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TRAFFIC AND CIRCULATION STUDY FOR THE GOLETA FIRE STATION 10 PROJECT – CITY OF GOLETA

Associated Transportation Engineers (ATE) has prepared the following traffic and circulation study for the Goleta Fire Station 10 Project (the "Project"), located in the City of Goleta. It is understood that the results of the study will be incorporated into the EIR being prepared by AMEC.

PROJECT DESCRIPTION

The City of Goleta is proposing to construct a new fire station at 7952 Hollister Avenue, located on the northeast corner of the Hollister Avenue/Cathedral Oaks Road intersection. Figure 1 (attached) illustrates the location of the Project site in the western portion of the City. Figure 2 illustrates the Project site plan. The Project includes an 11,600 SF fire station with three apparatus bays, a garage, and staff parking areas. Three firefighters would be on duty at all times, with the 24-hour shift change occurring at 8:00 AM. There would be a short transition between shifts during which six staff members would be on site simultaneously. There would be on average five fire engine response calls during each 24-hour shift, though there is no predictable pattern as to when these emergency responses would occur. Access to the fire station is planned via two driveways on Hollister Avenue.

Fire Station 10 public areas would include the following: an entry lobby; community room/training room with 30-person capacity; and a disabled-accessible public restroom. The community room/training room would be used infrequently for city-related activities and local community non-profit organizational use. The community facilities would be available from 8:00 AM to 9:00 PM

SETTING

Street Network

The circulation system serving the Project site is comprised of regional highways, arterial streets, and collector roads (see Figure 1). The following text briefly describes the key roadways in the Project vicinity.

Hollister Avenue, located along the southern frontage of the Project site, is a 2- to 4-lane east-west arterial roadway that extends through the Goleta Valley area from State Route 154 on the east to the Bacara Hotel on the west. This roadway serves as the primary east-west surface street route through Goleta. Adjacent to the Project site, Hollister Avenue contains two travel lanes with bike lanes.

Cathedral Oaks Road, located west of the Project site, is a 2- to 4-lane arterial roadway that extends north from Hollister Avenue and then proceeds easterly across the Goleta Valley. This roadway provides a secondary east-west surface street route through Goleta. The section of Cathedral Oaks Road in the study area contains two travel lanes with bike lanes.

Roadway Operations

Figure 3 shows the Existing average daily traffic (ADT) volumes for the study-area roadway segments. Existing roadway volumes were obtained from count data collected by the City of Goleta and new counts conducted in November of 2017 (count data attached for reference). The operational characteristics of the study-area roadways were analyzed based on the City of Goleta's "Acceptable Capacity" rating system (summary of roadway capacities attached for reference). Table 1 shows the Existing ADT volumes and the City=s Acceptable Capacity thresholds for study-area roadways.

Table 1
Existing Roadway Operations

Roadway Segment	Roadway Classification	Geometry	Acceptable Capacity	Existing ADT
Hollister Avenue e/o Cathedral Oaks Road	Major Arterial	2 Lanes	14,300	6,200
Cathedral Oaks Road n/o Calle Real	Major Arterial	2 Lanes	14,300	3,200

The data presented in Table 1 show that the study-area roadways operate within their acceptable capacities with Existing traffic volumes.

Intersection Operations

Because traffic flow on urban arterials is most constrained at intersections, detailed traffic flow analyses focus on the operating conditions of critical intersections during peak travel periods. In rating intersection operations, ALevels of Service@ (LOS) A through F are used, with LOS A indicating free flow operations and LOS F indicating congested operations (more complete definitions of levels of service are attached). The City of Goleta has established LOS C as the minimum acceptable operating standard for intersections.

Existing AM and PM peak hour traffic volumes for the study-area intersections were obtained from traffic counts conducted in November of 2017 (traffic count data attached). The Existing peak hour traffic volumes are shown on Figure 3 and Figure 4 illustrates the existing intersection lane geometries and traffic controls.

Levels of service for the stop-sign controlled intersections were calculated using the Highway Capacity Manual (HCM)[1] methodology pursuant to City and Caltrans standards. (calculation worksheets are attached). The HCM methodology determines levels of service based on the average stopped delay per vehicle at the intersection. Table 1 lists the existing levels of service for the study-area intersections

Table 2
Existing Intersection Levels of Service

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
US 101 NB Ramp-Calle Real/Winchester Canyon Rd	All-Way Stop	8.5 Sec.	A	10.0 Sec.	A
Calle Real/Cathedral Oaks Road	All-Way Stop	13.6 Sec.	B	11.5 Sec.	B
U.S. 101 SB Ramps/Cathedral Oaks Road	Two-Way Stop	9.7 Sec.	A	10.2 Sec.	B
Hollister Avenue/Cathedral Oaks Road	All-Way Stop	11.3 Sec.	B	11.7 Sec.	B

The data presented in Table 2 show that the study-area intersections currently operate acceptably in the LOS A-B range.

IMPACT THRESHOLDS

The City of Goleta traffic impact thresholds were used to determine impacts related to the Project. The City's thresholds are outlined in the following text.

[1] Highway Capacity Manual, Transportation Research Board, National Research Council, 2010.

City of Goleta Impact Threshold of Significance

A. The addition of project to an intersection increases the volume to capacity (V/C) ratio by the value provided below or sends at least 5, 10 or 15 trips to an intersection operating at LOS F, E, or D.

Significant Changes in Levels of Service	
Intersection Level of Service (Including Project)	**Increase in V/C or Trips Greater Than**
LOS A	0.20
LOS B	0.15
LOS C	0.10
LOS D	15 Trips
LOS E	10 Trips
LOS F	5 Trips

B. The project's access to a major road or arterial road would require access that would create an unsafe situation, a new traffic signal, or major revisions to an existing traffic signal.

C. Project adds traffic to a roadway that has design features (e.g.; narrow width, road side ditches. sharp curves, poor sight distance, inadequate pavement structure) or receives use which would be incompatible with substantial increases in traffic (e.g. rural roads with use by farm equipment, livestock, horseback riding, or residential roads with heavy pedestrian or recreational use, etc.) that will become potential safety problems with the addition of project or cumulative traffic. Exceedance of the roadways designated Circulation Element Capacity may indicate the potential for the occurrence of the above impacts.

D. Project traffic would utilize a substantial portion of an intersection(s) capacity where the intersection is currently operating at acceptable levels of service (A-C) but with cumulative traffic would degrade to or approach LOS D (V/C 0.81). Substantial is defined as a minimum change of 0.03 for intersections which would operate from 0.80 to 0.85 and a change of 0.02 for intersections which would operate from 0.86 to 0.90, and 0.01 for intersections operating at anything lower.

The City of Goleta=s roadway impact threshold defines a significant roadway impact if a project would increase traffic volumes by more than 1.0 percent (either project-specific or project contribution to cumulative impacts) on a roadway that currently exceeds its Acceptable Capacity or is forecast to exceed its Acceptable Capacity under cumulative conditions.

If the above thresholds are exceeded, construction of improvements or project modifications to reduce the levels of significance to insignificance are required.

PROJECT-SPECIFIC ANALYSIS

Trip Generation

Trip generation estimates were developed for the Project based on operational information provided by staff at the Santa Barbra County Fire Department since there are no published trip generation studies for fire stations. The key assumptions used for the trip generation analysis are as follows:

- 3 staff arrive and 3 staff depart during the AM peak hour;
- 5 fire engine calls per day;
- 3 miscellaneous trips per day (visitors, deliveries, errands, etc.);
- Public meeting room used 13 times per peak month (2-7 cars per meeting).

Table 2 summarizes the trip generation estimates developed for the Project.

Table 2
Project Trip Generation

Project Component	Unit	ADT	AM Peak Hour Trips	PM Peak Hour Trips
Staff Trips	3 Staff	6	6	0
Fire Engine Calls	5 Calls	10	1	1
Misc. Trips	3 Trips	6	0	0
Public Meeting Room	13/month	7	0	1
Total		**29**	**7**	**2**

As shown in Table 2, the Project is forecast to generate 29 ADT, with 7 trips during the AM peak hour period and 2 trips during the PM peak hour period.

Project Trip Distribution

Table 3 and Figure 5 show the trip distribution pattern for the Project which was developed based on existing traffic patterns and the anticipated service area for the new fire station. Figure 5 also shows the project-added trips at the study-area roadways and intersections.

Table 3
Project Trip Distribution Percentages

Origin/Destination	Direction	Distribution %
U.S. 101	East West	45% 10%
Hollister Avenue	East	30%
Cathedral Oaks Road	North	15%
Total:		**100%**

Roadway Operations

Table 4 presents the Existing and Existing + Project volumes and Acceptable Capacities for the study-area roadways.

Table 4
Existing & Existing + Project Roadway Operations

Roadway Segment	Average Daily Trips				Project Impact?
	Acceptable Capacity	Existing ADT	Project Added ADT	Existing+Project ADT	
Hollister Avenue e/o Cathedral Oaks Road	14,300	6,200	+20	6,220	No
Cathedral Oaks Road n/o Calle Real	14,300	3,200	+4	3,204	No

The data presented in Table 4 show that the study-area roadways would continue to operate within their Acceptable Capacities with the addition of Project traffic.

Intersection Operations

Existing + Project peak hour traffic volumes for the study-area intersections are shown on Figure 6. Tables 5 and 6 present the Existing levels of service, show the project-added traffic volumes, and identify potentially significant impacts based on the City's thresholds.

Table 5
Existing Intersection Operations and Project-Added Traffic – AM Peak Hour

Intersection	Existing		Project Added	
	Delay	LOS	Trips	Impact?
Calle Real/Winchester Canyon Road	8.5 Sec	A	1	No
Calle Real/Cathedral Oaks Road	13.6 Sec	B	3	No
U.S. 101 SB Ramps/Cathedral Oaks Road	9.7 Sec	A	5	No
Hollister Avenue/Cathedral Oaks Road	11.3 Sec	B	5	No

Table 6
Existing Intersection Operations and Project-Added Traffic – PM Peak Hour

Intersection	Existing		Project Added	
	V/C	LOS	Trips	Impact?
Calle Real – U.S. 101 NB Ramps/ Winchester Canyon Road	10.0 Sec	B	0	No
Calle Real/Cathedral Oaks Road	11.5 Sec	B	0	No
U.S. 101 SB Ramps/Cathedral Oaks Road	10.2 Sec	B	2	No
Hollister Avenue/Cathedral Oaks Road	11.7 Sec	B	2	No

The data presented in Tables 5 and 6 show that the Project would add a maximum of 5 trips during the AM peak hour and 2 trips during the PM peak hour to the study-area intersections, which would operate acceptably at LOS B or better. The Project would not generate significant impacts based on City of Goleta thresholds.

SITE ACCESS AND PARKING

Site Distance Analysis

As shown on Figure 2 (Project Site Plan), access for the fire station is proposed via two driveways on Hollister Avenue. A sight distance evaluation was completed for the proposed driveways to determine if adequate sight distances are provided, as reviewed below.

Sight Distance Criteria. The driver of a vehicle departing the Project driveways should have an unobstructed view along Hollister Avenue sufficient in length to anticipate and avoid potential collisions. The stopping sight distance standards in the Caltrans Highway Design Manual[2] were used to determine minimum sight distance requirements for the fire station

[2] Highway Design Manual, California Department of Transportation, Sixth Edition, 2006.

driveways. Given that the adjacent intersection of Hollister Avenue and Cathedral Oaks Road is controlled by all-way stop signs, a 25 MPH design speed was used as the sight distance standard for vehicles looking to the west. The Caltrans stopping sight distance standard for 25 MPH is 150 feet. The speed limit on Hollister Avenue east of the site is 45 MPH. The sight distance requirement for 45 MPH is 360 feet.

Western Apparatus Bay Driveway. The sight distance looking west from the apparatus bay driveway extends past the Hollister Avenue/Cathedral Oaks Road intersection which is 195 feet away, and thus exceeds the 150-foot minimum stopping sight distance requirement. Hollister Avenue has both horizontal and vertical curves east of the Project site. The sight distance looking to the east from the apparatus bay driveway was measured at 495 feet, which exceeds the minimum stopping sight distance requirement of 360 feet. Figure 7 illustrates the sight distances looking to the west and east from the apparatus bay driveway.

