



## REPORT TO MAYOR AND COUNCIL

**TO THE HONORABLE MAYOR AND COUNCIL:**

DATE: October 13, 2015

**SUBJECT: ADOPTION OF RESOLUTION NO. 15-3521.1 AUTHORIZING THE  
INSTALLATION OF ALL-WAY STOP CONTROL AT THE INTERSECTION OF  
ALMOND AVENUE AND MT. DIABLO STREET (GENERAL FUND)**

**Report in Brief**

A Pedestrian Safety Study was recently conducted by the City's Transportation Division at the intersection of Almond Avenue and Mt. Diablo Street (near Queen of All Saints School) based on concerns expressed by the community regarding vehicle-pedestrian conflicts at this intersection.

Based on this review, it was concluded that all-way STOP signs are justified at the intersection of Almond Avenue and Mt. Diablo Street to ensure pedestrian safety within this school zone.

Staff recommends that the City Council adopt Resolution No. 15-3521.1 authorizing the installation of All-Way STOP control at the intersection of Almond Avenue and Mt. Diablo Street for an estimated cost of \$3,000.

**Background**

Traffic consultant Omni-Means was recently hired by the City to review traffic conditions at the intersection of Almond Avenue and Mt. Diablo Street located north of downtown Concord. Members of the community in this area had expressed concerns regarding pedestrian safety at this intersection. This review was aimed at determining whether all-way STOP control is justified at the Almond Avenue/Mt. Diablo Street intersection. The findings of Omni-Means' review were summarized in a Pedestrian Safety Study (Study) which is included in Attachment 2.

By way of background, the Almond Avenue/Mt. Diablo Street intersection is a four-leg intersection located within a residential neighborhood and is adjacent to Queen of All Saints School as well as a facility for people with special needs. Almond Avenue extends in an east-west direction providing access to residential neighborhoods, Queen of All Saints School and Mt. Diablo High School. Mt. Diablo Street is oriented in a north-south direction and dead-ends one block north of Almond Avenue. It extends south from the intersection through downtown Concord. There are no existing STOP signs controlling any of the approaches to the intersection. There is, however, a drainage dip across Almond Avenue on the east side of the intersection which requires vehicles to slow down when crossing the dip.

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Pedestrian crosswalks (yellow striped) are marked crossing Mt. Diablo Street, but there are no crosswalks across Almond Avenue. There are paved sidewalks on both sides of each street and ADA curb ramps located on all four corners of the intersection. Street parking is allowed on both streets.

Almond Avenue and Mt. Diablo Street near the intersection serve as drop-off and pick-up locations for Queen of All Saints School. The school has gates to the school grounds at the north end of Mt. Diablo Street that parents drive through to drop off or pick up their children. During the morning period and midday afternoon period, vehicle queues can temporarily occur on both Mt. Diablo Street (northbound) and Almond Avenue (westbound) before the gates are opened. Once the school gates are opened, the vehicle queues dissipate. Children are also dropped off and picked up on Almond Avenue east of Mt. Diablo Street.

Street parking demand is moderate outside of the school peak periods. During the school peak times, parking demand on the block of Almond Avenue east of Mt. Diablo Street becomes fully occupied and occasionally some vehicles are double-parked. During these times, sight distances for pedestrians crossing the intersection can be limited due to the presence of vehicles.

**Discussion**

As part of the intersection review reported in the Study, traffic volume counts were conducted at the Almond Avenue/Mt. Diablo Street intersection during times selected to correspond with periods of higher activity at the intersection. Average daily traffic (ADT or 24-hour) counts were conducted on all four approaches to the intersection on school days and when the nearby Farmers Market and live music performances were occurring. The ADT counts provide hourly volume data for the all-way STOP control warrant analysis.

In addition to ADT volumes, peak hour intersection turning movement counts (including pedestrians and bicycles) were conducted at the intersection during peak periods, including the morning (7:00-9:00 AM), afternoon (1:00-4:00 PM) and evening (4:00-8:00 PM) periods.

Vehicle speed surveys were conducted on Almond Avenue and on Mt. Diablo Street approaching the intersection. Accident history through the previous five calendar years was also reviewed.

The all-way STOP control warrant analysis conducted by Omni-Means was based on the latest criteria found in the California Manual on Uniform Traffic Control Devices (CaMUTCD). As stated in the CaMUTCD, *“Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all other road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.”*

The intersection was evaluated for all-way STOP control based on CaMUTCD criteria, including reported collisions in a recent 12-month period, minimum traffic volumes entering the intersection, and other engineering judgment considerations taking into account overall pedestrian safety and traffic flow.

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**Intersection Conditions**

Pedestrian crossing activity near the Almond Avenue/Mt. Diablo Street intersection consists primarily of school children/parents at the beginning and ending times of the school day. The total crossing volumes collected in the field ranged from 61 to 75 pedestrians during the morning peak hour and 51 to 54 pedestrians during the afternoon peak hour of school dismissal. Outside of the school peak hours, volumes are lower, ranging from 4 to 27 total pedestrian crossings in one hour. However, a portion of the pedestrians consists of special needs adults living near the intersection.

At times during the school peak periods, sight distance at the intersection can be limited due to the presence of queued vehicles and/or parked vehicles near the intersection. During these times, pedestrians and motorists must extend slightly into the intersection in order to see approaching vehicles clearly and safely cross the street. As noted, the intersection has no existing STOP signs controlling any of the approaches to the intersection.

The reported accident history was evaluated for the five year period from January 2010 to the present time as part of the Study. There have been no reported accidents at the intersection during the evaluated timeframe.

Almond Avenue and Mt. Diablo Street have a 25 mph speed limit in the area. Radar speed surveys were conducted as part of the Study, which identified 85<sup>th</sup> percentile speeds (the speed at which 85% of all surveyed vehicles travel at or below) on both streets. The 85<sup>th</sup> percentile speed is the standard measure used in evaluating speeds. The surveys identified 85<sup>th</sup> percentile speeds of 24 mph on Almond Avenue and 21 mph on Mt. Diablo Street approaching the intersection.

**Study Findings**

The Almond Avenue/Mt. Diablo Street intersection was evaluated based on the CaMUTCD all-way STOP control warrant analysis. The vehicle and pedestrian volumes collected in the Study were applied against the volume thresholds specified in the CaMUTCD. Based on this analysis, it was found that all-way STOP control is not warranted at this intersection purely on the basis of traffic volumes.

However, the CaMUTCD also provides supplemental criteria when considering all-way STOP Control at an intersection. These pertain to potential vehicle-pedestrian conflicts and vehicle circulation through the intersection and are based on engineering judgment.

**Install All-Way STOP Control at Almond Avenue/Mt. Diablo Street.** This intersection was noted in the Study for its proximity to Queen of All Saints School and Mt. Diablo High School and other pedestrian generating sources, combined with the vehicle queuing characteristics during school times. The City's Transportation Manager has reviewed the Study findings and determined that the installation of all-way STOP control is justified at this intersection based on the following factors:

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- Vehicle volumes increase substantially before and after school during the same period of time when pedestrian crossing volumes are highest;
- Limited sight distance at the intersection for motorists and pedestrians (due to queued and parked vehicles during school times) increases the potential for pedestrian-vehicle conflicts;
- No vehicular controls are currently in place at the Almond Avenue/Mt. Diablo Street intersection to establish right-of-way during the busiest periods;
- Pedestrian crossing activity by children and special needs adults occurring throughout the day and evening is not protected; and
- Mt. Diablo Street and Almond Avenue serve as a route to school for both parents and children of Queen of All Saints School and Mt. Diablo High School.

With all-way STOP control, the intersection level of service (LOS) operating conditions would remain acceptable at LOS A during the morning, midday afternoon, and evening peak hours.

Based on these factors, all-way STOP control is recommended by the Transportation Manager at the Almond Avenue/Mt. Diablo Street intersection. If approved by the City Council, the proposed installation of all-way STOP control will include a STOP sign with an ALL WAY supplemental sign for each approach to the intersection. Additionally, marked yellow crosswalks will be installed across Almond Avenue on both sides of the intersection for improved crossing safety.

Furthermore, solar-powered red flashing lights will be installed on a temporary basis (i.e., for a period of 30 days) on top of the new STOP signs for nighttime visibility of the signs. The temporary flashing lights will be removed at the conclusion of the 30-day warning period.

The Concord Police Department has been notified of the proposed all-way STOP signs installation at the Almond Avenue/Mt. Diablo Street intersection.

**Fiscal Impact**

If approved by the City Council, a total of four STOP signs will be installed to bring the intersection of Almond Avenue and Mt. Diablo Street to All-Way STOP control as specified in this report. Additionally, the City will install new pavement markings and crosswalks and will remove/relocate existing signs as appropriate for safe and efficient intersection operations.

The total cost for these improvements is estimated at \$3,000. Sufficient funds are available in the City's operating budgets for Transportation Planning and Signs & Markings in FY 2015-16 to cover this cost.

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These improvements will be implemented by Public Works Maintenance staff upon City Council approval of the proposed STOP signs installation.

**Public Contact**

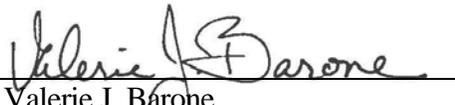
Posting of the Council Agenda provides public notification. Additionally, Staff has notified occupants and property owners of residences and businesses located within the geographic area bounded by Mt. Diablo High School to the north, Grant Street to the east, Bonifacio Street to the south, and Galindo Street to the west. This area extends beyond the 300-foot radius requirement for notification.

