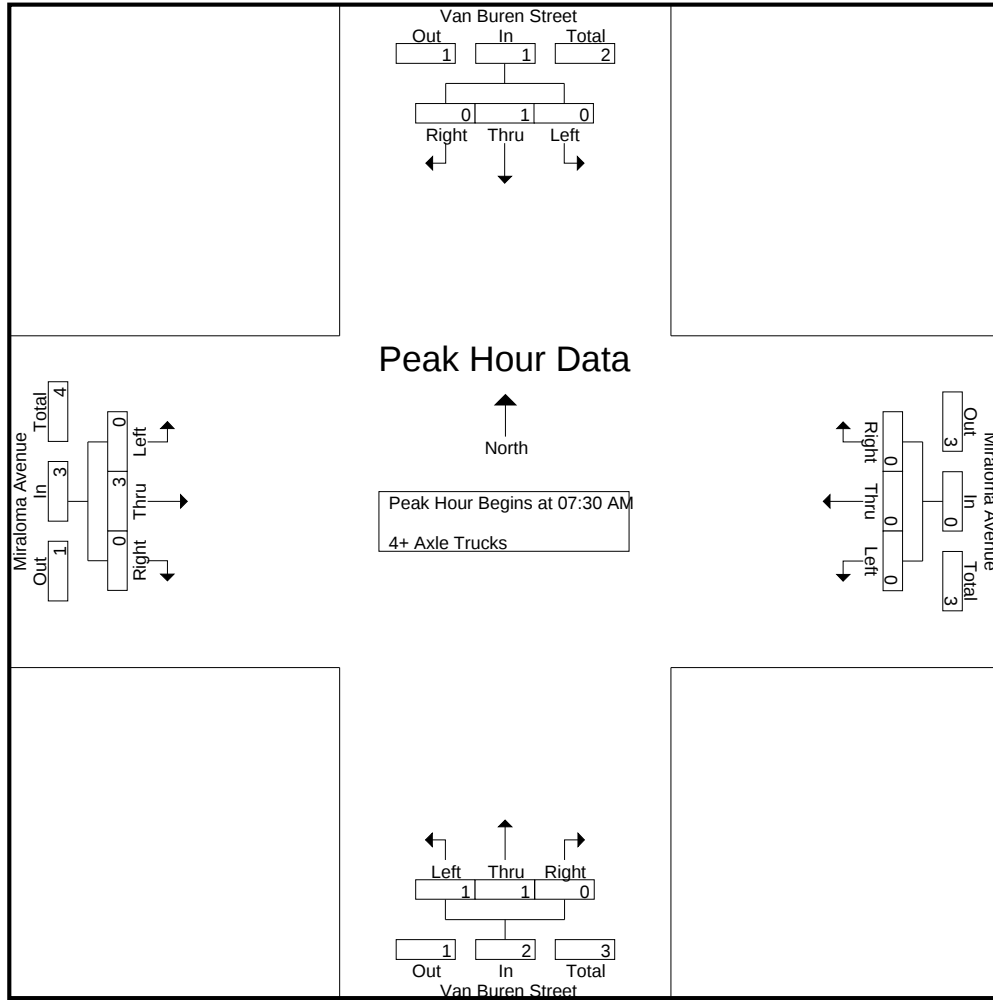
Groups Printed- 4+ Axle Trucks

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
07:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2	3
07:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	2
Total	0	2	0	2	0	0	0	0	1	1	0	2	0	3	0	3	7
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	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	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
08:45 AM	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	3
Total	0	2	0	2	0	2	0	2	0	1	1	2	0	0	0	0	6
Grand Total	0	4	0	4	0	2	0	2	1	2	1	4	0	3	0	3	13
Apprch %	0	100	0		0	100	0		25	50	25		0	100	0		
Total %	0	30.8	0	30.8	0	15.4	0	15.4	7.7	15.4	7.7	30.8	0	23.1	0	23.1	

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2	3
07:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	2
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	1	1	0	2	0	3	0	3	6
% App. Total	0	100	0		0	0	0		50	50	0		0	100	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.250	.250	.000	.500	.000	.375	.000	.375	.500

City of Placentia
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2
+15 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	1	1	0	2	0	3	0	3
% App. Total	0	100	0	0	0	0	0	0	50	50	0	0	0	100	0	0
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.250	.250	.000	.500	.000	.375	.000	.375

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
Weather: Clear

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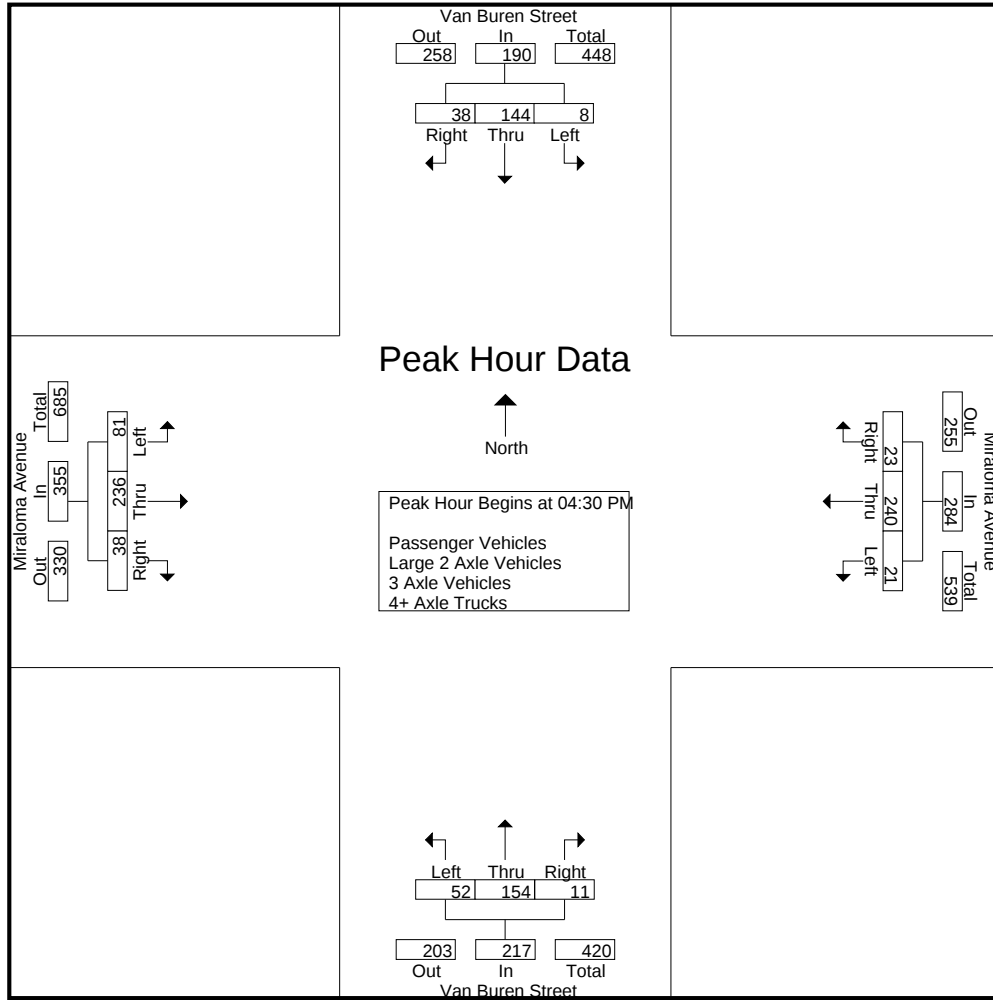
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	6	19	12	37	4	44	7	55	8	37	8	53	16	42	10	68	213
04:15 PM	4	28	11	43	8	50	3	61	10	35	1	46	12	35	3	50	200
04:30 PM	2	37	10	49	5	68	6	79	15	31	1	47	19	54	12	85	260
04:45 PM	0	25	11	36	7	48	1	56	15	36	2	53	24	62	9	95	240
Total	12	109	44	165	24	210	17	251	48	139	12	199	71	193	34	298	913
05:00 PM	2	45	12	59	6	85	8	99	13	52	8	73	21	62	7	90	321
05:15 PM	4	37	5	46	3	39	8	50	9	35	0	44	17	58	10	85	225
05:30 PM	6	36	8	50	2	43	5	50	5	35	5	45	17	54	5	76	221
05:45 PM	5	35	7	47	1	21	2	24	12	29	6	47	14	40	5	59	177
Total	17	153	32	202	12	188	23	223	39	151	19	209	69	214	27	310	944
Grand Total	29	262	76	367	36	398	40	474	87	290	31	408	140	407	61	608	1857
Apprch %	7.9	71.4	20.7		7.6	84	8.4		21.3	71.1	7.6		23	66.9	10		
Total %	1.6	14.1	4.1	19.8	1.9	21.4	2.2	25.5	4.7	15.6	1.7	22	7.5	21.9	3.3	32.7	
Passenger Vehicles	29	260	76	365	34	378	39	451	84	286	26	396	136	397	56	589	1801
% Passenger Vehicles	100	99.2	100	99.5	94.4	95	97.5	95.1	96.6	98.6	83.9	97.1	97.1	97.5	91.8	96.9	97
Large 2 Axle Vehicles	0	2	0	2	1	13	1	15	3	3	0	6	2	8	4	14	37
% Large 2 Axle Vehicles	0	0.8	0	0.5	2.8	3.3	2.5	3.2	3.4	1	0	1.5	1.4	2	6.6	2.3	2
3 Axle Vehicles	0	0	0	0	1	3	0	4	0	1	5	6	2	0	0	2	12
% 3 Axle Vehicles	0	0	0	0	2.8	0.8	0	0.8	0	0.3	16.1	1.5	1.4	0	0	0.3	0.6
4+ Axle Trucks	0	0	0	0	0	4	0	4	0	0	0	0	0	2	1	3	7
% 4+ Axle Trucks	0	0	0	0	0	1	0	0.8	0	0	0	0	0	0.5	1.6	0.5	0.4

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	2	37	10	49	5	68	6	79	15	31	1	47	19	54	12	85	260
04:45 PM	0	25	11	36	7	48	1	56	15	36	2	53	24	62	9	95	240
05:00 PM	2	45	12	59	6	85	8	99	13	52	8	73	21	62	7	90	321
05:15 PM	4	37	5	46	3	39	8	50	9	35	0	44	17	58	10	85	225
Total Volume	8	144	38	190	21	240	23	284	52	154	11	217	81	236	38	355	1046
% App. Total	4.2	75.8	20		7.4	84.5	8.1		24	71	5.1		22.8	66.5	10.7		
PHF	.500	.800	.792	.805	.750	.706	.719	.717	.867	.740	.344	.743	.844	.952	.792	.934	.815

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

	05:00 PM				04:15 PM				04:15 PM				04:30 PM			
+0 mins.	2	45	12	59	8	50	3	61	10	35	1	46	19	54	12	85
+15 mins.	4	37	5	46	5	68	6	79	15	31	1	47	24	62	9	95
+30 mins.	6	36	8	50	7	48	1	56	15	36	2	53	21	62	7	90
+45 mins.	5	35	7	47	6	85	8	99	13	52	8	73	17	58	10	85
Total Volume	17	153	32	202	26	251	18	295	53	154	12	219	81	236	38	355
% App. Total	8.4	75.7	15.8		8.8	85.1	6.1		24.2	70.3	5.5		22.8	66.5	10.7	
PHF	.708	.850	.667	.856	.813	.738	.563	.745	.883	.740	.375	.750	.844	.952	.792	.934

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
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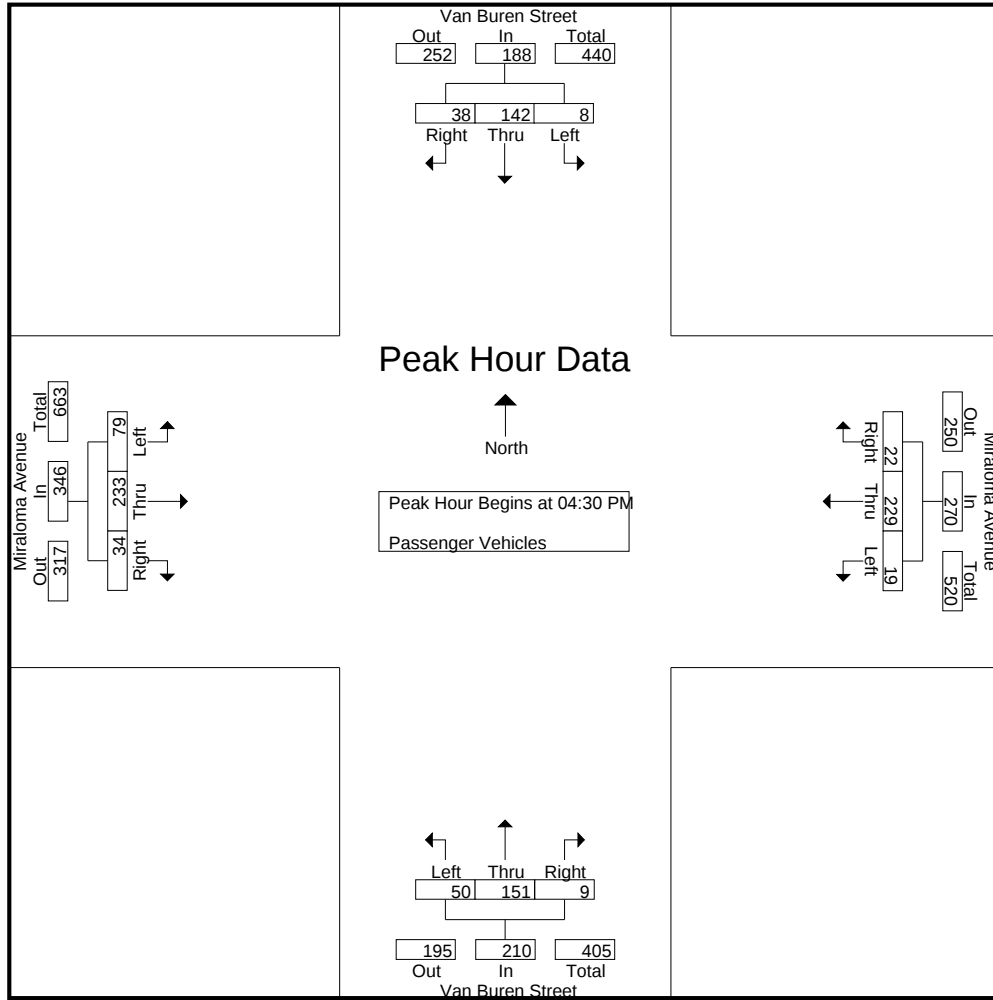
Groups Printed- Passenger Vehicles

