20957 & 20785 Baker Road Development
Castro Valley, CA
Transportation Impact Study

Draft Report

Prepared For:

Alameda County

April 2017

Prepared By:

WOOD RODGERS

20957 & 20785 Baker Road Development
Castro Valley, CA

TRANSPORTATION IMPACT STUDY

DRAFT REPORT

Prepared For:

Alameda County

Prepared By

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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April 2017

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EXECUTIVE SUMMARY

This report has been prepared to present the results of a Transportation Impact Study (TIS) performed by Wood Rodgers, Inc. for the proposed 20957 & 20785 Baker Road development project (Project) in Alameda County (County), California. This study has been performed to determine impacts the proposed Project may have on surrounding transportation facilities and potential mitigation measures that could be implemented to address significant impacts.

The proposed Project envisions redevelopment of two mostly vacant lots, with a combined size of approximately 1.13 acres, located at 20957 and 20785 Baker Road in the unincorporated community of Castro Valley in Alameda County, California. The Project proposes to demolish the one existing single-family dwelling unit home which currently occupies the site and construct 20 new townhomes in its place. The Project site is designated Residential Mixed Density (CBD-RMX) (20 dwelling units per acre) under the Central Business District Castro Valley General Plan. The Project also involves changing the existing residential and vacant land use of the site to For-Sale Condo land use.

PROJECT GENERATED TRIPS

New trips generated by the proposed Project were estimated using rates from the *Institute of Transportation Engineers Trip Generation Manual, 9th Edition*. Conservatively, this TIS assumed no reductions to the trips generated by ITE rates as the Project does not propose any mixed-use or commercial land uses and trips from existing land uses were minimal. The proposed Project is anticipated to generate a total of 159 daily trips, 14 AM peak hour trips (2 inbound and 12 outbound), and 16 PM peak hour trips (11 inbound and 5 outbound) under typical "annual average" traffic demand conditions.

INTERSECTION OPERATIONS, IMPACTS, AND MITIGATION MEASURES

This TIS report analyzed four (4) "study" intersections under "Existing" and "Existing plus Project" AM and PM peak hour conditions. HCM 2000 based analysis was performed using Synchro 9 software. CA-MUTCD based peak hour signal warrant-3 (urban areas) was also checked at all unsignalized study intersections. Level of service standards and significance criteria used in this TIS were based on Castro Valley standards and criteria used by other nearby cities.

All study intersections are currently operating and projected to operate at acceptable level of service during the AM and PM peak hours under "Existing" and "Existing plus Project" conditions. Based on the significance criteria used in this TIS, the Project was found to have "less than significant" impacts on all four (4) study intersections under "Existing plus Project" AM and PM peak hour conditions.

ON-SITE PARKING

The proposed project would provide approximately 3.05 parking spaces per unit (two garages spaces and approximately 1.05 visitor spaces per unit) which meets the minimum of two (2) parking spaces (at least one covered) and one (1) visitor space per townhome unit required by the Alameda County Townhome Design Guidelines. One (1) of the visitor spaces provided would be a disabled accessible parking stall.

TRANSIT IMPACTS

Project site residents could walk or bike to bus stops for AC Transit Route 32 and the Castro Valley BART station which are all located within 0.6 miles of the Project site. The increase in transit ridership caused by the proposed Project is not projected to be enough to significantly impact transit route delay or operations.

PEDESTRIAN IMPACTS

Project site residents could access nearby CV Transit Bus Route 32 bus stops, the Castro Valley BART station, and nearby shopping centers via the existing pedestrian facilities on Castro Valley Boulevard, Baker Road, and other nearby local residential roads. Outside of the Project site, there are no currently planned Pedestrian improvements for study area facilities.

BICYCLE IMPACTS

Project site residents could access the CV Transit Bus Route 32 bus stops located on Castro Valley Boulevard and/or the Castro Valley BART station via bicycle using the existing class II bike lanes on Castro Valley Boulevard and/or the low volume nearby local residential streets in the Project area. According to the Castro Valley General Plan, class II bike lanes are proposed to be constructed on Castro Valley Boulevard between Redwood Road and Crow Canyon Road (filling in the current gap). These class II bike lanes, once constructed, could be utilized by future Project residents for better bicycle access to nearby destinations and transit stops.

1. INTRODUCTION

This report has been prepared to present the results of a Transportation Impact Study (TIS) performed by Wood Rodgers, Inc. for the proposed 20957 & 20785 Baker Road development project (Project) in Alameda County (County), California. This study has been performed to determine impacts the proposed Project may have on surrounding transportation facilities and potential mitigation measures that could be implemented to address significant impacts. This introduction outlines project description, study area, analysis scenarios, analysis methods, significance criteria, and organization of the overall report.

1.1 PROJECT DESCRIPTION

The proposed Project envisions development of two mostly vacant lots, with a combined size of approximately 1.13 acres, located at 20957 and 20785 Baker Road in the unincorporated community of Castro Valley in Alameda County, California. The Project site is generally located mid-block on the block of Baker Road that falls between Castro Valley Boulevard and Kerr Street. The Project site is bound by Baker Road to the east, Rutledge Road to the west, and various homes, apartments, and businesses to the north and south. The Project site location and vicinity map are shown in **Figure 1**.

The most recent Project site plan (by William Hezmalhalch Architects Inc., April 3, 2017) is shown in **Figure 2**. The Project proposes to demolish the one existing single-family dwelling unit home which currently occupies the mostly vacant site and construct 20 new townhomes in its place. The Project site is designated Residential Mixed Density (CBD-RMX) (20 dwelling units per acre) under the Central Business District Castro Valley General Plan. The Project also involves changing the existing residential and vacant land use of the site to For-Sale Condo land use.

Based on the site plan, access to and from the Project site is planned to be provided via a new full access egress stop-controlled driveway intersection that would extend west from Baker Road, approximately across from an existing private roadway, along the middle of the Project site.

1.2 STUDY AREA

1.2.1 INTERSECTIONS

Study intersections were selected for analysis based on engineering judgement and coordination with County Public Works Agency staff. The following four (4) existing and proposed study intersections were analyzed in this TIS and are shown on **Figure 1**:

1. Castro Valley Boulevard / Wisteria Street
2. Castro Valley Boulevard / Baker Road
3. Castro Valley Boulevard / Anita Avenue
4. Baker Road / Project Access Driveway / Private Roadway

1.2.2 PEDESTRIAN, BICYCLE, AND TRANSIT FACILITIES

This TIS analyzes Project impacts on pedestrian, bicycle, and transit facilities located in the vicinity of the study area intersections listed above and which would be used to gain access to the Project site. This includes facilities on Baker Road, Castro Valley Boulevard, Wisteria Street, and Anita Avenue.

1.3 ANALYSIS SCENARIOS

The four (4) study intersections were evaluated under AM peak hour (highest hour of traffic between 7 and 9 AM) and PM peak hour (highest hour of traffic between 4 and 6 PM) conditions for the following scenarios:

Project Location and Vicinity Map
20957 and 20785 Baker Road Development TIS
Castro Valley, CA
February 2017

0 150 300
Feet

NORTH

Figure 1

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

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SITE PLAN

SETBACK DIAGRAM

PROJECT SUMMARY

SITE ACREAGE:	1.13 AC
DWELLING UNITS:	20 DU
Plan 1	*4 DU*
Plan 1X	*4 DU*
Plan 2	*12 DU*
DENSITY :	19.7 DU/AC

OPEN SPACE SUMMARY

PROVIDED COMMON OPEN SPACE	2,972 sf
REQUIRED COMMON OPEN SPACE	2,000 sf
(Min. 100 SF / Unit)	
PROVIDED PRIVATE OPEN SPACE	6,775 sf
(Min. 336 SF / Unit)	
REQUIRED PRIVATE OPEN SPACE	1,500 sf
(Min. 75 SF / Unit)	

PARKING SUMMARY

PROVIDED RESIDENTIAL PARKING	40 SPACES
REQUIRED RESIDENTIAL PARKING	40 SPACES
(Min. 2 spaces / Unit, 1 covered)	
PROVIDED GUEST PARKING	21 SPACES
Driveway Spaces	*12 SPACES*
Parallel Alley Spaces	*2 SPACES*
Street Parking	*6 SPACES*
REQUIRED GUEST PARKING	20 SPACES
(Min. 1 space / Unit)	

UNIT SUMMARY

LIVING SPACE:

Plan 1
1,917 SF | 3 bdrm | 3.5 ba

Plan 2
1,972 SF | 4 bdrm | 3.5 ba

Plan 1X
2,068 SF | 3 bdrm | 3.5 ba

FOOTPRINT:

Plan 1	Plan 2	Plan 1X
First Floor 1,048 SF	**First Floor** 1,105 SF	**First Floor** 1,158 SF
Second Floor 805 SF 76.8% of First Floor	**Second Floor** 823 SF 74.5% of First Floor	**Second Floor** 906 SF 78.2% of First Floor
Third Floor 732 SF 69.8% of First Floor	**Third Floor** 770 SF 69.6% of First Floor	**Third Floor** 732 SF 63.2% of First Floor
First Floor Porch	**First Floor** Porch	**First Floor** Porch
Second Floor Deck	**Second Floor** Deck	**Second Floor** Deck

Illustrative Site Plan

Baker Road

Castro Valley, California

CDPCV I Investors LLC

WILLIAM HEZMALHALCH ARCHITECTS, INC.

April 03, 2017

SP

2016219

2016219 - Baker Rd. - Castro Valley, CA

Figure 2

- **Existing Conditions:** Existing traffic volumes from counts.
- **Existing plus Project Conditions:** Existing traffic volumes plus traffic projected to be generated by the proposed Project.

1.4 ANALYSIS METHODS

Traffic operations in this TIS have been quantified through the determination of "Level of Service" (LOS). Level of Service is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment, representing progressively worsening traffic operations. LOS "A" represents free-flow conditions with little to no delays, while LOS "F" represents jammed or grid-lock conditions.

1.4.1 INTERSECTIONS

Intersection LOS has been calculated for all intersection control types using methods documented in the Transportation Research Board Publication *Highway Capacity Manual, Fourth Edition, 2000* (HCM-2000). For one-way-stop-controlled (OWSC) and two-way-stop-controlled (TWSC) intersections the "worst-case" movement delays and LOS are reported. For signalized and all-way-stop-controlled (AWSC) intersections the intersection delays and LOS reported are the "average" values for the whole intersection. The delay-based HCM-2000 LOS criteria for different types of intersection controls are outlined in **Table 1**.

Table 1. HCM-2000 Based Level-of-Service (LOS) Thresholds for Intersections

Level of Service	Flow Type	Operational Characteristics	Intersection Control Delay (seconds/vehicle)	
			Signal Control	Two-Way-Stop or All-Way Stop Control
"A"	Stable Flow	Free-flow conditions with negligible to minimal delays. Excellent progression with most vehicles arriving during the green phase and not having to stop at all. Nearly all drivers find freedom of operation.	≤ 10	0 – 10
"B"	Stable Flow	Good progression with slight delays. Short cycle-lengths typical. Relatively more vehicles stop than under LOS "A". Vehicle platoons are formed. Drivers begin to feel somewhat restricted within groups of vehicles.	> 10 – 20	> 10 – 15
"C"	Stable Flow	Relatively higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant, although many still pass through without stopping. Most drivers feel somewhat restricted.	> 20 – 35	> 15 – 25
"D"	Approaching Unstable Flow	Somewhat congested conditions. Longer but tolerable delays may result from unfavorable progression, long cycle lengths, and/or high volume-to-capacity ratios. Many vehicles are stopped. Individual cycle failures may be noticeable. Drivers feel restricted during short periods due to temporary back-ups.	> 35 – 55	> 25 – 35
"E"	Unstable Flow	Congested conditions. Significant delays result from poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures occur frequently. There are typically long queues of vehicles waiting upstream of the intersection. Driver maneuverability is very restricted.	> 55 – 80	> 35 – 50
"F"	Forced Flow	Jammed or grid-lock type operating conditions. Generally considered to be unacceptable for most drivers. Zero or very poor progression, with over-saturation or high volume-to-capacity ratios. Several individual cycle failures occur. Queue spillovers from other locations restrict or prevent movement.	> 80	> 50

Source: HCM-2000, Exhibits 16-2, 17-2 and 17-22.

For this TIS, calculated "Peak Hour Factor" (PHF) and a 2% heavy vehicle composition have been specified for each intersection under "Existing" and "Existing plus Project" peak hour analysis.

Synchro 9 operations analysis software was used to complete the HCM-2000 LOS analysis procedures for study intersections.

1.5 Level of Service Standards and Impact Criteria

1.5.1 Intersection Level of Service Impact Criteria

1.5.1.1 Signalized Intersections

According to the Castro Valley General Plan, Circulation Chapter, Policy 6.2-1 (Alameda County Community Development Agency, March 2012), the community currently utilizes LOS "E" as the minimum acceptable LOS threshold for intersections that fall on a Congestion Management Program (CMP) Roadway. CMP roadways include: Castro Valley Boulevard, Center Street, Grove Way, Crow Canyon Road, and Redwood road. The community utilizes LOS "D" or better as the acceptable LOS threshold for all non-CMP roadway intersections during peak travel periods.

Based on LOS policy in the Castro Valley General Plan and criteria used by other cities within Alameda County, Project impacts at signalized intersections would be considered significant if one of the following criteria is met:

1. If the addition of project generated traffic to an intersection causes the AM or PM peak hour LOS of the intersection to degrade from an acceptable LOS ("E" or better for CMP intersections or "D" or better for non-CMP intersections) to an unacceptable LOS, then the impact is significant.
2. If an intersection operates at an unacceptable AM or PM peak hour LOS (LOS "F" for CMP intersections or LOS "E" or "F" for non-CMP intersections) without the addition of project generated traffic, and the addition of project generated traffic increases the average intersection control delay by four (4) seconds or more, then the impact is significant.

1.5.1.2 Unsignalized Intersections

Castro Valley does not have an officially adopted significance criterion for unsignalized intersections. Based on criteria used by TISs for similar nearby projects, significant impacts are defined to occur when the addition of Project generated traffic causes the average intersection delay for all-way stop controlled intersections, or worst movement delay for one or two-way stop controlled intersections, to degrade to unacceptable levels and the intersection satisfies the CA-MUTCD peak-hour volume signal warrant.

1.5.1.3 Signal Warrants

In order to determine whether traffic signals should be installed at currently unsignalized intersections, a supplemental *California Manual on Uniform Traffic Control Devices*, dated November 2014 (*CA-MUTCD*) based traffic signal warrant analysis was also completed. The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the need for installation of a traffic signal at an unsignalized intersection location. The CA-MUTCD signal warrant criteria are based upon several factors including volume of vehicular and pedestrian traffic, location of school areas, frequency and type of collisions, etc. CA-MUTCD indicates that "the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal." This TIS evaluated CA-MUTCD based Peak-Hour-Volume-based Warrant 3 (Urban Areas) as a representative type of warrant analysis.

1.6 REPORT ORGANIZATION

The remainder of this report is divided into the following chapters:

- **Executive Summary**
- **Chapter 1: Introduction**
- **Chapter 2: Existing Conditions** – Describes existing conditions and operations of the study area intersections, roadways, transit system, pedestrian facilities, and bicycle facilities.
- **Chapter 3: Existing Plus Project Conditions** – Describes the methods used to estimate and distribute Project generated traffic and the resulting study facilities operations.
- **Chapter 4: Site Access and Circulation** – Describes site access and circulation for the Project site.
- **Chapter 5: Potential Effects on Transit, Bicycle, and Pedestrian Facilities and Services** – Describes potential effects the proposed Project may have on the transit system, pedestrian facilities, and bicycle facilities.
- **Chapter 6: Impacts and Mitigation Measures** – Describes the projected impacts the Project will have on study area facilities (if any) and presents potential mitigations.

2. EXISTING CONDITIONS

This chapter describes the existing roadway network, transit services, pedestrian facilities, and bicycle facilities within the study area. It also presents existing volumes at study intersections as well as calculated delays and LOS.

2.1 EXISTING ROADWAY NETWORK

This section provides descriptions of the study area roadways.

Castro Valley Boulevard is a two to four lane arterial that runs east-west through the unincorporated community of Castro Valley. It begins as a four-lane arterial at the Foothill Boulevard / Mattox Road / Castro Valley Boulevard / I-238-I-580 Ramps intersection and continues east until reducing to a two lane arterial at Five Canyons Parkway. The road then crosses under I-580 and eventually terminates at Palo Verde Road where it becomes Dublin Canyon Road. The posted speed limit on Castro Valley Boulevard near the Project study area is 30 miles per hour. Two hour parking is allowed on both sides of Castro Valley Boulevard near the Project study area. Castro Valley Boulevard is defined as a CMP roadway under the Castro Valley General Plan Circulation Chapter.

Wisteria Street is a two lane local road / residential street that runs north-south in Castro Valley between Castro Valley Boulevard and Somerset Road. The posted speed limit on Wisteria Street is 25 miles per hours. On-street parking is generally allowed on both sides of Wisteria Street.

Anita Avenue is a two lane local road / residential street that runs north-south in Castro Valley between Castro Valley Boulevard and Somerset Road. The posted speed limit on Anita Avenue is 25 miles per hours. On-street parking is generally allowed on both sides of Anita Avenue.

Baker Road is a two lane local road / residential street that runs north-south in Castro Valley with a northern terminus at Castro Valley Boulevard and a southern terminus at a cul-de-sac just north of Norridge Avenue. The posted speed limit on Baker road is 25 miles per hours. On-street parking is generally allowed on both sides of Baker Road.

2.2 PEDESTRIAN FACILITIES

Castro Valley Boulevard, Wisteria Street, and Baker Road all have continuous pedestrian sidewalks on both sides of the road within the Project study area. Anita Avenue has pedestrian sidewalks for most of its length within the project study area, however some sporadic segments have only asphalt sidewalks or no sidewalks.

The signalized Castro Valley Boulevard / Wisteria Street intersection has crosswalks with pedestrian push buttons on the north and east legs. The two-way-stop-controlled Castro Valley Boulevard / Baker Road intersection has a pedestrian crosswalk on the south leg only. The signalized Castro Valley Boulevard / Anita Avenue intersection has crosswalks with pedestrian push buttons on the north and west legs.

2.3 BICYCLE FACILITIES

The Castro Valley General Plan classifies the City's existing and proposed bike and trail network into the following three categories (based on Chapter 1000 of the Caltrans Highway Design Manual):

Class I: Provides a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.

Class II: Provides a restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted.

Class III: Provides a right-of-way designated by signs or permanent markings and shared with pedestrians and motorists.

Class II bikeways currently exist on the following segments of the study facilities:

- Castro Valley Boulevard between San Miguel Avenue and Redwood Road and between Crow Canyon Road and Five Canyons Parkway.

For Wisteria Street, Anita Avenue, and Baker Road it can be assumed that bicycles are allowed to share the roadway with vehicles.

2.4 EXISTING TRANSIT SERVICE

Transit services are provided by the Alameda-Contra Costa Transit District (AC District) and Bay Area Rapid Transit (BART) within Castro Valley and the Project study area. These agencies and the transit routes they provide within/nearby the project study area are described in this section.

Alameda-Contra Costa Transit District (AC District)

AC Transit operate eight (8) bus routes through Castro Valley, and four (4) additional routes that serve the surrounding area. AC Transit buses serve the Castro Valley BART station, downtown, nearby medical facilities, and recreation areas. Paratransit service is also provided for users with special needs. The following bus routes operate within the vicinity of the Project study area:

Bus Route 32 is a two-way loop that runs in Castro Valley, North Hayward, Cherryland, and Ashland. The route has major stops at the Hayward BART station, the Bay Fair BART station, and the Castro Valley BART station. It provides service every hour, in both directions, from 5:00 AM to 9:00 PM on weekdays and from 6:40 AM to 7:30 PM on weekends. Bus Route 32 has stops on the southwest corner of the Castro Valley Boulevard / Baker Road intersection and on the northeast corners of the Castro Valley Boulevard / Wisteria Street and Castro Valley Boulevard / Anita Avenue intersections within the Project study area.

Bay Area Rapid Transit (BART)

BART provides a system of grade-separated, electric heavy rail trains that transport passengers throughout the Bay Area. The Castro Valley BART station, which is a stop of the Dublin-Pleasanton line, is located on the southwest corner of the Redwood Road / Norbridge Avenue intersection, about a 0.6 mile walk or bike ride from the Project site. The Dublin-Pleasanton line provides direct service to Oakland, San Francisco, and the San Francisco International Airport. Additionally, the Bay Fair station (located in San Leandro) can be used to transfer between the Dublin-Pleasanton and Fremont-Richmond lines and the Hayward station (located in Hayward) can be used to transfer between the Fremont-Richmond and Fremont-Daly City lines.

2.5 EXISTING TRAFFIC VOLUMES AND INTERSECTION LANE GEOMETRICS

Project study intersection traffic operations were evaluated for the AM and PM peak hours. The AM peak hour is defined as the highest one hour of traffic flow counted between 7:00 AM and 9:00 AM on a typical weekday and the PM peak hour is defined as the highest one hour of traffic flow counted between 4:00 PM and 6:00 PM on a typical weekday.

Wood Rodgers conducted new AM and PM peak hour vehicular, pedestrian, and bicycle traffic counts at all study intersections on Tuesday, January 31, 2017. **Figure 3** illustrates existing intersection lane geometrics and control and **Figure 4** illustrates "Existing" conditions traffic volumes.