Eastern Public Driveway. The sight distance looking west from the public driveway extends past the Hollister Avenue/Cathedral Oaks Road intersection which is 375 feet away, and thus exceeds the 150-foot minimum stopping sight distance requirement. Hollister Avenue has both a horizontal and vertical curve east of the Project site. The sight distance looking to the east from the public driveway was measured at 530 feet, which exceeds the minimum stopping sight distance requirement of 360 feet. Figure 8 illustrates the sight distances looking to the west and east from the public driveway.

Pedestrian/Bicycle Improvements

The Project frontage on Hollister Avenue is currently unimproved with no sidewalks provided. Hollister Avenue also narrows at the Project site and the westbound Class II bike lane becomes discontinuous. The Project would implement frontage improvements including a new sidewalk that would extend from the existing sidewalk located east of the site to Cathedral Oaks Road bridge at the railroad and US 101. The current site design has the sidewalk extending around the curb return and ending behind the existing barricade wall adjacent to the railroad bridge, leaving no way for pedestrians to safely connect to the street or the intersection. The design will need to be modified to allow pedestrians to safely access the corner of the Hollister Avenue/Cathedral Oaks Road intersection. The frontage improvements should also be designed accommodate the transition of the westbound Class II bike which is currently discontinuous adjacent to the site.

Parking

The Project is proposing to provide nine parking spaces for the Fire Station employees at the rear of site, and seven public parking spaces located adjacent to Hollister Avenue.

The Project includes a community room/training room with 30-person capacity which would be or County of Santa Barbara Fire Department training use and City of Goleta-related public activities use. The Santa Barbara County Fire Department anticipates the following intensity of the community room/training room use:

Fire Department meetings and training would occur between 9:00 AM and 5:00 PM weekdays; a weekly on-site staff meeting would occur, and up to four training sessions/month involving crew from other stations (travelling in a fire engine or two cars). All vehicles would be accommodated by crew parking spaces and fire engine areas.

City of Goleta and public meetings and training would occur between 8:00 AM and 9:00 PM weekdays and 8:00 AM to 5:00 PM on Saturdays. This would include City staff meetings on weekdays up to once/month, and restricted public use such as limited enrollment (small class) First Aid/CPR classes and Community Emergency Response Team (CERT) training. The small public meetings would occur up to once/week on weekdays between 8:00 AM and 5:00 PM, and an annual CERT training extending once/week over 8 weeks that would occur from 6:00-9:00 PM on a weeknight. Weekend training could occur up to six Saturdays/year. City of Goleta staff and public meeting attendees would carpool such that total attendance would not exceed the seven available public parking spaces.

CUMULATIVE ANALYSIS

Cumulative traffic volumes were forecast for the study-area roadways and intersections assuming development of the approved and pending projects located within the study area. The list of approved and pending projects used for the cumulative analysis (November 2017) is attached for reference. Trip generation estimates were developed for the cumulative projects using the rates presented in the Institute of Transportation Engineers (ITE) Trip Generation report[3] (cumulative trip generation calculation worksheet attached). The traffic generated by the cumulative projects was added to the existing volumes based on the distribution percentages presented in existing traffic studies and environmental documents completed for developments in the study area. Figure 9 presents the Cumulative traffic volumes for the study-area roadways and intersections.

[3] Trip Generation, Institute of Transportation Engineers, 9th Edition, 2012.

Cumulative Roadway Operations

Figure 10 presents the Cumulative + Project volumes forecasts. Table 7 compares the Cumulative and Cumulative + Project roadway operations and identifies cumulative impacts based on City of Goleta impact thresholds.

Table 7
Cumulative + Project Roadway Operations

Roadway Segment	Average Daily Trips				
	Acceptable Capacity	Cumulative	Project Added	Cumulative+Project	Project Impact
Hollister Avenue e/o Cathedral Oaks Road	14,300	6,210	+20	6,230	No
Cathedral Oaks Road n/o Calle Real	14,300	3,257	+4	3,261	No

As shown in Table 7, the study-area roadways are forecast to carry volumes within their Acceptable Capacity ratings under Cumulative + Project traffic conditions. The Project would therefore not contribute to significant cumulative impacts based on City of Goleta impact thresholds.

Intersection Impacts

Tables 8 and 9 compare the Cumulative and Cumulative + Project levels of service and identify cumulative impacts based on City of Goleta thresholds.

Table 8
Cumulative + Project Intersection Operations – AM Peak Hour

Intersection	Cumulative		Project-Added Trips	Impact?
	LOS	V/C		
Calle Real – U.S. 101 NB Ramps/ Winchester Canyon Road	8.5	A	1	No
Calle Real/Cathedral Oaks Road	13.7	B	3	No
U.S. 101 SB Ramps/Cathedral Oaks Road	9.8	A	5	No
Hollister Avenue/Cathedral Oaks Road	11.3	B	5	No

Table 9
Cumulative + Project Intersection Operations – PM Peak Hour

Intersection	Cumulative		Project-Added Trips	Impact?
	LOS	V/C		
Calle Real – U.S. 101 NB Ramps/ Winchester Canyon Road	10.1	B	0	No
Calle Real/Cathedral Oaks Road	11.5	B	0	No
U.S. 101 SB Ramps/Cathedral Oaks Road	10.2	B	2	No
Hollister Avenue/Cathedral Oaks Road	11.7	B	2	No

The data presented in Tables 8 and 9 show that the Project would add a maximum of 5 trips during the AM peak hour and 2 trips during the PM peak hour to the study-area intersections which would operate acceptably at LOS B or better with Cumulative volumes. The Project would not generate significant cumulative impacts based on City of Goleta thresholds.

CONGESTION MANAGEMENT PROGRAM ANALYSIS

The Santa Barbara County Association of Governments (SBCAG) has developed a set of traffic impact thresholds to assess the impacts of land use decisions made by local jurisdictions on regional transportation facilities located within the Congestion Management Program (CMP) roadway system. According to the CMP Land Use Analysis Program, projects that generate less than 500 ADT and less than 50 peak hour trips are considered to be consistent with the CMP. The Goleta Fire Station 10 Project would generate 29 ADT, 7 AM peak hour trips and 2 PM peak hour trips. The Project would not impact the CMP facilities in the area.

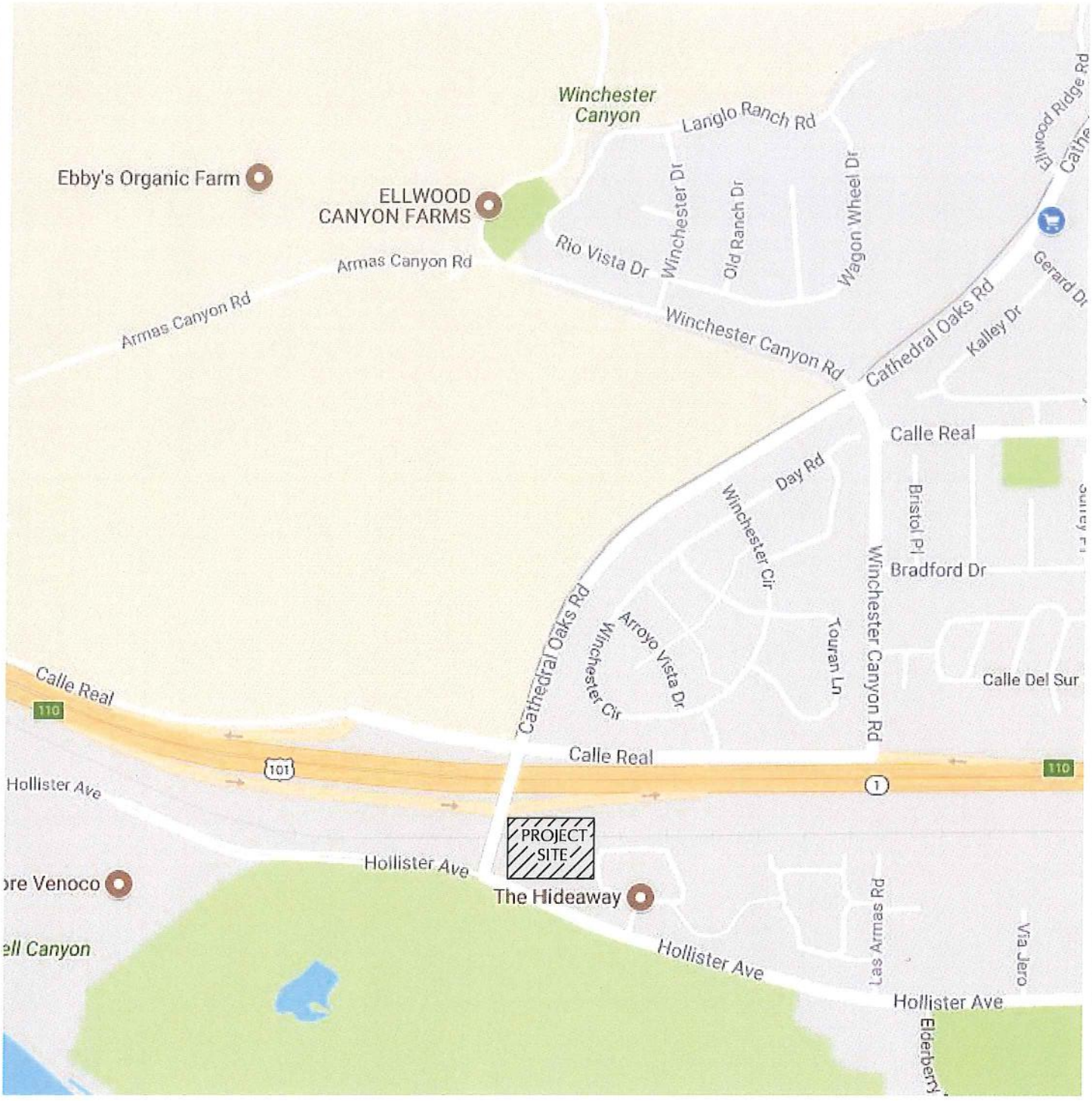
This concludes our traffic impact analysis for the Goleta Fire Station 10 Project.