The public notice was mailed to 75 recipients to inform them that All-Way STOP sign control was being considered by the City Council at the Almond Avenue/Mt. Diablo Street intersection. No feedback or comments have been received to date regarding this proposal.

**Recommendation for Action**

Staff recommends that the City Council adopt Resolution No. 15-3521.1 authorizing the installation of All-Way STOP control at the intersection of Almond Avenue and Mt. Diablo Street for an estimated cost of \$3,000.

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Attachment 1: Proposed Resolution No. 15-3521.1 Amending the Traffic Resolution, Section C, Stop Intersections  
Attachment 2: Omni-Means' Study Report

BEFORE THE CITY COUNCIL OF THE CITY OF CONCORD  
COUNTY OF CONTRA COSTA, STATE OF CALIFORNIA

A Resolution Amending the Traffic Resolution,  
Section C, Stop Intersections

Resolution No. 15-3521.1

WHEREAS, the Transportation Manager has recommended that the Traffic Resolution be amended by adding stop signs at the following intersections:

- 1. Almond Avenue and Mt. Diablo Street (all-way stop); and

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF CONCORD DOES  
RESOLVE AS FOLLOWS:

Section 1. That the Transportation Manager is authorized and directed to remove and install the appropriate signs and markings to effectuate this resolution.

Section 2. This resolution shall become effective immediately upon its passage and adoption.

PASSED AND ADOPTED by the City Council of the City of Concord on October 13, 2015, by the following vote:

AYES: Councilmembers -

NOES: Councilmembers -

ABSTAIN: Councilmembers -

ABSENT: Councilmembers -

I HEREBY CERTIFY that the foregoing Resolution No. 15-3521.1 was duly and regularly adopted at a regular meeting of the City Council of the City of Concord on October 13, 2015.

APPROVED AS TO FORM:

By \_\_\_\_\_  
Joelle Fockler  
City Clerk

\_\_\_\_\_  
Mark Coon  
City Attorney

***FINAL REPORT***

**TRAFFIC ANALYSIS REGARDING  
MULTI-WAY STOP CONTROL  
FOR THE**

**ALMOND AVE. / MT. DIABLO ST.  
INTERSECTION**

**IN THE CITY OF  
CONCORD, CA**

**September 21, 2015**

Prepared by:  
**Omni-Means, Ltd.  
Engineers & Planners  
1901 Olympic Blvd., Suite 120  
Walnut Creek, CA 94596**

*R2054TIA002 / 35-2272-42*



## Introduction

This report provides a focused operations analysis for the Almond Avenue / Mt. Diablo Street intersection in the City of Concord in regards to potential installation of all-way (multi-way) stop controls. The analysis was conducted based on an evaluation of vehicular and pedestrian volumes and safety issues pertaining to the intersection operation. The following sections describe the data collection effort, including daily and peak hour traffic volumes, pedestrian/bicycle flows, accident history, and vehicle speeds. Based on the data, multi-way stop control (MWSC) warrants were evaluated. Recommendations regarding vehicle control have been suggested for the study intersection.

## Existing Intersection / Field Observations

The Almond Avenue / Mt. Diablo Street intersection is a four-leg intersection located within a residential neighborhood and is adjacent to the Queen of All Saints School as well as a facility for people with special needs. Almond Avenue extends in an east-west direction providing access to residential units, the Queen of All Saints School, and Mt. Diablo High School. Mt. Diablo Street is oriented in a north-south direction. One block north of Almond Avenue it dead-ends. It extends south from the intersection through downtown Concord. There are no existing intersection approach controls. There is, however, a drainage dip across Almond Avenue on the east side of the intersection which requires vehicles to slow down when crossing. Pedestrian crosswalks (yellow striped) are marked crossing Mt. Diablo Street, but there are no crosswalks across Almond Avenue. There are paved sidewalks on both sides of each street and accessible curb-cutout ramps are located on all four corners of the intersection. Street parking is allowed on both streets.

Almond Avenue and Mt. Diablo Street near the intersection serve as drop-off and pick-up locations for the Queen of All Saints School. The school has gates to the school grounds at the north end of Mt. Diablo Street that parents drive through to drop-off or pick up their children. During the AM period and mid-day afternoon period, vehicle queues can temporarily occur on both Mt. Diablo Street (northbound) and Almond Avenue (westbound) before the gates are opened. Once the school gates are opened, the vehicle queues dissipate. Children are also dropped off and picked up on Almond Avenue east of Mt. Diablo Street. Street parking demand is moderate outside of the school peak periods. During the school peaks, parking demand on the block of Almond Avenue east of Mt. Diablo Street becomes fully occupied and occasionally some vehicles are double-parked. During these times, sight distances for pedestrians crossing the intersection can be limited due to the presence of the vehicles.

## Data Collection

Traffic volume counts were conducted at the intersection during times selected to correspond with periods of activity at the intersection. Average daily traffic (ADT or 24-hour) counts were conducted on all four approaches to the intersection on school days and when the nearby farmers market with live music performances were occurring.<sup>1</sup> The ADT counts provide hourly sub-total volume data for the multi-way stop control warrant checks.

In addition to ADT volumes, peak hour intersection turning movement counts, including pedestrian and bicycles, were conducted at the intersection during peak AM (7:00-9:00 am), afternoon (1:00-4:00 pm) and evening (4:00-8:00 pm) periods.<sup>2</sup>

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<sup>1</sup> Baymetrics Traffic Resources, *Average Daily Traffic (ADT) counts, Mt. Diablo Street & Almond Avenue (all approaches), August 27 & September 1, 2015.*

<sup>2</sup> Omni-Means Engineers and Planners, *Peak Period Counts, 8/11/15, 8/27/15, & 9/1/15.*

Vehicle speed surveys were conducted on Almond Avenue and Mt. Diablo Street approaching the intersection. Accident histories through the previous five calendar years have been provided by City Transportation staff.<sup>3</sup>

## **Multi-Way Stop Control Warrant**

The multi-way stop control warrant is based on the latest criteria found in the California Manual on Uniform Traffic Control Devices (CaMUTCD).<sup>4</sup> As stated in the manual, "Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all other road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal."

### *Guidance:*

*A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*

*B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*

### *C. Minimum volumes:*

*1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*

*2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour;*

*but*

*3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 & 2.*

*D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*

Other criteria that may be considered in an engineering study include:

*A. The need to control left-turn conflicts;*

*B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;*

*C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and*

*D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.'*

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<sup>3</sup> City of Concord, Accident history for the Almond Avenue /Mt. Diablo Street Intersection (1/1/2010-7/31/2015).

<sup>4</sup> Caltrans, Manual on Uniform Traffic Control Devices (MUTCD), Section 2B.07 Multi-Way Stop Applications, 2014 Edition.

The study intersection was evaluated for multi-way stop control based on the above criteria and engineering judgment taking into account overall pedestrian safety and traffic flow.

### **Almond Avenue / Mt. Diablo St. Intersection Conditions**

Pedestrian activity near the Almond Avenue / Mt. Diablo Street intersection consists primarily of school children/parents at the beginning and ending times of the school day. The total crossing volumes ranged from 61-75 pedestrians during the a.m. peak hour and 51-54 pedestrians during the afternoon peak hour of school dismissal. Outside of the school peak hours, volumes are lower, ranging from 4 to 27 total pedestrian crossings in an hour. However, a portion of the pedestrians consist of special needs adults living near the intersection.

At times during the school peak periods, sight distance at the intersection can be limited due to the presence of queued vehicles and/or parked vehicles near the intersection. During these times, pedestrians and motorists must extend slightly into the intersection in order to see approaching vehicles clearly and safely cross the street. As noted, the intersection has no existing vehicle controls.

The recorded accident history was evaluated for the five year period from January 2010 through July 2015 for this study. The recorded accident history is the source used by transportation engineers in assessing accident history. A location may have unrecorded accidents in addition to the recorded ones. However, unrecorded accidents cannot be scientifically evaluated. Records from the City of Concord and California Highway Patrol database, known as the Statewide Integrated Traffic Records System (SWITRS), were reviewed for this analysis. There have been no recorded accidents at the intersection during the evaluated time frame.

Almond Avenue and Mt. Diablo Street have a 25 mph speed limit in the area. For this study, radar speed surveys were conducted which identified 85<sup>th</sup> percentile speeds (the speed at which 85% of all surveyed vehicles travel at or below). The 85<sup>th</sup> percentile speed is the standard measure used in evaluating speeds. The surveys identified 85<sup>th</sup> percentile speeds of 24.0 mph on Almond Avenue and 20.9 mph on Mt. Diablo Street approaching the intersection. The speeds are less than 40 mph, therefore no adjustment is made for the MUTCD multi-way stop control volume threshold levels.

### **Findings / Recommendations**

The Almond Avenue/Mt. Diablo Street intersection was evaluated based on the MUTCD multi-way stop control warrants. The vehicle and pedestrian volumes were applied to the volume thresholds and are summarized in Table 1. As shown, the intersection does not qualify for multi-way stop control based on the volume warrants

However, the CaMUTCD also provides supplemental criteria when considering multi-way stop controls. These pertain to potential vehicle/pedestrian conflicts and vehicle circulation through the intersection and are based more on engineering judgment.

Given the intersection's proximity to the school and other pedestrian generating sources, combined with the vehicle queuing characteristics during school times, multi-way stop control installation could be considered for the intersection based on the following reasons:

- Vehicle volumes increase substantially before and after school during the same period of time when pedestrian crossing volumes are highest;
- Limited sight distance at the intersection for motorists and pedestrians due to queued and parked vehicles during school times increases potential for pedestrian/vehicle conflicts;
- No existing vehicular controls at the Mt. Diablo Street/Almond Avenue intersection to establish right-of-way during the busiest periods;
- Pedestrian crossing activity by children and special needs adults occurring throughout the day and evening;
- Mt. Diablo Street and Almond Avenue serve as a route to school for both parents and children of Queen of All Saints School and Mt. Diablo High School.