2.6 "EXISTING" INTERSECTION OPERATIONS

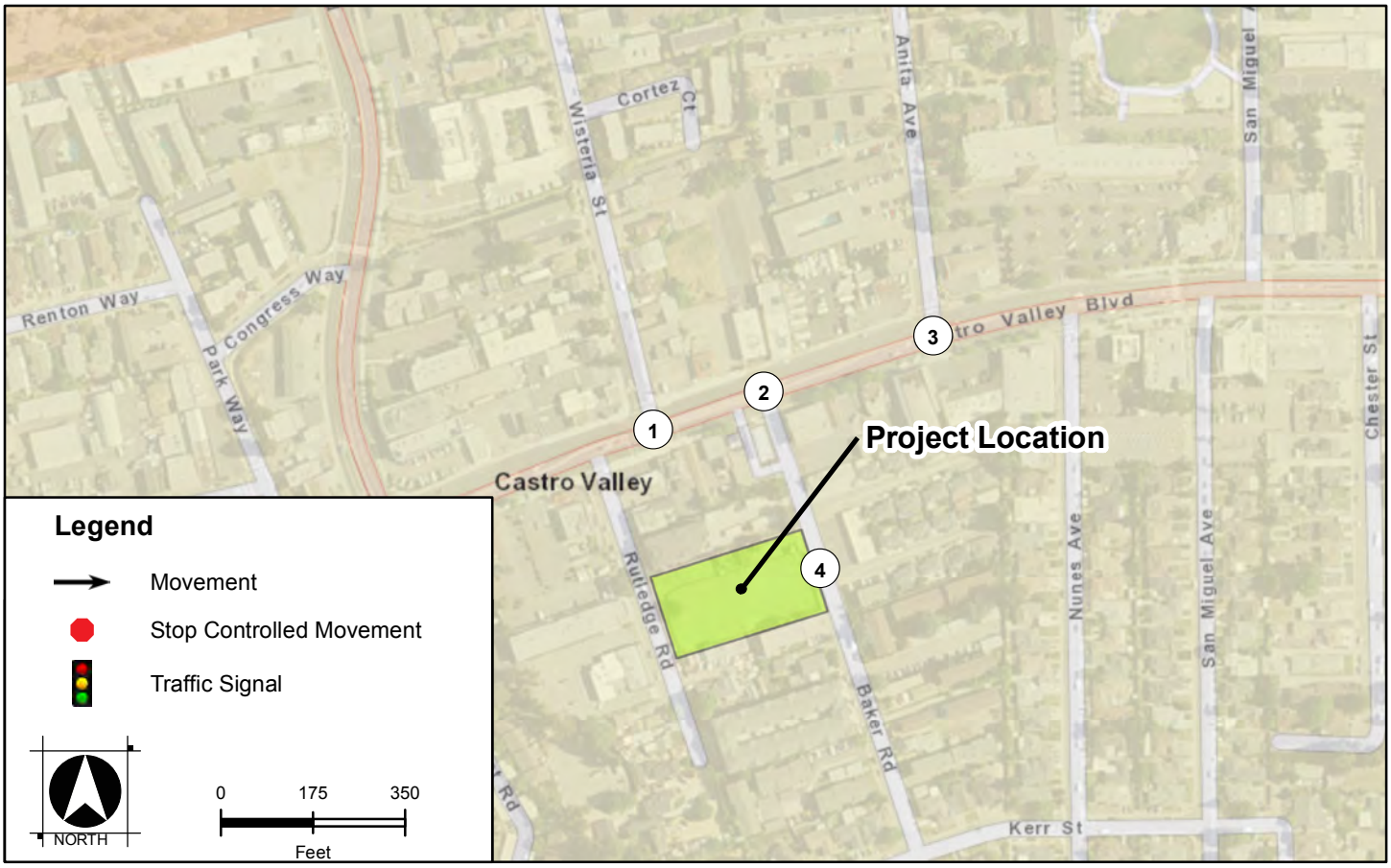
Table 2 presents existing study intersection traffic operations analysis under existing intersection geometrics and control (illustrated in **Figure 3**) and "Existing" intersection traffic volumes (illustrated in **Figure 4**).

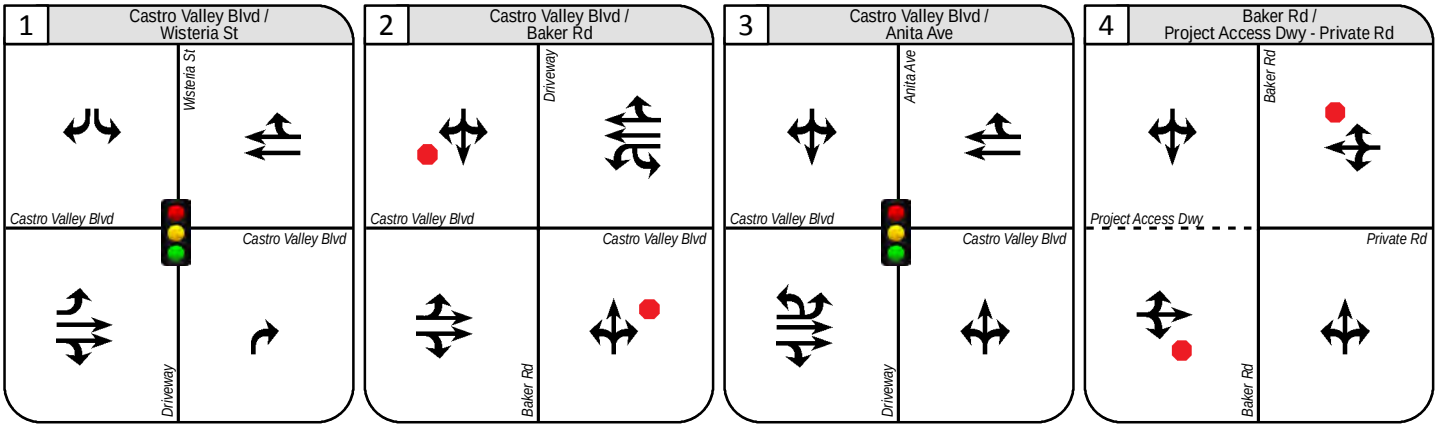
Table 2. "Existing" Conditions Intersection Traffic Operation

#	Intersection	Control Type	LOS Criteria	Peak Hour	Existing Conditions		
					Delay (S/V)[1]	LOS	Wrnt Met?[2]
1	Castro Valley Boulevard / Wisteria Street	Signal	E	AM	11.3	B	-
				PM	15.2	B	-
2	Castro Valley Boulevard / Baker Road	TWSC	E	AM	15.4	C	No
				PM	24.3	C	No
3	Castro Valley Boulevard / Anita Avenue	Signal	E	AM	16.9	B	-
				PM	12.2	B	-
4	Baker Road / Project Access Driveway / Private Roadway[3]	TWSC	D	AM	8.7	A	No
				PM	8.6	A	No

Notes: 1. For TWSC (Two-Way-Stop-Control) intersections, "worst-case" movement delay is indicated. "Average" control delays (in seconds/vehicle) are indicated for Signal-Control intersections.
2. Wrnt Met? = CA-MUTCD based Peak-hour-Volume Warrant #3 (Urban Areas)
3. Under "Existing Conditions" Intersection 4 consists solely of Baker Road and the Private Roadway that lies approximately across from where the proposed Project Access Driveway will be constructed.
***BOLD** indicates unacceptable level of service.*

As shown in **Table 2**, all of the study intersections are currently operating at acceptable level of service conditions during the AM and PM peak hours. CA-MUTCD based peak hour signal warrant-3 (urban areas) is not projected to be met at any of the unsignalized study intersections. Synchro software intersection LOS outputs are included in **Appendix Exhibit A** and CA-MUTCD signal warrant-3 worksheets are included in **Appendix Exhibit B.**

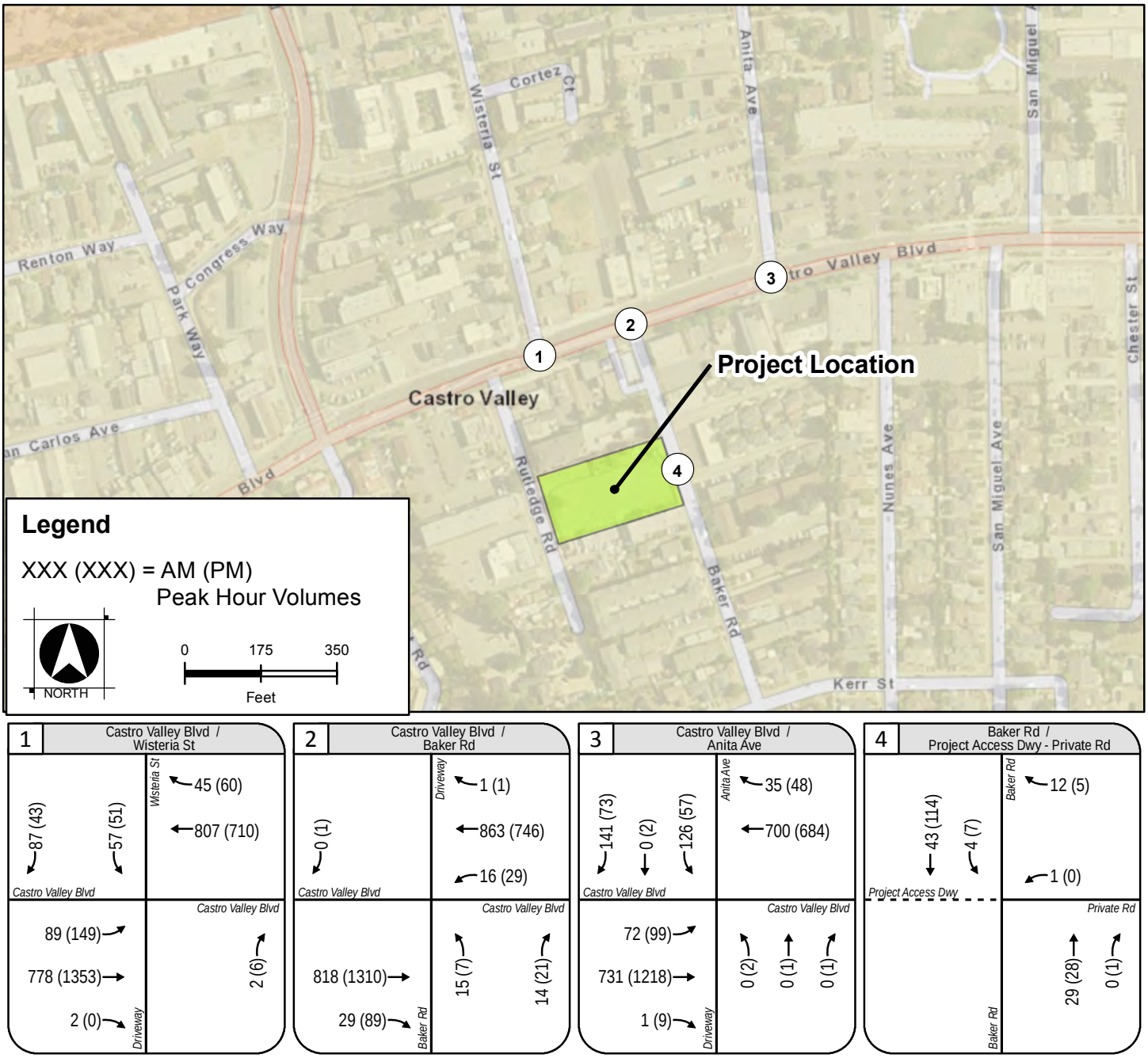




Existing Lane Geometric and Control
20957 & 20785 Baker Road Development
Castro Valley, CA
February 2017

Figure 3

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME



"Existing" Traffic Volumes
20957 & 20785 Baker Road Development
Castro Valley, CA
February 2017

Figure 4

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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All recommended improvements and mitigation measures are discussed in a subsequent section of this TIS report.

3. EXISTING PLUS PROJECT CONDITIONS

This chapter provides a description of the proposed Project, a discussion of the Project trip generation and distribution/assignment methods used to forecast Project-only volumes at study intersections, and analysis of traffic operations and impacts due to the proposed Project.

3.1 PROJECT SITE

3.1.1 PROJECT SITE DESCRIPTION

The proposed Project would demolish the one (1) single family residential unit that currently occupies the approximately 1.13 acre, mostly vacant Project site and construct 20 townhomes in its place. The proposed site would consist of four (4) new buildings, arranged in two rows of two. Each building would contain five (5) townhomes. The Project would provide 40 garage spaces (2 per unit) for residents as well as 12 driveway spaces, six (6) on-street spaces, two (2) parallel alley spaces, and one (1) disabled accessible parallel alley space for guests (approximately 1.05 guest stalls per unit). Driveways would be provided along the proposed Project internal roadway that would run through the middle of the site. The on-street parking spaces would be provided along the west side of Baker Road fronting the Project site. The three (3) total parallel alley spaces would be provided in the middle of the Project site, central to all four proposed townhome buildings. Overall the proposed Project site would have 61 total spaces and an average of 3.05 spaces per unit.

The Project would gain access to the local road network via a single new Project access driveway / proposed internal road that would extend west from Baker Road, approximately across from an existing private roadway, along the entire length of the middle of the Project site. The Project would have no access to Rutledge Road located directly to the west, behind the Project site. The west side of the proposed internal road would terminate in a hammer-head turn for emergency vehicles. The Project would reconstruct sidewalk along the west side of Baker Road fronting the Project site if necessary.

3.2 PROJECT GENERATED TRIPS

3.2.1 TRIP GENERATION

This TIS used *Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition* rates to estimate Project trip generation. The entire proposed development Project can essentially be characterized as the Residential Condominium/Townhouse land use. The following trip generation rates from the ITE were used to estimate Project generated trips:

Residential Condominium/Townhouse – For the proposed Project's 27 townhome units, the "Residential Condominium/Townhouse" (Use Code 230) trip generation rate is used. ITE Trip Generation describes Residential Condominium/Townhouse as: *"...ownership units that have at least one other owned unit within the same building structure."*

As the Project does not propose any mixed-use or commercial land uses, this TIS conservatively assumed no reductions to the trips generated by ITE rates. Additionally, since there was only a very small number of single family residential units on the site currently, it was conservatively assumed that no trip reductions would be applied to the new development to account for the displaced trips.

Table 3 summarizes the trip generation rates used for the proposed Project and **Table 4** summarizes the trip generation volumes for the proposed project.

Table 3. Project Trip Generation Rates

Land Use Category	Source	ITE Code	Rate Unit	Daily Trip Rate/Unit[1]	Weekday AM Peak Hour Rate/Unit			Weekday PM Peak Hour Rate/Unit		
					Total	In%	Out%	Total	In%	Out%
Residential Condominium/Townhouse	ITE	230	DU[2]	7.95	0.70	17%	83%	0.80	67%	33%

Notes: [1]Calculated trip rates were used in this analysis using the fitted curve equations, consistent with information contained in the ITE Publication Trip Generation (Ninth Edition)
[2]DU = Dwelling Unit

Table 4. Project Trip Generation Volumes

Land Use	Units	Quantity	Daily Trips	Weekday AM Peak Hour Trips[1]			Weekday PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
Residential Condominium/Townhouse	DU[2]	20	159	14	2	12	16	11	5

Notes: [1]The trips illustrated in this table are based on ITE Trip Generation (9th Edition) calculated trip rates, using the fitted curve equations.
[2]DU = Dwelling Unit

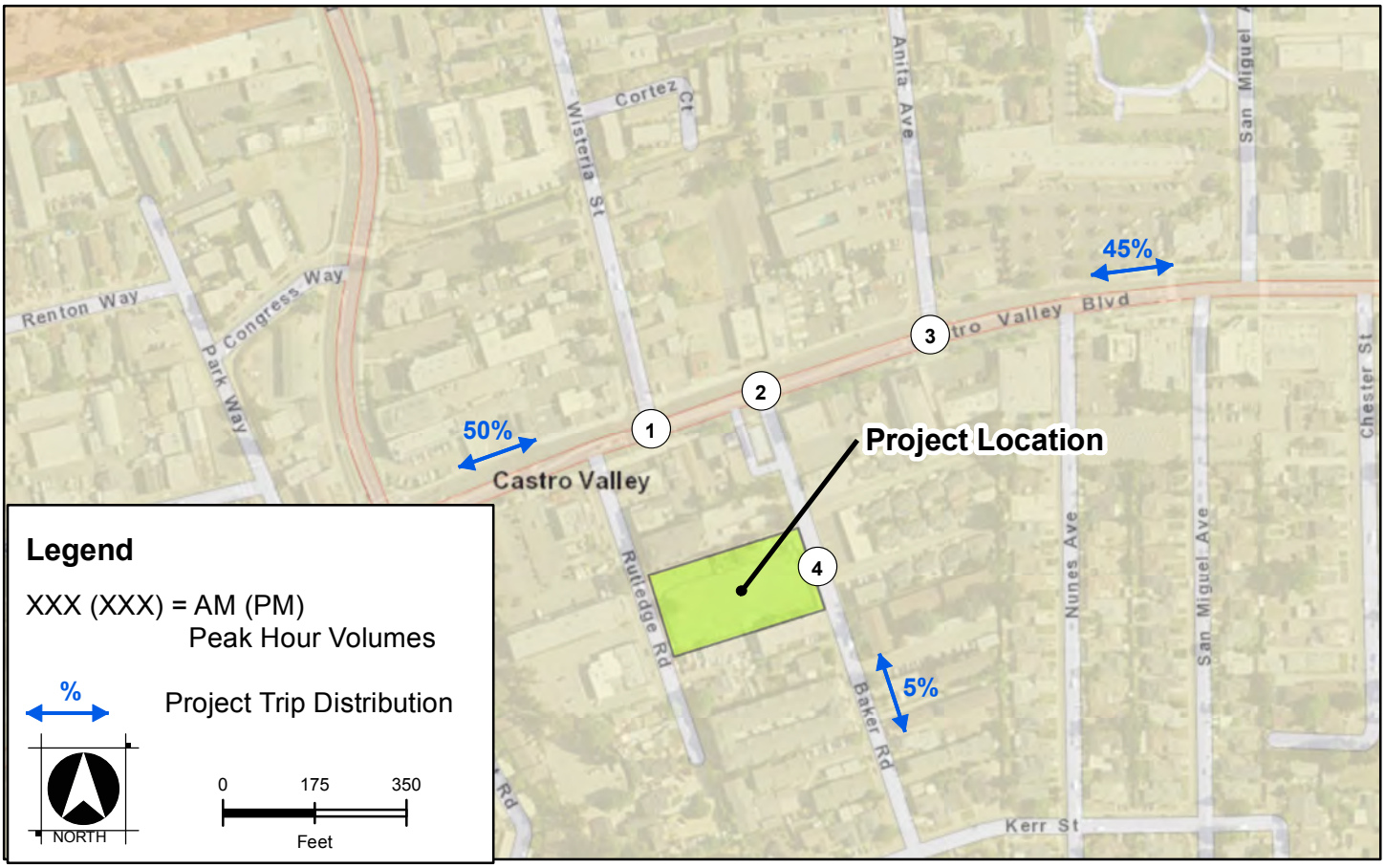
As illustrated in **Table 4**, the proposed Project is anticipated to generate a total of 159 daily trips, 14 AM peak hour trips (2 inbound and 12 outbound), and 16 PM peak hour trips (11 inbound and 5 outbound) under typical "annual average" traffic demand conditions. These trips would be considered "new" (or incremental) trips on the City's immediate local circulation system.

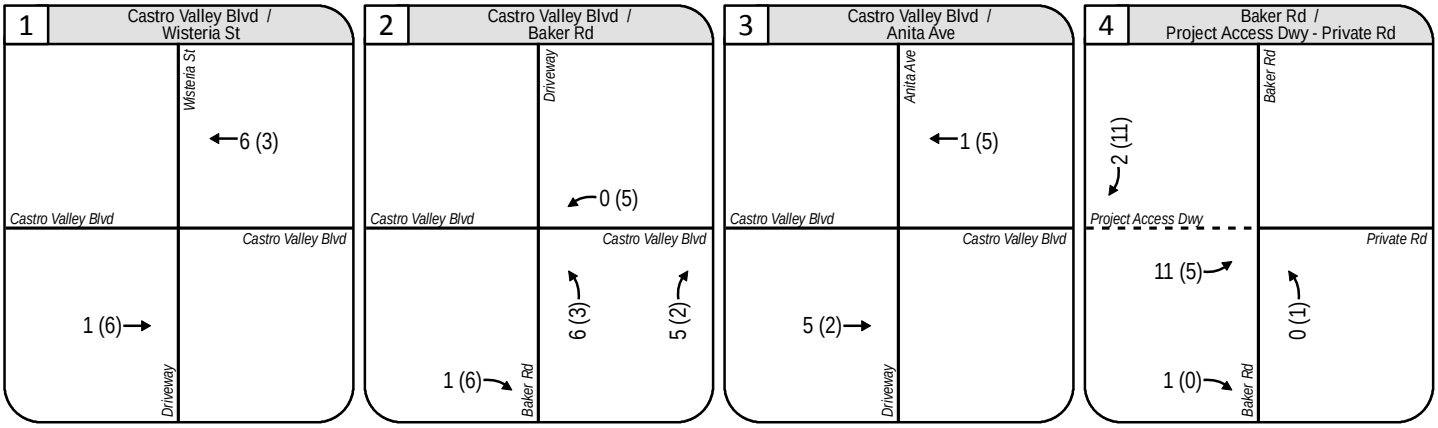
3.2.2 Project Trip Distribution and Assignment

Project trips were assigned to the study area network based on existing traffic volumes, observed travel patterns, daily travel pattern information contained in the Castro Valley General Plan, and routes to major freeways within the study area. **Figure 5** illustrates the estimated Project directional trip distribution and assignment patterns projected to be generally applicable for the Project under existing conditions, on an annualized average usage basis. **Figure 5** also illustrates the estimated AM and PM peak hour "Project Only" traffic volumes projected to be applicable under existing conditions. "Project Only" traffic volumes were also added on top of "Existing" conditions traffic volumes at study intersections, to estimate "Existing plus Project" conditions traffic volumes. **Figure 6** illustrates the estimated AM and PM peak hour "Existing plus Project" conditions traffic volumes at study intersections

3.3 "Existing Plus Project" Intersection Operations

"Existing plus Project" intersection operations were analyzed under the "Existing plus Project" traffic volumes (shown in **Figure 6**) and existing intersection lane geometrics and control (shown in **Figure 3**). **Table 5** illustrates the resulting "Existing plus Project" intersection LOS operations. **Table 5** also contains "Existing" conditions intersection delays and LOS for comparison purposes, as well as the projected change in intersection delay caused by the addition of Project generated trips. The projected change in intersection delay was reported for use in identifying significant impacts at signalized intersections.