Associated Transportation Engineers

Scott A. Schell, AICP, PTP
Principal Transportation Planner

SAS/DLD

attachments



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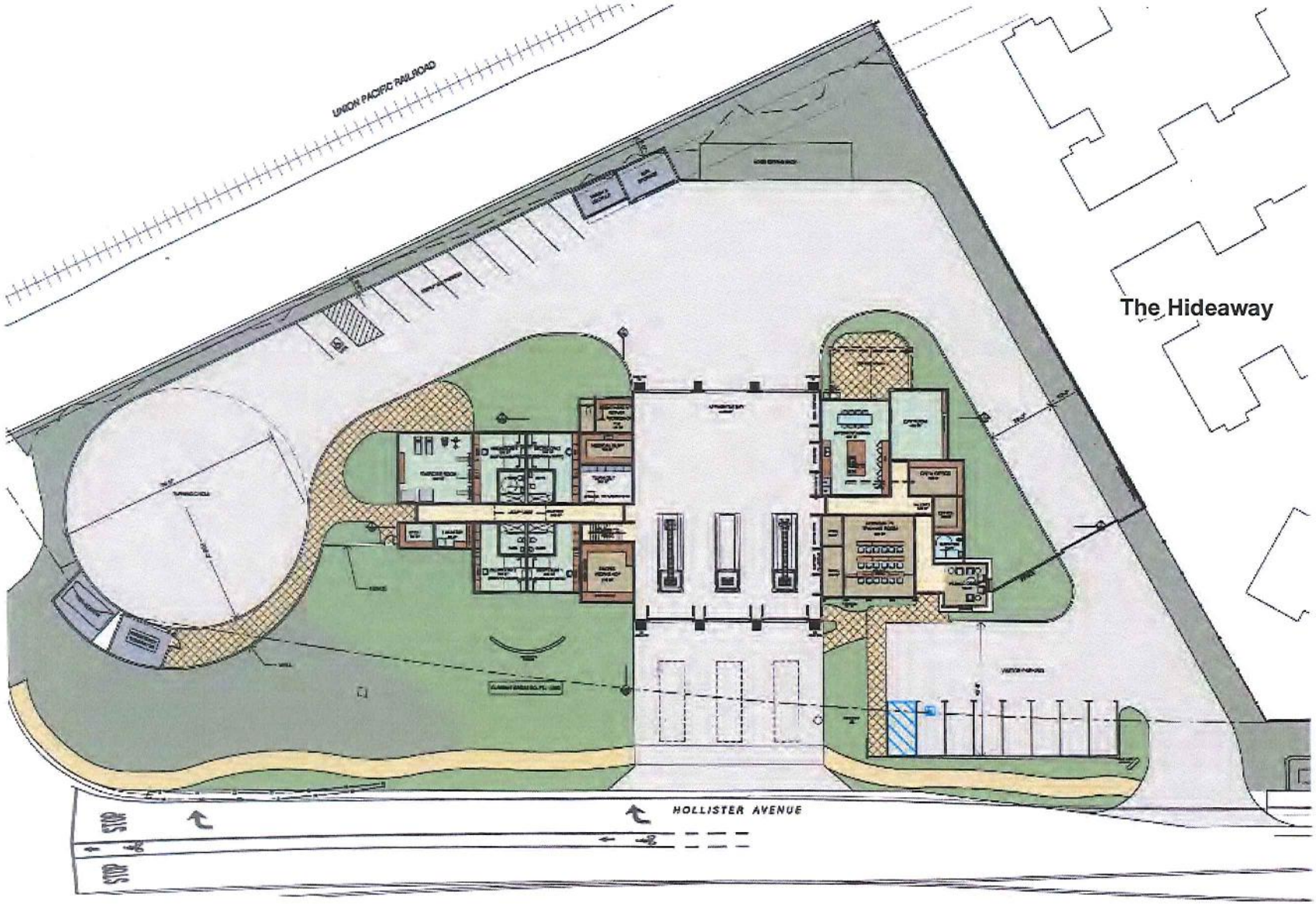
NOT TO SCALE

ASSOCIATED TRANSPORTATION ENGINEERS

EXISTING STREET NETWORK AND PROJECT SITE LOCATION

FIGURE 1

EKM - ATE#17070



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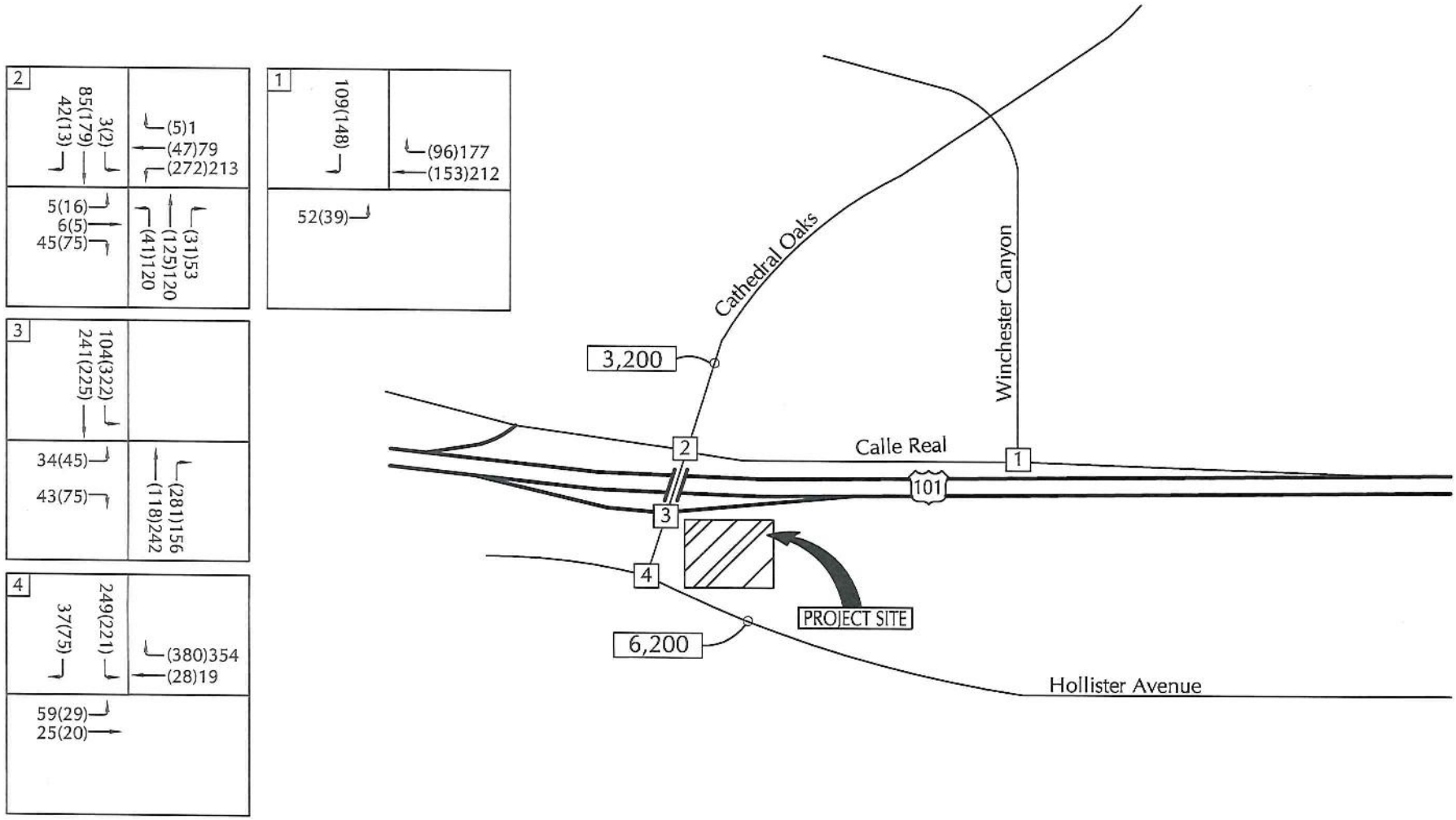
TRANSPORTATION
ENGINEERS

PROJECT SITE PLAN

FIGURE 2

EKM - ATE#17070



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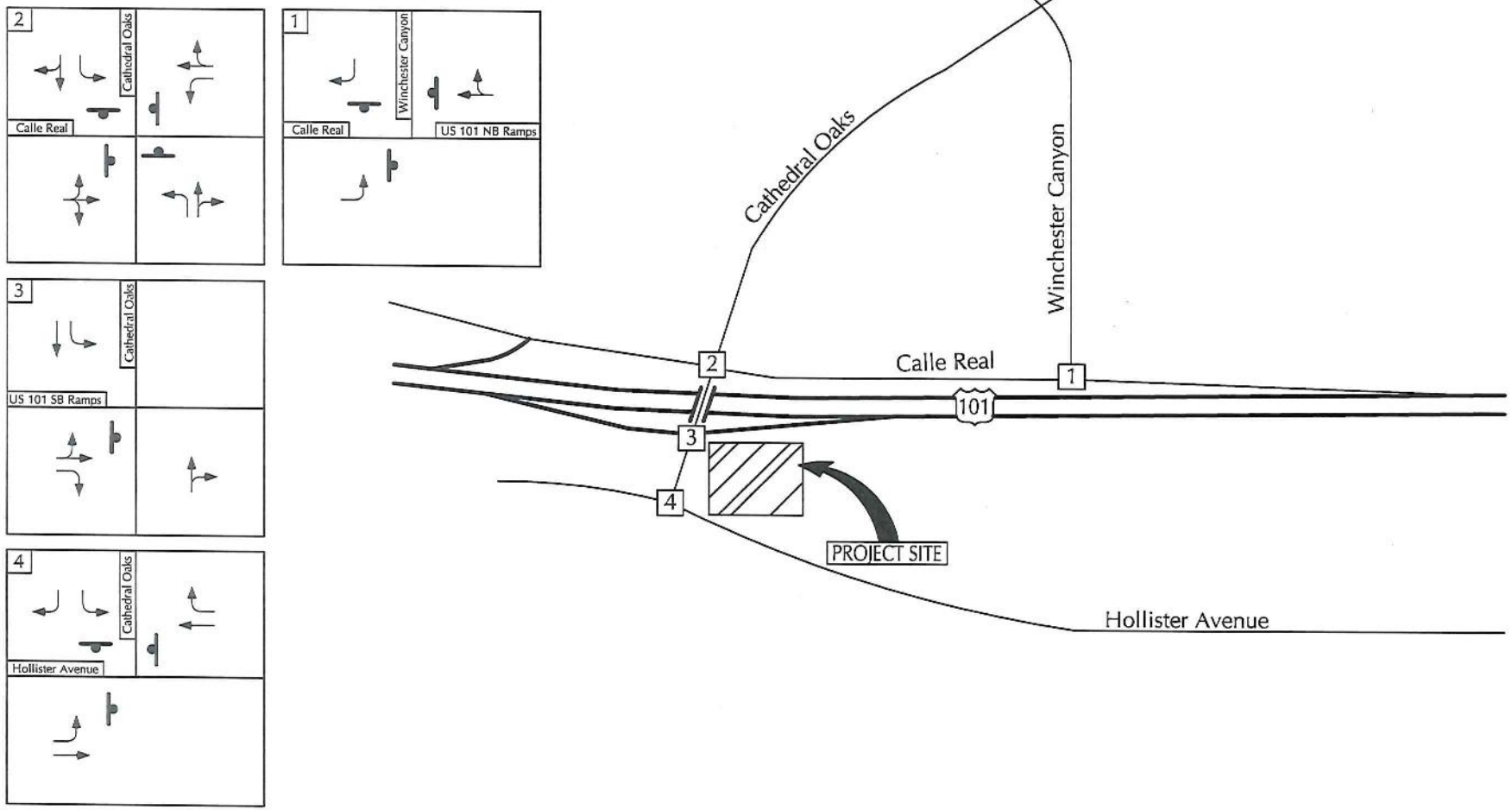
EXISTING TRAFFIC VOLUMES