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	6	19	12	37	4	41	7	52	7	37	7	51	15	39	10	64	204
04:15 PM	4	28	11	43	8	49	3	60	10	34	1	45	12	32	2	46	194
04:30 PM	2	36	10	48	5	66	6	77	14	31	1	46	19	52	12	83	254
04:45 PM	0	24	11	35	6	44	1	51	15	36	2	53	23	62	6	91	230
Total	12	107	44	163	23	200	17	240	46	138	11	195	69	185	30	284	882
05:00 PM	2	45	12	59	6	85	7	98	13	51	6	70	21	61	6	88	315
05:15 PM	4	37	5	46	2	34	8	44	8	33	0	41	16	58	10	84	215
05:30 PM	6	36	8	50	2	40	5	47	5	35	4	44	17	54	5	76	217
05:45 PM	5	35	7	47	1	19	2	22	12	29	5	46	13	39	5	57	172
Total	17	153	32	202	11	178	22	211	38	148	15	201	67	212	26	305	919
Grand Total	29	260	76	365	34	378	39	451	84	286	26	396	136	397	56	589	1801
Apprch %	7.9	71.2	20.8		7.5	83.8	8.6		21.2	72.2	6.6		23.1	67.4	9.5		
Total %	1.6	14.4	4.2	20.3	1.9	21	2.2	25	4.7	15.9	1.4	22	7.6	22	3.1	32.7	

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	2	36	10	48	5	66	6	77	14	31	1	46	19	52	12	83	254
04:45 PM	0	24	11	35	6	44	1	51	15	36	2	53	23	62	6	91	230
05:00 PM	2	45	12	59	6	85	7	98	13	51	6	70	21	61	6	88	315
05:15 PM	4	37	5	46	2	34	8	44	8	33	0	41	16	58	10	84	215
Total Volume	8	142	38	188	19	229	22	270	50	151	9	210	79	233	34	346	1014
% App. Total	4.3	75.5	20.2		7	84.8	8.1		23.8	71.9	4.3		22.8	67.3	9.8		
PHF	.500	.789	.792	.797	.792	.674	.688	.689	.833	.740	.375	.750	.859	.940	.708	.951	.805

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

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	2	36	10	48	5	66	6	77	14	31	1	46	19	52	12	83
+15 mins.	0	24	11	35	6	44	1	51	15	36	2	53	23	62	6	91
+30 mins.	2	45	12	59	6	85	7	98	13	51	6	70	21	61	6	88
+45 mins.	4	37	5	46	2	34	8	44	8	33	0	41	16	58	10	84
Total Volume	8	142	38	188	19	229	22	270	50	151	9	210	79	233	34	346
% App. Total	4.3	75.5	20.2		7	84.8	8.1		23.8	71.9	4.3		22.8	67.3	9.8	
PHF	.500	.789	.792	.797	.792	.674	.688	.689	.833	.740	.375	.750	.859	.940	.708	.951

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
Weather: Clear

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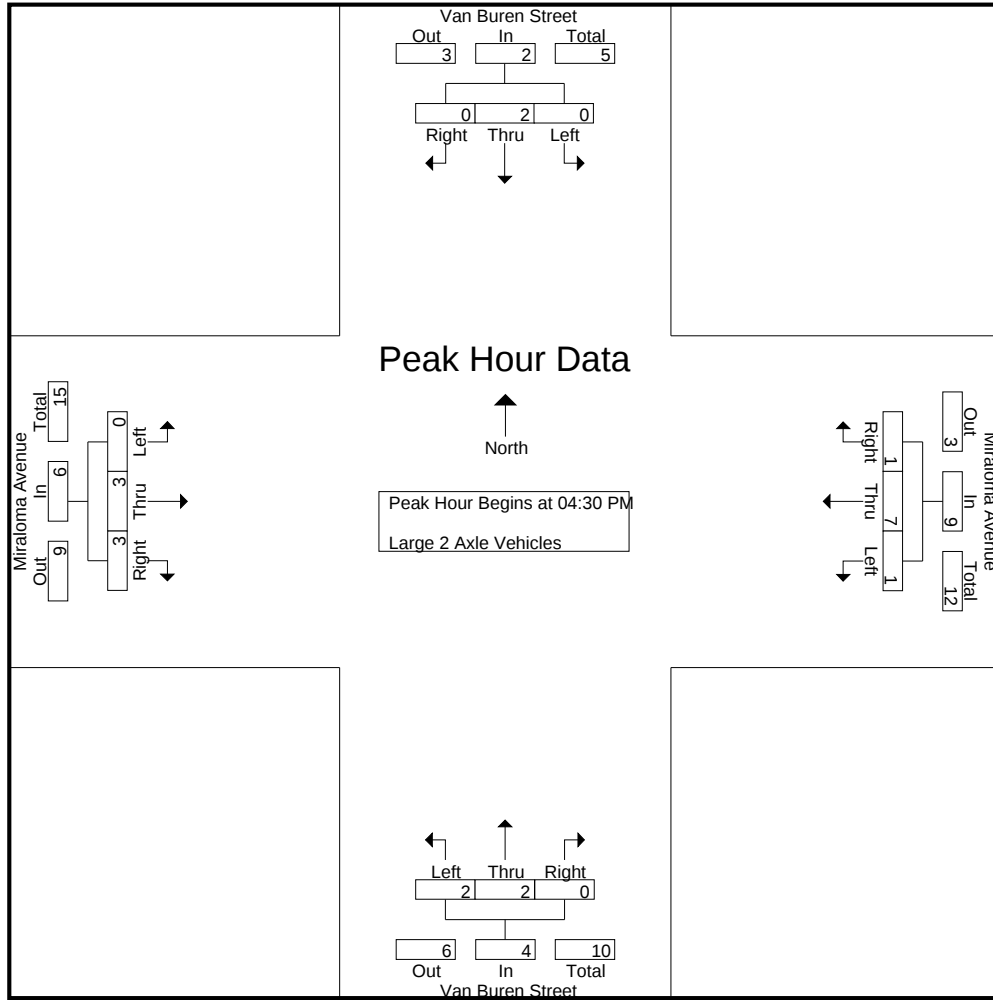
Groups Printed- Large 2 Axle Vehicles

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	1	1	0	0	1	1	3	0	4	6
04:15 PM	0	0	0	0	0	1	0	1	0	1	0	1	0	1	1	2	4
04:30 PM	0	1	0	1	0	1	0	1	1	0	0	1	0	2	0	2	5
04:45 PM	0	1	0	1	1	2	0	3	0	0	0	0	0	0	2	2	6
Total	0	2	0	2	1	5	0	6	2	1	0	3	1	6	3	10	21
05:00 PM	0	0	0	0	0	0	1	1	0	1	0	1	0	1	1	2	4
05:15 PM	0	0	0	0	0	4	0	4	1	1	0	2	0	0	0	0	6
05:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	1	1	0	2	4
Total	0	0	0	0	0	8	1	9	1	2	0	3	1	2	1	4	16
Grand Total	0	2	0	2	1	13	1	15	3	3	0	6	2	8	4	14	37
Apprch %	0	100	0		6.7	86.7	6.7		50	50	0		14.3	57.1	28.6		
Total %	0	5.4	0	5.4	2.7	35.1	2.7	40.5	8.1	8.1	0	16.2	5.4	21.6	10.8	37.8	

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	1	0	1	0	1	0	1	1	0	0	1	0	2	0	2	5
04:45 PM	0	1	0	1	1	2	0	3	0	0	0	0	0	0	2	2	6
05:00 PM	0	0	0	0	0	0	1	1	0	1	0	1	0	1	1	2	4
05:15 PM	0	0	0	0	0	4	0	4	1	1	0	2	0	0	0	0	6
Total Volume	0	2	0	2	1	7	1	9	2	2	0	4	0	3	3	6	21
% App. Total	0	100	0		11.1	77.8	11.1		50	50	0		0	50	50		
PHF	.000	.500	.000	.500	.250	.438	.250	.563	.500	.500	.000	.500	.000	.375	.375	.750	.875

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
Weather: Clear

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

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	1	0	1	0	1	0	1	1	0	0	1	0	2	0	2
+15 mins.	0	1	0	1	1	2	0	3	0	0	0	0	0	0	2	2
+30 mins.	0	0	0	0	0	0	1	1	0	1	0	1	0	1	1	2
+45 mins.	0	0	0	0	0	4	0	4	1	1	0	2	0	0	0	0
Total Volume	0	2	0	2	1	7	1	9	2	2	0	4	0	3	3	6
% App. Total	0	100	0		11.1	77.8	11.1		50	50	0		0	50	50	
PHF	.000	.500	.000	.500	.250	.438	.250	.563	.500	.500	.000	.500	.000	.375	.375	.750

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
Weather: Clear

File Name : 04_PLA_VB_Miraloma PM
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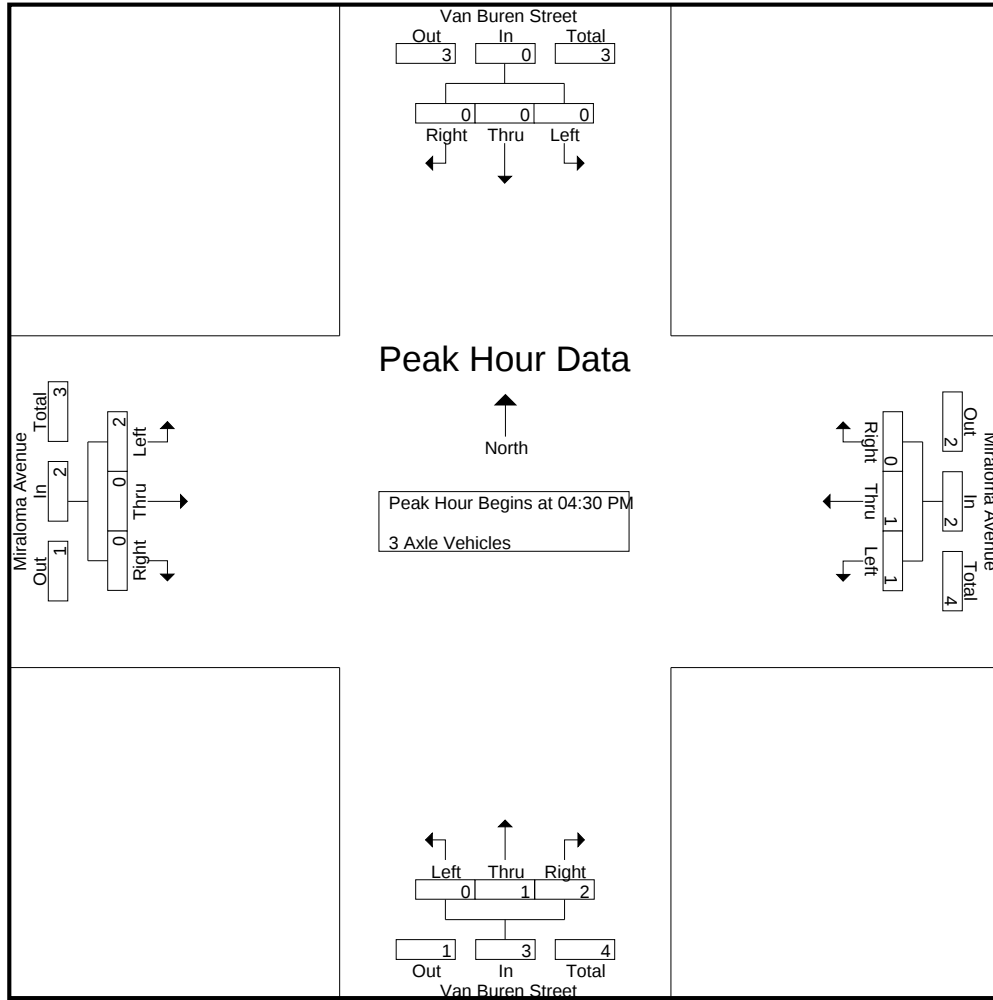
Groups Printed- 3 Axle Vehicles