With multi-way stop control, the LOS operating conditions would remain optimal (LOS A) and vehicle queues would be acceptable (2-3 vehicles). (LOS and queuing calculation worksheets are attached.)

For the above reasons, all-way stop control could be considered for the Almond Avenue / Mt. Diablo Street intersection. Installation of all-way stop control should include a STOP sign (R-1) with ALL WAY supplemental plaque (R1-3P) for each approach to the intersection. Additionally, installation of marked yellow crosswalks could also be considered across Almond Avenue on both sides of the intersection.

**TABLE 1  
ALMOND AVE. / MT. DIABLO ST. INTERSECTION: VOLUME WARRANTS FOR ALL-WAY STOP CONTROL**

TRAFFIC OPERATIONS ANALYSES CaMUTCD (STATE) CRITERIA FOR ALL-WAY STOP INSTALLATION VOLUME WARRANT CHECKLIST <sup>1</sup>		Multi-way stop sign installation may be considered... <b>VOLUME</b>										Volume Warrant Met?
		If: 85th %-ile speed is < 40 mph Then: Major street volume must average at least 300 vehicles per hour for any eight hours And combined minor street cars & pedestrians must average at least 200 units. <sup>2</sup>										
Major St.	Minor St.	Speed	Hour 1	Hour 2	Hour 3	Hour 4	Hour 5	Hour 6	Hour 7	Hour 8	Hrly. Ave.	
Almond Ave.	Mt. Diablo St.	< 40	Time: 3-4 pm	8-9 am	4-5 pm	5-6 pm	7-8 am	2-3 pm	7-8 pm	10-11 am		<b>No</b>
		Major St.:	91	70	64	56	49	40	34	22	53	
		Minor St.:	49	32	41	29	58	38	10	18	34	
		+ Peds.:	54	26	9	14	75	8	11	n.a.	28	
			103	58	50	43	133	46	21	n.a.	62	

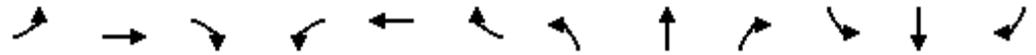
<sup>1</sup> Additional criteria (other than volumes) may be considered as described in the CaMUTCD Manual.

<sup>2</sup> Vehicle volumes from 24-hour machine tube counts and peak hour turning counts (8/11/15, 8/27/15 & 9/1/15).

n.a. = Not Available (not counted during off-peak hours). Though not counted, these are off-peak volumes which would be lower than the identified peak hour volumes.

HCM Unsignalized Intersection Capacity Analysis  
 1: Almond Ave. & Mt. Diablo St.

Existing AM Pk. Hr. (Thurs. 8/27/15)  
 With All-Way Stop



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	2	1	6	10	5	4	4	5	6	6	0
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	0	3	1	9	15	7	6	6	7	9	9	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	4	31	19	18
Volume Left (vph)	0	9	6	9
Volume Right (vph)	1	7	7	0
Hadj (s)	-0.17	-0.05	-0.14	0.13
Departure Headway (s)	3.8	3.9	3.9	4.1
Degree Utilization, x	0.00	0.03	0.02	0.02
Capacity (veh/h)	920	902	911	860
Control Delay (s)	6.9	7.1	6.9	7.2
Approach Delay (s)	6.9	7.1	6.9	7.2
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.1	
HCM Level of Service		A	
Intersection Capacity Utilization	19.1%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
 1: Almond Ave. & Mt. Diablo St.

Existing Mid-day Pk. Hr. (Thurs. 8/27/15)  
 With All-Way Stop



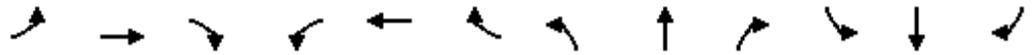
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	6	2	21	10	26	0	30	14	2	0	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	1	9	3	30	14	37	0	43	20	3	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	13	81	63	3
Volume Left (vph)	1	30	0	3
Volume Right (vph)	3	37	20	0
Hadj (s)	-0.08	-0.17	-0.16	0.23
Departure Headway (s)	4.0	3.9	3.9	4.4
Degree Utilization, x	0.01	0.09	0.07	0.00
Capacity (veh/h)	868	907	882	796
Control Delay (s)	7.1	7.3	7.2	7.4
Approach Delay (s)	7.1	7.3	7.2	7.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.2	
HCM Level of Service		A	
Intersection Capacity Utilization	25.7%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
 1: Almond Ave. & Mt. Diablo St.

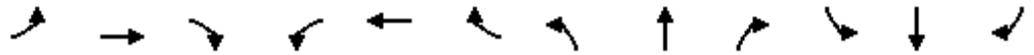
Existing PM Pk. Hr. (Thurs. 8/27/15)  
 With All-Way Stop



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	13	3	12	11	4	0	2	5	3	6	1
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	1	19	4	17	16	6	0	3	7	4	9	1
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	25	39	10	14								
Volume Left (vph)	1	17	0	4								
Volume Right (vph)	4	6	7	1								
Hadj (s)	-0.06	0.03	-0.39	0.03								
Departure Headway (s)	3.9	4.0	3.7	4.1								
Degree Utilization, x	0.03	0.04	0.01	0.02								
Capacity (veh/h)	903	887	955	864								
Control Delay (s)	7.0	7.2	6.7	7.1								
Approach Delay (s)	7.0	7.2	6.7	7.1								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.1									
HCM Level of Service			A									
Intersection Capacity Utilization			28.6%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 1: Almond Ave. & Mt. Diablo St.

Existing AM Pk. Hr. (Tues. 9/1/15)  
 With All-Way Stop



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	4	1	37	11	29	2	17	6	11	40	0
Peak Hour Factor	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Hourly flow rate (vph)	2	10	2	92	28	72	5	42	15	28	100	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	15	193	63	128
Volume Left (vph)	3	93	5	28
Volume Right (vph)	3	73	15	0
Hadj (s)	-0.03	-0.10	-0.09	0.08
Departure Headway (s)	4.5	4.3	4.4	4.5
Degree Utilization, x	0.02	0.23	0.08	0.16
Capacity (veh/h)	748	801	765	751
Control Delay (s)	7.6	8.5	7.8	8.4
Approach Delay (s)	7.6	8.5	7.8	8.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay		8.3	
HCM Level of Service		A	
Intersection Capacity Utilization	30.2%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
 1: Almond Ave. & Mt. Diablo St.

Existing Mid-day Pk. Hr. (Tues. 9/1/15)  
 With All-Way Stop



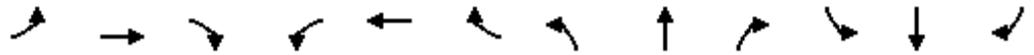
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	3	12	3	34	16	13	5	15	15	6	1	2
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	4	16	4	45	21	17	7	20	20	8	1	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	24	83	46	12
Volume Left (vph)	4	45	7	8
Volume Right (vph)	4	17	20	3
Hadj (s)	-0.03	0.02	-0.19	0.03
Departure Headway (s)	4.1	4.1	3.9	4.2
Degree Utilization, x	0.03	0.09	0.05	0.01
Capacity (veh/h)	863	869	878	828
Control Delay (s)	7.2	7.5	7.2	7.3
Approach Delay (s)	7.2	7.5	7.2	7.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.3	
HCM Level of Service		A	
Intersection Capacity Utilization	24.0%	ICU Level of Service	A
Analysis Period (min)		15	

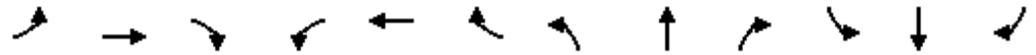
HCM Unsignalized Intersection Capacity Analysis  
 1: Almond Ave. & Mt. Diablo St.

Existing PM Pk. Hr. (Tues. 9/1/15)  
 With All-Way Stop



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	15	1	7	10	1	5	3	14	3	1	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	19	1	9	13	1	6	4	18	4	1	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	20	23	28	5								
Volume Left (vph)	0	9	6	4								
Volume Right (vph)	1	1	18	0								
Hadj (s)	0.00	0.08	-0.30	0.18								
Departure Headway (s)	4.0	4.1	3.7	4.2								
Degree Utilization, x	0.02	0.03	0.03	0.01								
Capacity (veh/h)	889	873	950	843								
Control Delay (s)	7.1	7.2	6.8	7.2								
Approach Delay (s)	7.1	7.2	6.8	7.2								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.0									
HCM Level of Service			A									
Intersection Capacity Utilization			20.1%	ICU Level of Service								A
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis Existing PM Pk. Hr. (Tues. 8/11/15, Music)  
 1: Almond Ave. & Mt. Diablo St. With All-Way Stop



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	2	1	6	10	5	4	4	5	6	6	0
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	0	3	1	9	15	7	6	6	7	9	9	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	4	31	19	18
Volume Left (vph)	0	9	6	9
Volume Right (vph)	1	7	7	0
Hadj (s)	-0.17	-0.05	-0.14	0.13
Departure Headway (s)	3.8	3.9	3.9	4.1
Degree Utilization, x	0.00	0.03	0.02	0.02
Capacity (veh/h)	920	902	911	860
Control Delay (s)	6.9	7.1	6.9	7.2
Approach Delay (s)	6.9	7.1	6.9	7.2
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.1	
HCM Level of Service		A	
Intersection Capacity Utilization	19.1%		ICU Level of Service A
Analysis Period (min)		15	

Intersection: 1: Almond Ave. & Mt. Diablo St.