FIGURE 3

EKM - ATE#17070



LEGEND

- Signalized Intersection
- Stopped Approach
- Lane Geometry

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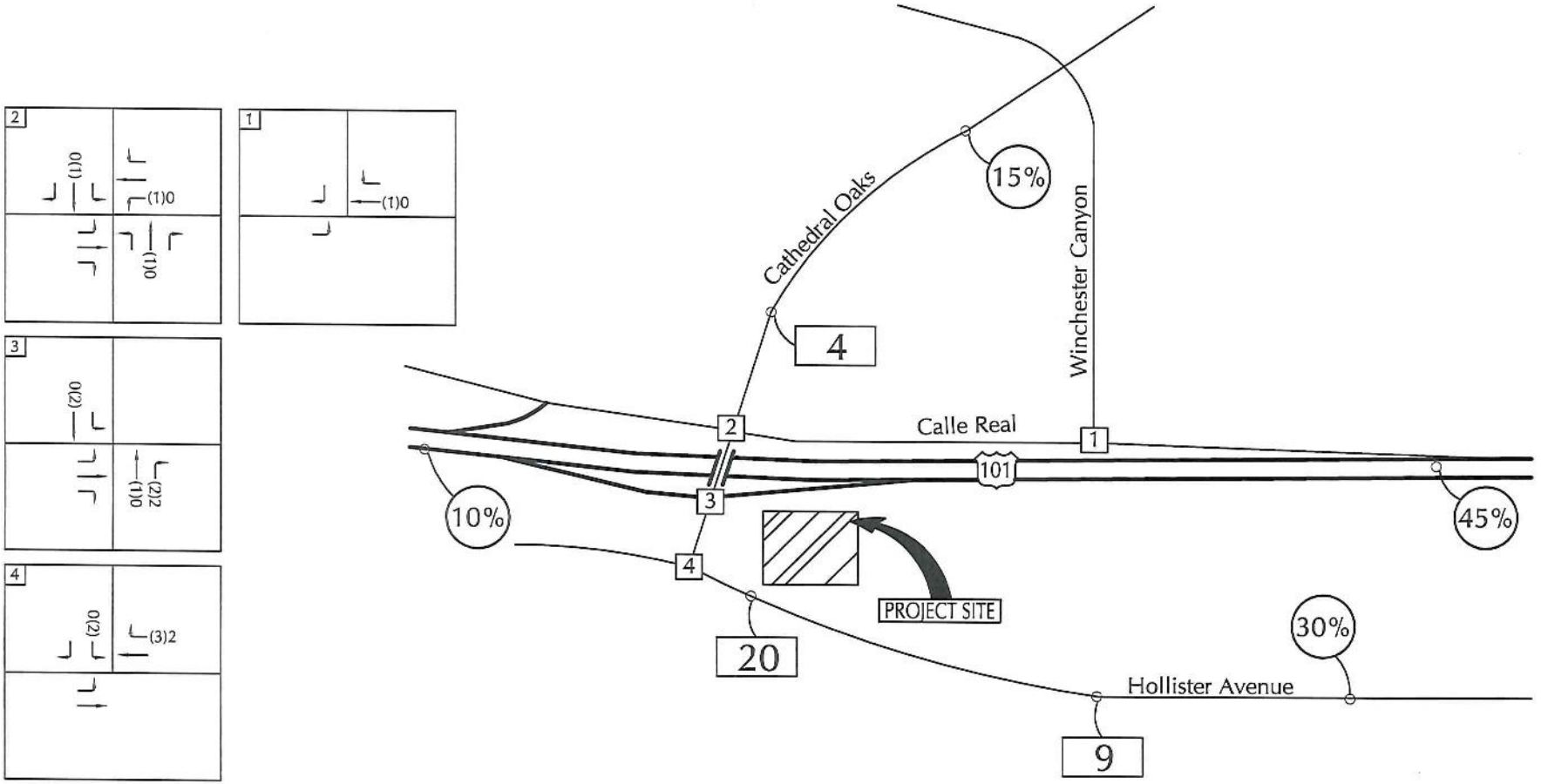
ENGINEERS

EXISTING LANE GEOMETRIES AND TRAFFIC CONTROLS

FIGURE 4

EKM - ATE#17070



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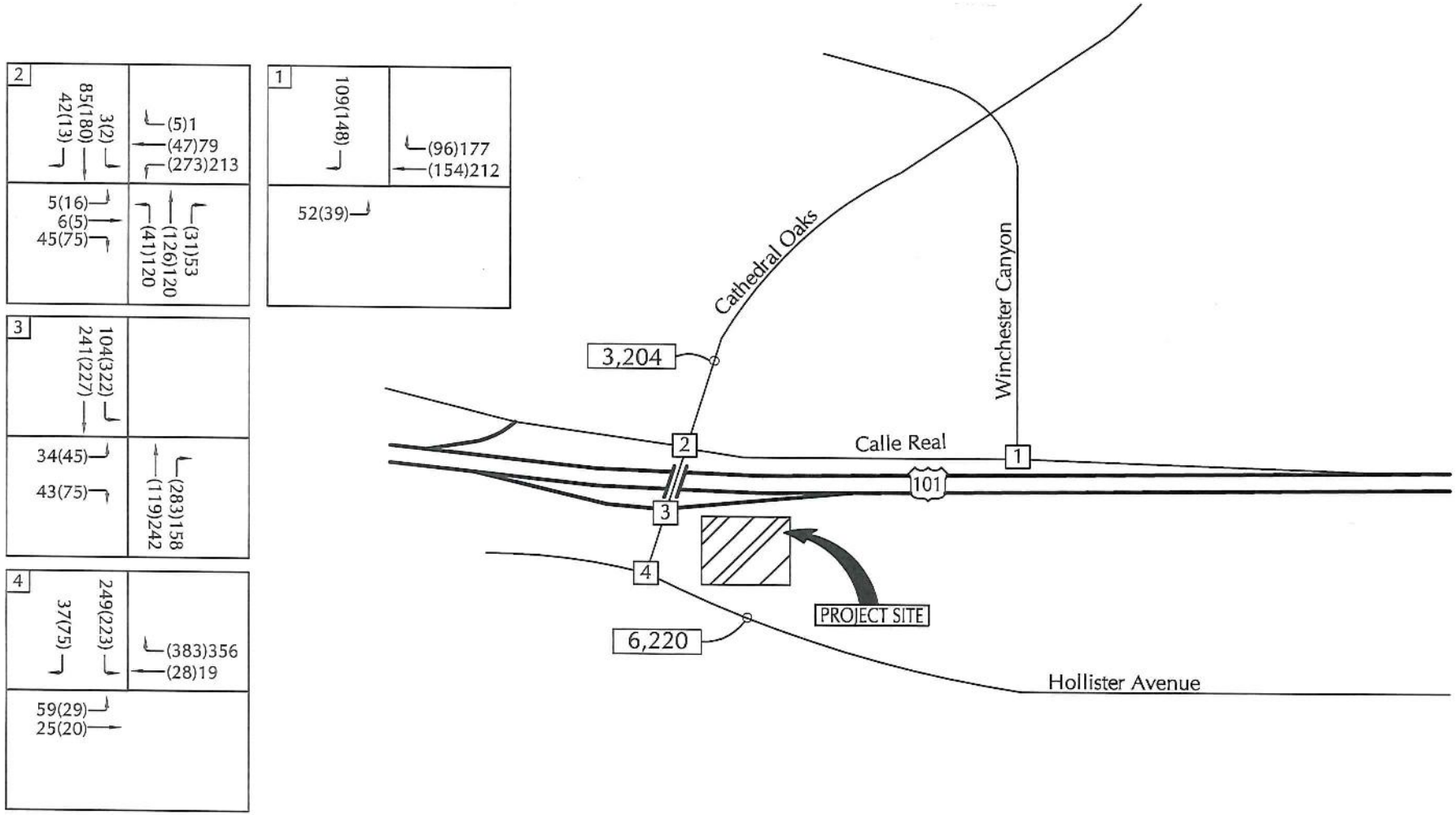
PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

FIGURE 5

EKM - ATE#17070



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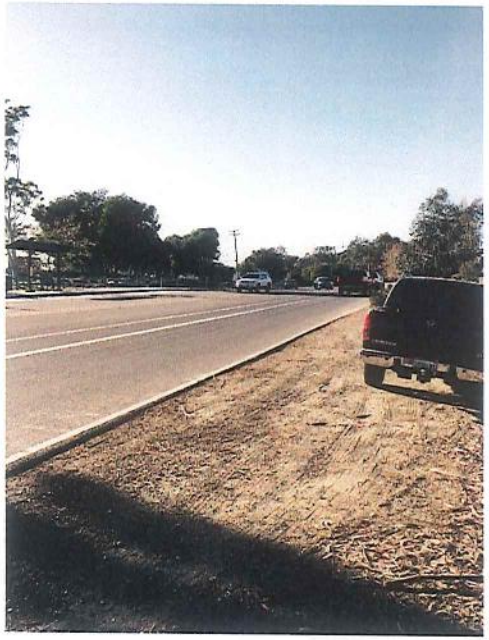
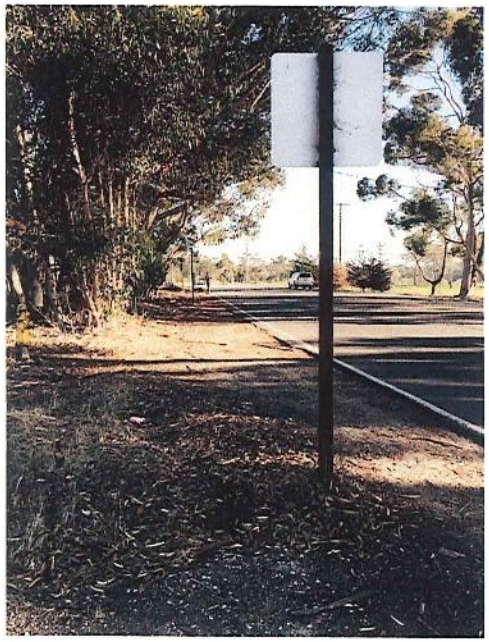
EXISTING + PROJECT TRAFFIC VOLUMES

FIGURE 6

EKM - ATE#17070



SIGHT DISTANCE LOOKING WEST



SIGHT DISTANCE LOOKING EAST

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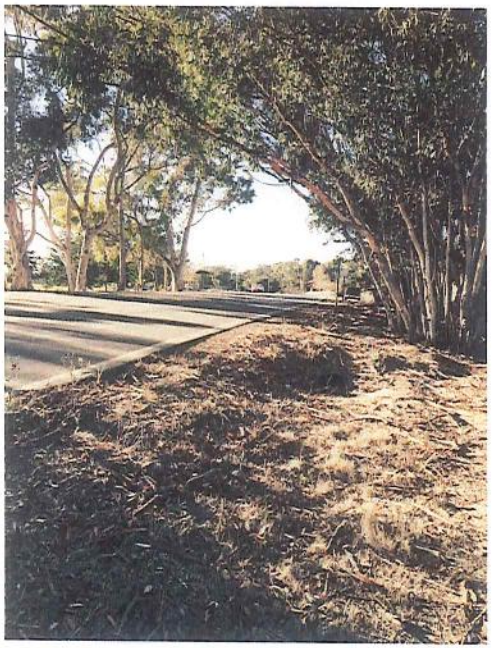
WESTERN APPARATUS DRIVEWAY SIGHT DISTANCE

FIGURE 7

EKM - ATE#17070



SIGHT DISTANCE LOOKING WEST

SIGHT DISTANCE LOOKING EAST

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NOT TO SCALE

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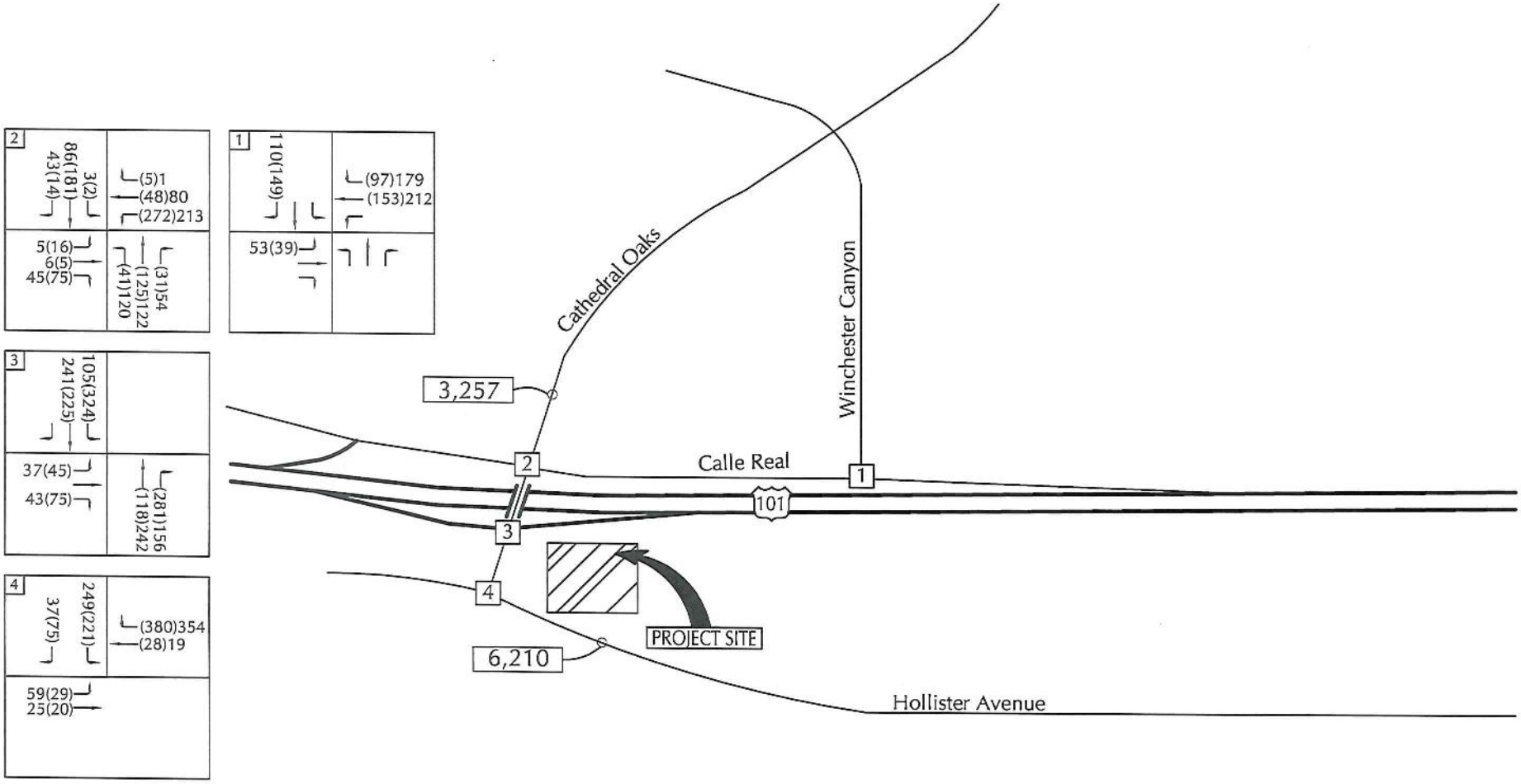
EAST PUBLIC DRIVEWAY SIGHT DISTANCE