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	2
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	1	0	0	1	2
Total	0	0	0	0	0	2	0	2	0	0	1	1	1	0	0	1	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
05:15 PM	0	0	0	0	1	0	0	1	0	1	0	1	1	0	0	1	3
05:30 PM	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	0	0	0	0	1	1	0	2	0	1	4	5	1	0	0	1	8
Grand Total	0	0	0	0	1	3	0	4	0	1	5	6	2	0	0	2	12
Apprch %	0	0	0		25	75	0		0	16.7	83.3		100	0	0		
Total %	0	0	0		8.3	25	0	33.3	0	8.3	41.7	50	16.7	0	0	16.7	

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
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	1	0	0	1	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
05:15 PM	0	0	0	0	1	0	0	1	0	1	0	1	1	0	0	1	3
Total Volume	0	0	0	0	1	1	0	2	0	1	2	3	2	0	0	2	7
% App. Total	0	0	0		50	50	0		0	33.3	66.7		100	0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.500	.000	.250	.250	.375	.500	.000	.000	.500	.583

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
Weather: Clear

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

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0
+45 mins.	0	0	0	0	1	0	0	1	0	1	0	1	1	0	0	1
Total Volume	0	0	0	0	1	1	0	2	0	1	2	3	2	0	0	2
% App. Total	0	0	0	0	50	50	0		0	33.3	66.7		100	0	0	
PHF	.000	.000	.000	.000	.250	.250	.000	.500	.000	.250	.250	.375	.500	.000	.000	.500

City of Placentia
N/S: Van Buren Street
E/W: Miraloma Avenue
Weather: Clear

File Name : 04_PLA_VB_Miraloma PM
Site Code : 10518117
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Groups Printed- 4+ Axle Trucks

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	2
Total	0	0	0	0	0	3	0	3	0	0	0	0	0	2	1	3	6
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	1	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	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	4	0	4	0	0	0	0	0	2	1	3	7
Apprch %	0	0	0		0	100	0		0	0	0		0	66.7	33.3		
Total %	0	0	0	0	0	57.1	0	57.1	0	0	0	0	0	28.6	14.3	42.9	

	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 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	3	0	3	0	0	0	0	0	0	1	1	4
% App. Total	0	0	0		0	100	0		0	0	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.000	.250	.250	.500

Counts Unlimited, Inc.

City of Placentia
Oak Street
W/ Van Buren Street
24 Hour Directional Volume Count

PO Box 1178
Corona, CA 92878
Phone: 951-268-6268
email: counts@countsunlimited.com

PLA001
Site Code: 105-18117

Start Time	15-Feb-18 Thu	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	2			0	0				
12:15		0	2			0	2				
12:30		0	3			0	2				
12:45		0	1	0	8	0	3	0	7	0	15
01:00		0	1			0	1				
01:15		0	3			0	3				
01:30		0	2			0	2				
01:45		0	2	0	8	0	2	0	8	0	16
02:00		0	5			0	0				
02:15		0	1			0	2				
02:30		0	1			0	1				
02:45		0	1	0	8	0	2	0	5	0	13
03:00		0	2			0	2				
03:15		0	3			0	5				
03:30		0	0			0	2				
03:45		0	4	0	9	0	2	0	11	0	20
04:00		0	1			0	0				
04:15		0	4			0	3				
04:30		0	2			0	0				
04:45		0	2	0	9	0	0	0	3	0	12
05:00		0	0			0	0				
05:15		0	1			1	5				
05:30		0	2			3	0				
05:45		1	0	1	3	2	0	6	5	7	8
06:00		1	2			5	4				
06:15		3	2			2	1				
06:30		1	2			1	1				
06:45		0	1	5	7	3	2	11	8	16	15
07:00		0	2			1	0				
07:15		0	2			0	0				
07:30		1	0			2	0				
07:45		1	1	2	5	2	0	5	0	7	5
08:00		2	1			0	0				
08:15		0	2			1	0				
08:30		1	2			1	0				
08:45		0	1	3	6	0	0	2	0	5	6
09:00		0	0			1	0				
09:15		0	0			1	0				
09:30		2	1			1	0				
09:45		1	0	3	1	5	0	8	0	11	1
10:00		2	1			2	0				
10:15		3	0			3	0				
10:30		0	0			3	0				
10:45		2	0	7	1	2	0	10	0	17	1
11:00		3	0			1	0				
11:15		0	0			2	0				
11:30		1	0			2	0				
11:45		1	0	5	0	0	0	5	0	10	0
Total		26	65	26	65	47	47	47	47	73	112
Combined Total		91		91		94		94		185	
AM Peak	-	09:30	-	-	-	09:45	-	-	-	-	-
Vol.	-	8	-	-	-	13	-	-	-	-	-
P.H.F.		0.667				0.650					
PM Peak	-	-	01:15	-	-	-	02:45	-	-	-	-
Vol.	-	-	12	-	-	-	11	-	-	-	-
P.H.F.			0.600				0.550				
Percentage		28.6%	71.4%			50.0%	50.0%				
ADT/AADT		ADT 185		AADT 185							

Counts Unlimited, Inc.

City of Placentia
Van Buren Street
S/ Oak Street
24 Hour Directional Volume Count

PO Box 1178
Corona, CA 92878
Phone: 951-268-6268
email: counts@countsunlimited.com

PLA002
Site Code: 105-18117

Start Time	15-Feb-18 Thu	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		5	41			7	34				
12:15		7	43			3	33				
12:30		3	44			0	35				
12:45		4	39	19	167	1	57	11	159	30	326
01:00		2	35			1	47				
01:15		3	36			1	45				
01:30		4	43			1	46				
01:45		2	43	11	157	1	41	4	179	15	336
02:00		3	34			1	34				
02:15		2	43			2	38				
02:30		0	39			1	34				
02:45		3	40	8	156	2	48	6	154	14	310
03:00		0	39			1	40				
03:15		0	45			1	43				
03:30		4	52			2	35				
03:45		1	55	5	191	4	41	8	159	13	350
04:00		2	51			3	32				
04:15		1	45			6	48				
04:30		3	55			9	36				
04:45		3	54	9	205	15	40	33	156	42	361
05:00		2	90			12	30				
05:15		3	61			21	39				
05:30		3	56			32	47				
05:45		7	49	15	256	46	44	111	160	126	416
06:00		17	68			38	33				
06:15		16	52			48	38				
06:30		11	62			58	19				
06:45		16	46	60	228	77	30	221	120	281	348
07:00		28	43			64	28				
07:15		14	20			87	18				
07:30		28	29			80	16				
07:45		24	30	94	122	94	15	325	77	419	199
08:00		20	21			76	19				
08:15		24	22			80	17				
08:30		28	26			68	14				
08:45		24	22	96	91	57	20	281	70	377	161
09:00		25	21			42	14				
09:15		21	25			43	11				
09:30		26	15			34	10				
09:45		25	19	97	80	32	15	151	50	248	130
10:00		26	15			31	9				
10:15		17	8			31	10				
10:30		20	20			40	12				
10:45		21	17	84	60	32	3	134	34	218	94
11:00		21	10			28	8				
11:15		28	3			37	5				
11:30		44	8			24	3				
11:45		46	9	139	30	34	1	123	17	262	47
Total		637	1743	637	1743	1408	1335	1408	1335	2045	3078
Combined Total		2380		2380		2743		2743		5123	
AM Peak	-	11:00	-	-	-	07:15	-	-	-	-	-
Vol.	-	139	-	-	-	337	-	-	-	-	-
P.H.F.		0.755				0.896					
PM Peak	-	-	04:45	-	-	-	00:45	-	-	-	-
Vol.	-	-	261	-	-	-	195	-	-	-	-
P.H.F.			0.725				0.855				
Percentage		26.8%	73.2%			51.3%	48.7%				
ADT/AADT		ADT 5,123		AADT 5,123							

Appendix B

Existing Conditions Intersection Analysis Worksheets

139-Unit Residential Development TIS
Existing Condition
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Van Buren Street / Orangethorpe Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.611
Loss Time (sec):	20	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	58	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	1	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	21	50	22	48	248	154	27	484	39	37	723	35
Growth 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
Initial Bse:	21	50	22	48	248	154	27	484	39	37	723	35
User 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
PHF 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
PHF Volume:	21	50	22	48	248	154	27	484	39	37	723	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	50	22	48	248	154	27	484	39	37	723	35
PCE 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
MLF 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
FinalVolume:	21	50	22	48	248	154	27	484	39	37	723	35

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.85	0.15	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	2961	239	1600	3200	1600

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.01	0.03	0.01	0.03	0.16	0.10	0.02	0.16	0.16	0.02	0.23	0.02
Crit Moves:	****			****			****			****		

Lanes and Geometrics
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865	0.999			
Flt Protected						
Satd. Flow (prot)	0	1611	3536	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	3536	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	187		204			206
Travel Time (s)	4.3		4.6			4.7
Intersection Summary						
Area Type:	Other					

Volume
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	1	105	1	0	325
Future Volume (vph)	0	1	105	1	0	325
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	1	118	1	0	365
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	119	0	0	365
Intersection Summary						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↘			↗
Traffic Vol, veh/h	0	1	105	1	0	325
Future Vol, veh/h	0	1	105	1	0	325
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	118	1	0	365
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	60	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	993	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	993	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.6	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	993		-		
HCM Lane V/C Ratio	-	0.001		-		
HCM Control Delay (s)	-	8.6		-		
HCM Lane LOS	-	A		-		
HCM 95th %tile Q(veh)	-	0		-		

Lanes and Geometrics
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	65		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.932			0.989				
Flt Protected		0.976			0.976			0.998		0.950		
Satd. Flow (prot)	0	1694	0	0	1694	0	0	1839	0	1770	1863	0
Flt Permitted		0.976			0.976			0.998		0.950		
Satd. Flow (perm)	0	1694	0	0	1694	0	0	1839	0	1770	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			729			791			204	
Travel Time (s)		7.3			16.6			18.0			4.6	
Intersection Summary												
Area Type:	Other											

Volume
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	0	4	16	0	16	4	81	7	6	322	0
Future Volume (vph)	4	0	4	16	0	16	4	81	7	6	322	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	4	0	4	17	0	17	4	88	8	7	350	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	34	0	0	100	0	7	350	0
Intersection Summary												

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	4	0	4	16	0	16	4	81	7	6	322	0
Future Vol, veh/h	4	0	4	16	0	16	4	81	7	6	322	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	4	17	0	17	4	88	8	7	350	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	473	468	350	466	464	92	350	0	0	96	0	0
Stage 1	364	364	-	100	100	-	-	-	-	-	-	-
Stage 2	109	104	-	366	364	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	501	493	693	507	495	965	1209	-	-	1498	-	-
Stage 1	655	624	-	906	812	-	-	-	-	-	-	-
Stage 2	896	809	-	653	624	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	489	489	693	501	491	965	1209	-	-	1498	-	-
Mov Cap-2 Maneuver	489	489	-	501	491	-	-	-	-	-	-	-
Stage 1	653	621	-	903	810	-	-	-	-	-	-	-
Stage 2	877	807	-	646	621	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.4		10.8		0.3		0.1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1209	-	-	573	660	1498	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.015	0.053	0.004	-	-				
HCM Control Delay (s)	8	0	-	11.4	10.8	7.4	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-				

Lanes and Geometrics
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.985			0.987			0.979	
Flt Protected	0.950				0.995			0.986			0.995	
Satd. Flow (prot)	1770	3405	0	0	3469	0	0	3444	0	0	3448	0
Flt Permitted	0.950				0.995			0.986			0.995	
Satd. Flow (perm)	1770	3405	0	0	3469	0	0	3444	0	0	3448	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1434			1096			1345			772	
Travel Time (s)		32.6			24.9			30.6			17.5	
Intersection Summary												
Area Type:	Other											

Volume
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	42	181	61	18	146	18	29	63	8	30	246	46
Future Volume (vph)	42	181	61	18	146	18	29	63	8	30	246	46
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	45	195	66	19	157	19	31	68	9	32	265	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	261	0	0	195	0	0	108	0	0	346	0
Intersection Summary												

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	181	61	18	146	18	29	63	8	30	246	46
Future Vol, veh/h	42	181	61	18	146	18	29	63	8	30	246	46
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	195	66	19	157	19	31	68	9	32	265	49
Number of Lanes	1	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	11	11.2	10.8	12
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	48%	0%	100%	0%	0%	20%	0%	20%	0%
Vol Thru, %	52%	80%	0%	100%	50%	80%	80%	80%	73%
Vol Right, %	0%	20%	0%	0%	50%	0%	20%	0%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	61	40	42	121	121	91	91	153	169
LT Vol	29	0	42	0	0	18	0	30	0
Through Vol	32	32	0	121	60	73	73	123	123
RT Vol	0	8	0	0	61	0	18	0	46
Lane Flow Rate	65	42	45	130	130	98	98	165	182
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.132	0.081	0.089	0.237	0.226	0.188	0.182	0.3	0.317
Departure Headway (Hd)	7.279	6.892	7.096	6.589	6.233	6.929	6.688	6.564	6.273
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	490	516	503	542	573	516	533	545	571
Service Time	5.064	4.678	4.866	4.359	4.002	4.706	4.464	4.332	4.041
HCM Lane V/C Ratio	0.133	0.081	0.089	0.24	0.227	0.19	0.184	0.303	0.319
HCM Control Delay	11.2	10.3	10.6	11.4	10.8	11.3	11	12.1	12
HCM Lane LOS	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	0.5	0.3	0.3	0.9	0.9	0.7	0.7	1.3	1.4