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	32	32	32
Average Queue (ft)	2	18	11	11
95th Queue (ft)	14	43	35	35
Link Distance (ft)	326	317	272	272
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Almond Ave. & Mt. Diablo St.

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LR
Maximum Queue (ft)	32	54	53	25
Average Queue (ft)	7	28	23	2
95th Queue (ft)	29	51	50	16
Link Distance (ft)	326	317	272	272
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Almond Ave. & Mt. Diablo St.

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	39	32	32
Average Queue (ft)	14	21	4	9
95th Queue (ft)	41	46	22	32
Link Distance (ft)	326	317	272	272
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Almond Ave. & Mt. Diablo St.

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	59	41	51
Average Queue (ft)	7	31	18	25
95th Queue (ft)	29	51	44	49
Link Distance (ft)	326	317	272	272
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Almond Ave. & Mt. Diablo St.

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	54	41	32
Average Queue (ft)	13	30	19	7
95th Queue (ft)	39	51	45	29
Link Distance (ft)	326	317	272	272
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Almond Ave. & Mt. Diablo St.

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	47	40	32
Average Queue (ft)	12	14	18	6
95th Queue (ft)	37	41	44	25
Link Distance (ft)	326	317	272	272
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Almond Ave. & Mt. Diablo St.

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	32	32	32
Average Queue (ft)	2	18	11	11
95th Queue (ft)	14	43	35	35
Link Distance (ft)	326	317	272	272
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

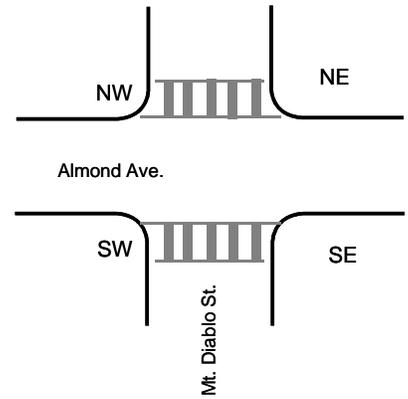
Network wide Queuing Penalty: 0

**Mt. Diablo St. @ Almond Ave.**

**Pedestrian Counts**

Date: 8/27/2015 Thurs.

Time	Number of Pedestrians					Comments: A = Adult, T = Teen, C = Child B= Bike
	NE - SE	NW-SW	NW - NE	SW - SE	SUM	
<b>AM</b>						
7:00-7:14	0	1	0	1	2	0 / 1A / 0 / 1A
7:15-7:29	3	1	5	2	11	2A,1C / 1A / 5T / 2T
7:30-7:44	12	1	13	0	26	8A,4C / 1A / 1A,11T,1C / 0
7:45-7:59	22	1	7	6	36	11A,11C / 1T / 2A,4T,1C / 1A,5T
<b>HRLY TOTAL</b>	<b>37</b>	<b>4</b>	<b>25</b>	<b>9</b>	<b>75</b>	<b>21A,16C / 3A,1T / 3A,20T,2C / 2A,7T</b>
8:00-8:14	4	0	10	6	20	4T / 0 / 9T,1TB / 6T
8:15-8:29	2	0	0	0	2	1A,1T / 0 / 0 / 0
8:30-8:44	0	1	0	0	1	0 / 1A / 0 / 0
8:45-8:59	0	0	2	1	3	0 / 0 / 2TB / 1A
<b>HRLY TOTAL</b>	<b>6</b>	<b>1</b>	<b>12</b>	<b>7</b>	<b>26</b>	<b>1A,5T / 1A / 9T,3TB / 1A,6T</b>
9:00 - 9:14					0	
9:15 - 9:29					0	
9:30 - 9:44					0	
9:45 - 9:59					0	
<b>HRLY TOTAL</b>					<b>0</b>	
<b>Midday</b>						
1:00-1:14	0	0	0	0	0	0 / 0 / 0 / 0
1:15-1:29	0	0	1	0	1	0 / 0 / 1A / 0
1:30-1:44	0	0	1	0	1	0 / 0 / 1A / 0
1:44-1:59	0	0	0	4	4	0 / 0 / 0 / 4A
<b>HRLY TOTAL</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>0 / 0 / 2A / 4A</b>
2:00-2:14	0	0	0	0	0	0 / 0 / 0 / 0
2:15-2:29	0	0	2	1	3	0 / 0 / 2A / 1AB
2:30-2:44	0	0	0	0	0	0 / 0 / 0 / 0
2:45-2:59	3	1	1	0	5	3A / 1A / 1A / 0
<b>HRLY TOTAL</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>8</b>	<b>3A / 1A / 3A / 1AB</b>
3:00-3:14	15	2	3	0	20	8A,7C / 1A,1C / 1A,1T,1C / 0
3:15-3:29	8	2	6	12	28	4A,3T,1C / 1A,1T / 1A,5T / 2A,9T,1AB
3:30-3:44	0	1	1	4	6	0 / 1T / 1T / 1A,2T,1AB
3:44-3:59	0	0	0	0	0	0 / 0 / 0 / 0
<b>HRLY TOTAL</b>	<b>23</b>	<b>5</b>	<b>10</b>	<b>16</b>	<b>54</b>	<b>12A,3T,8C / 2A,2T,1C / 2A,7T,1C / 3A,11T,2AB</b>
<b>PM</b>						
					0	
					0	
					0	
					0	
<b>HRLY TOTAL</b>					<b>0</b>	
4:00 - 4:14	0	0	0	0	0	0 / 0 / 0 / 0
4:15 - 4:29	0	0	1	0	1	0 / 0 / 1A / 0
4:30 - 4:44	0	0	1	0	1	0 / 0 / 1A / 0
4:45 - 4:59	1	2	4	0	7	1A / 2A / 2A,1C,1AB / 0
<b>HRLY TOTAL</b>	<b>1</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>9</b>	<b>1A / 2A / 4A,1C,1AB / 0</b>
5:00p - 5:14	0	2	2	0	4	0 / 2A / 2A / 0
5:15 - 5:29	3	1	2	4	10	1A,1T,1C / 1A / 1A,1C / 4T
5:30 - 5:44	0	0	0	0	0	0 / 0 / 0 / 0
5:45 - 5:59	0	0	0	0	0	0 / 0 / 0 / 0
<b>HRLY TOTAL</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>14</b>	<b>1A,1T,1C / 3A / 3A,1C / 4T</b>
6:00p - 6:14	2	0	0	1	3	1A,1C / 0 / 0 / 1A
6:15 - 6:29	2	4	1	1	8	2A / 4A / 1AB / 1AB
6:30 - 6:44	5	5	1	3	14	5A / 5A / 1AB / 3A
6:45 - 6:59	1	1	0	0	2	1A / 1A / 0 / 0
<b>HRLY TOTAL</b>	<b>10</b>	<b>10</b>	<b>2</b>	<b>5</b>	<b>27</b>	<b>9A,1C / 10A / 2AB / 4A,1AB</b>
<b>TOTAL</b>	<b>83</b>	<b>26</b>	<b>64</b>	<b>46</b>	<b>219</b>	

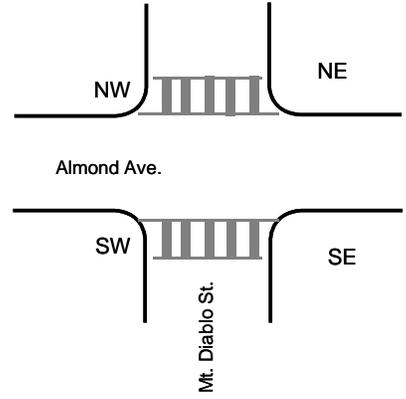


**Mt. Diablo St. @ Almond Ave.**

**Pedestrian Counts**

Date: 9/1/2015 Tues.