FIGURE 8

EKM - ATE#17070



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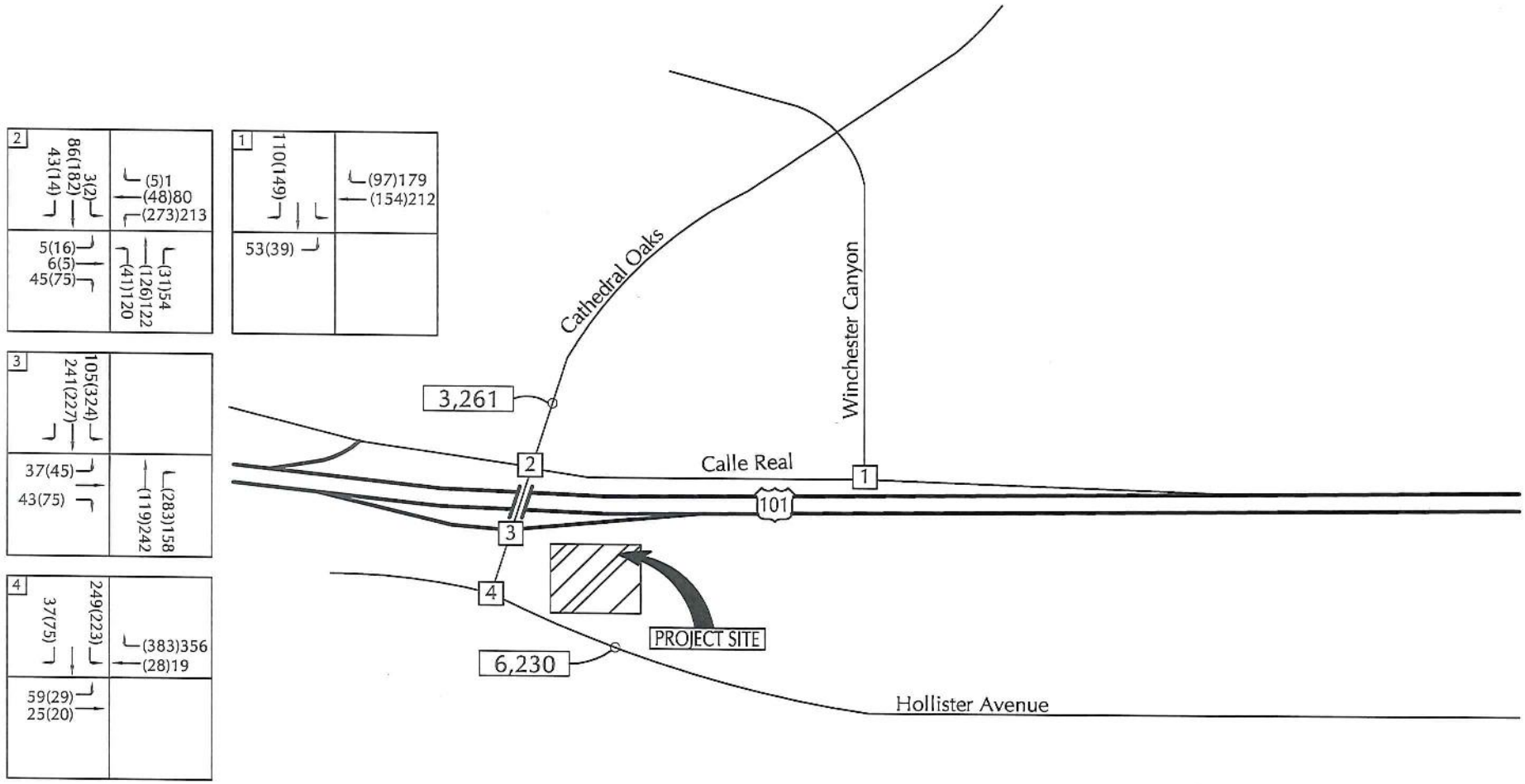
CUMULATIVE TRAFFIC VOLUMES

FIGURE 9

EKM - ATE#17070



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CUMULATIVE + PROJECT TRAFFIC VOLUMES

FIGURE 10

EKM - ATE#17070

Associated Transportation Engineers
#17070 - Fire Station No. 10
9/8/2017

Project Trip Generation Worksheet

Component	Unit	ADT	AM Peak Hour	PM Peak Hour
Staff Trips	3 Staff	6	6	0
Fire Engine Calls	5 Calls	10	1	1
Misc. Trips	3 Trips	6	0	0
Public Meeting Room	13 /month	7	0	1
Total		**29**	**7**	**2**

Trips based on operational data

Weekday Public Meeting Room ADT Calculations

Meeting Type	# of meetings	# of trips	ADT	Monthly ADT
Fire Department Training	4 /month	2 cars	4	16
City Staff Meetings	1 /month	7 cars	14	14
Small Public Meetings	4 /month	7 cars	14	56
Certificate Training	4 /month	7 cars	14	56
Total	***13 /month***			***142***
Average		**142 ADT / 21 weekdays/month =**		**7**

Prepared by National Data & Surveying Services

Winchester Canyon Rd & Calle Real - US 101 NB Ramp

Peak Hour Turning Movement Count

ID: 17-08112-001
City: Goleta

Day: Thursday
Date: 11/16/2017

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Winchester Canyon Rd — SOUTHBOUND

AM	148	0	0	0	135	AM
NOON	0	0	0	0	0	NOON
PM	109	0	0	0	229	PM
	0	1	0	0		

Calle Real - US 101 NB Ramp — EASTBOUND

AM	NOON	PM	
301	0	321	
0	0	0	0
39	0	52	0
0	0	0	1
0	0	0	0
AM	NOON	PM	

CONTROL

3-Way Stop(SB/EB/WB)

	AM	NOON	PM
TEV	436	0	550
PHF	0.92		0.88

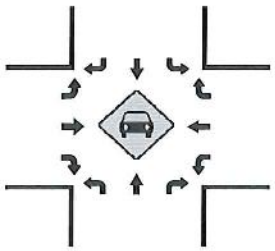
Calle Real - US 101 NB Ramp — WESTBOUND

PM	NOON	AM	
177	0	96	0
212	0	153	1
0	0	0	0
0	0	0	0
0	0	0	
PM	NOON	AM	

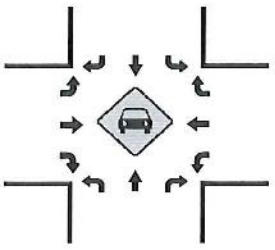
NORTHBOUND — Winchester Canyon Rd

PM	0	0	0	0	PM
NOON	0	0	0	0	NOON
AM	0	0	0	0	AM
	0	0	0	0	

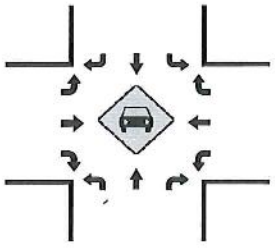
Total Vehicles (AM)



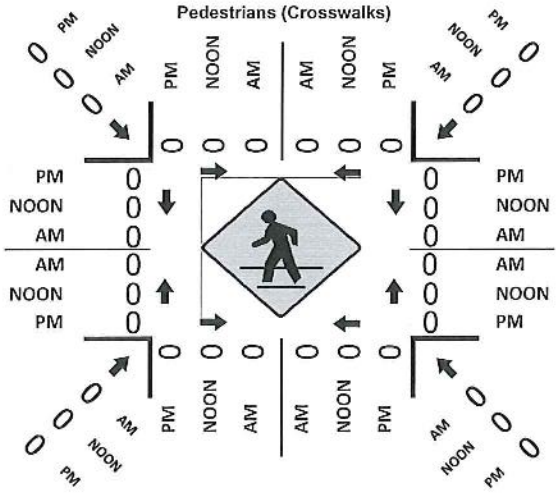
Total Vehicles (NOON)



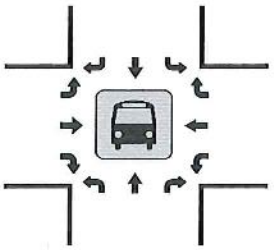
Total Vehicles (PM)



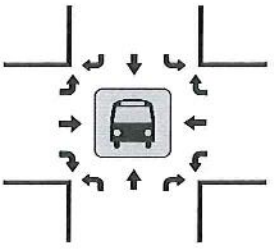
Pedestrians (Crosswalks)



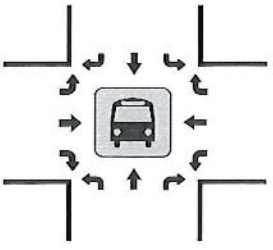
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

Cathedral Oaks Rd & Calle Real

Peak Hour Turning Movement Count

ID: 17-08112-002
City: Goleta

Day: Thursday
Date: 11/16/2017

PEAK HOURS

AM	07:45 AM - 08:45 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Cathedral Oaks Rd

SOUTHBOUND

AM	13	179	2	0	146	AM
NOON	0	0	0	0	0	NOON
PM	42	85	3	0	126	PM
	0.5	0.5	1	0		

EASTBOUND (Calle Real)

AM	NOON	PM	
101	0	241	
0	0	0	0
16	0	5	0.3
5	0	6	0.3
75	0	45	0.3
AM	NOON	PM	

WESTBOUND (Calle Real)

PM	NOON	AM	
1	0	5	0.5
79	0	47	0.5
213	0	272	1
0	0	0	0
62	0	38	
PM	NOON	AM	

CONTROL

4-Way Stop

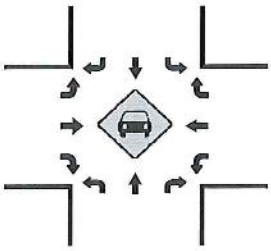
TEV	811	0	772
	AM	NOON	PM
PHF	0.87		0.88

	0	1	0.5	0.5		
PM	343	0	120	120	53	PM
NOON	0	0	0	0	0	NOON
AM	526	0	41	125	31	AM

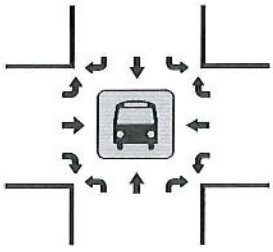
NORTHBOUND

Cathedral Oaks Rd

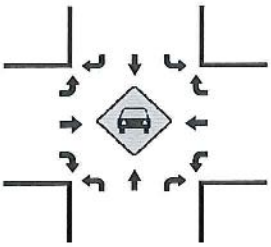
Total Vehicles (AM)



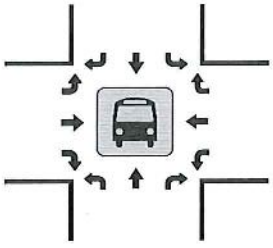
Total Vehicles (AM)