 139-Unit Residential Development TIS
 Existing Condition
 PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Van Buren Street / Orangethorpe Avenue

Cycle (sec): 100 Critical Vol./Cap.(X): 0.624
 Loss Time (sec): 20 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 59 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	46	157	62	43	83	57	127	884	33	20	587	46
Growth 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
Initial Bse:	46	157	62	43	83	57	127	884	33	20	587	46
User 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
PHF 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
PHF Volume:	46	157	62	43	83	57	127	884	33	20	587	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	157	62	43	83	57	127	884	33	20	587	46
PCE 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
MLF 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
FinalVolume:	46	157	62	43	83	57	127	884	33	20	587	46

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.93	0.07	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	3085	115	1600	3200	1600

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.03	0.10	0.04	0.03	0.05	0.04	0.08	0.29	0.29	0.01	0.18	0.03
Crit Moves:	****			****			****			****		

Lanes and Geometrics
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	3539	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	187		204			206
Travel Time (s)	4.3		4.6			4.7
Intersection Summary						
Area Type:	Other					

Volume
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	1	273	0	0	149
Future Volume (vph)	0	1	273	0	0	149
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	1	310	0	0	169
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	310	0	0	169
Intersection Summary						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	273	0	0	149
Future Vol, veh/h	0	1	273	0	0	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	310	0	0	169
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	155	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	864	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	864	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.2	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	864		-		
HCM Lane V/C Ratio	-	0.001		-		
HCM Control Delay (s)	-	9.2		-		
HCM Lane LOS	-	A		-		
HCM 95th %tile Q(veh)	-	0		-		

Lanes and Geometrics
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	65		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.865			0.910			0.996			0.997	
Flt Protected					0.984			0.999		0.950		
Satd. Flow (prot)	0	1611	0	0	1668	0	0	1853	0	1770	1857	0
Flt Permitted					0.984			0.999		0.950		
Satd. Flow (perm)	0	1611	0	0	1668	0	0	1853	0	1770	1857	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			729			791			204	
Travel Time (s)		7.3			16.6			18.0			4.6	
Intersection Summary												
Area Type:	Other											

Volume
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	0	6	3	0	5	5	251	7	7	141	3
Future Volume (vph)	0	0	6	3	0	5	5	251	7	7	141	3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	7	3	0	6	6	285	8	8	160	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	7	0	0	9	0	0	299	0	8	163	0
Intersection Summary												

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	0	0	6	3	0	5	5	251	7	7	141	3
Future Vol, veh/h	0	0	6	3	0	5	5	251	7	7	141	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	7	3	0	6	6	285	8	8	160	3

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	482	483	162	482	480	289	163	0	0	293	0	0
Stage 1	178	178	-	301	301	-	-	-	-	-	-	-
Stage 2	304	305	-	181	179	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	495	483	883	495	485	750	1416	-	-	1269	-	-
Stage 1	824	752	-	708	665	-	-	-	-	-	-	-
Stage 2	705	662	-	821	751	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	487	478	883	487	480	750	1416	-	-	1269	-	-
Mov Cap-2 Maneuver	487	478	-	487	480	-	-	-	-	-	-	-
Stage 1	820	747	-	704	662	-	-	-	-	-	-	-
Stage 2	696	659	-	810	746	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.1		10.9		0.1		0.4	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1416	-	-	883	624	1269	-
HCM Lane V/C Ratio	0.004	-	-	0.008	0.015	0.006	-
HCM Control Delay (s)	7.6	0	-	9.1	10.9	7.9	-
HCM Lane LOS	A	A	-	A	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-

Lanes and Geometrics
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.978			0.988			0.991			0.970	
Flt Protected	0.950				0.996			0.988			0.998	
Satd. Flow (prot)	1770	3461	0	0	3483	0	0	3465	0	0	3426	0
Flt Permitted	0.950				0.996			0.988			0.998	
Satd. Flow (perm)	1770	3461	0	0	3483	0	0	3465	0	0	3426	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1434			1096			1345			772	
Travel Time (s)		32.6			24.9			30.6			17.5	
Intersection Summary												
Area Type:	Other											

Volume
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	83	238	42	23	251	24	53	156	13	8	145	38
Future Volume (vph)	83	238	42	23	251	24	53	156	13	8	145	38
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	101	290	51	28	306	29	65	190	16	10	177	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	341	0	0	363	0	0	271	0	0	233	0
Intersection Summary												

Intersection	
Intersection Delay, s/veh	14.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	83	238	42	23	251	24	53	156	13	8	145	38
Future Vol, veh/h	83	238	42	23	251	24	53	156	13	8	145	38
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	101	290	51	28	306	29	65	190	16	10	177	46
Number of Lanes	1	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	14.6	15.8	15.1	14.1
HCM LOS	B	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	40%	0%	100%	0%	0%	15%	0%	10%	0%
Vol Thru, %	60%	86%	0%	100%	65%	85%	84%	90%	66%
Vol Right, %	0%	14%	0%	0%	35%	0%	16%	0%	34%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	131	91	83	159	121	149	150	81	111
LT Vol	53	0	83	0	0	23	0	8	0
Through Vol	78	78	0	159	79	126	126	73	73
RT Vol	0	13	0	0	42	0	24	0	38
Lane Flow Rate	160	111	101	193	148	181	182	98	135
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.372	0.249	0.232	0.417	0.308	0.402	0.395	0.228	0.302
Departure Headway (Hd)	8.392	8.083	8.263	7.751	7.503	7.998	7.803	8.375	8.078
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	427	443	433	462	478	449	459	427	443
Service Time	6.174	5.865	6.038	5.525	5.277	5.775	5.58	6.161	5.863
HCM Lane V/C Ratio	0.375	0.251	0.233	0.418	0.31	0.403	0.397	0.23	0.305
HCM Control Delay	16.1	13.6	13.5	16	13.6	16.1	15.6	13.6	14.4
HCM Lane LOS	C	B	B	C	B	C	C	B	B
HCM 95th-tile Q	1.7	1	0.9	2	1.3	1.9	1.9	0.9	1.3

Appendix C

Existing Plus Project Conditions Intersection Analysis Worksheets

139-Unit Residential Development TIS
Existing Plus Project Condition
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Van Buren Street / Orangethorpe Avenue

Cycle (sec): 100 Critical Vol./Cap.(X): 0.618
Loss Time (sec): 20 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 58 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	21	50	22	48	248	154	27	484	39	37	723	35
Growth 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
Initial Bse:	21	50	22	48	248	154	27	484	39	37	723	35
Added Vol:	10	4	6	0	1	0	0	0	3	2	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	54	28	48	249	154	27	484	42	39	723	35
User 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
PHF 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
PHF Volume:	31	54	28	48	249	154	27	484	42	39	723	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	54	28	48	249	154	27	484	42	39	723	35
PCE 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
MLF 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
FinalVolume:	31	54	28	48	249	154	27	484	42	39	723	35

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.84	0.16	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	2944	256	1600	3200	1600

Capacity Analysis Module:

Vol/Sat:	0.02	0.03	0.02	0.03	0.16	0.10	0.02	0.16	0.16	0.02	0.23	0.02
Crit Moves:	****			****			****			****		

Lanes and Geometrics
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865	0.999			
Flt Protected						
Satd. Flow (prot)	0	1611	3536	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	3536	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	187		204			206
Travel Time (s)	4.3		4.6			4.7
Intersection Summary						
Area Type:	Other					

Volume
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	1	126	1	0	331
Future Volume (vph)	0	1	126	1	0	331
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	1	142	1	0	372
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	143	0	0	372
Intersection Summary						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	126	1	0	331
Future Vol, veh/h	0	1	126	1	0	331
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	142	1	0	372
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	72	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	976	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	976	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	976		-		
HCM Lane V/C Ratio	-	0.001		-		
HCM Control Delay (s)	-	8.7		-		
HCM Lane LOS	-	A		-		
HCM 95th %tile Q(veh)	-	0		-		

Lanes and Geometrics
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	65		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.932			0.990			0.997	
Flt Protected		0.976			0.976			0.995		0.950		
Satd. Flow (prot)	0	1694	0	0	1694	0	0	1835	0	1770	1857	0
Flt Permitted		0.976			0.976			0.995		0.950		
Satd. Flow (perm)	0	1694	0	0	1694	0	0	1835	0	1770	1857	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			729			791			204	
Travel Time (s)		7.3			16.6			18.0			4.6	
Intersection Summary												
Area Type:	Other											

Volume
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	25	0	25	16	0	16	10	81	7	6	322	6
Future Volume (vph)	25	0	25	16	0	16	10	81	7	6	322	6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	27	0	27	17	0	17	11	88	8	7	350	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	34	0	0	107	0	7	357	0
Intersection Summary												

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↙	↘	
Traffic Vol, veh/h	25	0	25	16	0	16	10	81	7	6	322	6
Future Vol, veh/h	25	0	25	16	0	16	10	81	7	6	322	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	0	27	17	0	17	11	88	8	7	350	7
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	491	486	354	495	485	92	357	0	0	96	0	0
Stage 1	368	368	-	114	114	-	-	-	-	-	-	-
Stage 2	123	118	-	381	371	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	488	481	690	485	482	965	1202	-	-	1498	-	-
Stage 1	652	621	-	891	801	-	-	-	-	-	-	-
Stage 2	881	798	-	641	620	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	474	474	690	461	475	965	1202	-	-	1498	-	-
Mov Cap-2 Maneuver	474	474	-	461	475	-	-	-	-	-	-	-
Stage 1	645	618	-	882	793	-	-	-	-	-	-	-
Stage 2	856	790	-	613	617	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.1		11.1		0.8		0.1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1202	-	-	562	624	1498	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.097	0.056	0.004	-	-				
HCM Control Delay (s)	8	0	-	12.1	11.1	7.4	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-				

Lanes and Geometrics
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.985			0.988			0.980	
Flt Protected	0.950				0.995			0.987			0.996	
Satd. Flow (prot)	1770	3405	0	0	3469	0	0	3451	0	0	3455	0
Flt Permitted	0.950				0.995			0.987			0.996	
Satd. Flow (perm)	1770	3405	0	0	3469	0	0	3451	0	0	3455	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1434			1096			1345			772	
Travel Time (s)		32.6			24.9			30.6			17.5	
Intersection Summary												
Area Type:	Other											

Volume
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	42	181	61	18	146	18	29	69	8	30	267	46
Future Volume (vph)	42	181	61	18	146	18	29	69	8	30	267	46
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	45	195	66	19	157	19	31	74	9	32	287	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	261	0	0	195	0	0	114	0	0	368	0
Intersection Summary												

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	181	61	18	146	18	29	69	8	30	267	46
Future Vol, veh/h	42	181	61	18	146	18	29	69	8	30	267	46
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	195	66	19	157	19	31	74	9	32	287	49
Number of Lanes	1	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	11.2	11.3	11	12.4
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	46%	0%	100%	0%	0%	20%	0%	18%	0%
Vol Thru, %	54%	81%	0%	100%	50%	80%	80%	82%	74%
Vol Right, %	0%	19%	0%	0%	50%	0%	20%	0%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	64	43	42	121	121	91	91	164	180
LT Vol	29	0	42	0	0	18	0	30	0
Through Vol	35	35	0	121	60	73	73	134	134
RT Vol	0	8	0	0	61	0	18	0	46
Lane Flow Rate	68	46	45	130	130	98	98	176	193
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.139	0.089	0.09	0.241	0.23	0.191	0.185	0.322	0.339
Departure Headway (Hd)	7.346	6.981	7.198	6.691	6.334	7.036	6.795	6.601	6.327
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	485	510	495	535	564	507	524	541	566
Service Time	5.138	4.773	4.974	4.466	4.109	4.819	4.577	4.372	4.099
HCM Lane V/C Ratio	0.14	0.09	0.091	0.243	0.23	0.193	0.187	0.325	0.341
HCM Control Delay	11.3	10.5	10.7	11.6	11	11.5	11.1	12.5	12.3
HCM Lane LOS	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	0.5	0.3	0.3	0.9	0.9	0.7	0.7	1.4	1.5

139-Unit Residential Development TIS
Existing Plus Project Condition
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Van Buren Street / Orangethorpe Avenue

Cycle (sec): 100 Critical Vol./Cap.(X): 0.632
Loss Time (sec): 20 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 60 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	46	157	62	43	83	57	127	884	33	20	587	46
Growth 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
Initial Bse:	46	157	62	43	83	57	127	884	33	20	587	46
Added Vol:	6	2	3	0	4	0	0	0	10	6	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	52	159	65	43	87	57	127	884	43	26	587	46
User 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
PHF 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
PHF Volume:	52	159	65	43	87	57	127	884	43	26	587	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	159	65	43	87	57	127	884	43	26	587	46
PCE 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
MLF 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
FinalVolume:	52	159	65	43	87	57	127	884	43	26	587	46

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.91	0.09	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	3052	148	1600	3200	1600

Capacity Analysis Module:

Vol/Sat:	0.03	0.10	0.04	0.03	0.05	0.04	0.08	0.29	0.29	0.02	0.18	0.03
Crit Moves:	****			****			****			****		

Lanes and Geometrics
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	3539	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	187		204			206
Travel Time (s)	4.3		4.6			4.7
Intersection Summary						
Area Type:	Other					