Time	Number of Pedestrians					Comments: A = Adult, T = Teen, C = Child B= Bike
	NE - SE	NW-SW	NW - NE	SW - SE	SUM	
<b>AM</b>						
7:00-7:14	0	0	0	0	0	0 / 0 / 0 / 0
7:15-7:29	3	0	1	0	4	2A,1C / 0 / 1AB / 0
7:30-7:44	13	1	11	0	25	6A,3T,4C / 1A / 1A,9T,1C / 0
7:45-7:59	26	3	0	3	32	11A,5T,10C / 2A,1T / 0 / 3T
<b>HRLY TOTAL</b>	<b>42</b>	<b>4</b>	<b>12</b>	<b>3</b>	<b>61</b>	<b>19A,8T,15C / 3A,1T / 1A, 9T,1C,1AB / 3T</b>
8:00-8:14	5	3	8	4	20	5T / 3T / 2A,6T / 4T
8:15-8:29	0	1	2	0	3	0 / 1A / 2A / 0
8:30-8:44	0	1	2	0	3	0 / 1A / 2T / 0
8:45-8:59	0	0	1	0	1	0 / 0 / 1AB / 0
<b>HRLY TOTAL</b>	<b>5</b>	<b>5</b>	<b>13</b>	<b>4</b>	<b>27</b>	<b>5T / 2A,3T / 4A,8T,1AB / 4T</b>
9:00 - 9:14					0	
9:15 - 9:29					0	
9:30 - 9:44					0	
9:45 - 9:59					0	
<b>HRLY TOTAL</b>					<b>0</b>	
<b>Midday</b>						
1:00-1:14	0	0	0	0	0	0 / 0 / 0 / 0
1:15-1:29	0	0	1	0	1	0 / 0 / 1A / 0
1:30-1:44	0	0	0	0	0	0 / 0 / 0 / 0
1:44-1:59	0	0	0	1	1	0 / 0 / 0 / 1A
<b>HRLY TOTAL</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0 / 0 / 1A / 1A</b>
2:00-2:14	1	0	2	0	3	1A / 0 / 2A / 0
2:15-2:29	1	0	0	0	1	1A / 0 / 0 / 0
2:30-2:44	1	0	0	0	1	1AB / 0 / 0 / 0
2:45-2:59	0	1	1	1	3	0 / 1A / 1A / 1A
<b>HRLY TOTAL</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>8</b>	<b>2A,1AB / 1A / 3A / 1A</b>
3:00-3:14	2	12	1	2	17	1A,1T / 5A,2T,4C,1AB / 1T / 2A
3:15-3:29	7	5	4	4	20	6T,1AB / 4T,1TB / 4T / 4T
3:30-3:44	1	8	0	1	10	1A / 7T,1TB / 0 / 1A
3:44-3:59	0	2	2	0	4	0 / 2T / 2T / 0
<b>HRLY TOTAL</b>	<b>10</b>	<b>27</b>	<b>7</b>	<b>7</b>	<b>51</b>	<b>2A,7T,1AB / 5A,15T,4C,1AB,2TB / 7T / 3A,4T</b>
<b>PM</b>						
					0	
					0	
					0	
					0	
<b>HRLY TOTAL</b>					<b>0</b>	
4:00 - 4:14	0	0	0	0	0	0 / 0 / 0 / 0
4:15 - 4:29	0	1	0	0	1	0 / 1A / 0 / 0
4:30 - 4:44	0	1	0	0	1	0 / 1A / 0 / 0
4:45 - 4:59	3	0	0	1	4	2A,1C / 0 / 0 / 1AB
<b>HRLY TOTAL</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>2A,1C / 2A / 0 / 1AB</b>
5:00p - 5:14	3	1	0	0	4	2A,1C / 1A / 0 / 0
5:15 - 5:29	4	0	0	0	4	3A,1C / 0 / 0 / 0
5:30 - 5:44	3	0	1	0	4	1A,2C / 0 / 1AB / 0
5:45 - 5:59	1	1	5	1	8	1A / 1A / 3A,2TB / 1A
<b>HRLY TOTAL</b>	<b>11</b>	<b>2</b>	<b>6</b>	<b>1</b>	<b>20</b>	<b>7A,4C / 2A / 3A,1AB,2TB / 1A</b>
6:00p - 6:14	0	0	3	0	3	0 / 0 / 1A,2T / 0
6:15 - 6:29	0	4	0	4	8	0 / 4A / 0 / 4A
6:30 - 6:44	0	3	2	2	7	0 / 1A,2T / 2A / 1T,1AB
6:45 - 6:59	0	3	0	1	4	0 / 3A / 0 / 1A
<b>HRLY TOTAL</b>	<b>0</b>	<b>10</b>	<b>5</b>	<b>7</b>	<b>22</b>	<b>0 / 8A,2T / 3A,2T / 5A,1T,1AB</b>
<b>TOTAL</b>	<b>74</b>	<b>51</b>	<b>47</b>	<b>25</b>	<b>197</b>	

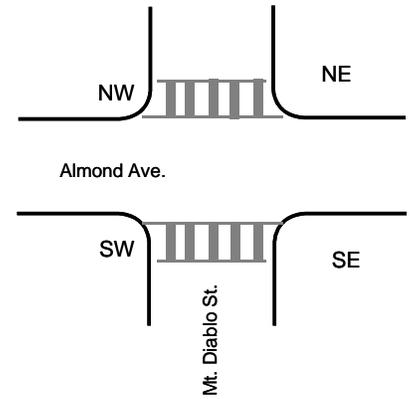


**Mt. Diablo St. @ Almond Ave.**

**Pedestrian Counts**

Date: 8/11/2015 Tues. (Music Night)

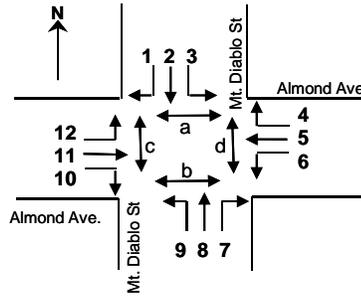
Time	Number of Pedestrians					Comments: A = Adult, T = Teen, C = Child B= Bike
	NE - SE	NW-SW	NW - NE	SW - SE	SUM	
<b>AM</b>						
7:00-7:14					0	
7:15-7:29					0	
7:30-7:44					0	
7:45-7:59					0	
<b>HRLY TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
8:00-8:14					0	
8:15-8:29					0	
8:30-8:44					0	
8:45-8:59					0	
<b>HRLY TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
9:00 - 9:14					0	
9:15 - 9:29					0	
9:30 - 9:44					0	
9:45 - 9:59					0	
<b>HRLY TOTAL</b>					<b>0</b>	
<b>Midday</b>						
1:00-1:14					0	
1:15-1:29					0	
1:30-1:44					0	
1:44-1:59					0	
<b>HRLY TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
2:00-2:14					0	
2:15-2:29					0	
2:30-2:44					0	
2:45-2:59					0	
<b>HRLY TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
3:00-3:14					0	
3:15-3:29					0	
3:30-3:44					0	
3:44-3:59					0	
<b>HRLY TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>PM</b>						
					0	
					0	
					0	
					0	
<b>HRLY TOTAL</b>					<b>0</b>	
4:00 - 4:14	0	1	0	0	1	0 / 1A / 0 / 0
4:15 - 4:29	0	0	0	0	0	0 / 0 / 0 / 0
4:30 - 4:44	0	0	0	0	0	0 / 0 / 0 / 0
4:45 - 4:59	0	3	0	0	3	0 / 3A / 0 / 0
<b>HRLY TOTAL</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0 / 4A / 0 / 0</b>
5:00p - 5:14	0	0	0	0	0	0 / 0 / 0 / 0
5:15 - 5:29	0	1	3	0	4	0 / 1A / 1A,2AB / 0
5:30 - 5:44	0	0	1	0	1	0 / 0 / 1A / 0
5:45 - 5:59	0	3	0	0	3	0 / 1A,2C / 0 / 0
<b>HRLY TOTAL</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>8</b>	<b>0 / 2A / 1A,2AB / 0</b>
6:00p - 6:14	1	2	1	0	4	1T / 2A / 1T / 0
6:15 - 6:29	0	1	0	0	1	0 / 1A / 0 / 0
6:30 - 6:44	0	0	0	0	0	0 / 0 / 0 / 0
6:45 - 6:59	4	2	0	0	6	2A,2C / 2A / 0 / 0
<b>HRLY TOTAL</b>	<b>5</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>2A,1T,2C / 5A / 1T / 0</b>
<b>TOTAL</b>	<b>5</b>	<b>13</b>	<b>5</b>	<b>0</b>	<b>23</b>	



Intersection Volume Worksheet

Mt. Diablo St. / Almond Ave.

8/27/15 Thurs. (school in session & music night)  
Weather: Clear

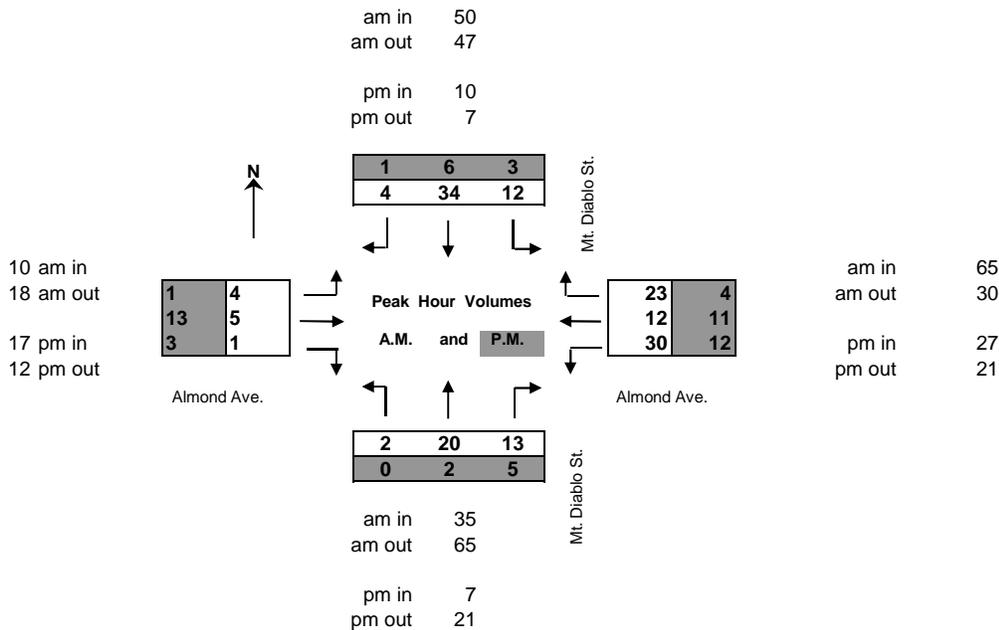


AM Period

	1	2	3	4	5	6	7	8	9	10	11	12	15 MIN.	60 MIN.
7:00-7:15	0	0	0	1	1	2	1	0	0	0	0	0	5	
7:15-7:30	1	4	1	2	1	3	2	2	0	1	1	1	19	
7:30-7:45	1	12	2	8	2	9	4	8	1	0	1	1	49	
7:45-8:00	2	18	8	13	3	14	3	10	1	0	2	1	75	148
8:00-8:15	0	0	1	0	6	4	4	0	0	0	1	1	17	160
8:15-8:30	0	1	0	1	1	5	0	0	0	1	0	0	9	150
8:30-8:45	1	2	0	0	2	1	1	0	0	0	1	0	8	109
8:45-9:00	0	4	0	0	1	1	0	1	2	0	0	0	9	43
<b>PeakHour:</b>														
7:15-8:15	4	34	12	23	12	30	13	20	2	1	5	4	160	160