Project Trip Distribution and "Project Only" Traffic Volumes
20957 & 20785 Baker Road Development
Castro Valley, CA
February 2017

Figure 5

WOOD RODGERS

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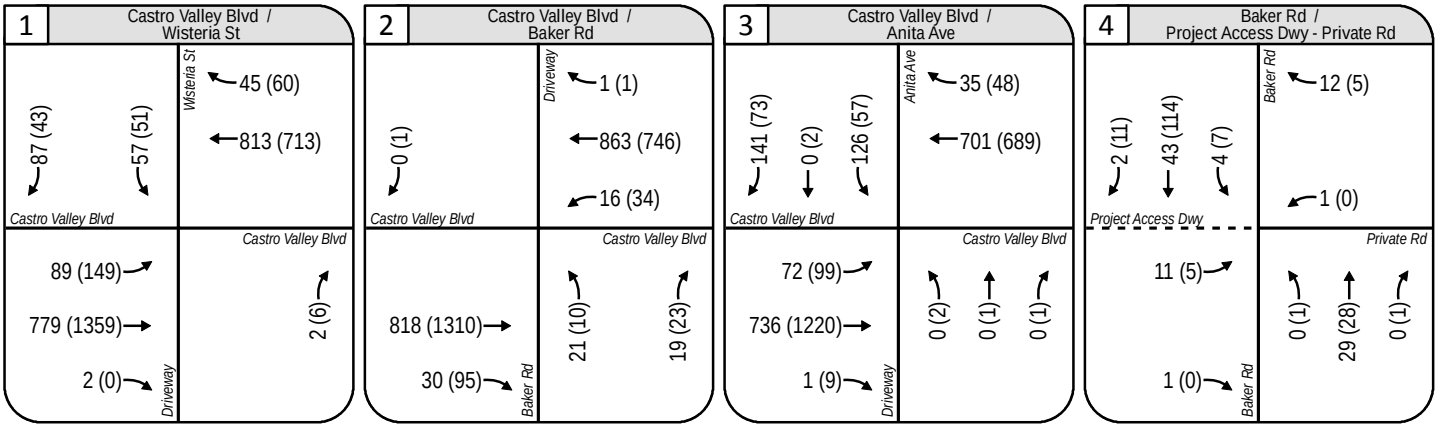


"Existing plus Project" Traffic Volumes
20957 & 20785 Baker Road Development
Castro Valley, CA
February 2017

Figure 6

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

Table 5. "Existing plus Project" Conditions Intersection Traffic Operations

#	Intersection	Control Type	LOS Criteria	Peak Hour	Existing Conditions			Existing plus Project Conditions			
					Delay (S/V)[1]	LOS	Wrnt Met?[2]	Delay (S/V)[1]	LOS	Wrnt Met?[2]	Change in Delay
1	Castro Valley Boulevard / Wisteria Street	Signal	E	AM	11.3	B	-	11.3	B	-	0.0
				PM	15.2	B	-	15.2	B	-	0.0
2	Castro Valley Boulevard / Baker Road	TWSC	E	AM	15.4	C	No	16.1	C	No	0.7
				PM	24.3	C	No	29.7	D	No	5.4
3	Castro Valley Boulevard / Anita Avenue	Signal	E	AM	16.9	B	-	16.9	B	-	0.0
				PM	12.2	B	-	12.2	B	-	0.0
4	Baker Road / Project Access Driveway / Private Roadway[3]	TWSC	D	AM	8.7	A	No	9.6	A	No	0.9
				PM	8.6	A	No	10.6	B	No	2.0

Notes: 1. For TWSC (Two-Way-Stop-Control) intersections, "worst-case" movement delay is indicated. "Average" control delays (in seconds/vehicle) are indicated for Signal-Control intersections.
2. Wrnt Met? = CA-MUTCD based Peak-hour-Volume Warrant #3 (Urban Areas)
3. Under "Existing Conditions" Intersection 4 consists solely of Baker Road and the Private Roadway that lies approximately across from where the proposed Project Access Driveway will be constructed.
***BOLD** indicates unacceptable level of service.*

As shown in **Table 5**, all of the study intersections are currently operating at acceptable level of service conditions during the AM and PM peak hours. CA-MUTCD based peak hour signal warrant-3 (urban areas) is not projected to be met at any of the unsignalized study intersections. Synchro software intersection LOS outputs are included in **Appendix Exhibit A**, and CA-MUTCD signal warrant-3 worksheets are included in **Appendix Exhibit B.**

All recommended improvements and mitigation measures are discussed in a subsequent section of this TIS report.

4. SITE ACCESS AND CIRCULATION

This chapter reviews the proposed Project site plan, including discussion of site access roadways, internal queuing, internal circulation, pedestrian and bicycle facilities, and on-site parking.

4.1 PROJECT ACCESS DRIVEWAY

The proposed Project would gain access to the nearby roadway network via one (1) new Project access driveway/roadway. The new Project driveway is proposed to intersect Baker Road at a new full-access driveway intersection, approximately across from an existing private roadway, and extend west along the middle of the Project site for its full length. The proposed Project access driveway intersection with Baker Road would be single lane in, single lane out, and egress stop-controlled, with Baker Road traffic having the right-of-way.

The proposed project driveway would intersect Baker Road at a 90-degree angle, similar to adjacent multi-residential uses along Baker Road. Therefore, red curb and/or "No Parking" would be required within project driveway intersection vicinity.

4.1.1 INTERNAL QUEUEING AT PROJECT ACCESS DRIVEWAY

Since there is only one (1) proposed internal roadway in the Project site, the proposed Project driveway at Baker Road could essentially accommodate eastbound vehicular queueing up to the entire length of the Project site (approximately 275 feet or 11 vehicles). Based on HCM-2000 Synchro analysis performed for the Project access driveway intersection, it is projected that the Project access driveway would have a worst-case "Existing plus Project" peak hour egress

(eastbound) queue of approximately 50 feet (or two vehicles), which is 225 feet less than the available storage. The Project access driveway queue storage length is projected to be adequate.

4.2 INTERNAL CIRCULATION

The proposed internal roadway in the Project site plan would allow two-way traffic. There are no proposed internal intersections. Passenger vehicles/trucks could use the three-point-turn method or back out of parking stalls to turn around in the Project site. Emergency vehicles could use the hammer-head on the western side of the site to turn around / make a U-turn. Traffic volumes on the proposed internal Project site roadway are not projected to be large enough to require other traffic control improvements. No other internal street improvements are recommended.

4.3 PEDESTRIAN AND BICYCLE ACCESS AND CIRCULATION

Due to the small nature of the proposed site, no dedicated bicycle facilities are proposed. Bicyclists can share the proposed on-site roadway with vehicles to navigate the Project site and access Baker Road and the nearby existing bicycle facilities. The Project proposes pedestrian walkways running east/west along both the north and south edges of the site, with north/south pedestrian walkways providing access to and from the guest parking stalls at the middle of the site. Pedestrians on site would be able to use these proposed walkways to access Baker Road, nearby existing and proposed pedestrian facilities, and any of the town home buildings.

4.4 ON-SITE PARKING

The Project would provide 40 garage spaces (2 per unit) for residents as well as 12 driveway spaces, six (6) on-street spaces, two (2) parallel alley spaces, and one (1) disabled accessible parallel alley space for guests (approximately 1.05 guest stalls per unit). Overall the proposed Project site would have 61 total spaces and an average of 3.05 spaces per unit. According to the Alameda County Design Guidelines for Townhomes and Small-Lot Single Family Homes on Narrow Lots (prepared for Alameda County Community Development Agency by Dyett & Bhatia Urban and Regional Planners and Kahn Mortimer Associates, March 23, 2009) newly constructed townhomes are required to provide a minimum of two (2) parking spaces per unit (one of which must be covered) and a minimum of one (1) guest parking space per unit for units that are greater than 1,000 square feet. Therefore, the proposed Project site is projected to meet the City's parking requirements by providing two (2) covered parking spaces and 1.05 guest spaces per unit.

5. POTENTIAL EFFECTS ON TRANSIT, BICYCLE, AND PEDESTRIAN FACILITIES AND SERVICES

This section discusses projected Project impacts on study area transit, bicycle, and pedestrian facilities.

5.1 TRANSIT IMPACTS

Project site residents could walk or bike to several bus stops for AC Transit Route 32 which are located along Castro Valley Boulevard within 1,000 feet of the Project site. The Castro Valley BART station is also located approximately 0.6 miles southeast of the Project site, within reasonable walking or bicycling distance.

The increase in transit ridership caused by the proposed Project is not projected to be enough to significantly impact transit route delay or operations.

5.2 PEDESTRIAN IMPACTS

Project site residents could access the CV Transit Bus Route 32 bus stops located on Castro Valley Boulevard on foot via the continuous existing sidewalks provided on Baker Road and Castro Valley Boulevard, as well as the pedestrian crosswalks with push buttons located at the Castro Valley Boulevard intersections with Wisteria Street and Anita Avenue. Project site residents could use those same pedestrian facilities as well as the continuous sidewalks provided on neighboring local residential streets to reach the Castro Valley BART station as well. A large shopping center, including a Safeway, located approximately half a mile northeast of the Project could be easily accessed by residents on foot as well.

Outside of the Project site, there are no currently planned Pedestrian improvements for study area facilities.

5.3 BICYCLE IMPACTS

Project site residents could access the CV Transit Bus Route 32 bus stops located on Castro Valley Boulevard and/or the Castro Valley BART station via bicycle using the existing class II bike lanes on Castro Valley Boulevard and/or the low volume nearby local residential streets in the Project study area.

According to the Castro Valley General Plan, class II bike lanes are proposed to be constructed on Castro Valley Boulevard between Redwood Road and Crow Canyon Road (filling in the current gap). These class II bike lanes, once constructed, could be utilized by future Project residents for better bicycle access to nearby destinations and transit stops.

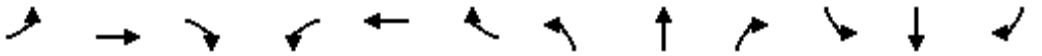
6. IMPACTS AND MITIGATION MEASURES

This chapter of the TIS evaluates the study intersection operations results presented in **Table 5** ("Existing plus Project" conditions) against the LOS impact criteria summarized in Section 1.5 of this report.

6.1 "EXISTING PLUS PROJECT" IMPACTS AND MITIGATION MEASURES

All of the study intersections are currently operating and projected to operate at acceptable level of service during the AM and PM peak hours under "Existing" and "Existing plus Project" conditions. Therefore, Project impacts at all study intersections are projected to be "**less than significant**".

Appendix Exhibit A
Intersection Level of Service Outputs



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	778	2	0	807	45	0	0	2	57	0	87
Future Volume (vph)	89	778	2	0	807	45	0	0	2	57	0	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00				0.98	1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			0.99				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1770	3537			3502				1585	1762		1583
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1770	3537			3502				1585	1762		1583
Peak-hour factor, PHF	0.72	0.72	0.72	0.91	0.91	0.94	0.50	0.50	0.50	0.78	0.78	0.78
Adj. Flow (vph)	124	1081	3	0	887	48	0	0	4	73	0	112
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	3	0	0	80
Lane Group Flow (vph)	124	1084	0	0	931	0	0	0	1	73	0	32
Confl. Peds. (#/hr)			11			14			4	4		
Confl. Bikes (#/hr)			1			2						
Turn Type	Prot	NA			NA				Perm	Perm		Perm
Protected Phases	7	4			8							
Permitted Phases									2	6		6
Actuated Green, G (s)	11.2	56.0			40.8				26.0	26.0		26.0
Effective Green, g (s)	11.2	56.0			40.8				26.0	26.0		26.0
Actuated g/C Ratio	0.12	0.62			0.45				0.29	0.29		0.29
Clearance Time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0		3.0
Lane Grp Cap (vph)	220	2200			1587				457	509		457
v/s Ratio Prot	c0.07	0.31			c0.27							
v/s Ratio Perm									0.00	c0.04		0.02
v/c Ratio	0.56	0.49			0.59				0.00	0.14		0.07
Uniform Delay, d1	37.1	9.3			18.3				22.8	23.7		23.2
Progression Factor	1.00	1.00			0.27				1.00	1.00		1.00
Incremental Delay, d2	3.3	0.8			1.3				0.0	0.6		0.3
Delay (s)	40.4	10.1			6.3				22.8	24.3		23.5
Level of Service	D	B			A				C	C		C
Approach Delay (s)		13.2			6.3			22.8			23.8	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	0	818	29	2	14	863	1	15	0	14	0	0
Future Volume (Veh/h)	0	818	29	2	14	863	1	15	0	14	0	0
Sign Control		Free				Free			Stop			Stop
Grade		0%				0%			0%			0%
Peak Hour Factor	0.70	0.70	0.70	0.93	0.93	0.93	0.93	0.60	0.60	0.60	0.92	0.92
Hourly flow rate (vph)	0	1169	41	0	15	928	1	25	0	23	0	0
Pedestrians									6			15
Lane Width (ft)									12.0			12.0
Walking Speed (ft/s)									3.5			3.5
Percent Blockage									1			1
Right turn flare (veh)												
Median type		None				None						
Median storage veh)												
Upstream signal (ft)		225				339						
pX, platoon unblocked	0.83			0.00	0.83			0.91	0.91	0.83	0.91	0.91
vC, conflicting volume	944			0	1216			1690	2170	611	1581	2190
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	514			0	852			726	1252	123	607	1274
tC, single (s)	4.1			0.0	4.1			7.5	6.5	6.9	7.5	6.5
tC, 2 stage (s)												
tF (s)	2.2			0.0	2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %	100			0	98			91	100	97	100	100
cM capacity (veh/h)	854			0	646			274	149	747	321	145

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	584	626	15	619	310	48	0
Volume Left	0	0	15	0	0	25	0
Volume Right	0	41	0	0	1	23	0
cSH	854	1700	646	1700	1700	393	1700
Volume to Capacity	0.00	0.37	0.02	0.36	0.18	0.12	0.00
Queue Length 95th (ft)	0	0	2	0	0	10	0
Control Delay (s)	0.0	0.0	10.7	0.0	0.0	15.4	0.0
Lane LOS			B			C	A
Approach Delay (s)	0.0		0.2			15.4	0.0
Approach LOS						C	A

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	33.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (Veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.92
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	0.83
vC, conflicting volume	480
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	0
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	884
Direction, Lane #	

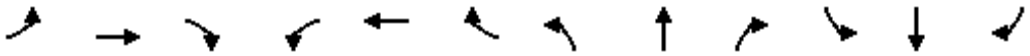
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	66	731	1	0	700	35	0	0	0	126	0
Future Volume (vph)	6	66	731	1	0	700	35	0	0	0	126	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0						4.0
Lane Util. Factor		1.00	0.95			0.95						1.00
Frpb, ped/bikes		1.00	1.00			1.00						0.99
Flpb, ped/bikes		1.00	1.00			1.00						1.00
Frt		1.00	1.00			0.99						0.93
Flt Protected		0.95	1.00			1.00						0.98
Satd. Flow (prot)		1770	3539			3505						1670
Flt Permitted		0.95	1.00			1.00						0.85
Satd. Flow (perm)		1770	3539			3505						1452
Peak-hour factor, PHF	0.68	0.68	0.68	0.68	0.91	0.91	0.91	0.92	0.92	0.92	0.74	0.74
Adj. Flow (vph)	9	97	1075	1	0	769	38	0	0	0	170	0
RTOR Reduction (vph)	0	0	0	0	0	4	0	0	0	0	0	45
Lane Group Flow (vph)	0	106	1076	0	0	803	0	0	0	0	0	316
Confl. Peds. (#/hr)				7			13	11				
Confl. Bikes (#/hr)				1			1					
Turn Type	Prot	Prot	NA			NA					Perm	NA
Protected Phases	7	7	4			8			2			6
Permitted Phases								2			6	
Actuated Green, G (s)		9.6	49.0			35.4						33.0
Effective Green, g (s)		9.6	49.0			35.4						33.0
Actuated g/C Ratio		0.11	0.54			0.39						0.37
Clearance Time (s)		4.0	4.0			4.0						4.0
Vehicle Extension (s)		3.0	3.0			3.0						3.0
Lane Grp Cap (vph)		188	1926			1378						532
v/s Ratio Prot		0.06	c0.30			c0.23						
v/s Ratio Perm												c0.22
v/c Ratio		0.56	0.56			0.58						0.59
Uniform Delay, d1		38.2	13.4			21.5						23.1
Progression Factor		0.82	0.49			1.00						1.00
Incremental Delay, d2		3.5	1.1			1.8						1.8
Delay (s)		34.7	7.7			23.3						24.9
Level of Service		C	A			C						C
Approach Delay (s)			10.1			23.3			0.0			24.9
Approach LOS			B			C			A			C

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	141
Future Volume (vph)	141
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.74
Adj. Flow (vph)	191
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	11
Confl. Bikes (#/hr)	
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

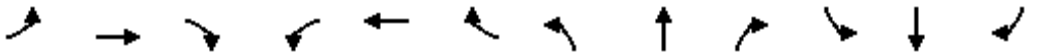
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1	0	12	0	29	0	4	43	0
Future Volume (Veh/h)	0	0	0	1	0	12	0	29	0	4	43	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Hourly flow rate (vph)	0	0	0	2	0	20	0	48	0	7	72	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	154	134	72	134	134	48	72			48		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	154	134	72	134	134	48	72			48		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	98	100			100		
cM capacity (veh/h)	794	753	990	835	753	1021	1528			1559		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	22	48	79
Volume Left	0	2	0	7
Volume Right	0	20	0	0
cSH	1700	1001	1528	1559
Volume to Capacity	0.02	0.02	0.00	0.00
Queue Length 95th (ft)	0	2	0	0
Control Delay (s)	0.0	8.7	0.0	0.7
Lane LOS	A	A		A
Approach Delay (s)	0.0	8.7	0.0	0.7
Approach LOS	A	A		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	15.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	1353	0	0	710	60	0	0	6	51	0	43
Future Volume (vph)	149	1353	0	0	710	60	0	0	6	51	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			0.99				0.98	1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00				1.00	0.99		1.00
Frt	1.00	1.00			0.99				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3474				1584	1761		1583
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1770	3539			3474				1584	1761		1583
Peak-hour factor, PHF	0.72	0.72	0.72	0.91	0.91	0.94	0.50	0.50	0.50	0.78	0.78	0.78
Adj. Flow (vph)	207	1879	0	0	780	64	0	0	12	65	0	55
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	9	0	0	42
Lane Group Flow (vph)	207	1879	0	0	839	0	0	0	3	65	0	13
Confl. Peds. (#/hr)			21			24			4	4		
Confl. Bikes (#/hr)			1			3						
Turn Type	Prot	NA			NA				Perm	Perm		Perm
Protected Phases	7	4			8							
Permitted Phases									2	6		6
Actuated Green, G (s)	17.3	76.0			54.7				26.0	26.0		26.0
Effective Green, g (s)	17.3	76.0			54.7				26.0	26.0		26.0
Actuated g/C Ratio	0.16	0.69			0.50				0.24	0.24		0.24
Clearance Time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0		3.0
Lane Grp Cap (vph)	278	2445			1727				374	416		374
v/s Ratio Prot	0.12	c0.53			0.24							
v/s Ratio Perm									0.00	c0.04		0.01
v/c Ratio	0.74	0.77			0.49				0.01	0.16		0.03
Uniform Delay, d1	44.2	11.2			18.3				32.1	33.3		32.3
Progression Factor	1.00	1.00			0.29				1.00	1.00		1.00
Incremental Delay, d2	10.3	2.4			0.9				0.0	0.8		0.2
Delay (s)	54.6	13.6			6.2				32.2	34.1		32.5
Level of Service	D	B			A				C	C		C
Approach Delay (s)		17.7			6.2			32.2			33.4	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	0	1310	89	4	25	746	1	7	0	21	0	0
Future Volume (Veh/h)	0	1310	89	4	25	746	1	7	0	21	0	0
Sign Control		Free				Free			Stop			Stop
Grade		0%				0%			0%			0%
Peak Hour Factor	0.70	0.70	0.70	0.93	0.93	0.93	0.93	0.60	0.60	0.60	0.92	0.92
Hourly flow rate (vph)	0	1871	127	0	27	802	1	12	0	35	0	0
Pedestrians									24			26
Lane Width (ft)									12.0			12.0
Walking Speed (ft/s)									3.5			3.5
Percent Blockage									2			2
Right turn flare (veh)												
Median type		None				None						
Median storage veh)												
Upstream signal (ft)		225				339						
pX, platoon unblocked	0.86			0.00	0.62			0.69	0.69	0.62	0.69	0.69
vC, conflicting volume	829			0	2022			2414	2842	1023	1853	2904
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	470			0	1426			1232	1849	0	421	1940
tC, single (s)	4.1			0.0	4.1			7.5	6.5	6.9	7.5	6.5
tC, 2 stage (s)												
tF (s)	2.2			0.0	2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %	100			0	91			85	100	95	100	100
cM capacity (veh/h)	911			0	287			81	44	658	296	39

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	936	1062	27	535	268	47	1
Volume Left	0	0	27	0	0	12	0
Volume Right	0	127	0	0	1	35	1
cSH	911	1700	287	1700	1700	233	905
Volume to Capacity	0.00	0.63	0.09	0.31	0.16	0.20	0.00
Queue Length 95th (ft)	0	0	8	0	0	18	0
Control Delay (s)	0.0	0.0	18.8	0.0	0.0	24.3	9.0
Lane LOS			C			C	A
Approach Delay (s)	0.0		0.6			24.3	9.0
Approach LOS						C	A

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	54.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	1
Future Volume (Veh/h)	1
Sign Control	
Grade	
Peak Hour Factor	0.92
Hourly flow rate (vph)	1
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	0.86
vC, conflicting volume	428
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	2
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	905
Direction, Lane #	