Volume
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	1	285	0	0	170
Future Volume (vph)	0	1	285	0	0	170
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	1	324	0	0	193
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	324	0	0	193
Intersection Summary						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	285	0	0	170
Future Vol, veh/h	0	1	285	0	0	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	324	0	0	193
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	162	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	855	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	855	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.2	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	-	855	-		
HCM Lane V/C Ratio	-	-	0.001	-		
HCM Control Delay (s)	-	-	9.2	-		
HCM Lane LOS	-	-	A	-		
HCM 95th %tile Q(veh)	-	-	0	-		

Lanes and Geometrics
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	65		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.921			0.910			0.997			0.978	
Flt Protected		0.980			0.984			0.995		0.950		
Satd. Flow (prot)	0	1681	0	0	1668	0	0	1848	0	1770	1822	0
Flt Permitted		0.980			0.984			0.995		0.950		
Satd. Flow (perm)	0	1681	0	0	1668	0	0	1848	0	1770	1822	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			729			791			204	
Travel Time (s)		7.3			16.6			18.0			4.6	
Intersection Summary												
Area Type:	Other											

Volume
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	12	0	18	3	0	5	26	251	7	7	141	24
Future Volume (vph)	12	0	18	3	0	5	26	251	7	7	141	24
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	0	20	3	0	6	30	285	8	8	160	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	0	0	9	0	0	323	0	8	187	0
Intersection Summary												

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	0	18	3	0	5	26	251	7	7	141	24
Future Vol, veh/h	12	0	18	3	0	5	26	251	7	7	141	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	0	20	3	0	6	30	285	8	8	160	27
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	542	543	174	549	552	289	187	0	0	293	0	0
Stage 1	190	190	-	349	349	-	-	-	-	-	-	-
Stage 2	352	353	-	200	203	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	451	447	869	446	442	750	1387	-	-	1269	-	-
Stage 1	812	743	-	667	633	-	-	-	-	-	-	-
Stage 2	665	631	-	802	733	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	437	433	869	425	428	750	1387	-	-	1269	-	-
Mov Cap-2 Maneuver	437	433	-	425	428	-	-	-	-	-	-	-
Stage 1	791	739	-	650	617	-	-	-	-	-	-	-
Stage 2	643	615	-	778	729	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.1		11.3		0.7		0.3					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1387	-	-	623	583	1269	-	-				
HCM Lane V/C Ratio	0.021	-	-	0.055	0.016	0.006	-	-				
HCM Control Delay (s)	7.7	0	-	11.1	11.3	7.9	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	-	-				

Lanes and Geometrics
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.978			0.988			0.992			0.972	
Flt Protected	0.950				0.996			0.989			0.998	
Satd. Flow (prot)	1770	3461	0	0	3483	0	0	3472	0	0	3433	0
Flt Permitted	0.950				0.996			0.989			0.998	
Satd. Flow (perm)	1770	3461	0	0	3483	0	0	3472	0	0	3433	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1434			1096			1345			772	
Travel Time (s)		32.6			24.9			30.6			17.5	
Intersection Summary												
Area Type:	Other											

Volume
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	83	238	42	23	251	24	53	177	13	8	157	38
Future Volume (vph)	83	238	42	23	251	24	53	177	13	8	157	38
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	101	290	51	28	306	29	65	216	16	10	191	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	341	0	0	363	0	0	297	0	0	247	0
Intersection Summary												

Intersection	
Intersection Delay, s/veh	15.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	83	238	42	23	251	24	53	177	13	8	157	38
Future Vol, veh/h	83	238	42	23	251	24	53	177	13	8	157	38
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	101	290	51	28	306	29	65	216	16	10	191	46
Number of Lanes	1	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	15.1	16.4	15.9	14.7
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	37%	0%	100%	0%	0%	15%	0%	9%	0%
Vol Thru, %	63%	87%	0%	100%	65%	85%	84%	91%	67%
Vol Right, %	0%	13%	0%	0%	35%	0%	16%	0%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	102	83	159	121	149	150	87	117
LT Vol	53	0	83	0	0	23	0	8	0
Through Vol	89	89	0	159	79	126	126	79	79
RT Vol	0	13	0	0	42	0	24	0	38
Lane Flow Rate	173	124	101	193	148	181	182	105	142
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.407	0.283	0.238	0.428	0.317	0.413	0.406	0.25	0.326
Departure Headway (Hd)	8.501	8.218	8.467	7.954	7.706	8.207	8.012	8.53	8.248
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	421	434	422	451	465	436	447	419	433
Service Time	6.297	6.014	6.258	5.745	5.496	6.001	5.806	6.329	6.047
HCM Lane V/C Ratio	0.411	0.286	0.239	0.428	0.318	0.415	0.407	0.251	0.328
HCM Control Delay	17.1	14.3	13.9	16.6	14.1	16.7	16.2	14.2	15
HCM Lane LOS	C	B	B	C	B	C	C	B	B
HCM 95th-tile Q	1.9	1.2	0.9	2.1	1.3	2	1.9	1	1.4

Appendix D

Existing Plus Ambient Growth (2020) Conditions Intersection Analysis
Worksheets

139-Unit Residential Development TIS
Opening Year Condition
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Van Buren Street / Orangethorpe Avenue

Cycle (sec): 100 Critical Vol./Cap.(X): 0.619
Loss Time (sec): 20 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 59 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	21	50	22	48	248	154	27	484	39	37	723	35
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	21	51	22	49	253	157	28	494	40	38	738	36
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	21	51	22	49	253	157	28	494	40	38	738	36
User 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
PHF 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
PHF Volume:	21	51	22	49	253	157	28	494	40	38	738	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	51	22	49	253	157	28	494	40	38	738	36
PCE 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
MLF 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
FinalVolume:	21	51	22	49	253	157	28	494	40	38	738	36

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.85	0.15	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	2961	239	1600	3200	1600

Capacity Analysis Module:

Vol/Sat:	0.01	0.03	0.01	0.03	0.16	0.10	0.02	0.17	0.17	0.02	0.23	0.02
Crit Moves:	****			****			****			****		

Lanes and Geometrics
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865	0.999			
Flt Protected						
Satd. Flow (prot)	0	1611	3536	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	3536	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	187		204			206
Travel Time (s)	4.3		4.6			4.7
Intersection Summary						
Area Type:	Other					

Volume
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	1	107	1	0	332
Future Volume (vph)	0	1	107	1	0	332
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	1	120	1	0	373
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	121	0	0	373
Intersection Summary						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	107	1	0	332
Future Vol, veh/h	0	1	107	1	0	332
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	120	1	0	373
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	61	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	992	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	992	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.6	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	- 992		-		
HCM Lane V/C Ratio	-	- 0.001		-		
HCM Control Delay (s)	-	- 8.6		-		
HCM Lane LOS	-	- A		-		
HCM 95th %tile Q(veh)	-	- 0		-		

Lanes and Geometrics
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	65		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.932			0.989				
Flt Protected		0.976			0.976			0.998		0.950		
Satd. Flow (prot)	0	1694	0	0	1694	0	0	1839	0	1770	1863	0
Flt Permitted		0.976			0.976			0.998		0.950		
Satd. Flow (perm)	0	1694	0	0	1694	0	0	1839	0	1770	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			729			791			204	
Travel Time (s)		7.3			16.6			18.0			4.6	
Intersection Summary												
Area Type:	Other											

Volume
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	0	4	16	0	16	4	83	7	6	328	0
Future Volume (vph)	4	0	4	16	0	16	4	83	7	6	328	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	4	0	4	17	0	17	4	90	8	7	357	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	34	0	0	102	0	7	357	0
Intersection Summary												

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	4	0	4	16	0	16	4	83	7	6	328	0
Future Vol, veh/h	4	0	4	16	0	16	4	83	7	6	328	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	4	17	0	17	4	90	8	7	357	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	482	477	357	475	473	94	357	0	0	98	0	0
Stage 1	371	371	-	102	102	-	-	-	-	-	-	-
Stage 2	111	106	-	373	371	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	495	487	687	500	490	963	1202	-	-	1495	-	-
Stage 1	649	620	-	904	811	-	-	-	-	-	-	-
Stage 2	894	807	-	648	620	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	483	483	687	494	486	963	1202	-	-	1495	-	-
Mov Cap-2 Maneuver	483	483	-	494	486	-	-	-	-	-	-	-
Stage 1	646	617	-	900	808	-	-	-	-	-	-	-
Stage 2	874	804	-	641	617	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.4		10.8		0.3		0.1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1202	-	-	567	653	1495	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.015	0.053	0.004	-	-				
HCM Control Delay (s)	8	0	-	11.4	10.8	7.4	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-				

Lanes and Geometrics
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.986			0.988			0.978	
Flt Protected	0.950				0.995			0.986			0.995	
Satd. Flow (prot)	1770	3405	0	0	3472	0	0	3448	0	0	3444	0
Flt Permitted	0.950				0.995			0.986			0.995	
Satd. Flow (perm)	1770	3405	0	0	3472	0	0	3448	0	0	3444	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1434			1096			1345			772	
Travel Time (s)		32.6			24.9			30.6			17.5	
Intersection Summary												
Area Type:	Other											

Volume
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	43	185	62	18	149	18	30	64	8	31	251	47
Future Volume (vph)	43	185	62	18	149	18	30	64	8	31	251	47
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	46	199	67	19	160	19	32	69	9	33	270	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	266	0	0	198	0	0	110	0	0	354	0
Intersection Summary												

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	185	62	18	149	18	30	64	8	31	251	47
Future Vol, veh/h	43	185	62	18	149	18	30	64	8	31	251	47
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	199	67	19	160	19	32	69	9	33	270	51
Number of Lanes	1	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	11.2	11.3	10.9	12.2
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	48%	0%	100%	0%	0%	19%	0%	20%	0%
Vol Thru, %	52%	80%	0%	100%	50%	81%	81%	80%	73%
Vol Right, %	0%	20%	0%	0%	50%	0%	19%	0%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	40	43	123	124	93	93	157	173
LT Vol	30	0	43	0	0	18	0	31	0
Through Vol	32	32	0	123	62	75	75	126	126
RT Vol	0	8	0	0	62	0	18	0	47
Lane Flow Rate	67	43	46	133	133	99	99	168	185
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.136	0.083	0.092	0.245	0.232	0.193	0.186	0.309	0.326
Departure Headway (Hd)	7.345	6.957	7.147	6.64	6.284	6.987	6.749	6.615	6.323
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	485	511	499	538	568	511	528	542	566
Service Time	5.134	4.747	4.92	4.413	4.056	4.768	4.53	4.383	4.091
HCM Lane V/C Ratio	0.138	0.084	0.092	0.247	0.234	0.194	0.188	0.31	0.327
HCM Control Delay	11.3	10.4	10.7	11.6	11	11.5	11.1	12.3	12.2
HCM Lane LOS	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	0.5	0.3	0.3	1	0.9	0.7	0.7	1.3	1.4

139-Unit Residential Development TIS
Opening Year Condition
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Van Buren Street / Orangethorpe Avenue

Cycle (sec): 100 Critical Vol./Cap.(X): 0.633
Loss Time (sec): 20 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 60 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	46	157	62	43	83	57	127	884	33	20	587	46
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	47	160	63	44	85	58	130	902	34	20	599	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	47	160	63	44	85	58	130	902	34	20	599	47
User 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
PHF 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
PHF Volume:	47	160	63	44	85	58	130	902	34	20	599	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	160	63	44	85	58	130	902	34	20	599	47
PCE 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
MLF 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
FinalVolume:	47	160	63	44	85	58	130	902	34	20	599	47

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.93	0.07	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	3085	115	1600	3200	1600

Capacity Analysis Module:

Vol/Sat:	0.03	0.10	0.04	0.03	0.05	0.04	0.08	0.29	0.29	0.01	0.19	0.03
Crit Moves:	****			****			****			****		

Lanes and Geometrics
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	3539	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	187		204			206
Travel Time (s)	4.3		4.6			4.7
Intersection Summary						
Area Type:	Other					

Volume
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	1	278	0	0	152
Future Volume (vph)	0	1	278	0	0	152
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	1	316	0	0	173
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	316	0	0	173
Intersection Summary						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	278	0	0	152
Future Vol, veh/h	0	1	278	0	0	152
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	316	0	0	173
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	158	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	860	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	860	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.2	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	860		-		
HCM Lane V/C Ratio	-	0.001		-		
HCM Control Delay (s)	-	9.2		-		
HCM Lane LOS	-	A		-		
HCM 95th %tile Q(veh)	-	0		-		

Lanes and Geometrics
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	65		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.865			0.910			0.996			0.997	
Flt Protected					0.984			0.999		0.950		
Satd. Flow (prot)	0	1611	0	0	1668	0	0	1853	0	1770	1857	0
Flt Permitted					0.984			0.999		0.950		
Satd. Flow (perm)	0	1611	0	0	1668	0	0	1853	0	1770	1857	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			729			791			204	
Travel Time (s)		7.3			16.6			18.0			4.6	
Intersection Summary												
Area Type:	Other											

Volume
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	0	6	3	0	5	5	256	7	7	144	3
Future Volume (vph)	0	0	6	3	0	5	5	256	7	7	144	3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	7	3	0	6	6	291	8	8	164	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	7	0	0	9	0	0	305	0	8	167	0
Intersection Summary												

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	0	0	6	3	0	5	5	256	7	7	144	3
Future Vol, veh/h	0	0	6	3	0	5	5	256	7	7	144	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	7	3	0	6	6	291	8	8	164	3