PM Period

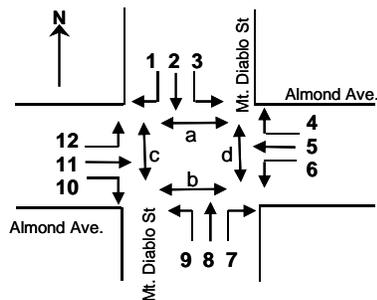
	1	2	3	4	5	6	7	8	9	10	11	12	15 MIN.	60 MIN.
4:00-4:15	0	1	0	1	0	1	1	1	0	0	1	0	6	
4:15-4:30	1	0	0	1	1	2	3	0	0	0	1	1	10	
4:30-4:45	0	1	1	0	0	1	2	1	1	1	1	0	9	
4:45-5:00	0	1	1	2	1	2	3	1	1	1	1	1	15	40
5:00-5:15	1	1	0	1	3	2	6	0	1	0	0	0	15	49
5:15-5:30	0	3	2	1	0	4	1	0	0	1	2	1	15	54
5:30-5:45	0	0	1	0	2	2	2	1	0	1	3	0	12	57
5:45-6:00	0	1	0	1	3	2	1	1	0	0	3	0	12	54
6:00-6:15	1	2	0	2	6	4	1	0	0	1	5	0	22	61
6:15-6:30	0	1	0	0	1	0	2	1	0	0	3	0	8	54
6:30-6:45	0	1	0	1	1	1	3	2	1	0	0	1	11	53
6:45-7:00	0	1	0	0	0	2	3	0	0	0	1	0	7	48
<b>PeakHour:</b>														
5:15-6:15	1	6	3	4	11	12	5	2	0	3	13	1	61	61



Intersection Volume Worksheet

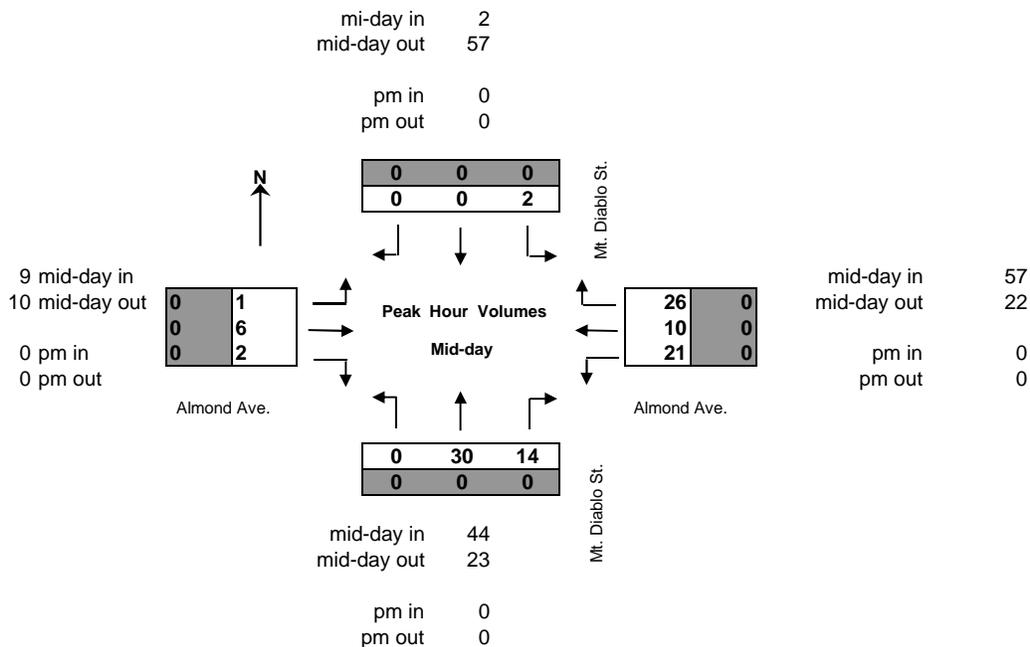
Mt. Diablo St. / Almond Ave.

8/27/2015 Thurs.  
Weather: Clear



Mid-day Period

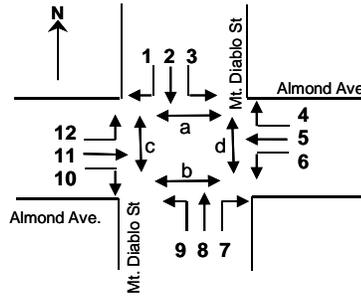
	1	2	3	4	5	6	7	8	9	10	11	12	15 MIN.	60 MIN.
1:00-1:15	0	0	0	0	1	1	1	1	0	0	1	0	5	
1:15-1:30	0	1	0	0	0	2	1	0	0	0	0	0	4	
1:30-1:45	0	0	0	1	1	0	0	0	0	0	0	0	2	
1:45-2:00	0	0	1	0	1	3	1	0	0	0	0	0	6	17
2:00-2:15	0	0	0	0	0	0	2	0	0	0	2	0	4	16
2:15-2:30	0	0	0	0	1	0	1	2	0	0	1	0	5	17
2:30-2:45	0	0	1	5	2	2	1	2	0	0	1	0	14	29
2:45-3:00	0	0	0	13	1	0	2	19	0	1	3	1	40	63
3:00-3:15	0	0	0	6	2	9	6	8	0	0	2	0	33	92
3:15-3:30	0	0	1	2	5	10	5	1	0	1	0	0	25	112
3:30-3:45	0	1	0	0	5	3	1	0	1	0	2	0	13	111
3:45-4:00	0	0	0	0	4	2	1	0	1	0	2	0	10	81
<b>PeakHour:</b>														
2:30-3:30	0	0	2	26	10	21	14	30	0	2	6	1	112	112



Intersection Volume Worksheet

Mt. Diablo St. / Almond Ave.

9/1/15 Tues. (school in session)  
Weather: Clear



AM Period

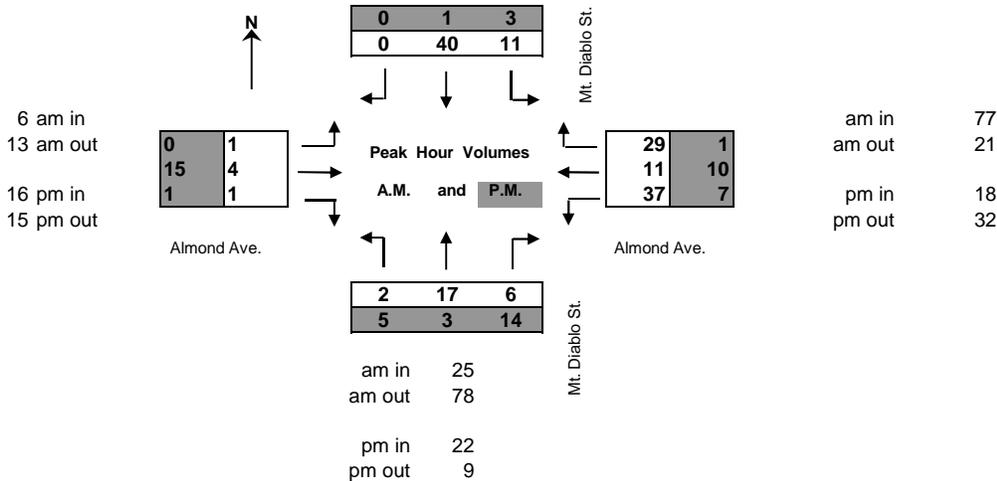
	1	2	3	4	5	6	7	8	9	10	11	12	15 MIN.	60 MIN.
7:00-7:15	0	1	0	1	2	3	0	0	0	0	0	0	7	
7:15-7:30	0	4	1	2	3	3	1	1	0	0	1	0	16	
7:30-7:45	0	8	1	8	0	7	0	2	0	1	1	0	28	
7:45-8:00	0	27	9	19	6	21	0	14	2	0	1	1	100	151
8:00-8:15	0	1	0	0	2	6	5	0	0	0	1	0	15	159
8:15-8:30	0	1	0	0	1	3	0	0	1	0	1	0	7	150
8:30-8:45	0	1	0	1	3	0	0	0	0	0	2	0	7	129
8:45-9:00	0	1	0	0	1	0	1	1	1	0	0	0	5	34
<b>PeakHour:</b>														
7:15-8:15	0	40	11	29	11	37	6	17	2	1	4	1	159	159