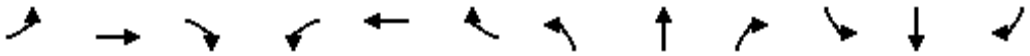
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	93	1218	9	0	684	48	2	1	1	57	2
Future Volume (vph)	6	93	1218	9	0	684	48	2	1	1	57	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0			4.0			4.0
Lane Util. Factor		1.00	0.95			0.95			1.00			1.00
Frpb, ped/bikes		1.00	1.00			0.99			1.00			0.99
Flpb, ped/bikes		1.00	1.00			1.00			1.00			1.00
Frt		1.00	1.00			0.99			0.97			0.93
Flt Protected		0.95	1.00			1.00			0.98			0.98
Satd. Flow (prot)		1770	3534			3484			1748			1663
Flt Permitted		0.95	1.00			1.00			0.93			0.87
Satd. Flow (perm)		1770	3534			3484			1667			1480
Peak-hour factor, PHF	0.68	0.68	0.68	0.68	0.91	0.91	0.91	0.92	0.92	0.92	0.74	0.74
Adj. Flow (vph)	9	137	1791	13	0	752	53	2	1	1	77	3
RTOR Reduction (vph)	0	0	0	0	0	5	0	0	1	0	0	40
Lane Group Flow (vph)	0	146	1804	0	0	800	0	0	3	0	0	139
Confl. Peds. (#/hr)				30			22	12				
Confl. Bikes (#/hr)				3			3					
Turn Type	Prot	Prot	NA			NA		Perm	NA		Perm	NA
Protected Phases	7	7	4			8			2			6
Permitted Phases								2			6	
Actuated Green, G (s)		16.0	74.0			54.0			28.0			28.0
Effective Green, g (s)		16.0	74.0			54.0			28.0			28.0
Actuated g/C Ratio		0.15	0.67			0.49			0.25			0.25
Clearance Time (s)		4.0	4.0			4.0			4.0			4.0
Vehicle Extension (s)		3.0	3.0			3.0			3.0			3.0
Lane Grp Cap (vph)		257	2377			1710			424			376
v/s Ratio Prot		0.08	c0.51			0.23						
v/s Ratio Perm									0.00			c0.09
v/c Ratio		0.57	0.76			0.47			0.01			0.37
Uniform Delay, d1		43.8	12.0			18.5			30.6			33.7
Progression Factor		0.79	0.26			1.00			1.00			1.00
Incremental Delay, d2		2.0	1.7			0.9			0.0			0.6
Delay (s)		36.6	4.8			19.4			30.7			34.3
Level of Service		D	A			B			C			C
Approach Delay (s)			7.2			19.4			30.7			34.3
Approach LOS			A			B			C			C

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	73
Future Volume (vph)	73
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.74
Adj. Flow (vph)	99
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	12
Confl. Bikes (#/hr)	
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

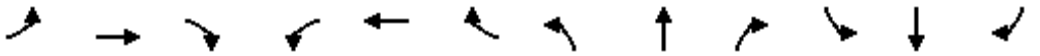
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	5	0	28	1	7	114	0
Future Volume (Veh/h)	0	0	0	0	0	5	0	28	1	7	114	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Hourly flow rate (vph)	0	0	0	0	0	8	0	47	2	12	190	0
Pedestrians											4	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											3.5	
Percent Blockage											0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	274	263	190	262	262	52	190			49		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	274	263	190	262	262	52	190			49		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	99	100			99		
cM capacity (veh/h)	667	637	852	687	638	1012	1384			1558		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	8	49	202
Volume Left	0	0	0	12
Volume Right	0	8	2	0
cSH	1700	1012	1384	1558
Volume to Capacity	0.01	0.01	0.00	0.01
Queue Length 95th (ft)	0	1	0	1
Control Delay (s)	0.0	8.6	0.0	0.5
Lane LOS	A	A		A
Approach Delay (s)	0.0	8.6	0.0	0.5
Approach LOS	A	A		

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	23.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	778	2	0	807	45	0	0	2	57	0	87
Future Volume (vph)	89	779	2	0	813	45	0	0	2	57	0	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00				0.98	1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			0.99				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1770	3537			3502				1585	1762		1583
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1770	3537			3502				1585	1762		1583
Peak-hour factor, PHF	0.72	0.72	0.72	0.91	0.91	0.94	0.50	0.50	0.50	0.78	0.78	0.78
Adj. Flow (vph)	124	1082	3	0	893	48	0	0	4	73	0	112
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	3	0	0	80
Lane Group Flow (vph)	124	1085	0	0	937	0	0	0	1	73	0	32
Confl. Peds. (#/hr)			11			14			4	4		
Confl. Bikes (#/hr)			1			2						
Turn Type	Prot	NA			NA				Perm	Perm		Perm
Protected Phases	7	4			8							
Permitted Phases									2	6		6
Actuated Green, G (s)	11.2	56.0			40.8				26.0	26.0		26.0
Effective Green, g (s)	11.2	56.0			40.8				26.0	26.0		26.0
Actuated g/C Ratio	0.12	0.62			0.45				0.29	0.29		0.29
Clearance Time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0		3.0
Lane Grp Cap (vph)	220	2200			1587				457	509		457
v/s Ratio Prot	c0.07	0.31			c0.27							
v/s Ratio Perm									0.00	c0.04		0.02
v/c Ratio	0.56	0.49			0.59				0.00	0.14		0.07
Uniform Delay, d1	37.1	9.3			18.4				22.8	23.7		23.2
Progression Factor	1.00	1.00			0.28				1.00	1.00		1.00
Incremental Delay, d2	3.3	0.8			1.4				0.0	0.6		0.3
Delay (s)	40.4	10.1			6.5				22.8	24.3		23.5
Level of Service	D	B			A				C	C		C
Approach Delay (s)		13.2			6.5			22.8			23.8	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	0	818	29	2	14	863	1	15	0	14	0	0
Future Volume (Veh/h)	0	818	30	2	15	863	1	21	0	19	0	0
Sign Control		Free				Free			Stop			Stop
Grade		0%				0%			0%			0%
Peak Hour Factor	0.70	0.70	0.70	0.93	0.93	0.93	0.93	0.60	0.60	0.60	0.92	0.92
Hourly flow rate (vph)	0	1169	43	0	16	928	1	35	0	32	0	0
Pedestrians									6			15
Lane Width (ft)									12.0			12.0
Walking Speed (ft/s)									3.5			3.5
Percent Blockage									1			1
Right turn flare (veh)												
Median type		None				None						
Median storage veh)												
Upstream signal (ft)		225				339						
pX, platoon unblocked	0.83			0.00	0.83			0.91	0.91	0.83	0.91	0.91
vC, conflicting volume	944			0	1218			1692	2172	612	1592	2194
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	514			0	853			728	1254	123	618	1277
tC, single (s)	4.1			0.0	4.1			7.5	6.5	6.9	7.5	6.5
tC, 2 stage (s)												
tF (s)	2.2			0.0	2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %	100			0	98			87	100	96	100	100
cM capacity (veh/h)	854			0	645			273	149	746	311	144

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	584	628	16	619	310	67	0
Volume Left	0	0	16	0	0	35	0
Volume Right	0	43	0	0	1	32	0
cSH	854	1700	645	1700	1700	391	1700
Volume to Capacity	0.00	0.37	0.02	0.36	0.18	0.17	0.00
Queue Length 95th (ft)	0	0	2	0	0	15	0
Control Delay (s)	0.0	0.0	10.7	0.0	0.0	16.1	0.0
Lane LOS			B			C	A
Approach Delay (s)	0.0		0.2			16.1	0.0
Approach LOS						C	A

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	33.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (Veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.92
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	0.83
vC, conflicting volume	480
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	0
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	884
Direction, Lane #	

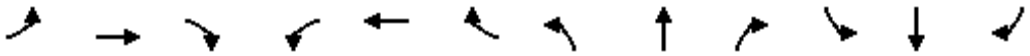
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	66	731	1	0	700	35	0	0	0	126	0
Future Volume (vph)	6	66	736	1	0	701	35	0	0	0	126	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0						4.0
Lane Util. Factor		1.00	0.95			0.95						1.00
Frpb, ped/bikes		1.00	1.00			1.00						0.99
Flpb, ped/bikes		1.00	1.00			1.00						1.00
Frt		1.00	1.00			0.99						0.93
Flt Protected		0.95	1.00			1.00						0.98
Satd. Flow (prot)		1770	3539			3506						1670
Flt Permitted		0.95	1.00			1.00						0.85
Satd. Flow (perm)		1770	3539			3506						1452
Peak-hour factor, PHF	0.68	0.68	0.68	0.68	0.91	0.91	0.91	0.92	0.92	0.92	0.74	0.74
Adj. Flow (vph)	9	97	1082	1	0	770	38	0	0	0	170	0
RTOR Reduction (vph)	0	0	0	0	0	4	0	0	0	0	0	45
Lane Group Flow (vph)	0	106	1083	0	0	804	0	0	0	0	0	316
Confl. Peds. (#/hr)				7			13	11				
Confl. Bikes (#/hr)				1			1					
Turn Type	Prot	Prot	NA			NA					Perm	NA
Protected Phases	7	7	4			8			2			6
Permitted Phases								2			6	
Actuated Green, G (s)		9.6	49.0			35.4						33.0
Effective Green, g (s)		9.6	49.0			35.4						33.0
Actuated g/C Ratio		0.11	0.54			0.39						0.37
Clearance Time (s)		4.0	4.0			4.0						4.0
Vehicle Extension (s)		3.0	3.0			3.0						3.0
Lane Grp Cap (vph)		188	1926			1379						532
v/s Ratio Prot		0.06	c0.31			0.23						
v/s Ratio Perm												c0.22
v/c Ratio		0.56	0.56			0.58						0.59
Uniform Delay, d1		38.2	13.5			21.5						23.1
Progression Factor		0.82	0.50			1.00						1.00
Incremental Delay, d2		3.5	1.1			1.8						1.8
Delay (s)		34.8	7.8			23.3						24.9
Level of Service		C	A			C						C
Approach Delay (s)			10.2			23.3			0.0			24.9
Approach LOS			B			C			A			C

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	141
Future Volume (vph)	141
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.74
Adj. Flow (vph)	191
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	11
Confl. Bikes (#/hr)	
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

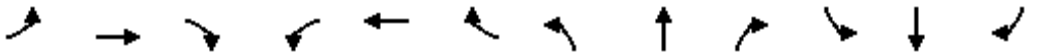
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1	0	12	0	29	0	4	43	0
Future Volume (Veh/h)	11	0	1	1	0	12	0	29	0	4	43	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Hourly flow rate (vph)	18	0	2	2	0	20	0	48	0	7	72	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	156	136	74	138	137	48	75			48		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	156	136	74	138	137	48	75			48		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	98	100			100		
cM capacity (veh/h)	792	752	988	829	751	1021	1524			1559		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	22	48	82
Volume Left	18	2	0	7
Volume Right	2	20	0	3
cSH	808	1000	1524	1559
Volume to Capacity	0.02	0.02	0.00	0.00
Queue Length 95th (ft)	2	2	0	0
Control Delay (s)	9.6	8.7	0.0	0.7
Lane LOS	A	A		A
Approach Delay (s)	9.6	8.7	0.0	0.7
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	15.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	1353	0	0	710	60	0	0	6	51	0	43
Future Volume (vph)	149	1359	0	0	713	60	0	0	6	51	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			0.99				0.98	1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00				1.00	0.99		1.00
Frt	1.00	1.00			0.99				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3474				1584	1761		1583
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1770	3539			3474				1584	1761		1583
Peak-hour factor, PHF	0.72	0.72	0.72	0.91	0.91	0.94	0.50	0.50	0.50	0.78	0.78	0.78
Adj. Flow (vph)	207	1888	0	0	784	64	0	0	12	65	0	55
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	9	0	0	42
Lane Group Flow (vph)	207	1888	0	0	843	0	0	0	3	65	0	13
Confl. Peds. (#/hr)			21			24			4	4		
Confl. Bikes (#/hr)			1			3						
Turn Type	Prot	NA			NA				Perm	Perm		Perm
Protected Phases	7	4			8							
Permitted Phases									2	6		6
Actuated Green, G (s)	17.3	76.0			54.7				26.0	26.0		26.0
Effective Green, g (s)	17.3	76.0			54.7				26.0	26.0		26.0
Actuated g/C Ratio	0.16	0.69			0.50				0.24	0.24		0.24
Clearance Time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0		3.0
Lane Grp Cap (vph)	278	2445			1727				374	416		374
v/s Ratio Prot	0.12	c0.53			0.24							
v/s Ratio Perm									0.00	c0.04		0.01
v/c Ratio	0.74	0.77			0.49				0.01	0.16		0.03
Uniform Delay, d1	44.2	11.3			18.4				32.1	33.3		32.3
Progression Factor	1.00	1.00			0.29				1.00	1.00		1.00
Incremental Delay, d2	10.3	2.4			0.9				0.0	0.8		0.2
Delay (s)	54.6	13.7			6.2				32.2	34.1		32.5
Level of Service	D	B			A				C	C		C
Approach Delay (s)		17.7			6.2			32.2			33.4	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	0	1310	89	4	25	746	1	7	0	21	0	0
Future Volume (Veh/h)	0	1310	95	4	30	746	1	10	0	23	0	0
Sign Control		Free				Free			Stop			Stop
Grade		0%				0%			0%			0%
Peak Hour Factor	0.70	0.70	0.70	0.93	0.93	0.93	0.93	0.60	0.60	0.60	0.92	0.92
Hourly flow rate (vph)	0	1871	136	0	32	802	1	17	0	38	0	0
Pedestrians									24			26
Lane Width (ft)									12.0			12.0
Walking Speed (ft/s)									3.5			3.5
Percent Blockage									2			2
Right turn flare (veh)												
Median type		None				None						
Median storage veh)												
Upstream signal (ft)		225				339						
pX, platoon unblocked	0.86			0.00	0.62			0.69	0.69	0.62	0.69	0.69
vC, conflicting volume	829			0	2031			2429	2856	1028	1866	2924
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	467			0	1428			1236	1857	0	418	1955
tC, single (s)	4.1			0.0	4.1			7.5	6.5	6.9	7.5	6.5
tC, 2 stage (s)												
tF (s)	2.2			0.0	2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %	100			0	89			78	100	94	100	100
cM capacity (veh/h)	912			0	284			78	42	653	289	37

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	936	1072	32	535	268	55	1
Volume Left	0	0	32	0	0	17	0
Volume Right	0	136	0	0	1	38	1
cSH	912	1700	284	1700	1700	200	907
Volume to Capacity	0.00	0.63	0.11	0.31	0.16	0.28	0.00
Queue Length 95th (ft)	0	0	9	0	0	27	0
Control Delay (s)	0.0	0.0	19.3	0.0	0.0	29.7	9.0
Lane LOS			C			D	A
Approach Delay (s)	0.0		0.7			29.7	9.0
Approach LOS						D	A

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	54.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	1
Future Volume (Veh/h)	1
Sign Control	
Grade	
Peak Hour Factor	0.92
Hourly flow rate (vph)	1
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	0.86
vC, conflicting volume	428
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	0
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	907
Direction, Lane #	

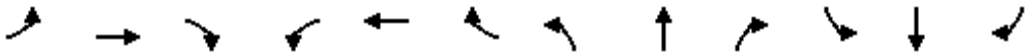
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	93	1218	9	0	684	48	2	1	1	57	2
Future Volume (vph)	6	93	1220	9	0	689	48	2	1	1	57	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0			4.0			4.0
Lane Util. Factor		1.00	0.95			0.95			1.00			1.00
Frpb, ped/bikes		1.00	1.00			0.99			1.00			0.99
Flpb, ped/bikes		1.00	1.00			1.00			1.00			1.00
Frt		1.00	1.00			0.99			0.97			0.93
Flt Protected		0.95	1.00			1.00			0.98			0.98
Satd. Flow (prot)		1770	3534			3484			1748			1663
Flt Permitted		0.95	1.00			1.00			0.93			0.87
Satd. Flow (perm)		1770	3534			3484			1667			1480
Peak-hour factor, PHF	0.68	0.68	0.68	0.68	0.91	0.91	0.91	0.92	0.92	0.92	0.74	0.74
Adj. Flow (vph)	9	137	1794	13	0	757	53	2	1	1	77	3
RTOR Reduction (vph)	0	0	0	0	0	5	0	0	1	0	0	40
Lane Group Flow (vph)	0	146	1807	0	0	805	0	0	3	0	0	139
Confl. Peds. (#/hr)				30			22	12				
Confl. Bikes (#/hr)				3			3					
Turn Type	Prot	Prot	NA			NA		Perm	NA		Perm	NA
Protected Phases	7	7	4			8			2			6
Permitted Phases								2			6	
Actuated Green, G (s)		16.0	74.0			54.0			28.0			28.0
Effective Green, g (s)		16.0	74.0			54.0			28.0			28.0
Actuated g/C Ratio		0.15	0.67			0.49			0.25			0.25
Clearance Time (s)		4.0	4.0			4.0			4.0			4.0
Vehicle Extension (s)		3.0	3.0			3.0			3.0			3.0
Lane Grp Cap (vph)		257	2377			1710			424			376
v/s Ratio Prot		0.08	c0.51			0.23						
v/s Ratio Perm									0.00			c0.09
v/c Ratio		0.57	0.76			0.47			0.01			0.37
Uniform Delay, d1		43.8	12.1			18.5			30.6			33.7
Progression Factor		0.79	0.26			1.00			1.00			1.00
Incremental Delay, d2		2.0	1.7			0.9			0.0			0.6
Delay (s)		36.5	4.8			19.5			30.7			34.3
Level of Service		D	A			B			C			C
Approach Delay (s)			7.1			19.5			30.7			34.3
Approach LOS			A			B			C			C

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	73
Future Volume (vph)	73
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.74
Adj. Flow (vph)	99
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	12
Confl. Bikes (#/hr)	
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	5	0	28	1	7	114	0
Future Volume (Veh/h)	5	0	0	0	0	5	1	28	1	7	114	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Hourly flow rate (vph)	8	0	0	0	0	8	2	47	2	12	190	18
Pedestrians											4	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											3.5	
Percent Blockage											0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	287	276	199	275	284	52	208			49		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	287	276	199	275	284	52	208			49		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	99	100			99		
cM capacity (veh/h)	653	626	842	673	619	1012	1363			1558		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	8	51	220
Volume Left	8	0	2	12
Volume Right	0	8	2	18
cSH	653	1012	1363	1558
Volume to Capacity	0.01	0.01	0.00	0.01
Queue Length 95th (ft)	1	1	0	1
Control Delay (s)	10.6	8.6	0.3	0.5
Lane LOS	B	A	A	A
Approach Delay (s)	10.6	8.6	0.3	0.5
Approach LOS	B	A		

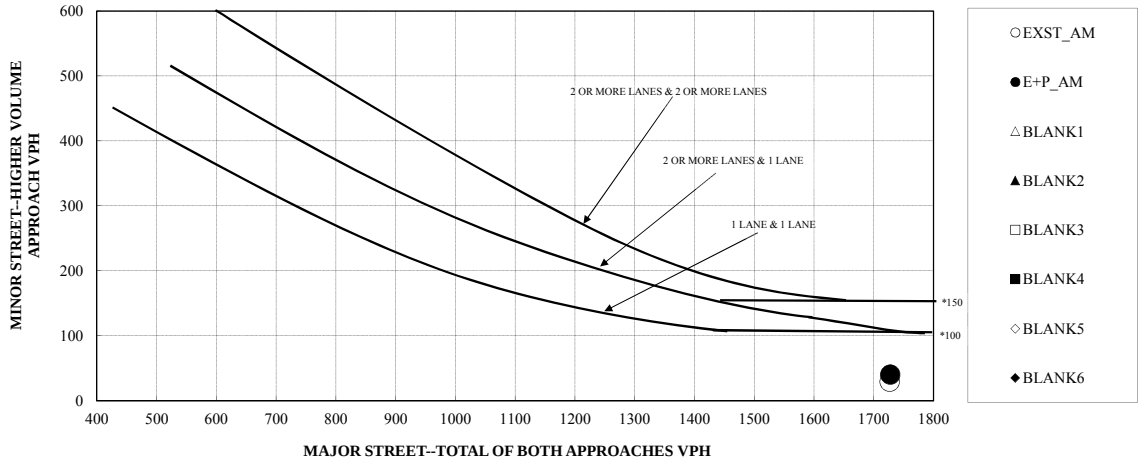
Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	23.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix Exhibit B
California MUTCD Signal Warrant Analysis

CA SIGNAL WARRANT 3 ANALYSIS

SCENARIOS: "AM PEAK HOUR" CONDITIONS

FIGURE 4C-3 WARRANT 3 PEAK HOUR VOLUME (CALIFORNIA MUTCD, DATED JANUARY 13, 2012)



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

SCENARIO	APPROACH(ES)		WARRANT MET?
	MAJOR	MINOR	
EXST_AM	1727	29	NO
E+P_AM	1728	40	NO
BLANK1	0	0	
BLANK2	0	0	
BLANK3	0	0	
BLANK4	0	0	
BLANK5	0	0	
BLANK6	0	0	

Note: Major approach is the total of both approaches. Minor approach is the highest of both approaches.