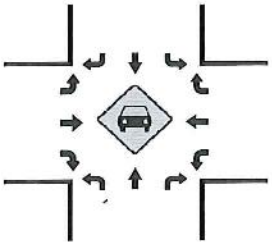
Total Vehicles (NOON)



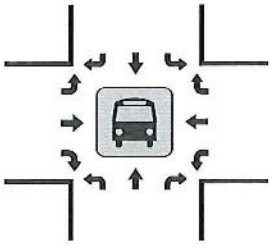
Total Vehicles (NOON)



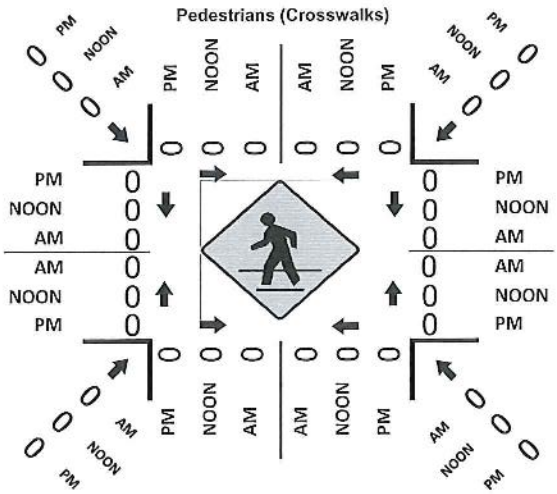
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Cathedral Oaks Rd & US 101 SB Ramps

Peak Hour Turning Movement Count

ID: 17-08112-003
City: Goleta

Day: Thursday
Date: 11/16/2017

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:15 PM - 05:15 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Cathedral Oaks Rd — SOUTHBOUND

AM	0	225	322	0	163	AM
NOON	0	0	0	0	0	NOON
PM	0	241	104	0	276	PM
	0	1	1	0		

US 101 SB Ramps — EASTBOUND

AM	NOON	PM		
0	0	0		
0	0	0	0	
45	0	34	0.5	
0	0	1	0.5	
75	0	43	1	
AM	NOON	PM		

CONTROL

1-Way Stop(EB)

TEV	1066	0	821
	AM	NOON	PM
PHF	0.90		0.87

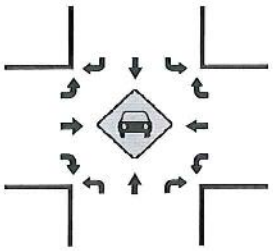
US 101 SB Ramps — WESTBOUND

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
261	0	603	
PM	NOON	AM	

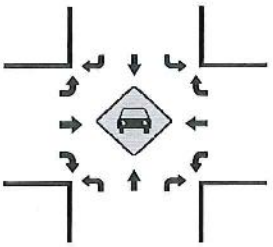
	0	0	0.5	0.5		
PM	284	0	0	242	156	PM
NOON	0	0	0	0	0	NOON
AM	300	0	0	118	281	AM

Cathedral Oaks Rd — NORTHBOUND

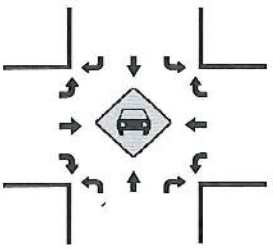
Total Vehicles (AM)



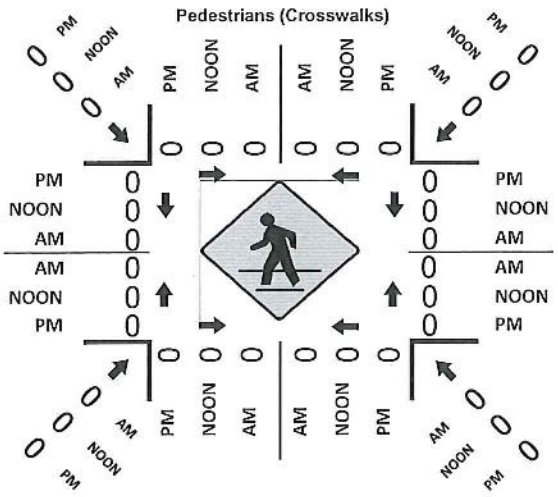
Total Vehicles (NOON)



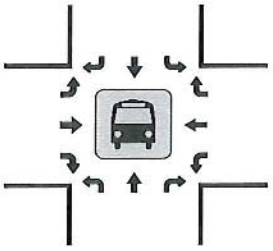
Total Vehicles (PM)



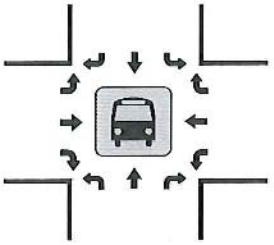
Pedestrians (Crosswalks)



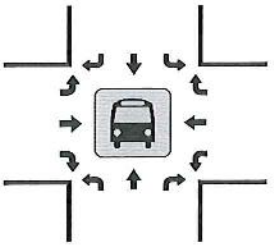
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

Cathedral Oaks Rd & Hollister Ave

Peak Hour Turning Movement Count

ID: 17-08112-004
City: Goleta

Day: Thursday
Date: 11/16/2017

PEAK HOURS

AM	07:45 AM - 08:45 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Cathedral Oaks Rd

SOUTHBOUND

AM	75	0	221	0	409	AM
NOON	0	0	0	0	0	NOON
PM	37	0	249	0	413	PM

1 0 1 0

EASTBOUND

Hollister Ave

AM	NOON	PM	
103	0	56	
0	0	0	0
29	0	59	1
20	0	25	1
0	0	0	0
AM	NOON	PM	

CONTROL

3-Way Stop(SB/EB/WB)

TEV	753	0	743
	AM	NOON	PM
PHF	0.94		0.91

WESTBOUND

Hollister Ave

PM	NOON	AM	
354	0	380	1
19	0	28	1
0	0	0	0
0	0	0	0
274	0	241	
PM	NOON	AM	

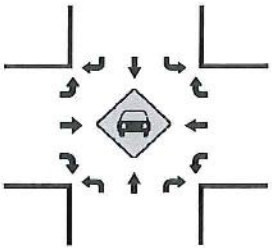
0 0 0 0

NORTHBOUND

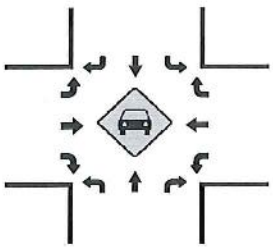
PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

Cathedral Oaks Rd

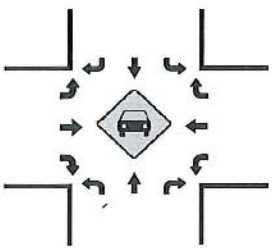
Total Vehicles (AM)



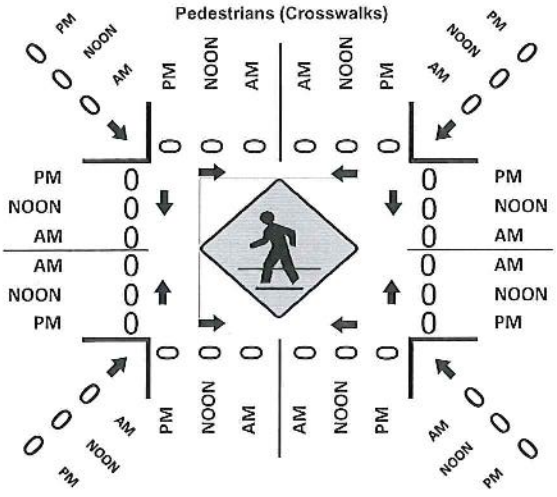
Total Vehicles (NOON)



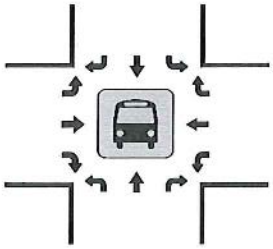
Total Vehicles (PM)



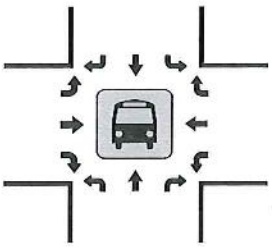
Pedestrians (Crosswalks)



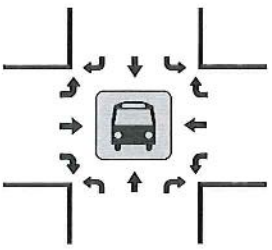
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



Prepared by NDS/ATD

VOLUME

Cathedral Oaks Rd N/O Calle Real

Day: Thursday
Date: 11/16/2017

City: Goleta
Project #: CA17_8113_002

DAILY TOTALS	NB	SB	EB	WB	Total
	1,308	1,879	0	0	3,187

AM Period	NB		SB		EB		WB		TOTAL	
00:00	1		3						4	
00:15	1		1						2	
00:30	2		1						3	
00:45	1	5	0	5					1	10
01:00	0		1						1	
01:15	0		0						0	
01:30	2		2						4	
01:45	2	4	0	3					2	7
02:00	0		1						1	
02:15	2		0						2	
02:30	1		1						2	
02:45	2	5	0	2					2	7
03:00	0		0						0	
03:15	0		0						0	
03:30	0		0						0	
03:45	0		0						0	
04:00	1		1						2	
04:15	0		0						0	
04:30	0		2						2	
04:45	3	4	3	6					6	10
05:00	0		2						2	
05:15	1		8						9	
05:30	2		7						9	
05:45	3	6	12	29					15	35
06:00	6		8						14	
06:15	4		7						11	
06:30	11		20						31	
06:45	20	41	33	68					53	109
07:00	10		27						37	
07:15	25		44						69	
07:30	72		70						142	
07:45	66	173	83	224					149	397
08:00	28		67						95	
08:15	24		41						65	
08:30	18		41						59	
08:45	17	87	41	190					58	277
09:00	13		25						38	
09:15	21		30						51	
09:30	18		31						49	
09:45	17	69	29	115					46	184
10:00	12		31						43	
10:15	11		23						34	
10:30	13		26						39	
10:45	19	55	30	110					49	165
11:00	14		16						30	
11:15	14		23						37	
11:30	17		21						38	
11:45	22	67	30	90					52	157
TOTALS		516		842						1358
SPLIT %		38.0%		62.0%						42.6%

PM Period	NB		SB		EB		WB		TOTAL	
12:00	20		32						52	
12:15	26		30						56	
12:30	21		10						31	
12:45	19	86	27	99					46	185
13:00	14		37						51	
13:15	37		27						64	
13:30	18		23						41	
13:45	16	85	30	117					46	202
14:00	13		28						41	
14:15	22		28						50	
14:30	27		26						53	
14:45	25	87	43	125					68	212
15:00	25		61						86	
15:15	18		40						58	
15:30	31		29						60	
15:45	25	99	40	170					65	269
16:00	27		30						57	
16:15	25		45						70	
16:30	29		31						60	
16:45	34	115	30	136					64	251
17:00	38		36						74	
17:15	29		35						64	
17:30	26		30						56	
17:45	26	119	18	119					44	238
18:00	19		27						46	
18:15	17		23						40	
18:30	19		22						41	
18:45	13	68	23	95					36	163
19:00	17		28						45	
19:15	11		14						25	
19:30	7		15						22	
19:45	6	41	14	71					20	112
20:00	15		9						24	
20:15	8		14						22	
20:30	10		7						17	
20:45	7	40	14	44					21	84
21:00	8		9						17	
21:15	7		7						14	
21:30	10		9						19	
21:45	3	28	5	30					8	58
22:00	3		5						8	
22:15	7		6						13	
22:30	3		1						4	
22:45	1	14	4	16					5	30
23:00	4		7						11	
23:15	2		3						5	
23:30	2		3						5	
23:45	2	10	2	15					4	25
TOTALS		792		1037						1829
SPLIT %		43.3%		56.7%						57.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	1,308	1,879	0	0	3,187

AM Peak Hour	07:15	07:15			07:15
AM Pk Volume	191	264			455
Pk Hr Factor	0.663	0.795			0.763
7 - 9 Volume	260	414	0	0	674
7 - 9 Peak Hour	07:15	07:15			07:15
7 - 9 Pk Volume	191	264	0	0	455
Pk Hr Factor	0.663	0.795	0.000	0.000	0.763