PM Period

	1	2	3	4	5	6	7	8	9	10	11	12	15 MIN.	60 MIN.
4:00-4:15	0	0	0	1	2	1	0	0	0	0	0	0	4	
4:15-4:30	1	0	1	0	1	1	2	1	0	0	1	1	9	
4:30-4:45	0	1	0	0	1	0	1	0	0	0	1	0	4	
4:45-5:00	0	0	1	0	0	2	0	1	1	1	1	0	7	24
5:00-5:15	1	1	0	1	3	1	2	0	0	0	3	0	12	32
5:15-5:30	0	1	1	0	1	1	1	1	1	0	1	0	8	31
5:30-5:45	0	0	0	1	2	3	1	0	1	1	2	0	11	38
5:45-6:00	0	1	1	0	3	0	4	1	0	0	6	0	16	47
6:00-6:15	0	0	1	0	3	1	3	1	2	0	3	0	14	49
6:15-6:30	0	0	1	0	2	3	6	1	2	0	4	0	19	60
6:30-6:45	0	0	2	0	0	1	2	1	0	0	1	0	7	56
6:45-7:00	0	0	0	0	0	1	1	0	0	1	1	0	4	44
<b>PeakHour:</b>														
5:30-6:30	0	1	3	1	10	7	14	3	5	1	15	0	60	60

am in 51  
am out 47

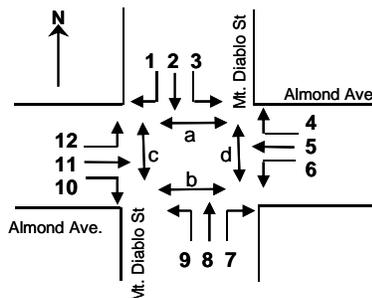
pm in 4  
pm out 4



Intersection Volume Worksheet

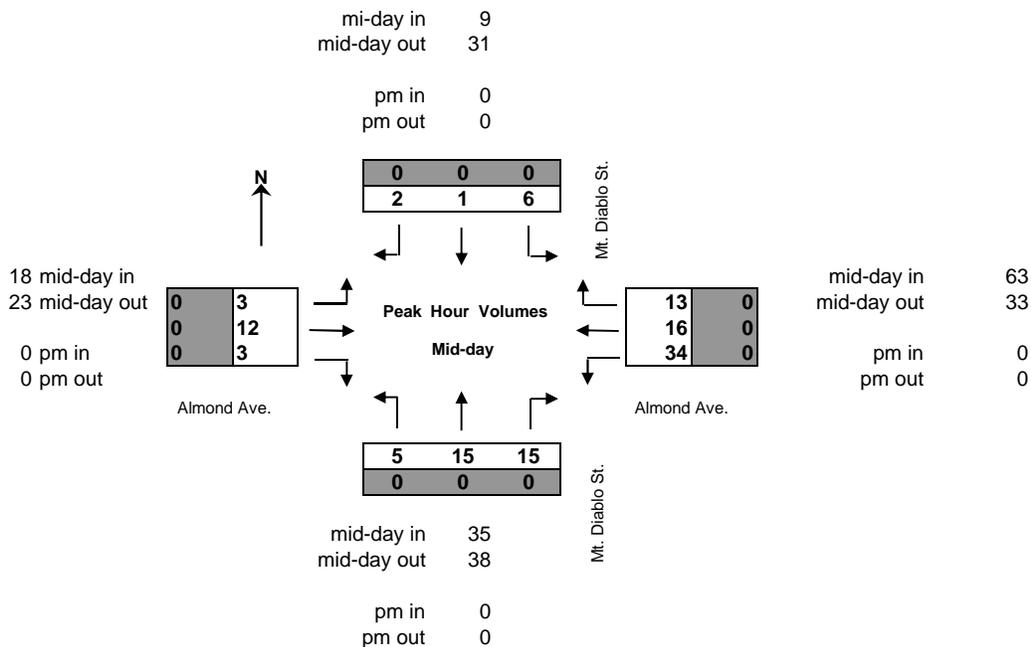
Mt. Diablo St. / Almond Ave.

9/1/2015 Tues.  
Weather: Clear



Mid-day Period

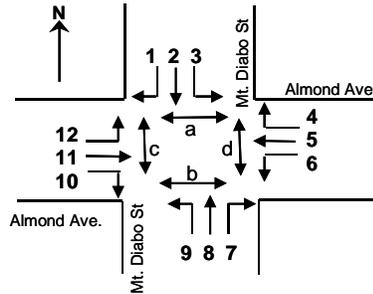
	1	2	3	4	5	6	7	8	9	10	11	12	15 MIN.	60 MIN.
1:00-1:15	0	0	0	0	1	0	0	1	0	0	1	0	3	
1:15-1:30	1	0	0	0	1	1	1	0	0	0	0	0	4	
1:30-1:45	0	1	0	0	0	1	0	0	0	0	1	0	3	
1:45-2:00	0	0	0	0	2	0	0	0	0	0	0	0	2	12
2:00-2:15	0	0	0	1	0	2	1	1	0	0	0	0	5	14
2:15-2:30	0	0	1	1	1	0	2	1	1	0	1	0	8	18
2:30-2:45	0	0	0	3	1	3	1	2	0	3	0	0	13	28
2:45-3:00	0	0	0	9	2	3	5	12	2	0	5	1	39	65
3:00-3:15	1	0	5	4	6	17	2	2	1	1	1	1	41	101
3:15-3:30	0	0	0	0	5	9	1	0	0	1	5	1	22	115
3:30-3:45	1	1	1	0	3	5	7	1	2	1	1	0	23	125
3:45-4:00	0	1	1	1	4	2	2	1	0	0	2	0	14	100
<b>PeakHour:</b>														
2:45-3:45	2	1	6	13	16	34	15	15	5	3	12	3	125	125



Intersection Volume Worksheet

Mt. Diablo St. / Almond Ave.

8/11/15 Tues. (music night)  
Weather: Clear



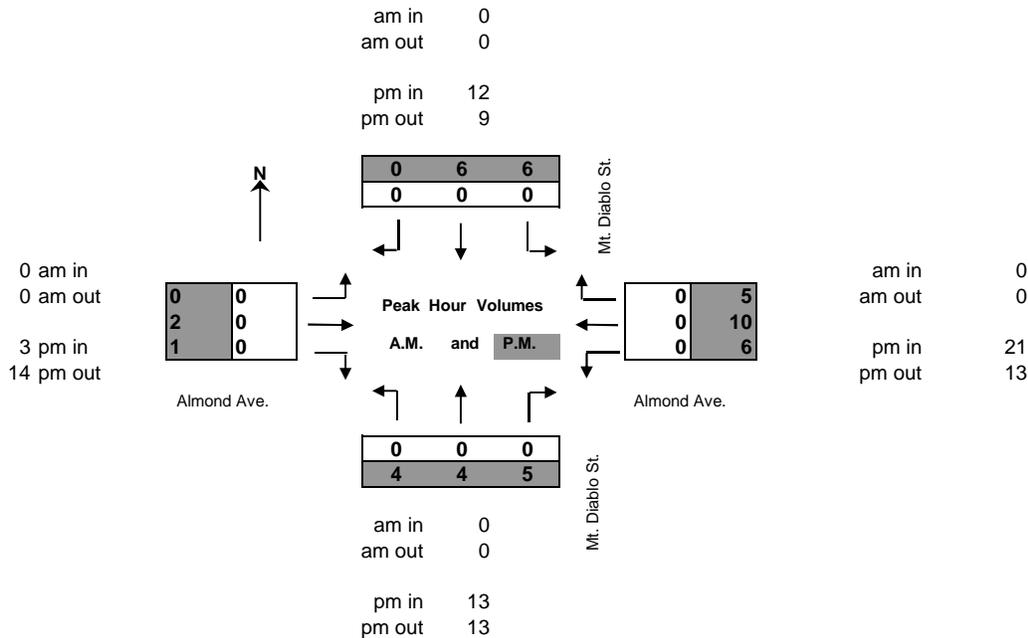
AM Period

	1	2	3	4	5	6	7	8	9	10	11	12	15 MIN.	60 MIN.
7:00-7:15														
7:15-7:30														
7:30-7:45														
7:45-8:00														
8:00-8:15														
8:15-8:30														
8:30-8:45														
8:45-9:00														
<b>PeakHour:</b>														
7:30-8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM Period

	1	2	3	4	5	6	7	8	9	10	11	12	15 MIN.	60 MIN.
4:00-4:15														
4:15-4:30	0	0	1	1	1	0	2	1	0	1	0	0	7	
4:30-4:45	0	0	1	0	1	0	0	0	1	3	1	0	7	
4:45-5:00	0	1	0	0	0	0	1	2	0	0	0	0	4	
5:00-5:15	0	1	0	0	1	3	0	1	0	1	1	0	8	26
5:15-5:30	0	1	0	2	4	1	2	3	0	0	1	0	14	33
5:30-5:45	0	4	3	2	1	3	0	1	4	0	0	0	18	44
5:45-6:00	0	1	2	1	0	1	0	0	0	1	0	0	6	46
6:00-6:15	0	0	1	0	5	1	3	0	0	0	1	0	11	49
6:15-6:30	0	0	0	0	0	1	1	0	0	0	2	1	5	40
6:30-6:45	0	0	0	1	0	2	2	0	1	0	3	2	11	33
6:45-7:00	0	0	1	1	0	1	2	0	1	0	0	0	6	33
8:00-8:15	0	0	1	0	0	1	2	2	0	0	0	0	6	28
<b>PeakHour:</b>														
5:15-6:15	0	6	6	5	10	6	5	4	4	1	2	0	49	49