Date: **February 17, 2017** Intersection No.: **2**

Intersection: **Castro Valley Boulevard / Baker Street**

Number of lanes on MAJOR street: **2**

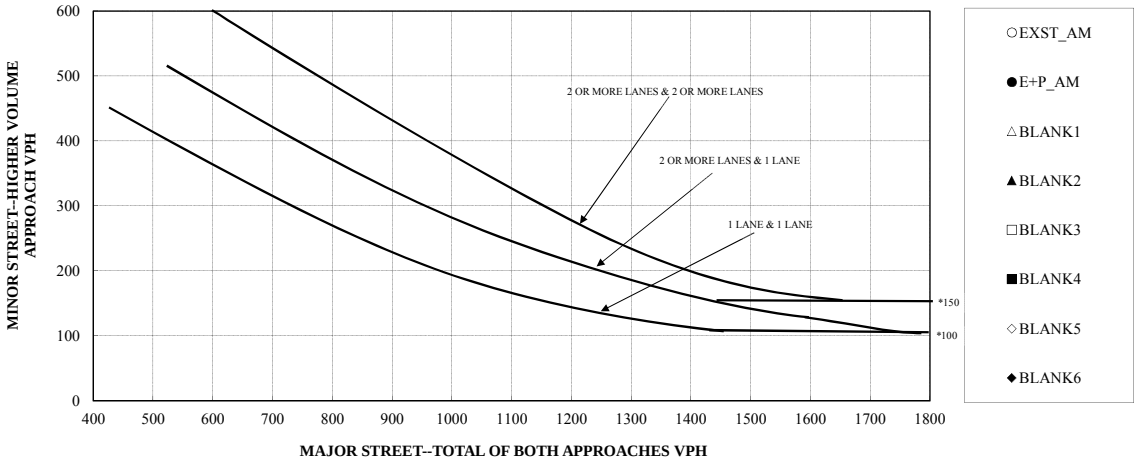
Number of lanes on MINOR street: **1**

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

CA SIGNAL WARRANT 3 ANALYSIS

SCENARIOS: "AM PEAK HOUR" CONDITIONS

FIGURE 4C-3 WARRANT 3 PEAK HOUR VOLUME
(CALIFORNIA MUTCD, DATED JANUARY 13, 2012)



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

SCENARIO	APPROACH(ES)		WARRANT MET?
	MAJOR	MINOR	
EXST_AM	76	13	NO
E+P_AM	78	13	NO
BLANK1	0	0	
BLANK2	0	0	
BLANK3	0	0	
BLANK4	0	0	
BLANK5	0	0	
BLANK6	0	0	

Note: Major approach is the total of both approaches. Minor approach is the highest of both approaches.

Date: **February 17, 2017** Intersection No.: **4**

Intersection: **Baker Road / Project Access Driveway / Private Roadway**

Number of lanes on MAJOR street: **1**

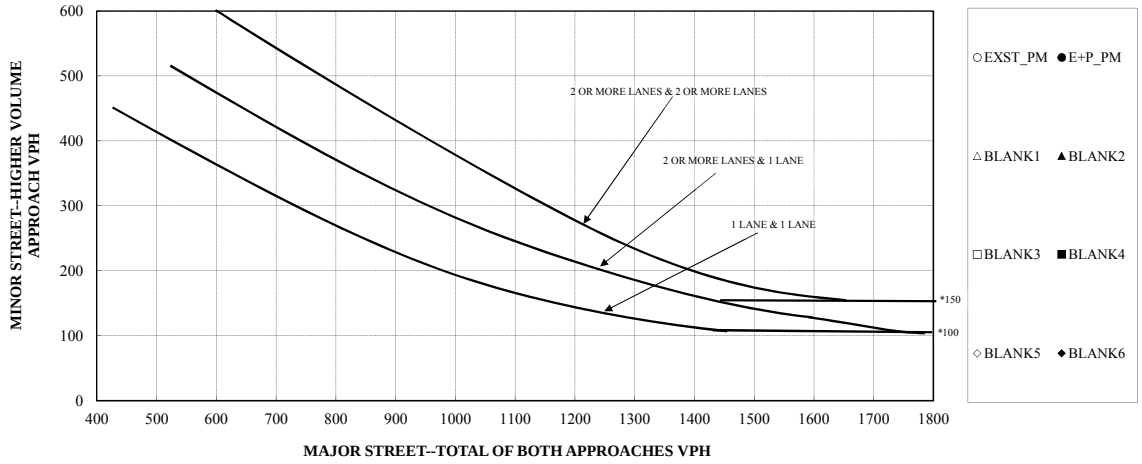
Number of lanes on MINOR street: **1**

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

CA SIGNAL WARRANT 3 ANALYSIS

SCENARIOS: "PM PEAK HOUR" CONDITIONS

FIGURE 4C-3 WARRANT 3 PEAK HOUR VOLUME (CALIFORNIA MUTCD, DATED JANUARY 13, 2012)



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

SCENARIO	APPROACH(ES)		WARRANT MET?
	MAJOR	MINOR	
EXST_PM	2175	28	NO
E+P_PM	2186	33	NO
BLANK1	0	0	
BLANK2	0	0	
BLANK3	0	0	
BLANK4	0	0	
BLANK5	0	0	
BLANK6	0	0	

Note: Major approach is the total of both approaches. Minor approach is the highest of both approaches.

Date: **February 17, 2017** Intersection No.: **2**

Intersection: **Castro Valley Boulevard / Baker Street**

Number of lanes on MAJOR street: **2**

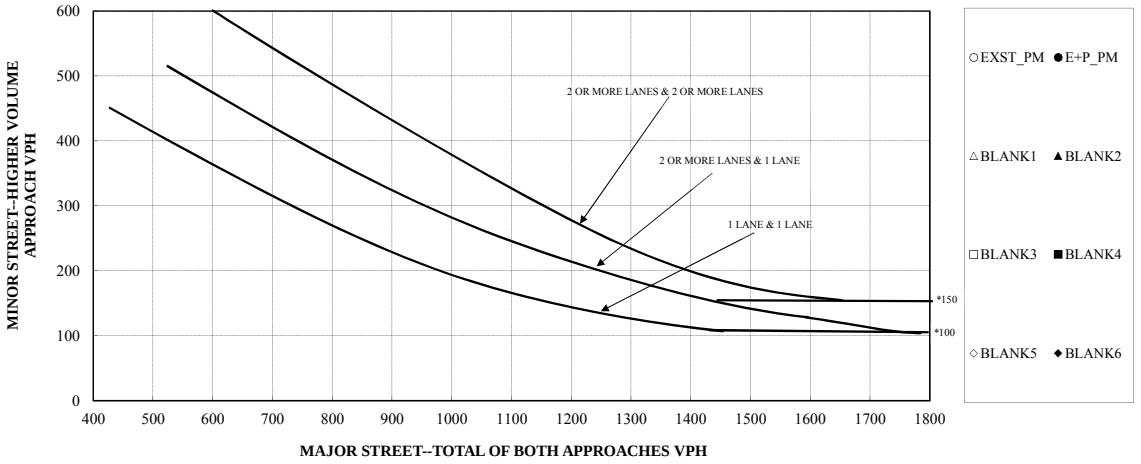
Number of lanes on MINOR street: **1**

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

CA SIGNAL WARRANT 3 ANALYSIS

SCENARIOS: "PM PEAK HOUR" CONDITIONS

FIGURE 4C-3 WARRANT 3 PEAK HOUR VOLUME (CALIFORNIA MUTCD, DATED JANUARY 13, 2012)



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

SCENARIO	APPROACH(ES)		WARRANT MET?
	MAJOR	MINOR	
EXST_PM	150	5	NO
E+P_PM	162	5	NO
BLANK1	0	0	
BLANK2	0	0	
BLANK3	0	0	
BLANK4	0	0	
BLANK5	0	0	
BLANK6	0	0	

Note: Major approach is the total of both approaches. Minor approach is the highest of both approaches.

Date: **February 17, 2017** Intersection No.: **4**

Intersection: **Baker Road / Project Access Driveway / Private Roadway**

Number of lanes on MAJOR street: **1**

Number of lanes on MINOR street: **1**

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

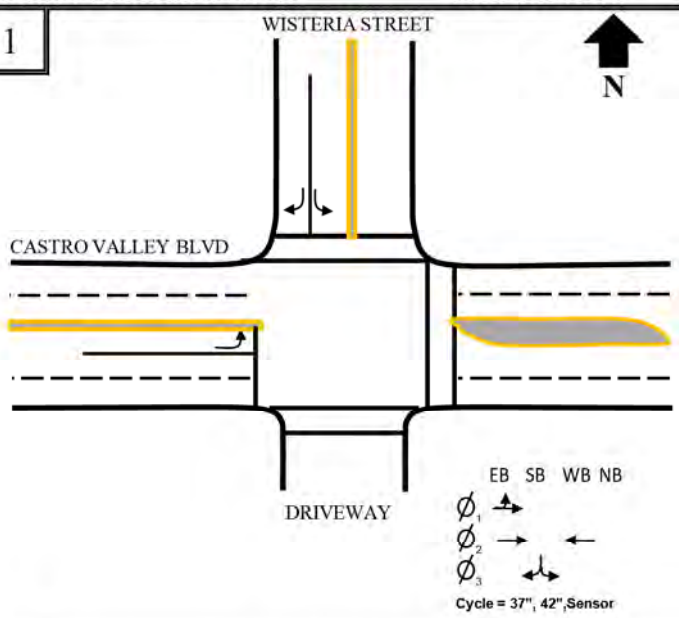
Appendix C
Existing Traffic Counts

BAYMETRICS

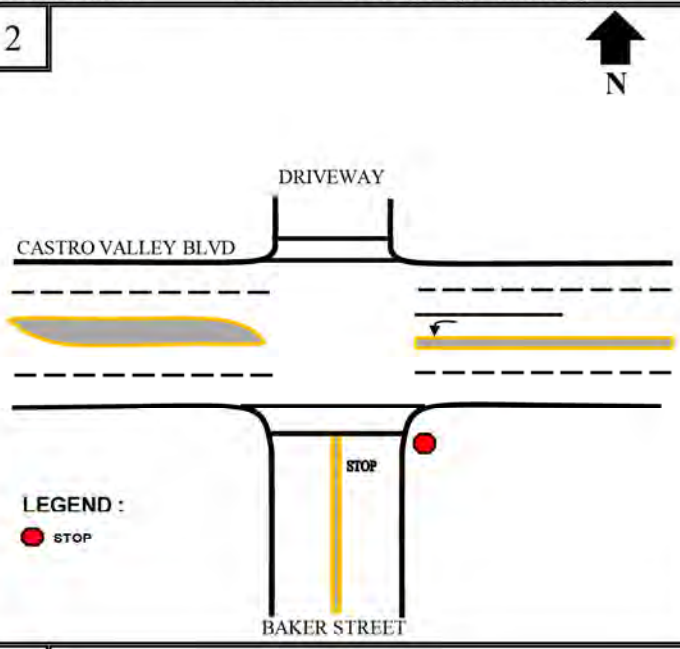
INTERSECTION GEOMETRY & TRAFFIC CONTROL PLAN

PROJECT NUMBER: 3701005 JURISDICTION: CASTRO VALLEY DATE: 1/31/2017 (TUESDAY)

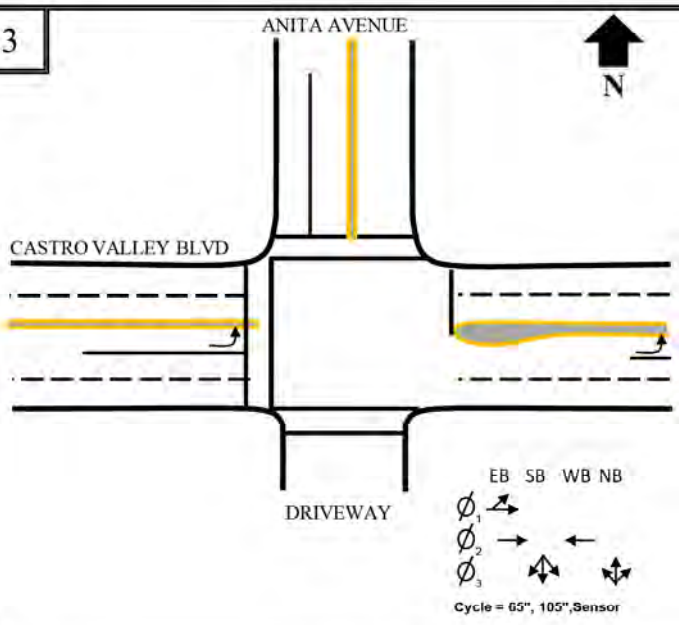
1



2



3



TEL: (510) 232 - 1271 EMAIL: BAYMETRICS@GMAIL.COM

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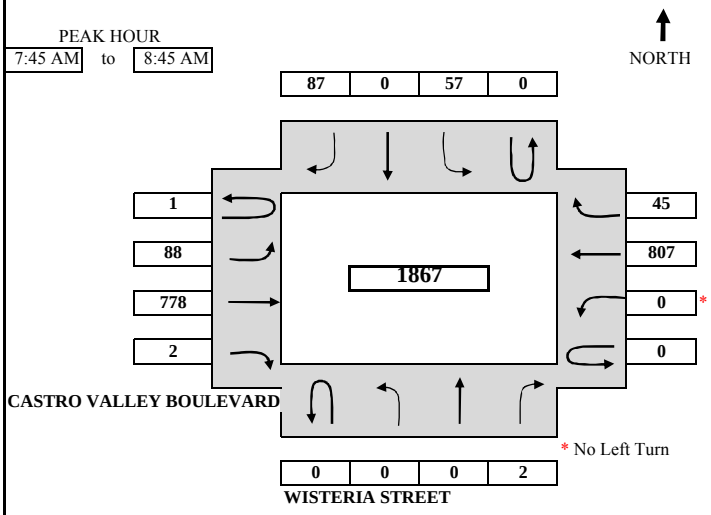
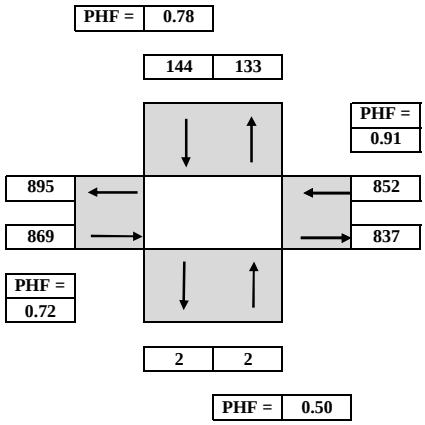
INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**	**DAY:**	**TUESDAY**
N-S APPROACH:	**WISTERIA STREET**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**	**FILE:**	**3701005-1AM**

PEAK HOUR 7:45 AM to 8:45 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD			NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
From		To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																			
7:00 AM	to	7:15 AM		0		0		11		28	0	13	94	0			146	4	**296**
7:15 AM	to	7:30 AM		0		0		16		53	0	31	203	0			286	11	**600**
7:30 AM	to	7:45 AM		0		0		29		89	0	50	379	0			435	17	**999**
7:45 AM	to	8:00 AM		0		1		51		113	0	71	658	0			629	24	**1547**
8:00 AM	to	8:15 AM		0		1		63		140	1	90	853	0			854	34	**2036**
8:15 AM	to	8:30 AM		0		1		77		161	1	119	990	0			1054	51	**2454**
8:30 AM	to	8:45 AM		0		2		86		176	1	138	1157	2			1242	62	**2866**
8:45 AM	to	9:00 AM		0		2		92		194	1	156	1316	2			1397	69	**3229**
TOTAL BY PERIOD																			
7:00 AM	to	7:15 AM	0	0	0	0	0	11	0	28	0	13	94	0	0	0	146	4	**296**
7:15 AM	to	7:30 AM	0	0	0	0	0	5	0	25	0	18	109	0	0	0	140	7	**304**
7:30 AM	to	7:45 AM	0	0	0	0	0	13	0	36	0	19	176	0	0	0	149	6	**399**
7:45 AM	to	8:00 AM	0	0	0	1	0	22	0	24	0	21	279	0	0	0	194	7	**548**
8:00 AM	to	8:15 AM	0	0	0	0	0	12	0	27	1	19	195	0	0	0	225	10	**489**
8:15 AM	to	8:30 AM	0	0	0	0	0	14	0	21	0	29	137	0	0	0	200	17	**418**
8:30 AM	to	8:45 AM	0	0	0	1	0	9	0	15	0	19	167	2	0	0	188	11	**412**
8:45 AM	to	9:00 AM	0	0	0	0	0	6	0	18	0	18	159	0	0	0	155	7	**363**
HOURLY TOTALS																			
7:00 AM	to	8:00 AM	0	0	0	1	0	51	0	113	0	71	658	0	0	0	629	24	**1547**
7:15 AM	to	8:15 AM	0	0	0	1	0	52	0	112	1	77	759	0	0	0	708	30	**1740**
7:30 AM	to	8:30 AM	0	0	0	1	0	61	0	108	1	88	787	0	0	0	768	40	**1854**
7:45 AM	to	8:45 AM	0	0	0	2	0	57	0	87	1	88	778	2	0	0	807	45	**1867**
8:00 AM	to	9:00 AM	0	0	0	1	0	41	0	81	1	85	658	2	0	0	768	45	**1682**

PEAK HOUR SUMMARY

7:45 AM to 8:45 AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	
VOLUME	0	0	0	2	0	57	0	87	1	88	778	2	0	0	807	45	**1867**
PHF BY MOVEMENT	0.00	0.00	0.00	0.50	0.00	0.65	0.00	0.81	0.25	0.76	0.70	0.25	0.00	0.00	0.90	0.66	OVERALL
PHF BY APPROACH	0.50				0.78				0.72				0.91				0.85
BICYCLE	0				0				1				2				**3**
PEDESTRIAN	1				3				11				14				**29**
	N-LEG				**S-LEG**				**E-LEG**				**W-LEG**				
PEDESTRIAN BY LEG:	14				11				4				0				**29**

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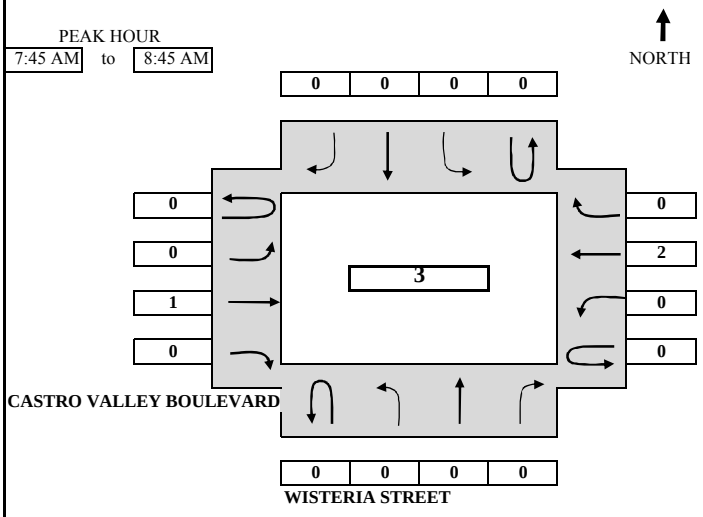
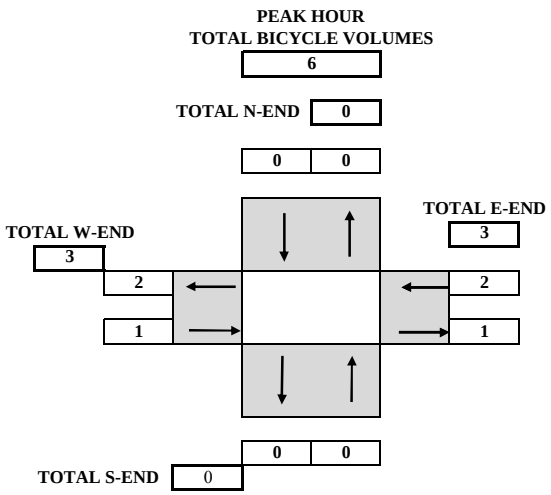
BICYCLE TURNING MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**	**DAY:**	**TUESDAY**
N-S APPROACH:	**WISTERIA STREET**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**	**FILE:**	**3701005-1AM**





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

TEL: (510) 232 - 1271 EMAIL: BAYMETRICS@GMAIL.COM

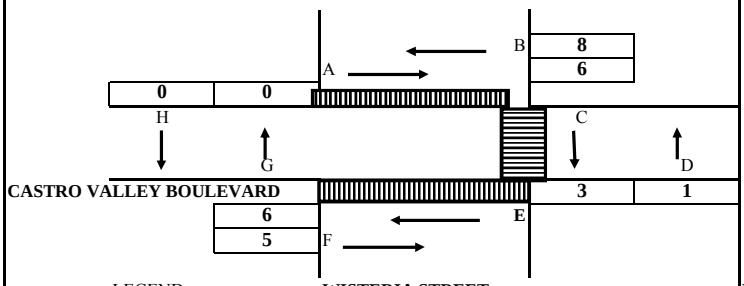
7:45 AM to 8:45 AM					
APPROACH VOLUME	NB	SB	EB	WB	TOTAL
BICYCLE	0	0	1	2	**3**

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

PEDESTRIAN MOVEMENT SUMMARY

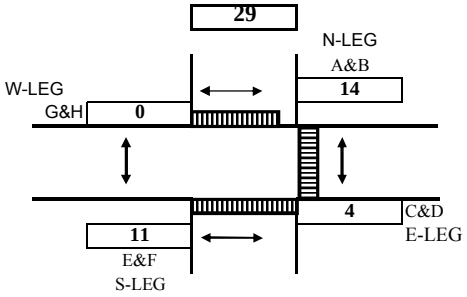
PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**
N-S APPROACH:	**WISTERIA STREET**	**DAY:**	**TUESDAY**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**
SURVEY PERIOD:	**7:00 AM TO 9:00 AM**	**FILE:**	**3701005-1AM**

PEAK HOUR
07:45 AM TO 08:45 AM



LEGEND: **WISTERIA STREET**
CROSSWALK
SIDEWALK
STOP CONTROL LINE
STOP

PEAK HOUR
TOTAL PEDESTRIAN VOLUMES



BY LEG:		**BY DIRECTION:**	
N-LEG	**14**	**NB**(D+G)	**1**
S-LEG	**11**	**SB**(C+H)	**3**
E-LEG	**4**	**EB**(A+F)	**11**
W-LEG	**0**	**WB**(B+E)	**14**