PM Peak Hour	16:30	14:45			14:45
PM Pk Volume	130	173			272
Pk Hr Factor	0.855	0.709			0.791
4 - 6 Volume	234	255	0	0	489
4 - 6 Peak Hour	16:30	16:15			16:15
4 - 6 Pk Volume	130	142	0	0	268
Pk Hr Factor	0.855	0.789	0.000	0.000	0.905

Table 1
Goleta Roadway Classifications

Classification	Purpose and Design Factors	Design Capacity		LOS C Threshold[1]	
		2 Lane	4 Lane	2 Lane	4 Lane
Primary 1	Roadways designed to serve primarily non-residential development. Roadways would have a minimum of 12-foot wide lanes with shoulders and few curb cuts. Signals would be spaced at 1 mile or more intervals.	19,900	47,760	15,900	38,200
Primary 2	Roadways which serve a high proportion of non-residential development with some residential lots and few or no driveway curb cuts. Lane widths are a minimum of 12 feet with well spaced curb cuts. Signals intervals at a minimum of 1/2 mile.	17,900	42,480	14,300	34,000
Primary 3	Roadways designed to serve non-residential development and residential development. More frequent driveways are acceptable. Potential signal intervals of 1/2-1/4 mile.	15,700	37,680	12,500	30,100
Secondary 1	Roadways designed to primarily serve non-residential development and large lot residential development with well spaced driveways. Roadways would be 2 lanes with infrequent driveways. Signal would generally occur at intersections with primary roads.	11,600	NA	9,300	NA
Secondary 2	Roadways designed to serve residential and non-residential land uses. Roadways would be 2 lanes with close to moderately spaced driveways.	9,100	NA	7,300	NA
Secondary 3	Roadways designed to primarily serve residential with small to medium lots. Roadways are 2 lanes with more frequent driveways.	7,900	NA	6,300	NA

[1] Defined as 80% of Design Capacity.
Source: Santa Barbara County Public Works, Transportation Division.

Signalized Intersection Level of Service Definitions

LOS	Delay (a)	V/C Ratio	Definition
A	< 10.0	< 0.60	Progression is extremely favorable. Most vehicles arrive during the green phase. Many vehicles do not stop at all.
B	10.1 - 20.0	0.61 - 0.70	Good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	20.1 - 35.0	0.71 - 0.80	Only fair progression, longer cycle lengths, or both, result in higher cycle lengths. Cycle lengths may fail to serve queued vehicles, and overflow occurs. Number of vehicles stopped is significant, though many still pass through intersection without stopping.
D	35.1 - 55.0	0.81 - 0.90	Congestion becomes more noticeable. Unfavorable progression, long cycle lengths and high v/c ratios result in longer delays. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55.1 - 80.0	0.91 - 1.00	High delay values indicate poor progression, long cycle lengths and high v/c ratios. Individual cycle failures are frequent
F	> 80.0	> 1.00	Considered unacceptable for most drivers, this level occurs when arrival flow rates exceed the capacity of lane groups, resulting in many individual cycle failures. Poor progression and long cycle lengths may also contribute to high delay levels.

(a) Average control delay per vehicle in seconds.

Unsignalized Intersection Level of Service Definitions

The HCM[1] uses *control delay* to determine the level of service at unsignalized intersections. Control delay is the difference between the travel time actually experienced at the control device and the travel time that would occur in the absence of the traffic control device. Control delay includes deceleration from free flow speed, queue move-up time, stopped delay and acceleration back to free flow speed.

LOS	Control Delay Seconds per Vehicle
A	< 10.0
B	10.1 - 15.0
C	15.1 - 25.0
D	25.1 - 35.0
E	35.1 - 50.0
F	> 50.0

[1] Highway Capacity Manual, National Research Board, 2010

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Time Period	AM PEAK HOUR

Site Information

Intersection	01_AM
Jurisdiction	CITY OF GOLETA
Analysis Year	2017

Project ID *FIRE STATION 10 # 17070*

East/West Street: *CALLE REAL- US 101 NB RAMPS* North/South Street: *WINCHESTER CANYON*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	39	6	45	213	153	96
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	120	120	53	3	85	148
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	L		TR				R	
PHF	0.92		0.92				0.92	
Flow Rate (veh/h)	42		270				160	
% Heavy Vehicles	2		2				2	
No. Lanes	1		1		0		1	
Geometry Group	1		1				1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	1.0		0.0				0.0	
Prop. Right-Turns	0.0		0.4				1.0	
Prop. Heavy Vehicle	0.0		0.0				0.0	
hLT-adj	0.2	0.2	0.2	0.2			0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6			-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7			1.7	1.7
hadj, computed	0.2		-0.2				-0.6	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20				3.20	
x, initial	0.04		0.24				0.14	
hd, final value (s)	4.76		4.10				4.02	
x, final value	0.056		0.308				0.179	
Move-up time, m (s)	2.0		2.0				2.0	
Service Time, t_s (s)	2.8		2.1				2.0	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	700		871				889	
Delay (s/veh)	8.0		8.9				7.9	
LOS	A		A				A	
Approach: Delay (s/veh)	8.0		8.9				7.9	
LOS	A		A				A	
Intersection Delay (s/veh)	8.5							
Intersection LOS	A							

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Time Period	PM PEAK HOUR

Site Information

Intersection	01_PM
Jurisdiction	CITY OF GOLETA
Analysis Year	2017

Project ID *FIRE STATION 10 # 17070*

East/West Street: *CALLE REAL- US 101 NB RAMPS* North/South Street: *WINCHESTER CANYON*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	52	6	45	213	212	177
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	120	120	53	3	85	109
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	L		TR				R	
PHF	0.88		0.88				1.00	
Flow Rate (veh/h)	59		441				109	
% Heavy Vehicles	2		2				2	
No. Lanes	1		1		0		1	
Geometry Group	1		1				1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	1.0		0.0				0.0	
Prop. Right-Turns	0.0		0.5				1.0	
Prop. Heavy Vehicle	0.0		0.0				0.0	
hLT-adj	0.2	0.2	0.2	0.2			0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6			-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7			1.7	1.7
hadj, computed	0.2		-0.2				-0.6	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20				3.20	
x, initial	0.05		0.39				0.10	
hd, final value (s)	4.83		3.99				4.40	
x, final value	0.079		0.489				0.133	
Move-up time, m (s)	2.0		2.0				2.0	
Service Time, t_s (s)	2.8		2.0				2.4	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	738		900				838	
Delay (s/veh)	8.2		10.7				8.1	
LOS	A		B				A	
Approach: Delay (s/veh)	8.2		10.7				8.1	
LOS	A		B				A	
Intersection Delay (s/veh)	10.0+							
Intersection LOS	B							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Time Period	AM PEAK HOUR

Site Information

Intersection	01_AM_CU
Jurisdiction	CITY OF GOLETA
Analysis Year	2017

Project ID *FIRE STATION 10 # 17070*

East/West Street: *CALLE REAL- US 101 NB RAMPS* North/South Street: *WINCHESTER CANYON*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	39	6	45	213	153	97
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	120	120	53	3	85	149
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	L		TR				R	
PHF	0.92		0.92				0.92	
Flow Rate (veh/h)	42		271				161	
% Heavy Vehicles	2		2				2	
No. Lanes	1		1		0		1	
Geometry Group	1		1				1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	1.0		0.0				0.0	
Prop. Right-Turns	0.0		0.4				1.0	
Prop. Heavy Vehicle	0.0		0.0				0.0	
hLT-adj	0.2	0.2	0.2	0.2			0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6			-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7			1.7	1.7
hadj, computed	0.2		-0.2				-0.6	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20				3.20	
x, initial	0.04		0.24				0.14	
hd, final value (s)	4.77		4.10				4.02	
x, final value	0.056		0.309				0.180	
Move-up time, m (s)	2.0		2.0				2.0	
Service Time, t_s (s)	2.8		2.1				2.0	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	700		874				894	
Delay (s/veh)	8.0		8.9				7.9	
LOS	A		A				A	
Approach: Delay (s/veh)	8.0		8.9				7.9	
LOS	A		A				A	
Intersection Delay (s/veh)	8.5							
Intersection LOS	A							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Time Period	PM PEAK HOUR

Site Information

Intersection	01_PM_CU
Jurisdiction	CITY OF GOLETA
Analysis Year	2017

Project ID *FIRE STATION 10 # 17070*

East/West Street: *CALLE REAL- US 101 NB RAMPS* North/South Street: *WINCHESTER CANYON*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	53	6	45	213	212	179
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	120	120	53	3	85	110
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	L		TR				R	
PHF	0.88		0.88				1.00	
Flow Rate (veh/h)	60		443				110	
% Heavy Vehicles	2		2				2	
No. Lanes	1		1		0		1	
Geometry Group	1		1				1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	1.0		0.0				0.0	
Prop. Right-Turns	0.0		0.5				1.0	
Prop. Heavy Vehicle	0.0		0.0				0.0	
hLT-adj	0.2	0.2	0.2	0.2			0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6			-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7			1.7	1.7
hadj, computed	0.2		-0.2				-0.6	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20				3.20	
x, initial	0.05		0.39				0.10	
hd, final value (s)	4.83		3.99				4.40	
x, final value	0.081		0.491				0.135	
Move-up time, m (s)	2.0		2.0				2.0	
Service Time, t_s (s)	2.8		2.0				2.4	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	750		904				846	
Delay (s/veh)	8.3		10.8				8.1	
LOS	A		B				A	
Approach: Delay (s/veh)	8.3		10.8				8.1	
LOS	A		B				A	
Intersection Delay (s/veh)	10.1							
Intersection LOS	B							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Time Period	PM PEAK HOUR

Site Information

Intersection	02_AM
Jurisdiction	CITY OF GOLETA
Analysis Year	2017

Project ID *FIRE STATION 10 # 17070*

East/West Street: *CALLE REAL* North/South Street: *CATHEDRAL OAKS*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	16	5	75	272	47	5
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	41	125	31	2	179	13
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		L	TR	L	TR	L	TR
PHF	0.87		0.87	0.87	0.87	0.87	0.87	0.87
Flow Rate (veh/h)	109		312	59	47	178	2	219
% Heavy Vehicles	2		2	2	0	0	2	2
No. Lanes	1		2		2		2	
Geometry Group	4b		5		5		5	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.2		1.0	0.0	1.0	0.0	1.0	0.0
Prop. Right-Turns	0.8		0.0	0.1	0.0	0.2	0.0	0.1
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.5
hRT-adj	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.4		0.5	-0.0	0.5	-0.1	0.5	-0.0

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.10		0.28	0.05	0.04	0.16	0.00	0.19
hd, final value (s)	6.10		6.55	5.99	6.90	6.26	6.93	6.38
x, final value	0.185		0.568	0.098	0.090	0.309	0.004	0.388
Move-up time, m (s)	2.3		2.3		2.3		2.3	
Service Time, t_s (s)	3.8		4.3	3.7	4.6	4.0	4.6	4.1

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	606		547	590	522	574	0	562
Delay (s/veh)	10.2		17.5	9.3	10.3	11.7	9.7	13.1
LOS	B		C	A	B	B	A	B
Approach: Delay (s/veh)	10.2		16.2		11.4		13.0	
LOS	B		C		B		B	
Intersection Delay (s/veh)	13.6							
Intersection LOS	B							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Time Period	PM PEAK HOUR

Site Information

Intersection	02_EX_PM
Jurisdiction	CITY OF GOLETA
Analysis Year	2017

Project ID *FIRE STATION 10 # 17070*

East/West Street: *CALLE REAL* North/South Street: *CATHEDRAL OAKS*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	5	6	45	213	79	1
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	120	120	53	3	85	42
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		L	TR	L	TR	L	TR
PHF	0.88		0.88	0.88	0.88	0.88	0.88	0.88
Flow Rate (veh/h)	62		242	90	136	196	3	143
% Heavy Vehicles	2		2	2	0	0	2	2
No. Lanes	1		2		2		2	
Geometry Group	4b		5		5		5	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.1		1.0	0.0	1.0	0.0	1.0	0.0
Prop. Right-Turns	0.8		0.0	0.0	0.0	0.3	0.0	0.3
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.5
hRT-adj	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.4		0.5	0.0	0.5	-0.2	0.5	-0.2