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	492	493	166	492	490	295	167	0	0	299	0	0
Stage 1	182	182	-	307	307	-	-	-	-	-	-	-
Stage 2	310	311	-	185	183	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	487	477	878	487	479	744	1411	-	-	1262	-	-
Stage 1	820	749	-	703	661	-	-	-	-	-	-	-
Stage 2	700	658	-	817	748	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	479	472	878	479	474	744	1411	-	-	1262	-	-
Mov Cap-2 Maneuver	479	472	-	479	474	-	-	-	-	-	-	-
Stage 1	816	745	-	699	658	-	-	-	-	-	-	-
Stage 2	691	655	-	806	744	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.1		10.9		0.1		0.4	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1411	-	-	878	616	1262	-
HCM Lane V/C Ratio	0.004	-	-	0.008	0.015	0.006	-
HCM Control Delay (s)	7.6	0	-	9.1	10.9	7.9	-
HCM Lane LOS	A	A	-	A	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-

Lanes and Geometrics
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.978			0.988			0.991			0.970	
Flt Protected	0.950				0.996			0.988			0.998	
Satd. Flow (prot)	1770	3461	0	0	3483	0	0	3465	0	0	3426	0
Flt Permitted	0.950				0.996			0.988			0.998	
Satd. Flow (perm)	1770	3461	0	0	3483	0	0	3465	0	0	3426	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1434			1096			1345			772	
Travel Time (s)		32.6			24.9			30.6			17.5	
Intersection Summary												
Area Type:	Other											

Volume
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	85	243	43	23	256	24	54	159	13	8	148	39
Future Volume (vph)	85	243	43	23	256	24	54	159	13	8	148	39
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	104	296	52	28	312	29	66	194	16	10	180	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	348	0	0	369	0	0	276	0	0	238	0
Intersection Summary												

Intersection	
Intersection Delay, s/veh	15.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	243	43	23	256	24	54	159	13	8	148	39
Future Vol, veh/h	85	243	43	23	256	24	54	159	13	8	148	39
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	296	52	28	312	29	66	194	16	10	180	48
Number of Lanes	1	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	15	16.3	15.4	14.4
HCM LOS	B	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	40%	0%	100%	0%	0%	15%	0%	10%	0%
Vol Thru, %	60%	86%	0%	100%	65%	85%	84%	90%	65%
Vol Right, %	0%	14%	0%	0%	35%	0%	16%	0%	35%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	134	93	85	162	124	151	152	82	113
LT Vol	54	0	85	0	0	23	0	8	0
Through Vol	80	80	0	162	81	128	128	74	74
RT Vol	0	13	0	0	43	0	24	0	39
Lane Flow Rate	163	113	104	198	151	184	185	100	138
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.384	0.256	0.24	0.43	0.319	0.414	0.407	0.235	0.313
Departure Headway (Hd)	8.489	8.182	8.349	7.837	7.588	8.09	7.898	8.474	8.177
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	422	437	428	458	472	444	454	422	437
Service Time	6.28	5.972	6.132	5.619	5.371	5.876	5.684	6.267	5.97
HCM Lane V/C Ratio	0.386	0.259	0.243	0.432	0.32	0.414	0.407	0.237	0.316
HCM Control Delay	16.5	13.8	13.8	16.5	13.9	16.5	16.1	13.9	14.7
HCM Lane LOS	C	B	B	C	B	C	C	B	B
HCM 95th-tile Q	1.8	1	0.9	2.1	1.4	2	1.9	0.9	1.3

Appendix E

Existing Plus Ambient Growth (2020) Plus Project Conditions
Intersection Analysis Worksheets

139-Unit Residential Development TIS
Opening Year Plus Project Condition
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Van Buren Street / Orangethorpe Avenue

Cycle (sec): 100 Critical Vol./Cap.(X): 0.626
Loss Time (sec): 20 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 59 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	21	50	22	48	248	154	27	484	39	37	723	35
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	21	51	22	49	253	157	28	494	40	38	738	36
Added Vol:	10	4	6	0	1	0	0	0	3	2	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	55	28	49	254	157	28	494	43	40	738	36
User 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
PHF 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
PHF Volume:	31	55	28	49	254	157	28	494	43	40	738	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	55	28	49	254	157	28	494	43	40	738	36
PCE 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
MLF 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
FinalVolume:	31	55	28	49	254	157	28	494	43	40	738	36

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.84	0.16	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	2945	255	1600	3200	1600

Capacity Analysis Module:

Vol/Sat:	0.02	0.03	0.02	0.03	0.16	0.10	0.02	0.17	0.17	0.02	0.23	0.02
Crit Moves:	****			****			****			****		

Lanes and Geometrics
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865	0.999			
Flt Protected						
Satd. Flow (prot)	0	1611	3536	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	3536	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	187		204			206
Travel Time (s)	4.3		4.6			4.7
Intersection Summary						
Area Type:	Other					

Volume
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	1	128	1	0	338
Future Volume (vph)	0	1	128	1	0	338
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	1	144	1	0	380
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	145	0	0	380
Intersection Summary						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗			↗
Traffic Vol, veh/h	0	1	128	1	0	338
Future Vol, veh/h	0	1	128	1	0	338
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	144	1	0	380
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	73	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	975	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	975	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	975		-		
HCM Lane V/C Ratio	-	0.001		-		
HCM Control Delay (s)	-	8.7		-		
HCM Lane LOS	-	A		-		
HCM 95th %tile Q(veh)	-	0		-		

Lanes and Geometrics
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	65		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.932			0.990			0.997	
Flt Protected		0.976			0.976			0.995		0.950		
Satd. Flow (prot)	0	1694	0	0	1694	0	0	1835	0	1770	1857	0
Flt Permitted		0.976			0.976			0.995		0.950		
Satd. Flow (perm)	0	1694	0	0	1694	0	0	1835	0	1770	1857	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			729			791			204	
Travel Time (s)		7.3			16.6			18.0			4.6	
Intersection Summary												
Area Type:	Other											

Volume
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	25	0	25	16	0	16	10	83	7	6	328	6
Future Volume (vph)	25	0	25	16	0	16	10	83	7	6	328	6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	27	0	27	17	0	17	11	90	8	7	357	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	34	0	0	109	0	7	364	0
Intersection Summary												

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↙	↘	
Traffic Vol, veh/h	25	0	25	16	0	16	10	83	7	6	328	6
Future Vol, veh/h	25	0	25	16	0	16	10	83	7	6	328	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	0	27	17	0	17	11	90	8	7	357	7
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	500	495	361	504	494	94	364	0	0	98	0	0
Stage 1	375	375	-	116	116	-	-	-	-	-	-	-
Stage 2	125	120	-	388	378	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	481	476	684	478	476	963	1195	-	-	1495	-	-
Stage 1	646	617	-	889	800	-	-	-	-	-	-	-
Stage 2	879	796	-	636	615	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	467	469	684	454	469	963	1195	-	-	1495	-	-
Mov Cap-2 Maneuver	467	469	-	454	469	-	-	-	-	-	-	-
Stage 1	640	614	-	880	792	-	-	-	-	-	-	-
Stage 2	854	788	-	608	612	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.2		11.2		0.8		0.1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1195	-	-	555	617	1495	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.098	0.056	0.004	-	-				
HCM Control Delay (s)	8	0	-	12.2	11.2	7.4	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-				

Lanes and Geometrics
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.986			0.988			0.980	
Flt Protected	0.950				0.995			0.986			0.996	
Satd. Flow (prot)	1770	3405	0	0	3472	0	0	3448	0	0	3455	0
Flt Permitted	0.950				0.995			0.986			0.996	
Satd. Flow (perm)	1770	3405	0	0	3472	0	0	3448	0	0	3455	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1434			1096			1345			772	
Travel Time (s)		32.6			24.9			30.6			17.5	
Intersection Summary												
Area Type:	Other											

Volume
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	43	185	62	18	149	18	30	70	8	31	272	47
Future Volume (vph)	43	185	62	18	149	18	30	70	8	31	272	47
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	46	199	67	19	160	19	32	75	9	33	292	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	266	0	0	198	0	0	116	0	0	376	0
Intersection Summary												

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	185	62	18	149	18	30	70	8	31	272	47
Future Vol, veh/h	43	185	62	18	149	18	30	70	8	31	272	47
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	199	67	19	160	19	32	75	9	33	292	51
Number of Lanes	1	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	11.4	11.5	11.1	12.6
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	46%	0%	100%	0%	0%	19%	0%	19%	0%
Vol Thru, %	54%	81%	0%	100%	50%	81%	81%	81%	74%
Vol Right, %	0%	19%	0%	0%	50%	0%	19%	0%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	43	43	123	124	93	93	167	183
LT Vol	30	0	43	0	0	18	0	31	0
Through Vol	35	35	0	123	62	75	75	136	136
RT Vol	0	8	0	0	62	0	18	0	47
Lane Flow Rate	70	46	46	133	133	99	99	180	197
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.144	0.09	0.093	0.248	0.236	0.196	0.189	0.332	0.348
Departure Headway (Hd)	7.412	7.046	7.25	6.743	6.386	7.094	6.856	6.649	6.374
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	481	505	492	529	558	503	520	539	561
Service Time	5.208	4.841	5.029	4.521	4.165	4.88	4.642	4.423	4.147
HCM Lane V/C Ratio	0.146	0.091	0.093	0.251	0.238	0.197	0.19	0.334	0.351
HCM Control Delay	11.5	10.5	10.8	11.8	11.2	11.6	11.3	12.7	12.5
HCM Lane LOS	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	0.5	0.3	0.3	1	0.9	0.7	0.7	1.4	1.5

139-Unit Residential Development TIS
Opening Year Plus Project Condition
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Van Buren Street / Orangethorpe Avenue

Cycle (sec): 100 Critical Vol./Cap.(X): 0.641
Loss Time (sec): 20 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 61 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	46	157	62	43	83	57	127	884	33	20	587	46
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	47	160	63	44	85	58	130	902	34	20	599	47
Added Vol:	6	2	3	0	4	0	0	0	10	6	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	162	66	44	89	58	130	902	44	26	599	47
User 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
PHF 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
PHF Volume:	53	162	66	44	89	58	130	902	44	26	599	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	162	66	44	89	58	130	902	44	26	599	47
PCE 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
MLF 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
FinalVolume:	53	162	66	44	89	58	130	902	44	26	599	47

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.91	0.09	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	3052	148	1600	3200	1600

Capacity Analysis Module:

Vol/Sat:	0.03	0.10	0.04	0.03	0.06	0.04	0.08	0.30	0.30	0.02	0.19	0.03
Crit Moves:	****			****			****			****		

Lanes and Geometrics
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	3539	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	187		204			206
Travel Time (s)	4.3		4.6			4.7
Intersection Summary						
Area Type:	Other					

Volume
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	1	290	0	0	173
Future Volume (vph)	0	1	290	0	0	173
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	1	330	0	0	197
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	330	0	0	197
Intersection Summary						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	290	0	0	173
Future Vol, veh/h	0	1	290	0	0	173
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	330	0	0	197
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	165	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	851	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	851	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.2	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	-	851	-		
HCM Lane V/C Ratio	-	-	0.001	-		
HCM Control Delay (s)	-	-	9.2	-		
HCM Lane LOS	-	-	A	-		
HCM 95th %tile Q(veh)	-	-	0	-		

Lanes and Geometrics
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	65		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.921			0.910			0.997			0.979	
Flt Protected		0.980			0.984			0.995		0.950		
Satd. Flow (prot)	0	1681	0	0	1668	0	0	1848	0	1770	1824	0
Flt Permitted		0.980			0.984			0.995		0.950		
Satd. Flow (perm)	0	1681	0	0	1668	0	0	1848	0	1770	1824	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			729			791			204	
Travel Time (s)		7.3			16.6			18.0			4.6	
Intersection Summary												
Area Type:	Other											

Volume
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	12	0	18	3	0	5	26	256	7	7	144	24
Future Volume (vph)	12	0	18	3	0	5	26	256	7	7	144	24
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	0	20	3	0	6	30	291	8	8	164	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	0	0	9	0	0	329	0	8	191	0
Intersection Summary												

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	12	0	18	3	0	5	26	256	7	7	144	24
Future Vol, veh/h	12	0	18	3	0	5	26	256	7	7	144	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	0	20	3	0	6	30	291	8	8	164	27
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	552	553	178	559	562	295	191	0	0	299	0	0
Stage 1	194	194	-	355	355	-	-	-	-	-	-	-
Stage 2	358	359	-	204	207	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	444	441	865	440	436	744	1383	-	-	1262	-	-
Stage 1	808	740	-	662	630	-	-	-	-	-	-	-
Stage 2	660	627	-	798	731	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	430	427	865	419	422	744	1383	-	-	1262	-	-
Mov Cap-2 Maneuver	430	427	-	419	422	-	-	-	-	-	-	-
Stage 1	787	736	-	645	614	-	-	-	-	-	-	-
Stage 2	638	611	-	774	727	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.2		11.4		0.7		0.3					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1383	-	-	616	576	1262	-	-				
HCM Lane V/C Ratio	0.021	-	-	0.055	0.016	0.006	-	-				
HCM Control Delay (s)	7.7	0	-	11.2	11.4	7.9	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile O(veh)	0.1	-	-	0.2	0	0	-	-				

Lanes and Geometrics
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.978			0.988			0.992			0.972	
Flt Protected	0.950				0.996			0.989			0.998	
Satd. Flow (prot)	1770	3461	0	0	3483	0	0	3472	0	0	3433	0
Flt Permitted	0.950				0.996			0.989			0.998	
Satd. Flow (perm)	1770	3461	0	0	3483	0	0	3472	0	0	3433	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1434			1096			1345			772	
Travel Time (s)		32.6			24.9			30.6			17.5	
Intersection Summary												
Area Type:	Other											