TIME PERIOD			**NORTH X-WALK**		**EAST X-WALK**		**SOUTH X-WALK**		**WEST X-WALK**		
From		**To**	***A***	***B***	***C***	***D***	***E***	***F***	***G***	***H***	***TOTAL***
SURVEY DATA											
07:00 AM	---	07:15 AM	0	6	2	1	0	0	0	0	***9***
07:15 AM	---	07:30 AM	2	6	2	2	1	1	0	0	***14***
07:30 AM	---	07:45 AM	4	7	2	6	1	2	0	0	***22***
07:45 AM	---	08:00 AM	4	8	2	6	3	5	0	0	***28***
08:00 AM	---	08:15 AM	5	10	2	6	5	5	0	0	***33***
08:15 AM	---	08:30 AM	7	13	3	6	5	5	0	0	***39***
08:30 AM	---	08:45 AM	10	15	5	7	7	7	0	0	***51***
08:45 AM	---	09:00 AM	13	21	5	8	8	9	0	0	***64***
TOTAL BY PERIOD											
07:00 AM	---	07:15 AM	0	6	2	1	0	0	0	0	***9***
07:15 AM	---	07:30 AM	2	0	0	1	1	1	0	0	***5***
07:30 AM	---	07:45 AM	2	1	0	4	0	1	0	0	***8***
07:45 AM	---	08:00 AM	0	1	0	0	2	3	0	0	***6***
08:00 AM	---	08:15 AM	1	2	0	0	2	0	0	0	***5***
08:15 AM	---	08:30 AM	2	3	1	0	0	0	0	0	***6***
08:30 AM	---	08:45 AM	3	2	2	1	2	2	0	0	***12***
08:45 AM	---	09:00 AM	3	6	0	1	1	2	0	0	***13***
HOURLY TOTALS											
07:00 AM	---	08:00 AM	4	8	2	6	3	5	0	0	***28***
07:15 AM	---	08:15 AM	5	4	0	5	5	5	0	0	***24***
07:30 AM	---	08:30 AM	5	7	1	4	4	4	0	0	***25***
07:45 AM	---	08:45 AM	6	8	3	1	6	5	0	0	***29***
08:00 AM	---	09:00 AM	9	13	3	2	5	4	0	0	***36***

Tel : (510) 232-1271 ***EMAIL: BAYMETRICS@GMAIL.COM***

12:00 AM to 12:00 AM

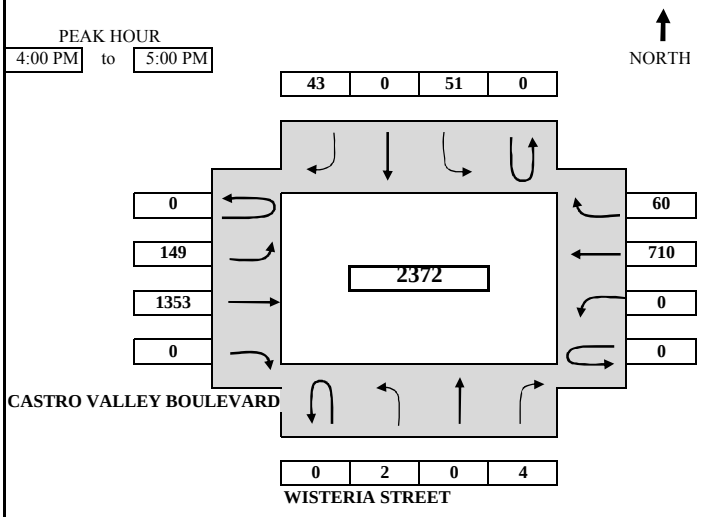
VOLUME BY DIRECTION	NB	SB	EB	WB	TOTAL
PEDESTRIAN	1	3	11	14	**29**
VOLUME BY LEG	N-LEG	S-LEG	E-LEG	W-LEG	TOTAL
PEDESTRIAN	14	11	4	0	**29**

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

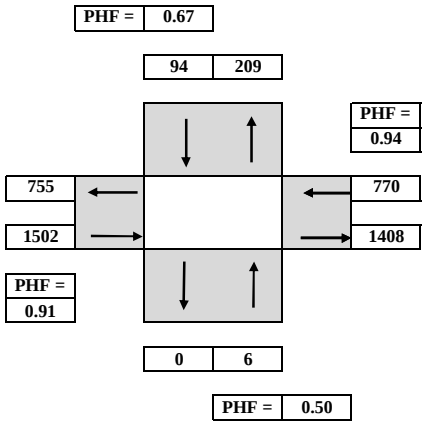
INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**	**DAY:**	**TUESDAY**
N-S APPROACH:	**WISTERIA STREET**	**SURVEY TIME:**	**4:00 PM**	**TO**	**6:00 PM**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**	**FILE:**	**3701005-1PM**

PEAK HOUR 4:00 PM to 5:00 PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD			NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
From		To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																			
4:00 PM	to	4:15 PM		0		0		11		9		46	367				181	16	**630**
4:15 PM	to	4:30 PM		0		1		21		17		84	671				340	30	**1164**
4:30 PM	to	4:45 PM		1		2		31		28		115	1022				520	46	**1765**
4:45 PM	to	5:00 PM		2		4		51		43		149	1353				710	60	**2372**
5:00 PM	to	5:15 PM		3		5		68		57		184	1633				899	70	**2919**
5:15 PM	to	5:30 PM		3		5		80		70		223	1902				1089	88	**3460**
5:30 PM	to	5:45 PM		3		5		96		88		266	2163				1308	109	**4038**
5:45 PM	to	6:00 PM		3		5		111		103		303	2426				1484	124	**4559**
TOTAL BY PERIOD																			
4:00 PM	to	4:15 PM	0	0	0	0	0	11	0	9	0	46	367	0	0	0	181	16	**630**
4:15 PM	to	4:30 PM	0	0	0	1	0	10	0	8	0	38	304	0	0	0	159	14	**534**
4:30 PM	to	4:45 PM	0	1	0	1	0	10	0	11	0	31	351	0	0	0	180	16	**601**
4:45 PM	to	5:00 PM	0	1	0	2	0	20	0	15	0	34	331	0	0	0	190	14	**607**
5:00 PM	to	5:15 PM	0	1	0	1	0	17	0	14	0	35	280	0	0	0	189	10	**547**
5:15 PM	to	5:30 PM	0	0	0	0	0	12	0	13	0	39	269	0	0	0	190	18	**541**
5:30 PM	to	5:45 PM	0	0	0	0	0	16	0	18	0	43	261	0	0	0	219	21	**578**
5:45 PM	to	6:00 PM	0	0	0	0	0	15	0	15	0	37	263	0	0	0	176	15	**521**
HOURLY TOTALS																			
4:00 PM	to	5:00 PM	0	2	0	4	0	51	0	43	0	149	1353	0	0	0	710	60	**2372**
4:15 PM	to	5:15 PM	0	3	0	5	0	57	0	48	0	138	1266	0	0	0	718	54	**2289**
4:30 PM	to	5:30 PM	0	3	0	4	0	59	0	53	0	139	1231	0	0	0	749	58	**2296**
4:45 PM	to	5:45 PM	0	2	0	3	0	65	0	60	0	151	1141	0	0	0	788	63	**2273**
5:00 PM	to	6:00 PM	0	1	0	1	0	60	0	60	0	154	1073	0	0	0	774	64	**2187**

PEAK HOUR SUMMARY

4:00 PM to 5:00 PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	
VOLUME	0	2	0	4	0	51	0	43	0	149	1353	0	0	0	710	60	**2372**
PHF BY MOVEMENT	0.00	0.50	0.00	0.50	0.00	0.64	0.00	0.72	0.00	0.81	0.92	0.00	0.00	0.00	0.93	0.94	OVERALL
PHF BY APPROACH	0.50				0.67				0.91				0.94				0.94
BICYCLE	0				0				1				3				**4**
PEDESTRIAN	0				4				26				19				**49**
	N-LEG				**S-LEG**				**E-LEG**				**W-LEG**				
PEDESTRIAN BY LEG:	24				21				4				0				**49**

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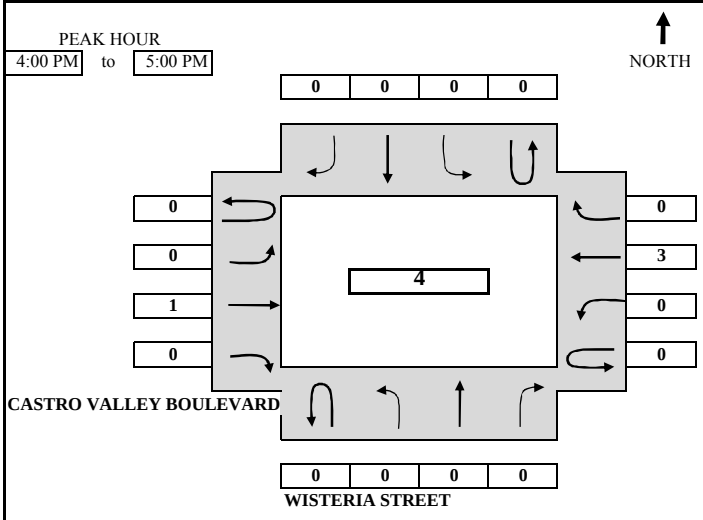
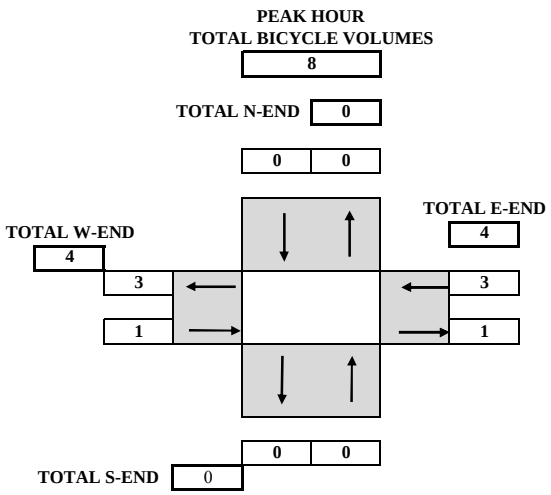
B.A.Y.M.E.T.R.I.C.S.

BICYCLE TURNING MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**	**DAY:**	**TUESDAY**
N-S APPROACH:	**WISTERIA STREET**	**SURVEY TIME:**	**4:00 PM**	**TO**	**6:00 PM**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**	**FILE:**	**3701005-1PM**





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

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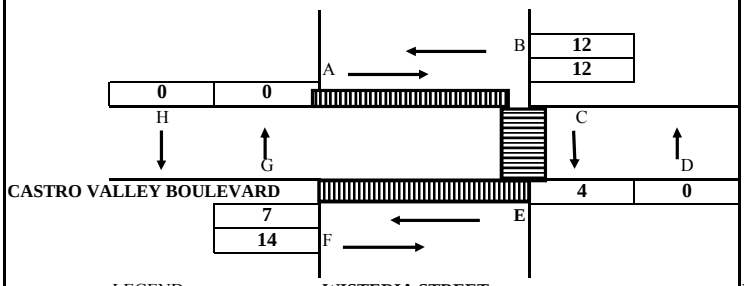
4:00 PM to 5:00 PM					
APPROACH VOLUME	NB	SB	EB	WB	TOTAL
BICYCLE	0	0	1	3	**4**

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

PEDESTRIAN MOVEMENT SUMMARY

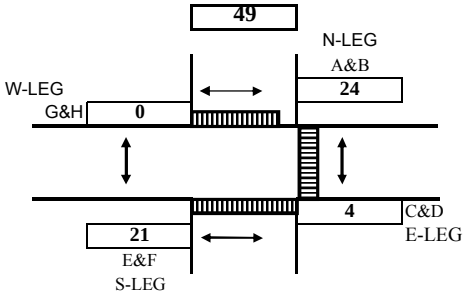
PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**
N-S APPROACH:	**WISTERIA STREET**	**DAY:**	**TUESDAY**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**
SURVEY PERIOD:	**4:00 PM TO 6:00 PM**	**FILE:**	**3701005-1PM**

PEAK HOUR
04:00 PM TO 05:00 PM



LEGEND:
WISTERIA STREET
CROSSWALK
SIDEWALK
STOP CONTROL LINE
STOP

PEAK HOUR
TOTAL PEDESTRIAN VOLUMES



BY LEG:		BY DIRECTION:	
N-LEG	**24**	**NB**(D+G)	**0**
S-LEG	**21**	**SB**(C+H)	**4**
E-LEG	**4**	**EB**(A+F)	**26**
W-LEG	**0**	**WB**(B+E)	**19**

TIME PERIOD			NORTH X-WALK		EAST X-WALK		SOUTH X-WALK		WEST X-WALK		
From		**To**	***A***	***B***	***C***	***D***	***E***	***F***	***G***	***H***	***TOTAL***
SURVEY DATA											
04:00 PM	---	04:15 PM	2	6	0	0	1	1	0	0	***10***
04:15 PM	---	04:30 PM	6	10	2	0	2	3	0	0	***23***
04:30 PM	---	04:45 PM	9	12	4	0	4	9	0	0	***38***
04:45 PM	---	05:00 PM	12	12	4	0	7	14	0	0	***49***
05:00 PM	---	05:15 PM	18	12	4	0	11	15	0	0	***60***
05:15 PM	---	05:30 PM	19	18	6	0	14	16	0	0	***73***
05:30 PM	---	05:45 PM	23	25	6	3	14	19	0	0	***90***
05:45 PM	---	06:00 PM	24	30	6	3	18	20	0	0	***101***
TOTAL BY PERIOD											
04:00 PM	---	04:15 PM	2	6	0	0	1	1	0	0	***10***
04:15 PM	---	04:30 PM	4	4	2	0	1	2	0	0	***13***
04:30 PM	---	04:45 PM	3	2	2	0	2	6	0	0	***15***
04:45 PM	---	05:00 PM	3	0	0	0	3	5	0	0	***11***
05:00 PM	---	05:15 PM	6	0	0	0	4	1	0	0	***11***
05:15 PM	---	05:30 PM	1	6	2	0	3	1	0	0	***13***
05:30 PM	---	05:45 PM	4	7	0	3	0	3	0	0	***17***
05:45 PM	---	06:00 PM	1	5	0	0	4	1	0	0	***11***
HOURLY TOTALS											
04:00 PM	---	05:00 PM	12	12	4	0	7	14	0	0	***49***
04:15 PM	---	05:15 PM	16	6	4	0	10	14	0	0	***50***
04:30 PM	---	05:30 PM	13	8	4	0	12	13	0	0	***50***
04:45 PM	---	05:45 PM	14	13	2	3	10	10	0	0	***52***
05:00 PM	---	06:00 PM	12	18	2	3	11	6	0	0	***52***

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12:00 AM to 12:00 AM

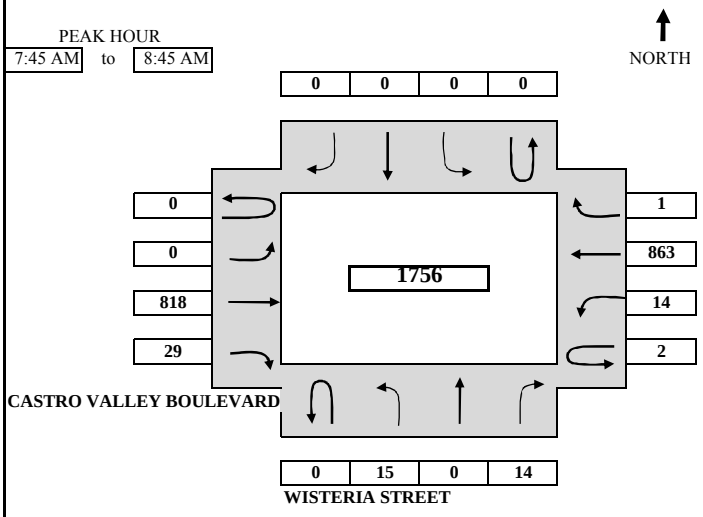
VOLUME BY DIRECTION	NB	SB	EB	WB	TOTAL
PEDESTRIAN	0	4	26	19	**49**
VOLUME BY LEG	N-LEG	S-LEG	E-LEG	W-LEG	TOTAL
PEDESTRIAN	24	21	4	0	**49**

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

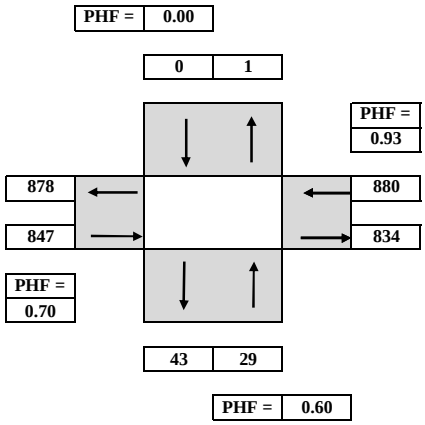
INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**	**DAY:**	**TUESDAY**
N-S APPROACH:	**WISTERIA STREET**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**	**FILE:**	**3701005-2AM**

PEAK HOUR 7:45 AM to 8:45 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD			NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
From		To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																			
7:00 AM	to	7:15 AM		9	0	1		0	0	0		0	84	5	0	2	144	0	**245**
7:15 AM	to	7:30 AM		18	0	4		0	0	0		0	198	8	0	4	272	0	**504**
7:30 AM	to	7:45 AM		24	0	9		0	0	0		0	376	10	2	7	406	0	**834**
7:45 AM	to	8:00 AM		28	0	17		0	0	0		0	670	19	2	9	618	0	**1363**
8:00 AM	to	8:15 AM		32	0	20		0	0	0		0	874	29	4	16	846	0	**1821**
8:15 AM	to	8:30 AM		36	0	21		0	0	0		0	1030	33	4	17	1067	1	**2209**
8:30 AM	to	8:45 AM		39	0	23		0	0	0		0	1194	39	4	21	1269	1	**2590**
8:45 AM	to	9:00 AM		42	0	25		0	0	0		0	1357	46	5	23	1431	1	**2930**
TOTAL BY PERIOD																			
7:00 AM	to	7:15 AM	0	9	0	1	0	0	0	0	0	0	84	5	0	2	144	0	**245**
7:15 AM	to	7:30 AM	0	9	0	3	0	0	0	0	0	0	114	3	0	2	128	0	**259**
7:30 AM	to	7:45 AM	0	6	0	5	0	0	0	0	0	0	178	2	2	3	134	0	**330**
7:45 AM	to	8:00 AM	0	4	0	8	0	0	0	0	0	0	294	9	0	2	212	0	**529**
8:00 AM	to	8:15 AM	0	4	0	3	0	0	0	0	0	0	204	10	2	7	228	0	**458**
8:15 AM	to	8:30 AM	0	4	0	1	0	0	0	0	0	0	156	4	0	1	221	1	**388**
8:30 AM	to	8:45 AM	0	3	0	2	0	0	0	0	0	0	164	6	0	4	202	0	**381**
8:45 AM	to	9:00 AM	0	3	0	2	0	0	0	0	0	0	163	7	1	2	162	0	**340**
HOURLY TOTALS																			
7:00 AM	to	8:00 AM	0	28	0	17	0	0	0	0	0	0	670	19	2	9	618	0	**1363**
7:15 AM	to	8:15 AM	0	23	0	19	0	0	0	0	0	0	790	24	4	14	702	0	**1576**
7:30 AM	to	8:30 AM	0	18	0	17	0	0	0	0	0	0	832	25	4	13	795	1	**1705**
7:45 AM	to	8:45 AM	0	15	0	14	0	0	0	0	0	0	818	29	2	14	863	1	**1756**
8:00 AM	to	9:00 AM	0	14	0	8	0	0	0	0	0	0	687	27	3	14	813	1	**1567**

PEAK HOUR SUMMARY

7:45 AM to 8:45 AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	
VOLUME	0	15	0	14	0	0	0	0	0	0	818	29	2	14	863	1	**1756**
PHF BY MOVEMENT	0.00	0.94	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.73	0.25	0.50	0.95	0.25	OVERALL
PHF BY APPROACH	0.60				0.00				0.70				0.93				0.83
BICYCLE	0				0				1				2				**3**
PEDESTRIAN	0				1				14				7				**22**
	N-LEG				**S-LEG**				**E-LEG**				**W-LEG**				
PEDESTRIAN BY LEG:	15				6				1				0				**22**

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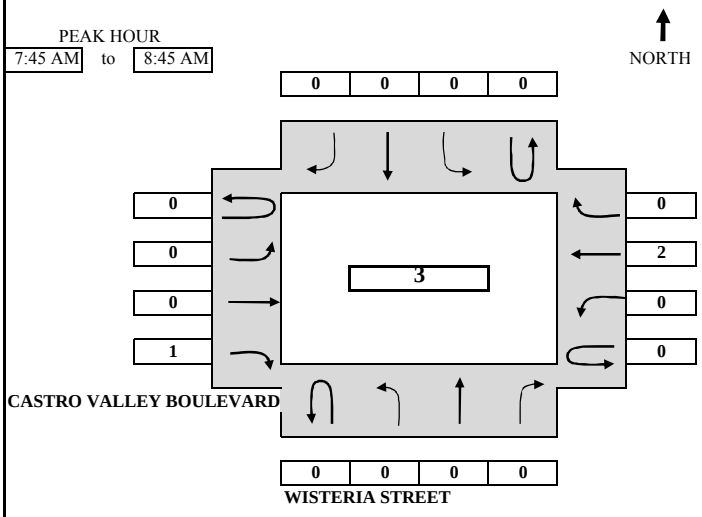
B.A.Y.M.E.T.R.I.C.S.