\*Music night 6:30-8:00 pm



# BAYMETRICS

## ADT APPROACH VOLUME COUNTS IN CONCORD

LOCATION		ALMOND AVENUE / MT DIABLO STREET								
DATE / DAY		27-Aug-15				Thursday				
STREET NAME		MT DIABLO STREET				ALMOND AVENUE				
APPROACH		NB		SB		EB		WB		
TIME		15 MIN	60 MIN	15 MIN	60 MIN	15 MIN	60 MIN	15 MIN	60 MIN	
0:00	---	0:15	0	0	3	0	1	0	0	0
0:15	---	0:30	0	0	0	0	0	0	0	0
0:30	---	0:45	0	0	0	0	1	0	0	0
0:45	---	1:00	0	0	0	3	0	2	0	0
1:00	---	1:15	0	0	0	0	0	1	0	0
1:15	---	1:30	0	0	0	0	0	1	0	0
1:30	---	1:45	0	0	0	0	1	1	0	0
1:45	---	2:00	0	0	0	0	0	1	0	0
2:00	---	2:15	0	0	1	1	1	2	0	0
2:15	---	2:30	0	0	0	1	0	2	0	0
2:30	---	2:45	0	0	0	1	0	1	0	0
2:45	---	3:00	0	0	0	1	0	1	0	0
3:00	---	3:15	0	0	3	3	1	1	0	0
3:15	---	3:30	0	0	0	3	0	1	0	0
3:30	---	3:45	0	0	0	3	0	1	0	0
3:45	---	4:00	0	0	0	3	0	1	0	0
4:00	---	4:15	0	0	0	0	0	0	0	0
4:15	---	4:30	0	0	0	0	0	0	0	0
4:30	---	4:45	0	0	0	0	0	0	0	0
4:45	---	5:00	0	0	0	0	0	0	0	0
5:00	---	5:15	0	0	1	1	1	1	0	0
5:15	---	5:30	0	0	0	1	0	1	0	0
5:30	---	5:45	0	0	0	1	0	1	0	0
5:45	---	6:00	0	0	0	1	2	3	2	2
6:00	---	6:15	0	0	0	0	0	2	0	2
6:15	---	6:30	0	0	0	0	4	6	0	2
6:30	---	6:45	0	0	0	0	1	7	0	2
6:45	---	7:00	0	0	1	1	2	7	0	0
7:00	---	7:15	0	0	0	1	2	9	0	0
7:15	---	7:30	0	0	2	3	4	9	1	1
7:30	---	7:45	16	16	3	6	7	15	0	1
7:45	---	8:00	29	45	6	11	18	31	2	3
8:00	---	8:15	1	46	16	27	43	72	2	5
8:15	---	8:30	2	48	3	28	12	80	0	4
8:30	---	8:45	0	32	1	26	6	79	0	4
8:45	---	9:00	2	5	1	21	8	69	1	3
9:00	---	9:15	0	4	2	7	2	28	1	2
9:15	---	9:30	0	2	1	5	6	22	0	2
9:30	---	9:45	0	2	0	4	0	16	0	2
9:45	---	10:00	3	3	0	3	5	13	2	3
10:00	---	10:15	0	3	0	1	3	14	1	3
10:15	---	10:30	0	3	7	7	3	11	2	5
10:30	---	10:45	3	6	2	9	5	16	2	7
10:45	---	11:00	0	3	3	12	4	15	1	6
11:00	---	11:15	2	5	3	15	1	13	0	5
11:15	---	11:30	0	5	1	9	5	15	3	6
11:30	---	11:45	2	4	1	8	2	12	1	5
11:45	---	12:00	0	4	2	7	7	15	1	5
12:00	---	12:15	2	4	5	9	14	28	1	6
12:15	---	12:30	0	4	3	11	11	34	0	3
12:30	---	12:45	0	2	0	10	1	33	1	3
12:45	---	13:00	0	2	2	10	3	29	0	2
13:00	---	13:15	4	4	2	7	4	19	1	2
13:15	---	13:30	2	6	0	4	5	13	2	4
13:30	---	13:45	1	7	1	5	2	14	0	3
13:45	---	14:00	0	7	0	3	2	13	2	5
14:00	---	14:15	0	3	0	1	5	14	1	5
14:15	---	14:30	5	6	1	2	4	13	3	6
14:30	---	14:45	9	14	2	3	3	14	4	10
14:45	---	15:00	28	42	5	8	10	22	4	12
15:00	---	15:15	0	42	21	29	23	40	3	14
15:15	---	15:30	0	37	9	37	24	60	4	15
15:30	---	15:45	0	28	5	40	19	76	3	14
15:45	---	16:00	4	4	3	38	11	77	1	11
16:00	---	16:15	2	6	7	24	9	63	2	10
16:15	---	16:30	3	9	4	19	6	45	3	9
16:30	---	16:45	4	13	5	19	7	33	2	8
16:45	---	17:00	2	11	2	18	6	28	2	9
17:00	---	17:15	4	13	8	19	9	28	1	8
17:15	---	17:30	4	14	6	21	11	33	4	9
17:30	---	17:45	1	11	2	18	5	31	5	12
17:45	---	18:00	4	13	3	19	8	33	3	13
18:00	---	18:15	5	14	3	14	13	37	3	15
18:15	---	18:30	0	10	13	21	6	32	1	12
18:30	---	18:45	5	14	8	27	11	38	2	9
18:45	---	19:00	1	11	10	34	4	34	1	7
19:00	---	19:15	1	7	9	40	6	27	0	4
19:15	---	19:30	0	7	13	40	4	25	1	4
19:30	---	19:45	0	2	5	37	9	23	0	2
19:45	---	20:00	0	1	6	33	4	23	0	1
20:00	---	20:15	3	3	1	25	8	25	0	1
20:15	---	20:30	1	4	4	16	4	25	0	0
20:30	---	20:45	0	4	3	14	4	20	2	2
20:45	---	21:00	0	4	3	11	4	20	0	2
21:00	---	21:15	0	1	1	11	3	15	1	3
21:15	---	21:30	0	0	5	12	4	15	0	3
21:30	---	21:45	0	0	3	12	3	14	0	1
21:45	---	22:00	1	1	0	9	1	11	0	1
22:00	---	22:15	0	1	2	10	1	9	0	0
22:15	---	22:30	0	1	1	6	4	9	0	0
22:30	---	22:45	0	1	2	5	0	6	0	0
22:45	---	23:00	0	0	2	7	5	10	0	0
23:00	---	23:15	0	0	0	5	2	11	0	0
23:15	---	23:30	0	0	0	4	1	8	1	1
23:30	---	23:45	0	0	3	5	1	9	0	1
23:45	---	0:00	0	0	0	3	2	6	0	1
TOTAL			156	N/A	256	N/A	464	N/A	86	N/A
PEAK HOUR VOLUMES	AM		48		28		80		5	
	NOON		42		15		34		12	
	PM		42		40		77		15	
	EVEN		4		25		25		3	

# RADAR SPEED SURVEY

## OMNI-MEANS LTD.

ALMOND AVE. approaching Mt. Diablo St.

DATE: 8/27 9/1 15    TIME START: Various    TIME END: Various    WEATHER: Clear    ROAD TYPE: 2 lanes  
 DIRECTION: Both    SPEED LIMIT: 25 mph    OBSERVER: c-m    CALIBRATION TEST: Yes

SPEED	FREQUENCY	ACUM %	PERCENTAGE BREAKDOWN
14	3	4.6	*****
15	0	4.6	*****
16	5	12.3	*****5*****1**
17	4	18.5	*****5*****1*****5***
18	4	24.6	*****5*****1*****5*****2****
19	5	32.3	*****5*****1*****5*****2*****5*****3**
20	6	41.5	*****5*****1*****5*****2*****5*****3*****5*****4*
21	10	56.9	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*
22	6	66.2	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*
23	9	80.0	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8
24	3	84.6	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****
25	3	89.2	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****5*****
26	3	93.8	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****9*****5*****
27	2	96.9	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****9*****5*****5*
28	1	98.5	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****9*****5*****5*****
29	1	100.0	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****9*****5*****5*****0

65

AVERAGE SPEED = 20.9  
 50th PERCENTILE = 20.5  
 85th PERCENTILE = 24  
 90th PERCENTILE = 25.1  
 95th PERCENTILE = 26.3

PACE = 15 - 25  
 % IN PACE = 84.6  
 VEHICLES IN PACE = 55

SAMPLE VARIANCE = 12.10721  
 STANDARD DEVIATION = 3.479541  
 RANGE 1\*S = 66.15385  
 RANGE 2\*S = 96.92308  
 RANGE 3\*S = 100

# RADAR SPEED SURVEY

## OMNI-MEANS LTD.

MT. DIABLO ST. approaching Almond Ave.

DATE: 8/27 9/1 15    TIME START: Various    TIME END: Various    WEATHER: Clear    ROAD TYPE: 2 lanes  
 DIRECTION: Both    SPEED LIMIT: 25 mph    OBSERVER: o-m    CALIBRATION TEST: Yes

SPEED	FREQUENCY	ACUM %	PERCENTAGE BREAKDOWN
14	3	6.0	*****5*
15	1	8.0	*****5***
16	1	10.0	*****5****1
17	4	18.0	*****5*****1*****5***
18	11	40.0	*****5*****1*****5*****2*****5*****3*****5*****4
19	9	58.0	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5***
20	9	76.0	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*
21	5	86.0	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****5*
22	2	90.0	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****5*****9
23	2	94.0	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****5*****9*****
24	1	96.0	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****5*****9*****5*
25	0	96.0	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****5*****9*****5*
26	1	98.0	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****5*****9*****5***
27	1	100.0	*****5*****1*****5*****2*****5*****3*****5*****4*****5*****5*****5*****6*****5*****7*****5*****8*****5*****9*****5****0

50

AVERAGE SPEED = 19.2	PACE = 14 - 23	SAMPLE VARIANCE = 6.961615
50th PERCENTILE = 18.5	% IN PACE = 94	STANDARD DEVIATION = 2.638487
85th PERCENTILE = 20.9	VEHICLES IN PACE = 47	RANGE 1*S = 76
90th PERCENTILE = 22		RANGE 2*S = 96
95th PERCENTILE = 23.5		RANGE 3*S = 100