Volume
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	85	243	43	23	256	24	54	180	13	8	160	39
Future Volume (vph)	85	243	43	23	256	24	54	180	13	8	160	39
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	104	296	52	28	312	29	66	220	16	10	195	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	348	0	0	369	0	0	302	0	0	253	0
Intersection Summary												

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	243	43	23	256	24	54	180	13	8	160	39
Future Vol, veh/h	85	243	43	23	256	24	54	180	13	8	160	39
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	296	52	28	312	29	66	220	16	10	195	48
Number of Lanes	1	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	15.7	17.1	16.4	15.1
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	38%	0%	100%	0%	0%	15%	0%	9%	0%
Vol Thru, %	62%	87%	0%	100%	65%	85%	84%	91%	67%
Vol Right, %	0%	13%	0%	0%	35%	0%	16%	0%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	103	85	162	124	151	152	88	119
LT Vol	54	0	85	0	0	23	0	8	0
Through Vol	90	90	0	162	81	128	128	80	80
RT Vol	0	13	0	0	43	0	24	0	39
Lane Flow Rate	176	126	104	198	151	184	185	107	145
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.424	0.294	0.25	0.448	0.332	0.431	0.424	0.26	0.341
Departure Headway (Hd)	8.702	8.43	8.672	8.158	7.908	8.42	8.228	8.736	8.453
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	414	427	416	443	457	429	439	411	425
Service Time	6.451	6.168	6.394	5.88	5.63	6.146	5.953	6.487	6.204
HCM Lane V/C Ratio	0.425	0.295	0.25	0.447	0.33	0.429	0.421	0.26	0.341
HCM Control Delay	17.7	14.7	14.3	17.4	14.5	17.4	16.9	14.5	15.5
HCM Lane LOS	C	B	B	C	B	C	C	B	C
HCM 95th-tile Q	2.1	1.2	1	2.3	1.4	2.1	2.1	1	1.5

Appendix F

Existing Plus Ambient Growth (2020) Plus Cumulative Projects Conditions
Intersection Analysis Worksheets

139-Unit Residential Development TIS
Opening Year Plus Cumulative Condition
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Van Buren Street / Orangethorpe Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.624
Loss Time (sec):	20	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected			Protected			Protected			Protected					
Rights:	Include			Include			Include			Include					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1

Volume Module:

Base Vol:	21	50	22	48	248	154	27	484	39	37	723	35
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	21	51	22	49	253	157	28	494	40	38	738	36
Added Vol:	2	0	0	0	0	0	0	7	15	0	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	23	51	22	49	253	157	28	501	55	38	749	36
User 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
PHF 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
PHF Volume:	23	51	22	49	253	157	28	501	55	38	749	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	51	22	49	253	157	28	501	55	38	749	36
PCE 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
MLF 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
FinalVolume:	23	51	22	49	253	157	28	501	55	38	749	36

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.80	0.20	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	2884	316	1600	3200	1600

Capacity Analysis Module:

Vol/Sat:	0.01	0.03	0.01	0.03	0.16	0.10	0.02	0.17	0.17	0.02	0.23	0.02
Crit Moves:	****			****			****			****		

Lanes and Geometrics
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865	0.999			
Flt Protected						
Satd. Flow (prot)	0	1611	3536	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	3536	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	187		204			206
Travel Time (s)	4.3		4.6			4.7
Intersection Summary						
Area Type:	Other					

Volume
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	1	109	1	0	347
Future Volume (vph)	0	1	109	1	0	347
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	1	122	1	0	390
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	123	0	0	390
Intersection Summary						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	109	1	0	347
Future Vol, veh/h	0	1	109	1	0	347
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	122	1	0	390
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	62	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	990	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	990	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.6	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	990		-		
HCM Lane V/C Ratio	-	0.001		-		
HCM Control Delay (s)	-	8.6		-		
HCM Lane LOS	-	A		-		
HCM 95th %tile Q(veh)	-	0		-		

Lanes and Geometrics
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	65		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.932			0.990				
Flt Protected		0.976			0.976			0.998		0.950		
Satd. Flow (prot)	0	1694	0	0	1694	0	0	1840	0	1770	1863	0
Flt Permitted		0.976			0.976			0.998		0.950		
Satd. Flow (perm)	0	1694	0	0	1694	0	0	1840	0	1770	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			729			791			204	
Travel Time (s)		7.3			16.6			18.0			4.6	
Intersection Summary												
Area Type:	Other											

Volume
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	0	4	16	0	16	4	85	7	6	343	0
Future Volume (vph)	4	0	4	16	0	16	4	85	7	6	343	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	4	0	4	17	0	17	4	92	8	7	373	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	34	0	0	104	0	7	373	0
Intersection Summary												

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	4	16	0	16	4	85	7	6	343	0
Future Vol, veh/h	4	0	4	16	0	16	4	85	7	6	343	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	4	17	0	17	4	92	8	7	373	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	500	495	373	493	491	96	373	0	0	100	0	0
Stage 1	387	387	-	104	104	-	-	-	-	-	-	-
Stage 2	113	108	-	389	387	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	481	476	673	486	478	960	1185	-	-	1493	-	-
Stage 1	637	610	-	902	809	-	-	-	-	-	-	-
Stage 2	892	806	-	635	610	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	469	472	673	480	474	960	1185	-	-	1493	-	-
Mov Cap-2 Maneuver	469	472	-	480	474	-	-	-	-	-	-	-
Stage 1	634	607	-	898	806	-	-	-	-	-	-	-
Stage 2	872	803	-	628	607	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.6		10.9		0.3		0.1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1185	-	-	553	640	1493	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.016	0.054	0.004	-	-				
HCM Control Delay (s)	8	0	-	11.6	10.9	7.4	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-				

Lanes and Geometrics
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.973			0.990			0.978	
Flt Protected	0.950				0.996			0.988			0.995	
Satd. Flow (prot)	1770	3405	0	0	3430	0	0	3462	0	0	3444	0
Flt Permitted	0.950				0.996			0.988			0.995	
Satd. Flow (perm)	1770	3405	0	0	3430	0	0	3462	0	0	3444	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1434			1096			1345			772	
Travel Time (s)		32.6			24.9			30.6			17.5	
Intersection Summary												
Area Type:	Other											

Volume
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	61	185	62	18	149	36	30	86	8	34	254	50
Future Volume (vph)	61	185	62	18	149	36	30	86	8	34	254	50
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	66	199	67	19	160	39	32	92	9	37	273	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	266	0	0	218	0	0	133	0	0	364	0
Intersection Summary												

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	185	62	18	149	36	30	86	8	34	254	50
Future Vol, veh/h	61	185	62	18	149	36	30	86	8	34	254	50
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	199	67	19	160	39	32	92	9	37	273	54
Number of Lanes	1	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	11.7	11.8	11.5	13
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	41%	0%	100%	0%	0%	19%	0%	21%	0%
Vol Thru, %	59%	84%	0%	100%	50%	81%	67%	79%	72%
Vol Right, %	0%	16%	0%	0%	50%	0%	33%	0%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	73	51	61	123	124	93	111	161	177
LT Vol	30	0	61	0	0	18	0	34	0
Through Vol	43	43	0	123	62	75	75	127	127
RT Vol	0	8	0	0	62	0	36	0	50
Lane Flow Rate	78	55	66	133	133	99	119	173	190
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.166	0.111	0.136	0.256	0.244	0.202	0.23	0.334	0.351
Departure Headway (Hd)	7.62	7.3	7.467	6.958	6.602	7.306	6.974	6.95	6.644
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	471	491	482	519	547	491	516	519	544
Service Time	5.36	5.039	5.183	4.674	4.317	5.042	4.71	4.665	4.358
HCM Lane V/C Ratio	0.166	0.112	0.137	0.256	0.243	0.202	0.231	0.333	0.349
HCM Control Delay	11.9	11	11.4	12.1	11.4	11.9	11.8	13.1	12.9
HCM Lane LOS	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	0.6	0.4	0.5	1	1	0.7	0.9	1.5	1.6

139-Unit Residential Development TIS
Opening Year Plus Cumulative Condition
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Van Buren Street / Orangethorpe Avenue

Cycle (sec): 100 Critical Vol./Cap.(X): 0.638
Loss Time (sec): 20 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 60 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	46	157	62	43	83	57	127	884	33	20	587	46
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	47	160	63	44	85	58	130	902	34	20	599	47
Added Vol:	13	0	0	0	0	0	0	15	2	0	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	60	160	63	44	85	58	130	917	36	20	611	47
User 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
PHF 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
PHF Volume:	60	160	63	44	85	58	130	917	36	20	611	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	160	63	44	85	58	130	917	36	20	611	47
PCE 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
MLF 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
FinalVolume:	60	160	63	44	85	58	130	917	36	20	611	47

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.93	0.07	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	3080	120	1600	3200	1600

Capacity Analysis Module:

Vol/Sat:	0.04	0.10	0.04	0.03	0.05	0.04	0.08	0.30	0.30	0.01	0.19	0.03
Crit Moves:	****			****			****			****		

Lanes and Geometrics
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	3539	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	187		204			206
Travel Time (s)	4.3		4.6			4.7
Intersection Summary						
Area Type:	Other					

Volume
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	1	291	0	0	154
Future Volume (vph)	0	1	291	0	0	154
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	1	331	0	0	175
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	331	0	0	175
Intersection Summary						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	291	0	0	154
Future Vol, veh/h	0	1	291	0	0	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	331	0	0	175
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	166	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	850	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	850	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.2	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	850		-		
HCM Lane V/C Ratio	-	0.001		-		
HCM Control Delay (s)	-	9.2		-		
HCM Lane LOS	-	A		-		
HCM 95th %tile Q(veh)	-	0		-		

Lanes and Geometrics
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	65		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.865			0.910			0.997			0.997	
Flt Protected					0.984			0.999		0.950		
Satd. Flow (prot)	0	1611	0	0	1668	0	0	1855	0	1770	1857	0
Flt Permitted					0.984			0.999		0.950		
Satd. Flow (perm)	0	1611	0	0	1668	0	0	1855	0	1770	1857	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			729			791			204	
Travel Time (s)		7.3			16.6			18.0			4.6	
Intersection Summary												
Area Type:	Other											

Volume
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	0	6	3	0	5	5	269	7	7	146	3
Future Volume (vph)	0	0	6	3	0	5	5	269	7	7	146	3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	7	3	0	6	6	306	8	8	166	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	7	0	0	9	0	0	320	0	8	169	0
Intersection Summary												

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔	↔	
Traffic Vol, veh/h	0	0	6	3	0	5	5	269	7	7	146	3
Future Vol, veh/h	0	0	6	3	0	5	5	269	7	7	146	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	7	3	0	6	6	306	8	8	166	3

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	509	510	168	509	507	310	169	0	0	314	0	0
Stage 1	184	184	-	322	322	-	-	-	-	-	-	-
Stage 2	325	326	-	187	185	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	475	467	876	475	468	730	1409	-	-	1246	-	-
Stage 1	818	747	-	690	651	-	-	-	-	-	-	-
Stage 2	687	648	-	815	747	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	467	462	876	467	463	730	1409	-	-	1246	-	-
Mov Cap-2 Maneuver	467	462	-	467	463	-	-	-	-	-	-	-
Stage 1	814	743	-	687	648	-	-	-	-	-	-	-
Stage 2	678	645	-	803	743	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	11.1	0.1	0.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1409	-	-	876	603	1246	-
HCM Lane V/C Ratio	0.004	-	-	0.008	0.015	0.006	-
HCM Control Delay (s)	7.6	0	-	9.1	11.1	7.9	-
HCM Lane LOS	A	A	-	A	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-

Lanes and Geometrics
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.978			0.987			0.991			0.967	
Flt Protected	0.950				0.996			0.988			0.995	
Satd. Flow (prot)	1770	3461	0	0	3479	0	0	3465	0	0	3405	0
Flt Permitted	0.950				0.996			0.988			0.995	
Satd. Flow (perm)	1770	3461	0	0	3479	0	0	3465	0	0	3405	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1434			1096			1345			772	
Travel Time (s)		32.6			24.9			30.6			17.5	
Intersection Summary												
Area Type:	Other											

Volume
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	88	243	43	23	256	27	54	162	13	24	168	55
Future Volume (vph)	88	243	43	23	256	27	54	162	13	24	168	55
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	107	296	52	28	312	33	66	198	16	29	205	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	348	0	0	373	0	0	280	0	0	301	0
Intersection Summary												