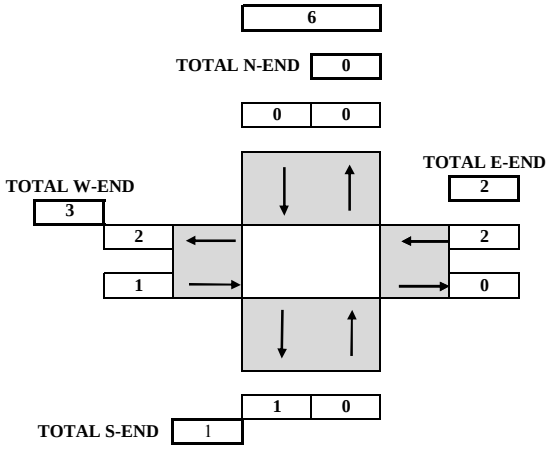
BICYCLE TURNING MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**	**DAY:**	**TUESDAY**
N-S APPROACH:	**WISTERIA STREET**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**	**FILE:**	**3701005-2AM**

PEAK HOUR
7:45 AM to 8:45 AM



PEAK HOUR
TOTAL BICYCLE VOLUMES



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

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7:45 AM to 8:45 AM

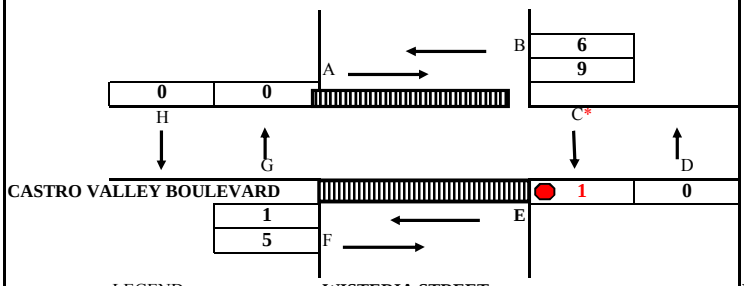
APPROACH VOLUME	NB	SB	EB	WB	TOTAL
BICYCLE	0	0	1	2	**3**

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

PEDESTRIAN MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**
N-S APPROACH:	**WISTERIA STREET**	**DAY:**	**TUESDAY**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**
SURVEY PERIOD:	**7:00 AM TO 9:00 AM**	**FILE:**	**3701005-2AM**

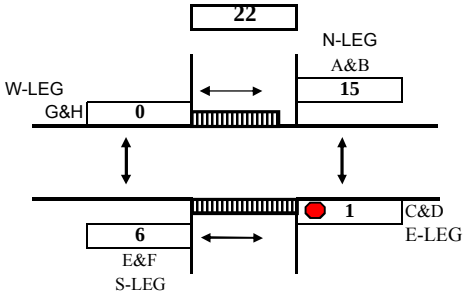
PEAK HOUR
07:45 AM TO 08:45 AM



LEGEND:
- CROSSWALK
- SIDEWALK
- STOP CONTROL LINE
- STOP
- * J-WALK IN RED

WISTERIA STREET

PEAK HOUR
TOTAL PEDESTRIAN VOLUMES



BY LEG:		**BY DIRECTION:**	
N-LEG	**15**	**NB**(D+G)	**0**
S-LEG	**6**	**SB**(C+H)	**1**
E-LEG	**1**	**EB**(A+F)	**14**
W-LEG	**0**	**WB**(B+E)	**7**

TIME PERIOD			NORTH X-WALK		EAST X-WALK		SOUTH X-WALK		WEST X-WALK		
From		**To**	***A***	***B***	***C****	***D***	***E***	***F***	***G***	***H***	***TOTAL***
SURVEY DATA											
07:00 AM	---	07:15 AM	0	4	0	0	0	2	0	0	***6***
07:15 AM	---	07:30 AM	5	4	0	0	1	2	0	0	***12***
07:30 AM	---	07:45 AM	9	4	0	0	4	4	0	0	***21***
07:45 AM	---	08:00 AM	11	4	0	0	5	6	0	0	***26***
08:00 AM	---	08:15 AM	12	6	1	0	5	6	0	0	***30***
08:15 AM	---	08:30 AM	14	9	1	0	5	7	0	0	***36***
08:30 AM	---	08:45 AM	18	10	1	0	5	9	0	0	***43***
08:45 AM	---	09:00 AM	20	16	1	0	6	9	0	0	***52***
TOTAL BY PERIOD											
07:00 AM	---	07:15 AM	0	4	0	0	0	2	0	0	***6***
07:15 AM	---	07:30 AM	5	0	0	0	1	0	0	0	***6***
07:30 AM	---	07:45 AM	4	0	0	0	3	2	0	0	***9***
07:45 AM	---	08:00 AM	2	0	0	0	1	2	0	0	***5***
08:00 AM	---	08:15 AM	1	2	1	0	0	0	0	0	***4***
08:15 AM	---	08:30 AM	2	3	0	0	0	1	0	0	***6***
08:30 AM	---	08:45 AM	4	1	0	0	0	2	0	0	***7***
08:45 AM	---	09:00 AM	2	6	0	0	1	0	0	0	***9***
HOURLY TOTALS											
07:00 AM	---	08:00 AM	11	4	0	0	5	6	0	0	***26***
07:15 AM	---	08:15 AM	12	2	1	0	5	4	0	0	***24***
07:30 AM	---	08:30 AM	9	5	1	0	4	5	0	0	***24***
07:45 AM	---	08:45 AM	9	6	1	0	1	5	0	0	***22***
08:00 AM	---	09:00 AM	9	12	1	0	1	3	0	0	***26***

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12:00 AM to 12:00 AM

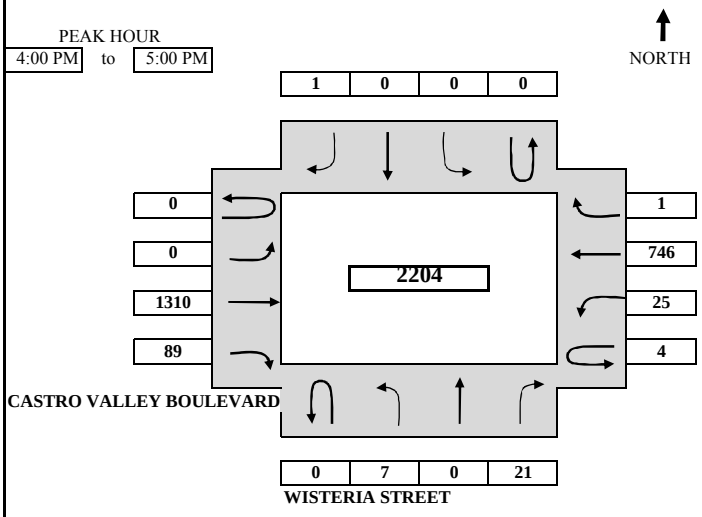
VOLUME BY DIRECTION	NB	SB	EB	WB	TOTAL
PEDESTRIAN	0	1	14	7	**22**
VOLUME BY LEG	N-LEG	S-LEG	E-LEG	W-LEG	TOTAL
PEDESTRIAN	15	6	1	0	**22**

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

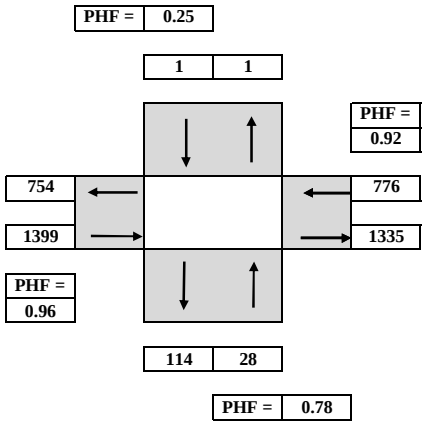
INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**	**DAY:**	**TUESDAY**
N-S APPROACH:	**WISTERIA STREET**	**SURVEY TIME:**	**4:00 PM**	**TO**	**6:00 PM**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**	**FILE:**	**3701005-2PM**

PEAK HOUR 4:00 PM to 5:00 PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD			NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
From		To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																			
4:00 PM	to	4:15 PM		2	0	7		0	0	0		0	342	23	0	4	189	0	**567**
4:15 PM	to	4:30 PM		4	0	9		0	0	0		0	629	48	1	12	356	1	**1060**
4:30 PM	to	4:45 PM		5	0	17		0	0	0		0	972	65	2	19	544	1	**1625**
4:45 PM	to	5:00 PM		7	0	21		0	0	1		0	1310	89	4	25	746	1	**2204**
5:00 PM	to	5:15 PM		12	0	24		0	0	1		0	1589	102	5	33	951	1	**2718**
5:15 PM	to	5:30 PM		18	0	30		0	0	2		0	1875	117	8	41	1149	1	**3241**
5:30 PM	to	5:45 PM		18	0	34		0	0	2		0	2145	131	13	51	1394	1	**3789**
5:45 PM	to	6:00 PM		23	0	40		0	0	4		0	2393	154	16	57	1589	1	**4277**
TOTAL BY PERIOD																			
4:00 PM	to	4:15 PM	0	2	0	7	0	0	0	0	0	0	342	23	0	4	189	0	**567**
4:15 PM	to	4:30 PM	0	2	0	2	0	0	0	0	0	0	287	25	1	8	167	1	**493**
4:30 PM	to	4:45 PM	0	1	0	8	0	0	0	0	0	0	343	17	1	7	188	0	**565**
4:45 PM	to	5:00 PM	0	2	0	4	0	0	0	1	0	0	338	24	2	6	202	0	**579**
5:00 PM	to	5:15 PM	0	5	0	3	0	0	0	0	0	0	279	13	1	8	205	0	**514**
5:15 PM	to	5:30 PM	0	6	0	6	0	0	0	1	0	0	286	15	3	8	198	0	**523**
5:30 PM	to	5:45 PM	0	0	0	4	0	0	0	0	0	0	270	14	5	10	245	0	**548**
5:45 PM	to	6:00 PM	0	5	0	6	0	0	0	2	0	0	248	23	3	6	195	0	**488**
HOURLY TOTALS																			
4:00 PM	to	5:00 PM	0	7	0	21	0	0	0	1	0	0	1310	89	4	25	746	1	**2204**
4:15 PM	to	5:15 PM	0	10	0	17	0	0	0	1	0	0	1247	79	5	29	762	1	**2151**
4:30 PM	to	5:30 PM	0	14	0	21	0	0	0	2	0	0	1246	69	7	29	793	0	**2181**
4:45 PM	to	5:45 PM	0	13	0	17	0	0	0	2	0	0	1173	66	11	32	850	0	**2164**
5:00 PM	to	6:00 PM	0	16	0	19	0	0	0	3	0	0	1083	65	12	32	843	0	**2073**

PEAK HOUR SUMMARY

4:00 PM to 5:00 PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	
VOLUME	0	7	0	21	0	0	0	1	0	0	1310	89	4	25	746	1	**2204**
PHF BY MOVEMENT	0.00	0.88	0.00	0.66	0.00	0.00	0.00	0.25	0.00	0.00	0.95	0.89	0.50	0.78	0.92	0.25	OVERALL
PHF BY APPROACH	0.78				0.25				0.96				0.92				0.95
BICYCLE	0				0				1				3				**4**
PEDESTRIAN	0				0				24				26				**50**
	N-LEG				**S-LEG**				**E-LEG**				**W-LEG**				
PEDESTRIAN BY LEG:	26				24				0				0				**50**

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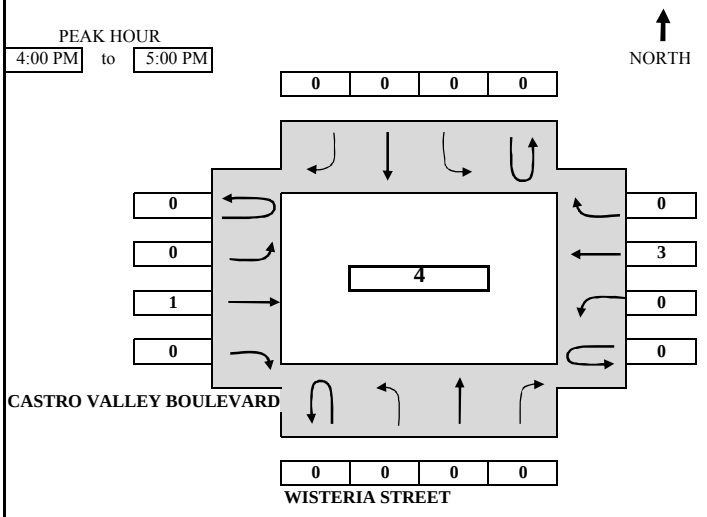
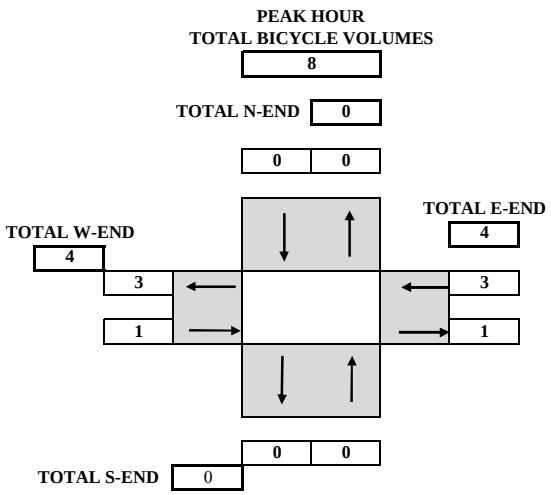
BICYCLE TURNING MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**	**DAY:**	**TUESDAY**
N-S APPROACH:	**WISTERIA STREET**	**SURVEY TIME:**	**4:00 PM**	**TO**	**6:00 PM**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**	**FILE:**	**3701005-2PM**





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

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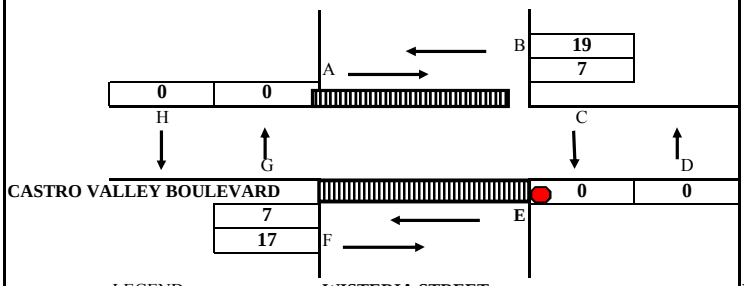
4:00 PM to 5:00 PM					
APPROACH VOLUME	NB	SB	EB	WB	TOTAL
BICYCLE	0	0	1	3	**4**

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

PEDESTRIAN MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**
N-S APPROACH:	**WISTERIA STREET**	**DAY:**	**TUESDAY**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**
SURVEY PERIOD:	**4:00 PM TO 6:00 PM**	**FILE:**	**3701005-2PM**

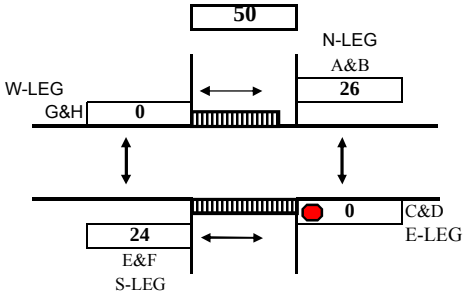
PEAK HOUR
04:00 PM TO 05:00 PM



LEGEND:
- CROSSWALK
- SIDEWALK
- STOP CONTROL LINE
- STOP

WISTERIA STREET

PEAK HOUR
TOTAL PEDESTRIAN VOLUMES



BY LEG:		BY DIRECTION:	
N-LEG	**26**	**NB**(D+G)	**0**
S-LEG	**24**	**SB**(C+H)	**0**
E-LEG	**0**	**EB**(A+F)	**24**
W-LEG	**0**	**WB**(B+E)	**26**

TIME PERIOD			NORTH X-WALK		EAST X-WALK		SOUTH X-WALK		WEST X-WALK		
From		**To**	***A***	***B***	***C***	***D***	***E***	***F***	***G***	***H***	***TOTAL***
SURVEY DATA											
04:00 PM	---	04:15 PM	1	4	0	0	1	0	0	0	***6***
04:15 PM	---	04:30 PM	4	9	0	0	2	2	0	0	***17***
04:30 PM	---	04:45 PM	5	18	0	0	4	12	0	0	***39***
04:45 PM	---	05:00 PM	7	19	0	0	7	17	0	0	***50***
05:00 PM	---	05:15 PM	15	22	0	0	9	20	0	0	***66***
05:15 PM	---	05:30 PM	25	28	0	0	12	24	0	0	***89***
05:30 PM	---	05:45 PM	27	37	0	0	14	28	0	0	***106***
05:45 PM	---	06:00 PM	28	43	0	0	17	28	0	0	***116***
TOTAL BY PERIOD											
04:00 PM	---	04:15 PM	1	4	0	0	1	0	0	0	***6***
04:15 PM	---	04:30 PM	3	5	0	0	1	2	0	0	***11***
04:30 PM	---	04:45 PM	1	9	0	0	2	10	0	0	***22***
04:45 PM	---	05:00 PM	2	1	0	0	3	5	0	0	***11***
05:00 PM	---	05:15 PM	8	3	0	0	2	3	0	0	***16***
05:15 PM	---	05:30 PM	10	6	0	0	3	4	0	0	***23***
05:30 PM	---	05:45 PM	2	9	0	0	2	4	0	0	***17***
05:45 PM	---	06:00 PM	1	6	0	0	3	0	0	0	***10***
HOURLY TOTALS											
04:00 PM	---	05:00 PM	7	19	0	0	7	17	0	0	***50***
04:15 PM	---	05:15 PM	14	18	0	0	8	20	0	0	***60***
04:30 PM	---	05:30 PM	21	19	0	0	10	22	0	0	***72***
04:45 PM	---	05:45 PM	22	19	0	0	10	16	0	0	***67***
05:00 PM	---	06:00 PM	21	24	0	0	10	11	0	0	***66***

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12:00 AM to 12:00 AM

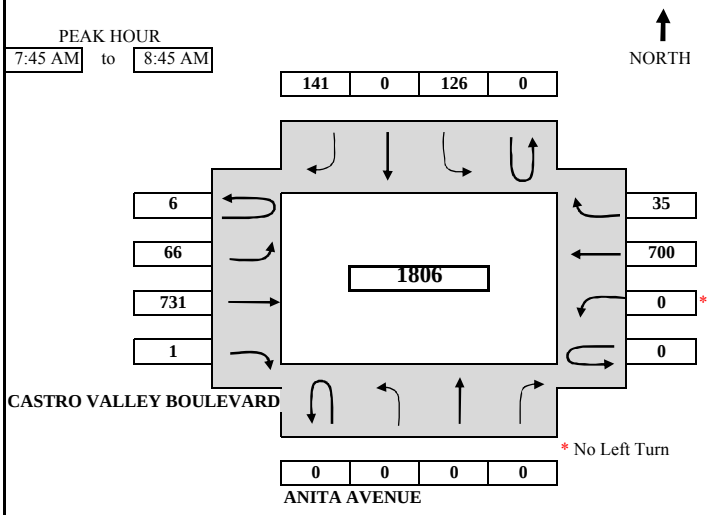
VOLUME BY DIRECTION	NB	SB	EB	WB	TOTAL
PEDESTRIAN	0	0	24	26	**50**
VOLUME BY LEG	**N-LEG**	**S-LEG**	**E-LEG**	**W-LEG**	**TOTAL**
PEDESTRIAN	26	24	0	0	**50**

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

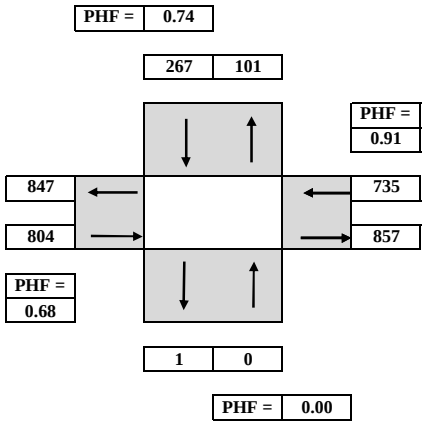
INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**	**DAY:**	**TUESDAY**
N-S APPROACH:	**ANITA AVENUE**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**	**FILE:**	**3701005-3AM**

PEAK HOUR 7:45 AM to 8:45 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD			NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
From		To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																			
7:00 AM	to	7:15 AM		0	0	0		5	0	23	2	11	76	0			118	5	**240**
7:15 AM	to	7:30 AM		0	0	0		23	0	46	2	22	174	0			221	8	**496**
7:30 AM	to	7:45 AM		0	0	0		37	0	69	4	39	347	0			355	10	**861**
7:45 AM	to	8:00 AM		0	0	0		83	0	113	6	62	618	0			511	19	**1412**
8:00 AM	to	8:15 AM		0	0	0		130	0	155	8	78	785	1			686	30	**1873**
8:15 AM	to	8:30 AM		0	0	0		147	0	176	9	93	921	1			882	37	**2266**
8:30 AM	to	8:45 AM		0	0	0		163	0	210	10	105	1078	1			1055	45	**2667**
8:45 AM	to	9:00 AM		0	0	0		169	0	233	3	115	1216	3			1180	52	**2971**
TOTAL BY PERIOD																			
7:00 AM	to	7:15 AM	0	0	0	0	0	5	0	23	2	11	76	0	0	0	118	5	**240**
7:15 AM	to	7:30 AM	0	0	0	0	0	18	0	23	0	11	98	0	0	0	103	3	**256**
7:30 AM	to	7:45 AM	0	0	0	0	0	14	0	23	2	17	173	0	0	0	134	2	**365**
7:45 AM	to	8:00 AM	0	0	0	0	0	46	0	44	2	23	271	0	0	0	156	9	**551**
8:00 AM	to	8:15 AM	0	0	0	0	0	47	0	42	2	16	167	1	0	0	175	11	**461**
8:15 AM	to	8:30 AM	0	0	0	0	0	17	0	21	1	15	136	0	0	0	196	7	**393**
8:30 AM	to	8:45 AM	0	0	0	0	0	16	0	34	1	12	157	0	0	0	173	8	**401**
8:45 AM	to	9:00 AM	0	0	0	0	0	6	0	23	-7	10	138	2	0	0	125	7	**304**
HOURLY TOTALS																			
7:00 AM	to	8:00 AM	0	0	0	0	0	83	0	113	6	62	618	0	0	0	511	19	**1412**
7:15 AM	to	8:15 AM	0	0	0	0	0	125	0	132	6	67	709	1	0	0	568	25	**1633**
7:30 AM	to	8:30 AM	0	0	0	0	0	124	0	130	7	71	747	1	0	0	661	29	**1770**
7:45 AM	to	8:45 AM	0	0	0	0	0	126	0	141	6	66	731	1	0	0	700	35	**1806**
8:00 AM	to	9:00 AM	0	0	0	0	0	86	0	120	-3	53	598	3	0	0	669	33	**1559**

PEAK HOUR SUMMARY

7:45 AM to 8:45 AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	
VOLUME	0	0	0	0	0	126	0	141	6	66	731	1	0	0	700	35	**1806**
PHF BY MOVEMENT	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.80	0.75	0.72	0.67	0.25	0.00	0.00	0.89	0.80	OVERALL
PHF BY APPROACH	0.00				0.74				0.68				0.91				0.82
BICYCLE	0				1				1				1				**3**
PEDESTRIAN	7				4				11				9				**31**
	N-LEG				**S-LEG**				**E-LEG**				**W-LEG**				
PEDESTRIAN BY LEG:	13				7				0				11				**31**

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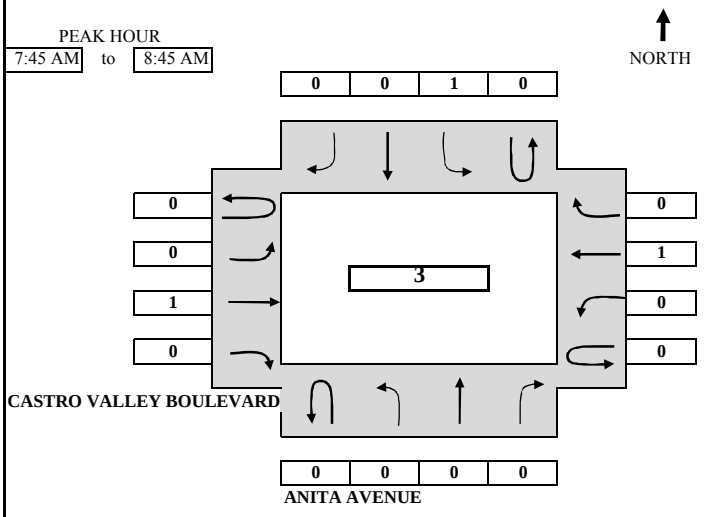
B.A.Y.M.E.T.R.I.C.S.