Intersection	
Intersection Delay, s/veh	16.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	88	243	43	23	256	27	54	162	13	24	168	55
Future Vol, veh/h	88	243	43	23	256	27	54	162	13	24	168	55
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	107	296	52	28	312	33	66	198	16	29	205	67
Number of Lanes	1	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	16.2	17.7	16.5	16.3
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	40%	0%	100%	0%	0%	15%	0%	22%	0%
Vol Thru, %	60%	86%	0%	100%	65%	85%	83%	78%	60%
Vol Right, %	0%	14%	0%	0%	35%	0%	17%	0%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	135	94	88	162	124	151	155	108	139
LT Vol	54	0	88	0	0	23	0	24	0
Through Vol	81	81	0	162	81	128	128	84	84
RT Vol	0	13	0	0	43	0	27	0	55
Lane Flow Rate	165	115	107	198	151	184	189	132	170
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.41	0.276	0.263	0.456	0.339	0.439	0.44	0.323	0.397
Departure Headway (Hd)	8.967	8.662	8.823	8.309	8.059	8.578	8.373	8.828	8.429
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	402	415	408	435	446	420	431	407	427
Service Time	6.717	6.412	6.569	6.054	5.804	6.325	6.12	6.578	6.179
HCM Lane V/C Ratio	0.41	0.277	0.262	0.455	0.339	0.438	0.439	0.324	0.398
HCM Control Delay	17.8	14.7	14.7	17.9	14.9	17.9	17.6	15.8	16.7
HCM Lane LOS	C	B	B	C	B	C	C	C	C
HCM 95th-tile Q	2	1.1	1	2.3	1.5	2.2	2.2	1.4	1.9

Appendix G

Existing Plus Ambient Growth (2020) Plus Cumulative Projects Plus Project
Conditions Intersection Analysis Worksheets

139-Unit Residential Development TIS
Opening Year Plus Cumulative Plus Project Condition
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Van Buren Street / Orangethorpe Avenue

Cycle (sec): 100 Critical Vol./Cap.(X): 0.631
Loss Time (sec): 20 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 60 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	21	50	22	48	248	154	27	484	39	37	723	35
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	21	51	22	49	253	157	28	494	40	38	738	36
Added Vol:	12	4	6	0	1	0	0	7	17	2	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	55	28	49	254	157	28	501	57	40	749	36
User 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
PHF 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
PHF Volume:	33	55	28	49	254	157	28	501	57	40	749	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	55	28	49	254	157	28	501	57	40	749	36
PCE 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
MLF 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
FinalVolume:	33	55	28	49	254	157	28	501	57	40	749	36

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.80	0.20	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	2874	326	1600	3200	1600

Capacity Analysis Module:

Vol/Sat:	0.02	0.03	0.02	0.03	0.16	0.10	0.02	0.17	0.17	0.02	0.23	0.02
Crit Moves:	****			****			****			****		

Lanes and Geometrics
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865	0.999			
Flt Protected						
Satd. Flow (prot)	0	1611	3536	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	3536	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	187		204			206
Travel Time (s)	4.3		4.6			4.7
Intersection Summary						
Area Type:	Other					

Volume
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	1	130	1	0	352
Future Volume (vph)	0	1	130	1	0	352
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	1	146	1	0	396
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	147	0	0	396
Intersection Summary						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	1	130	1	0	352
Future Vol, veh/h	0	1	130	1	0	352
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	146	1	0	396
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	74	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	973	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	973	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.7	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	-	973	-		
HCM Lane V/C Ratio	-	-	0.001	-		
HCM Control Delay (s)	-	-	8.7	-		
HCM Lane LOS	-	-	A	-		
HCM 95th %tile Q(veh)	-	-	0	-		

Lanes and Geometrics
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	65		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.932			0.990			0.997	
Flt Protected		0.976			0.976			0.995		0.950		
Satd. Flow (prot)	0	1694	0	0	1694	0	0	1835	0	1770	1857	0
Flt Permitted		0.976			0.976			0.995		0.950		
Satd. Flow (perm)	0	1694	0	0	1694	0	0	1835	0	1770	1857	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			729			791			204	
Travel Time (s)		7.3			16.6			18.0			4.6	
Intersection Summary												
Area Type:	Other											

Volume
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	25	0	25	16	0	16	10	85	7	6	343	6
Future Volume (vph)	25	0	25	16	0	16	10	85	7	6	343	6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	27	0	27	17	0	17	11	92	8	7	373	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	34	0	0	111	0	7	380	0
Intersection Summary												

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↙	↘	
Traffic Vol, veh/h	25	0	25	16	0	16	10	85	7	6	343	6
Future Vol, veh/h	25	0	25	16	0	16	10	85	7	6	343	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	0	27	17	0	17	11	92	8	7	373	7
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	518	513	377	522	512	96	380	0	0	100	0	0
Stage 1	391	391	-	118	118	-	-	-	-	-	-	-
Stage 2	127	122	-	404	394	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	468	465	670	465	465	960	1178	-	-	1493	-	-
Stage 1	633	607	-	887	798	-	-	-	-	-	-	-
Stage 2	877	795	-	623	605	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	454	458	670	441	458	960	1178	-	-	1493	-	-
Mov Cap-2 Maneuver	454	458	-	441	458	-	-	-	-	-	-	-
Stage 1	627	604	-	878	790	-	-	-	-	-	-	-
Stage 2	853	787	-	595	602	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.4		11.3		0.8		0.1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1178	-	-	541	604	1493	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.1	0.058	0.004	-	-				
HCM Control Delay (s)	8.1	0	-	12.4	11.3	7.4	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-				

Lanes and Geometrics
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.973			0.990			0.979	
Flt Protected	0.950				0.996			0.989			0.995	
Satd. Flow (prot)	1770	3405	0	0	3430	0	0	3465	0	0	3448	0
Flt Permitted	0.950				0.996			0.989			0.995	
Satd. Flow (perm)	1770	3405	0	0	3430	0	0	3465	0	0	3448	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1434			1096			1345			772	
Travel Time (s)		32.6			24.9			30.6			17.5	
Intersection Summary												
Area Type:	Other											

Volume
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	61	185	62	18	149	36	30	91	8	34	275	50
Future Volume (vph)	61	185	62	18	149	36	30	91	8	34	275	50
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	66	199	67	19	160	39	32	98	9	37	296	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	266	0	0	218	0	0	139	0	0	387	0
Intersection Summary												

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	185	62	18	149	36	30	91	8	34	275	50
Future Vol, veh/h	61	185	62	18	149	36	30	91	8	34	275	50
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	199	67	19	160	39	32	98	9	37	296	54
Number of Lanes	1	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	11.9	12	11.7	13.5
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	40%	0%	100%	0%	0%	19%	0%	20%	0%
Vol Thru, %	60%	85%	0%	100%	50%	81%	67%	80%	73%
Vol Right, %	0%	15%	0%	0%	50%	0%	33%	0%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	76	54	61	123	124	93	111	172	188
LT Vol	30	0	61	0	0	18	0	34	0
Through Vol	46	46	0	123	62	75	75	138	138
RT Vol	0	8	0	0	62	0	36	0	50
Lane Flow Rate	81	58	66	133	133	99	119	184	202
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.174	0.118	0.138	0.26	0.248	0.205	0.234	0.359	0.376
Departure Headway (Hd)	7.702	7.393	7.577	7.049	6.711	7.419	7.086	6.999	6.71
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	466	485	475	509	537	483	506	516	538
Service Time	5.448	5.14	5.299	4.79	4.433	5.163	4.831	4.708	4.419
HCM Lane V/C Ratio	0.174	0.12	0.139	0.261	0.248	0.205	0.235	0.357	0.375
HCM Control Delay	12.1	11.1	11.5	12.3	11.6	12.1	12	13.6	13.4
HCM Lane LOS	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	0.6	0.4	0.5	1	1	0.8	0.9	1.6	1.7

139-Unit Residential Development TIS
Opening Year Plus Cumulative Plus Project Condition
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Van Buren Street / Orangethorpe Avenue

Cycle (sec): 100 Critical Vol./Cap.(X): 0.646
Loss Time (sec): 20 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 61 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	46	157	62	43	83	57	127	884	33	20	587	46
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	47	160	63	44	85	58	130	902	34	20	599	47
Added Vol:	19	2	3	0	4	0	0	15	12	6	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	162	66	44	89	58	130	917	46	26	611	47
User 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
PHF 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
PHF Volume:	66	162	66	44	89	58	130	917	46	26	611	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	162	66	44	89	58	130	917	46	26	611	47
PCE 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
MLF 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
FinalVolume:	66	162	66	44	89	58	130	917	46	26	611	47

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.91	0.09	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	3048	152	1600	3200	1600

Capacity Analysis Module:

Vol/Sat:	0.04	0.10	0.04	0.03	0.06	0.04	0.08	0.30	0.30	0.02	0.19	0.03
Crit Moves:	****			****			****			****		

Lanes and Geometrics
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	3539	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	187		204			206
Travel Time (s)	4.3		4.6			4.7
Intersection Summary						
Area Type:	Other					

Volume
2: Van Buren Street & Olive Street

139-Unit Residential Development TIS

01/22/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	1	303	0	0	175
Future Volume (vph)	0	1	303	0	0	175
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	1	344	0	0	199
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	344	0	0	199
Intersection Summary						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	303	0	0	175
Future Vol, veh/h	0	1	303	0	0	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	344	0	0	199
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	172	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	842	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	842	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.3	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	842		-		
HCM Lane V/C Ratio	-	0.001		-		
HCM Control Delay (s)	-	9.3		-		
HCM Lane LOS	-	A		-		
HCM 95th %tile Q(veh)	-	0		-		

Lanes and Geometrics
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	65		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.921			0.910			0.997			0.979	
Flt Protected		0.980			0.984			0.996		0.950		
Satd. Flow (prot)	0	1681	0	0	1668	0	0	1850	0	1770	1824	0
Flt Permitted		0.980			0.984			0.996		0.950		
Satd. Flow (perm)	0	1681	0	0	1668	0	0	1850	0	1770	1824	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			729			791			204	
Travel Time (s)		7.3			16.6			18.0			4.6	
Intersection Summary												
Area Type:	Other											

Volume
3: Van Buren Street & Oak Street

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	12	0	18	3	0	5	26	269	7	7	146	24
Future Volume (vph)	12	0	18	3	0	5	26	269	7	7	146	24
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	0	20	3	0	6	30	306	8	8	166	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	0	0	9	0	0	344	0	8	193	0
Intersection Summary												

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	12	0	18	3	0	5	26	269	7	7	146	24
Future Vol, veh/h	12	0	18	3	0	5	26	269	7	7	146	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	0	20	3	0	6	30	306	8	8	166	27

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	569	570	180	576	579	310	193	0	0	314	0	0
Stage 1	196	196	-	370	370	-	-	-	-	-	-	-
Stage 2	373	374	-	206	209	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	433	431	863	428	426	730	1380	-	-	1246	-	-
Stage 1	806	739	-	650	620	-	-	-	-	-	-	-
Stage 2	648	618	-	796	729	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	419	417	863	407	412	730	1380	-	-	1246	-	-
Mov Cap-2 Maneuver	419	417	-	407	412	-	-	-	-	-	-	-
Stage 1	785	735	-	633	604	-	-	-	-	-	-	-
Stage 2	626	602	-	772	725	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.3		11.5		0.7		0.3	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1380	-	-	606	563	1246	-
HCM Lane V/C Ratio	0.021	-	-	0.056	0.016	0.006	-
HCM Control Delay (s)	7.7	0	-	11.3	11.5	7.9	-
HCM Lane LOS	A	A	-	B	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	-

Lanes and Geometrics
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.978			0.987			0.992			0.968	
Flt Protected	0.950				0.996			0.989			0.995	
Satd. Flow (prot)	1770	3461	0	0	3479	0	0	3472	0	0	3409	0
Flt Permitted	0.950				0.996			0.989			0.995	
Satd. Flow (perm)	1770	3461	0	0	3479	0	0	3472	0	0	3409	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1434			1096			1345			772	
Travel Time (s)		32.6			24.9			30.6			17.5	
Intersection Summary												
Area Type:	Other											

Volume
4: Van Buren Street & Miraloma Avenue

139-Unit Residential Development TIS

01/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	88	243	43	23	256	27	54	183	13	24	179	55
Future Volume (vph)	88	243	43	23	256	27	54	183	13	24	179	55
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	107	296	52	28	312	33	66	223	16	29	218	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	348	0	0	373	0	0	305	0	0	314	0
Intersection Summary												

Intersection	
Intersection Delay, s/veh	17.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	88	243	43	23	256	27	54	183	13	24	179	55
Future Vol, veh/h	88	243	43	23	256	27	54	183	13	24	179	55
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	107	296	52	28	312	33	66	223	16	29	218	67
Number of Lanes	1	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	16.7	18.4	17.6	17.1
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	37%	0%	100%	0%	0%	15%	0%	21%	0%
Vol Thru, %	63%	88%	0%	100%	65%	85%	83%	79%	62%
Vol Right, %	0%	12%	0%	0%	35%	0%	17%	0%	38%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	146	105	88	162	124	151	155	114	145
LT Vol	54	0	88	0	0	23	0	24	0
Through Vol	92	92	0	162	81	128	128	90	90
RT Vol	0	13	0	0	43	0	27	0	55
Lane Flow Rate	177	127	107	198	151	184	189	138	176
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.448	0.312	0.269	0.468	0.348	0.45	0.451	0.346	0.422
Departure Headway (Hd)	9.086	8.806	9.04	8.524	8.274	8.8	8.595	8.997	8.615
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	396	408	397	423	434	409	420	400	418
Service Time	6.842	6.561	6.792	6.277	6.026	6.556	6.351	6.751	6.368
HCM Lane V/C Ratio	0.447	0.311	0.27	0.468	0.348	0.45	0.45	0.345	0.421
HCM Control Delay	19.1	15.5	15.1	18.6	15.4	18.6	18.3	16.5	17.5
HCM Lane LOS	C	C	C	C	C	C	C	C	C
HCM 95th-tile Q	2.2	1.3	1.1	2.4	1.5	2.3	2.3	1.5	2.1