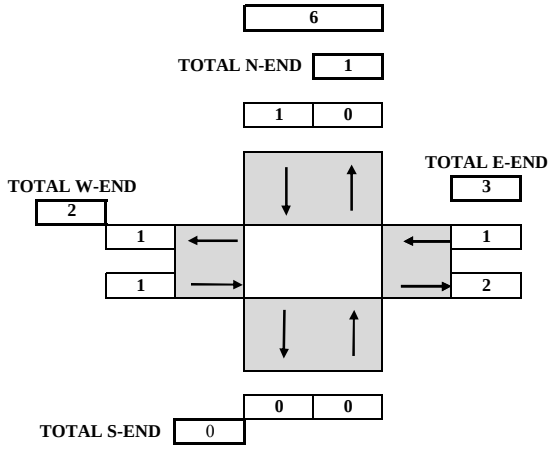
BICYCLE TURNING MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**	**DAY:**	**TUESDAY**
N-S APPROACH:	**ANITA AVENUE**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**	**FILE:**	**3701005-3AM**

PEAK HOUR 7:45 AM to 8:45 AM



PEAK HOUR TOTAL BICYCLE VOLUMES



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

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7:45 AM to 8:45 AM

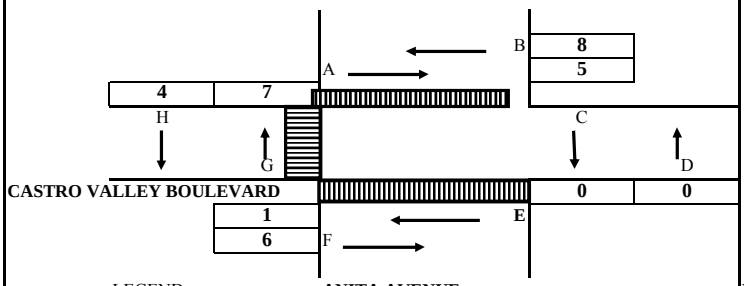
APPROACH VOLUME	NB	SB	EB	WB	TOTAL
BICYCLE	0	1	1	1	**3**

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

PEDESTRIAN MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**
N-S APPROACH:	**ANITA AVENUE**	**DAY:**	**TUESDAY**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**
SURVEY PERIOD:	**7:00 AM TO 9:00 AM**	**FILE:**	**3701005-3AM**

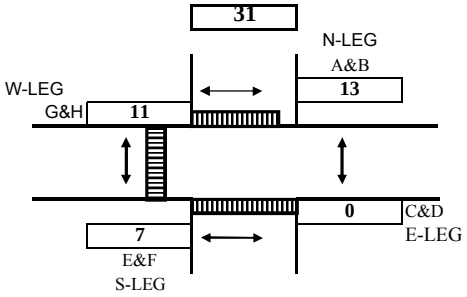
PEAK HOUR
07:45 AM TO 08:45 AM



LEGEND:
- CROSSWALK
- SIDEWALK
- STOP CONTROL LINE
- STOP

ANITA AVENUE

PEAK HOUR
TOTAL PEDESTRIAN VOLUMES



BY LEG:		**BY DIRECTION:**	
N-LEG	**13**	**NB**(D+G)	**7**
S-LEG	**7**	**SB**(C+H)	**4**
E-LEG	**0**	**EB**(A+F)	**11**
W-LEG	**11**	**WB**(B+E)	**9**

TIME PERIOD			**NORTH X-WALK**		**EAST X-WALK**		**SOUTH X-WALK**		**WEST X-WALK**		
From		**To**	***A***	***B***	***C***	***D***	***E***	***F***	***G***	***H***	***TOTAL***
SURVEY DATA											
07:00 AM	---	07:15 AM	0	3	0	0	2	1	2	1	***9***
07:15 AM	---	07:30 AM	1	3	0	0	3	6	2	2	***17***
07:30 AM	---	07:45 AM	12	3	0	0	5	6	5	3	***34***
07:45 AM	---	08:00 AM	13	5	0	0	5	10	8	4	***45***
08:00 AM	---	08:15 AM	13	7	0	0	5	11	11	6	***53***
08:15 AM	---	08:30 AM	17	9	0	0	6	11	12	7	***62***
08:30 AM	---	08:45 AM	17	11	0	0	6	12	12	7	***65***
08:45 AM	---	09:00 AM	19	13	0	0	6	13	13	9	***73***
TOTAL BY PERIOD											
07:00 AM	---	07:15 AM	0	3	0	0	2	1	2	1	***9***
07:15 AM	---	07:30 AM	1	0	0	0	1	5	0	1	***8***
07:30 AM	---	07:45 AM	11	0	0	0	2	0	3	1	***17***
07:45 AM	---	08:00 AM	1	2	0	0	0	4	3	1	***11***
08:00 AM	---	08:15 AM	0	2	0	0	0	1	3	2	***8***
08:15 AM	---	08:30 AM	4	2	0	0	1	0	1	1	***9***
08:30 AM	---	08:45 AM	0	2	0	0	0	1	0	0	***3***
08:45 AM	---	09:00 AM	2	2	0	0	0	1	1	2	***8***
HOURLY TOTALS											
07:00 AM	---	08:00 AM	13	5	0	0	5	10	8	4	***45***
07:15 AM	---	08:15 AM	13	4	0	0	3	10	9	5	***44***
07:30 AM	---	08:30 AM	16	6	0	0	3	5	10	5	***45***
07:45 AM	---	08:45 AM	5	8	0	0	1	6	7	4	***31***
08:00 AM	---	09:00 AM	6	8	0	0	1	3	5	5	***28***

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12:00 AM to 12:00 AM

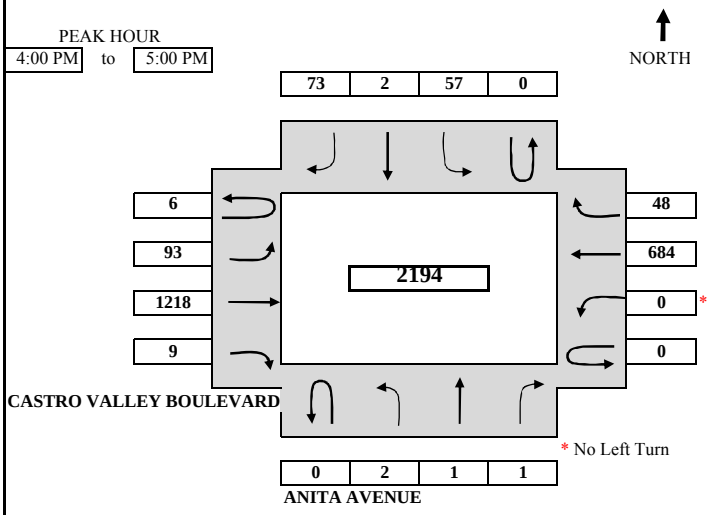
VOLUME BY DIRECTION	NB	SB	EB	WB	TOTAL
PEDESTRIAN	7	4	11	9	**31**
VOLUME BY LEG	**N-LEG**	**S-LEG**	**E-LEG**	**W-LEG**	**TOTAL**
PEDESTRIAN	13	7	0	11	**31**

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

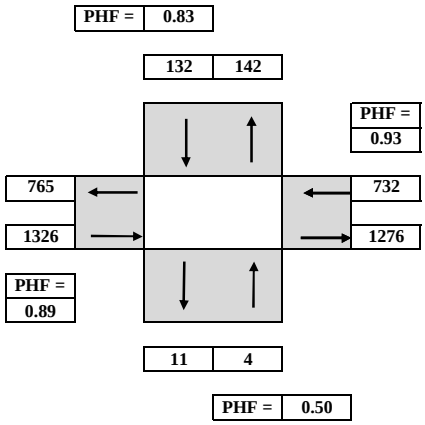
INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**	**DAY:**	**TUESDAY**
N-S APPROACH:	**ANITA AVENUE**	**SURVEY TIME:**	**4:00 PM**	**TO**	**6:00 PM**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**	**FILE:**	**3701005-3PM**

PEAK HOUR 4:00 PM to 5:00 PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD			NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
From		To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																			
4:00 PM	to	4:15 PM		0	1	0		13	0	17	1	19	299	2			176	11	**539**
4:15 PM	to	4:30 PM		0	1	0		33	0	29	2	36	587	3			335	23	**1049**
4:30 PM	to	4:45 PM		1	1	1		44	1	47	4	65	877	7			500	35	**1583**
4:45 PM	to	5:00 PM		2	1	1		57	2	73	6	93	1218	9			684	48	**2194**
5:00 PM	to	5:15 PM		2	2	2		74	2	84	6	112	1466	14			881	60	**2705**
5:15 PM	to	5:30 PM		3	2	2		85	2	99	7	139	1709	17			1069	73	**3207**
5:30 PM	to	5:45 PM		3	2	2		104	3	124	8	167	1963	18			1284	86	**3764**
5:45 PM	to	6:00 PM		3	2	2		117	4	141	9	185	2205	19			1458	100	**4245**
TOTAL BY PERIOD																			
4:00 PM	to	4:15 PM	0	0	1	0	0	13	0	17	1	19	299	2	0	0	176	11	**539**
4:15 PM	to	4:30 PM	0	0	0	0	0	20	0	12	1	17	288	1	0	0	159	12	**510**
4:30 PM	to	4:45 PM	0	1	0	1	0	11	1	18	2	29	290	4	0	0	165	12	**534**
4:45 PM	to	5:00 PM	0	1	0	0	0	13	1	26	2	28	341	2	0	0	184	13	**611**
5:00 PM	to	5:15 PM	0	0	1	1	0	17	0	11	0	19	248	5	0	0	197	12	**511**
5:15 PM	to	5:30 PM	0	1	0	0	0	11	0	15	1	27	243	3	0	0	188	13	**502**
5:30 PM	to	5:45 PM	0	0	0	0	0	19	1	25	1	28	254	1	0	0	215	13	**557**
5:45 PM	to	6:00 PM	0	0	0	0	0	13	1	17	1	18	242	1	0	0	174	14	**481**
HOURLY TOTALS																			
4:00 PM	to	5:00 PM	0	2	1	1	0	57	2	73	6	93	1218	9	0	0	684	48	**2194**
4:15 PM	to	5:15 PM	0	2	1	2	0	61	2	67	5	93	1167	12	0	0	705	49	**2166**
4:30 PM	to	5:30 PM	0	3	1	2	0	52	2	70	5	103	1122	14	0	0	734	50	**2158**
4:45 PM	to	5:45 PM	0	2	1	1	0	60	2	77	4	102	1086	11	0	0	784	51	**2181**
5:00 PM	to	6:00 PM	0	1	1	1	0	60	2	68	3	92	987	10	0	0	774	52	**2051**

PEAK HOUR SUMMARY

4:00 PM to 5:00 PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	
VOLUME	0	2	1	1	0	57	2	73	6	93	1218	9	0	0	684	48	**2194**
PHF BY MOVEMENT	0.00	0.50	0.25	0.25	0.00	0.71	0.50	0.70	0.75	0.80	0.89	0.56	0.00	0.00	0.93	0.92	OVERALL
PHF BY APPROACH	0.50				0.83				0.89				0.93				0.90
BICYCLE	0				1				3				3				**7**
PEDESTRIAN	6				6				23				29				**64**
	N-LEG				**S-LEG**				**E-LEG**				**W-LEG**				
PEDESTRIAN BY LEG:	22				30				0				12				**64**

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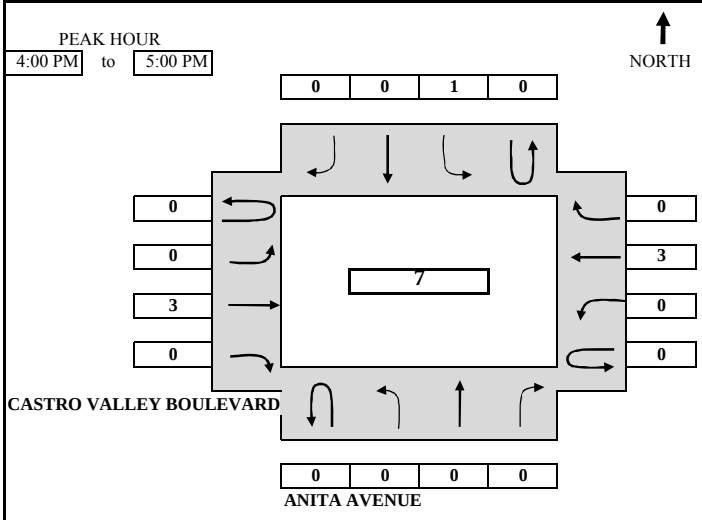
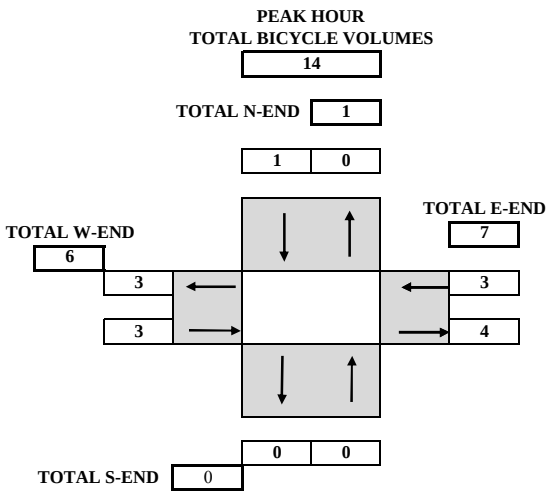
B.A.Y.M.E.T.R.I.C.S.

BICYCLE TURNING MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**	**DAY:**	**TUESDAY**
N-S APPROACH:	**ANITA AVENUE**	**SURVEY TIME:**	**4:00 PM**	**TO**	**6:00 PM**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**	**FILE:**	**3701005-3PM**





TIME PERIOD			NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
From		To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																			
4:00 PM	to	4:15 PM	0	0	0	0	0	1	0	0	0	0	2	0	0	0	1	0	**4**
4:15 PM	to	4:30 PM	0	0	0	0	0	1	0	0	0	0	2	0	0	0	1	0	**4**
4:30 PM	to	4:45 PM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	1	0	**5**
4:45 PM	to	5:00 PM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	3	0	**7**
5:00 PM	to	5:15 PM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	4	0	**8**
5:15 PM	to	5:30 PM	0	0	0	0	0	1	0	1	0	0	3	0	0	0	4	0	**9**
5:30 PM	to	5:45 PM	0	0	0	0	0	1	0	1	0	0	3	0	0	0	5	0	**10**
5:45 PM	to	6:00 PM	0	0	0	0	0	1	0	2	0	0	3	0	0	0	6	0	**12**
TOTAL BY PERIOD																			
4:00 PM	to	4:15 PM	0	0	0	0	0	1	0	0	0	0	2	0	0	0	1	0	**4**
4:15 PM	to	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:30 PM	to	4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**1**
4:45 PM	to	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	**2**
5:00 PM	to	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**1**
5:15 PM	to	5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
5:30 PM	to	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**1**
5:45 PM	to	6:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	**2**
HOURLY TOTALS																			
4:00 PM	to	5:00 PM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	3	0	**7**
4:15 PM	to	5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	**4**
4:30 PM	to	5:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	3	0	**5**
4:45 PM	to	5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	0	**5**
5:00 PM	to	6:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	0	**5**

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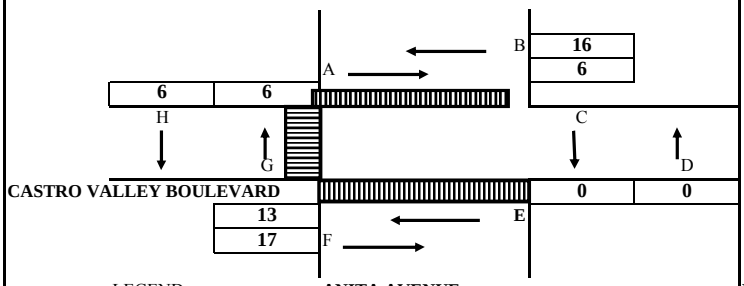
4:00 PM to 5:00 PM					
APPROACH VOLUME	NB	SB	EB	WB	TOTAL
BICYCLE	0	1	3	3	**7**

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

PEDESTRIAN MOVEMENT SUMMARY

PROJECT:	**TRAFFIC COUNTS IN CASTRO VALLEY**	**SURVEY DATE:**	**1/31/2017**
N-S APPROACH:	**ANITA AVENUE**	**DAY:**	**TUESDAY**
E-W APPROACH:	**CASTRO VALLEY BOULEVARD**	**JURISDICTION:**	**CASTRO VALLEY**
SURVEY PERIOD:	**4:00 PM TO 6:00 PM**	**FILE:**	**3701005-3PM**

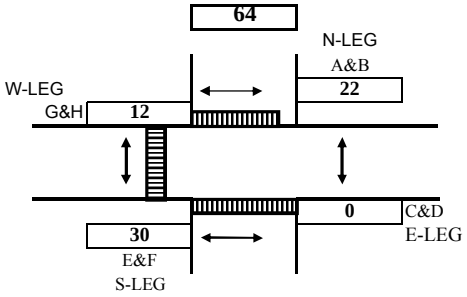
PEAK HOUR
04:00 PM TO 05:00 PM



LEGEND:
- CROSSWALK
- SIDEWALK
- STOP CONTROL LINE
- STOP

ANITA AVENUE

PEAK HOUR
TOTAL PEDESTRIAN VOLUMES



BY LEG:		**BY DIRECTION:**	
N-LEG	**22**	**NB**(D+G)	**6**
S-LEG	**30**	**SB**(C+H)	**6**
E-LEG	**0**	**EB**(A+F)	**23**
W-LEG	**12**	**WB**(B+E)	**29**

TIME PERIOD			**NORTH X-WALK**		**EAST X-WALK**		**SOUTH X-WALK**		**WEST X-WALK**		
From		**To**	***A***	***B***	***C***	***D***	***E***	***F***	***G***	***H***	***TOTAL***
SURVEY DATA											
04:00 PM	---	04:15 PM	1	5	0	0	3	2	1	1	***13***
04:15 PM	---	04:30 PM	4	8	0	0	4	8	1	3	***28***
04:30 PM	---	04:45 PM	4	15	0	0	8	14	4	4	***49***
04:45 PM	---	05:00 PM	6	16	0	0	13	17	6	6	***64***
05:00 PM	---	05:15 PM	10	16	0	0	15	18	6	9	***74***
05:15 PM	---	05:30 PM	14	19	0	0	19	25	10	14	***101***
05:30 PM	---	05:45 PM	16	23	0	0	22	27	15	17	***120***
05:45 PM	---	06:00 PM	17	29	0	0	25	29	18	17	***135***
TOTAL BY PERIOD											
04:00 PM	---	04:15 PM	1	5	0	0	3	2	1	1	***13***
04:15 PM	---	04:30 PM	3	3	0	0	1	6	0	2	***15***
04:30 PM	---	04:45 PM	0	7	0	0	4	6	3	1	***21***
04:45 PM	---	05:00 PM	2	1	0	0	5	3	2	2	***15***
05:00 PM	---	05:15 PM	4	0	0	0	2	1	0	3	***10***
05:15 PM	---	05:30 PM	4	3	0	0	4	7	4	5	***27***
05:30 PM	---	05:45 PM	2	4	0	0	3	2	5	3	***19***
05:45 PM	---	06:00 PM	1	6	0	0	3	2	3	0	***15***
HOURLY TOTALS											
04:00 PM	---	05:00 PM	6	16	0	0	13	17	6	6	***64***
04:15 PM	---	05:15 PM	9	11	0	0	12	16	5	8	***61***
04:30 PM	---	05:30 PM	10	11	0	0	15	17	9	11	***73***
04:45 PM	---	05:45 PM	12	8	0	0	14	13	11	13	***71***
05:00 PM	---	06:00 PM	11	13	0	0	12	12	12	11	***71***

Tel : (510) 232-1271 ***EMAIL: BAYMETRICS@GMAIL.COM***

12:00 AM to 12:00 AM

VOLUME BY DIRECTION	NB	SB	EB	WB	TOTAL
PEDESTRIAN	6	6	23	29	**64**
VOLUME BY LEG	**N-LEG**	**S-LEG**	**E-LEG**	**W-LEG**	**TOTAL**
PEDESTRIAN	22	30	0	12	**64**