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.06		0.22	0.08	0.12	0.17	0.00	0.13
hd, final value (s)	5.87		6.43	5.92	6.42	5.70	6.72	5.98
x, final value	0.101		0.432	0.148	0.242	0.310	0.006	0.238
Move-up time, m (s)	2.3		2.3		2.3		2.3	
Service Time, t_s (s)	3.6		4.1	3.6	4.1	3.4	4.4	3.7

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	620		563	600	567	632	300	596
Delay (s/veh)	9.2		13.9	9.6	11.2	10.9	9.5	10.5
LOS	A		B	A	B	B	A	B
Approach: Delay (s/veh)	9.2		12.8		11.0		10.5	
LOS	A		B		B		B	
Intersection Delay (s/veh)	11.5							
Intersection LOS	B							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Time Period	PM PEAK HOUR

Site Information

Intersection	02_AM_CU
Jurisdiction	CITY OF GOLETA
Analysis Year	2017

Project ID *FIRE STATION 10 # 17070*

East/West Street: *CALLE REAL* North/South Street: *CATHEDRAL OAKS*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	16	5	75	272	48	5
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	41	125	31	2	181	14
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		L	TR	L	TR	L	TR
PHF	0.87		0.87	0.87	0.87	0.87	0.87	0.87
Flow Rate (veh/h)	109		312	60	47	178	2	224
% Heavy Vehicles	2		2	2	0	0	2	2
No. Lanes	1		2		2		2	
Geometry Group	4b		5		5		5	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.2		1.0	0.0	1.0	0.0	1.0	0.0
Prop. Right-Turns	0.8		0.0	0.1	0.0	0.2	0.0	0.1
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.5
hRT-adj	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.4		0.5	-0.0	0.5	-0.1	0.5	-0.0

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.10		0.28	0.05	0.04	0.16	0.00	0.20
hd, final value (s)	6.12		6.57	6.01	6.92	6.27	6.94	6.38
x, final value	0.185		0.570	0.100	0.090	0.310	0.004	0.397
Move-up time, m (s)	2.3		2.3		2.3		2.3	
Service Time, t_s (s)	3.8		4.3	3.7	4.6	4.0	4.6	4.1

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	574		547	600	522	574	0	560
Delay (s/veh)	10.2		17.6	9.4	10.3	11.8	9.7	13.2
LOS	B		C	A	B	B	A	B
Approach: Delay (s/veh)	10.2		16.3		11.5		13.2	
LOS	B		C		B		B	
Intersection Delay (s/veh)	13.7							
Intersection LOS	B							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Time Period	PM PEAK HOUR

Site Information

Intersection	02_PM_CU
Jurisdiction	CITY OF GOLETA
Analysis Year	2017

Project ID FIRE STATION 10 # 17070

East/West Street: CALLE REAL | North/South Street: CATHEDRAL OAKS

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	5	6	45	213	80	1
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	120	122	54	3	86	43
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		L	TR	L	TR	L	TR
PHF	0.88		0.88	0.88	0.88	0.88	0.88	0.88
Flow Rate (veh/h)	62		242	91	136	199	3	145
% Heavy Vehicles	2		2	2	0	0	2	2
No. Lanes	1		2		2		2	
Geometry Group	4b		5		5		5	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.1		1.0	0.0	1.0	0.0	1.0	0.0
Prop. Right-Turns	0.8		0.0	0.0	0.0	0.3	0.0	0.3
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.5
hRT-adj	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.4		0.5	0.0	0.5	-0.2	0.5	-0.2

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.06		0.22	0.08	0.12	0.18	0.00	0.13
hd, final value (s)	5.89		6.44	5.93	6.42	5.70	6.73	5.99
x, final value	0.101		0.433	0.150	0.243	0.315	0.006	0.241
Move-up time, m (s)	2.3		2.3		2.3		2.3	
Service Time, t_s (s)	3.6		4.1	3.6	4.1	3.4	4.4	3.7

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	620		563	607	567	622	300	604
Delay (s/veh)	9.3		14.0	9.7	11.2	11.0	9.5	10.6
LOS	A		B	A	B	B	A	B
Approach: Delay (s/veh)	9.3		12.8		11.1		10.6	
LOS	A		B		B		B	
Intersection Delay (s/veh)	11.5							
Intersection LOS	B							

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HCS7 Two-Way Stop-Control Report

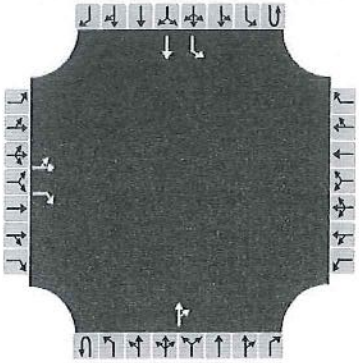
General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Year	2017
Time Analyzed	AM PEAK HOUR
Intersection Orientation	North-South
Project Description	EXISTING

Site Information

Intersection	US 101 SB/CATHEDRAL OAKS
Jurisdiction	CITY OF GOLETA
East/West Street	US 101 SB RAMPS
North/South Street	CATHEDRAL OAKS
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	0	0	0	0	1	0	0	1	1	0
Configuration		LT		R								TR		L	T	
Volume, V (veh/h)		45	0	75							118	281		322	225	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

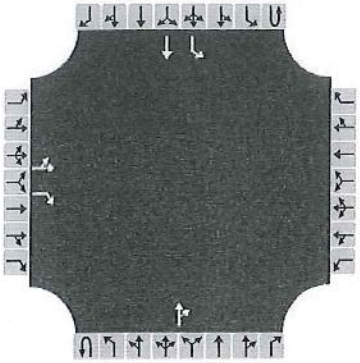
Flow Rate, v (veh/h)		49		82										350		
Capacity, c (veh/h)		439		791										1120		
v/c Ratio		0.11		0.10										0.31		
95% Queue Length, Q_{95} (veh)		0.4		0.3										1.3		
Control Delay (s/veh)		14.2		10.1										9.7		
Level of Service, LOS		B		B										A		
Approach Delay (s/veh)		11.6												5.7		
Approach LOS		B														

AWD: 9.7 SEC = LOS A

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EKM	Intersection	US 101 SB/CATHEDRAL OAKS
Agency/Co.	ATE	Jurisdiction	CITY OF GOLETA
Date Performed	11/28/2017	East/West Street	US 101 SB RAMPS
Analysis Year	2017	North/South Street	CATHEDRAL OAKS
Time Analyzed	PM PEAK HOUR	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	EXISTING		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	0	0	0	0	1	0	0	1	1	0
Configuration		LT		R								TR		L	T	
Volume, V (veh/h)		34	1	43							242	156		104	241	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		38		47										113		
Capacity, c (veh/h)		384		1341										1120		
v/c Ratio		0.10		0.04										0.10		
95% Queue Length, Q_{95} (veh)		0.3		0.1										0.3		
Control Delay (s/veh)		15.4		7.8										8.6		
Level of Service, LOS		C		A										A		
Approach Delay (s/veh)		11.2												2.6		
Approach LOS		B														

AWD: 10.2 SEC = LOS B

HCS7 Two-Way Stop-Control Report

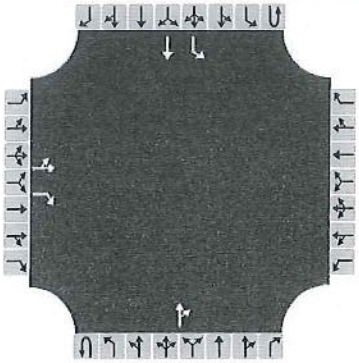
General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Year	2017
Time Analyzed	AM PEAK HOUR
Intersection Orientation	North-South
Project Description	CUMULATIVE

Site Information

Intersection	US 101 SB/CATHEDRAL OAKS
Jurisdiction	CITY OF GOLETA
East/West Street	US 101 SB RAMPS
North/South Street	CATHEDRAL OAKS
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	0	0	0	0	1	0	0	1	1	0
Configuration		LT		R								TR		L	T	
Volume, V (veh/h)		45	0	75							118	281		324	225	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		49		82										352		
Capacity, c (veh/h)		437		791										1120		
v/c Ratio		0.11		0.10										0.31		
95% Queue Length, Q_{95} (veh)		0.4		0.3										1.4		
Control Delay (s/veh)		14.3		10.1										9.7		
Level of Service, LOS		B		B										A		
Approach Delay (s/veh)		11.6												5.7		
Approach LOS		B														

AWD: 9.8 SEC = LOS A

HCS7 Two-Way Stop-Control Report

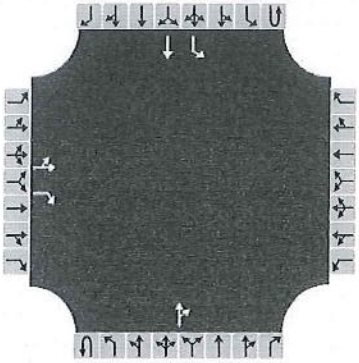
General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Year	2017
Time Analyzed	PM PEAK HOUR
Intersection Orientation	North-South
Project Description	CUMULATIVE

Site Information

Intersection	US 101 SB/CATHEDRAL OAKS
Jurisdiction	CITY OF GOLETA
East/West Street	US 101 SB RAMPS
North/South Street	CATHEDRAL OAKS
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	0	0	0	0	1	0	0	1	1	0
Configuration		LT		R								TR		L	T	
Volume, V (veh/h)		37	1	43							242	156		105	241	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		41		47										114		
Capacity, c (veh/h)		383		1341										1120		
v/c Ratio		0.11		0.04										0.10		
95% Queue Length, Q_{95} (veh)		0.4		0.1										0.3		
Control Delay (s/veh)		15.5		7.8										8.6		
Level of Service, LOS		C		A										A		
Approach Delay (s/veh)		11.4												2.6		
Approach LOS		B														

AWD: 10.2 SEC = LOS B

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Time Period	AM PEAK HOUR

Site Information

Intersection	04_EXISTING
Jurisdiction	CITY OF GOLETA
Analysis Year	2017

Project ID *FIRE STATION # 17070*

East/West Street: *HOLLISTER AVENUE* North/South Street: *CATHEDRAL OAKS*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	29	20	0	0	28	380
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	0	0	0	221	0	75
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	L	T	T	R			L	R
PHF	0.94	0.94	0.94	0.94			0.94	0.94
Flow Rate (veh/h)	30	21	29	404			235	79
% Heavy Vehicles	2	2	2	2			2	2
No. Lanes	2		2		0		2	
Geometry Group	5		5				1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	1.0	0.0	0.0	0.0			1.0	0.0
Prop. Right-Turns	0.0	0.0	0.0	1.0			0.0	1.0
Prop. Heavy Vehicle	0.0	0.0	0.0	0.0			0.0	0.0
hLT-adj	0.5	0.5	0.5	0.5			0.2	0.2
hRT-adj	-0.7	-0.7	-0.7	-0.7			-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7			1.7	1.7
hadj, computed	0.5	0.0	0.0	-0.7			0.2	-0.6

Departure Headway and Service Time

hd, initial value (s)	3.20	3.20	3.20	3.20			3.20	3.20
x, initial	0.03	0.02	0.03	0.36			0.21	0.07
hd, final value (s)	6.31	5.81	5.42	4.72			5.26	4.46
x, final value	0.053	0.034	0.044	0.529			0.343	0.098
Move-up time, m (s)	2.3		2.3				2.0	
Service Time, t_s (s)	4.0	3.5	3.1	2.4			3.3	2.5

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	600	700	725	762			691	790
Delay (s/veh)	9.4	8.7	8.4	12.6			11.0	7.9
LOS	A	A	A	B			B	A
Approach: Delay (s/veh)	9.1		12.3				10.2	
LOS	A		B				B	
Intersection Delay (s/veh)	11.3							
Intersection LOS	B							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Time Period	PM PEAK HOUR

Site Information

Intersection	04_PM
Jurisdiction	CITY OF GOLETA
Analysis Year	2017

Project ID *FIRE STATION # 17070*

East/West Street: *HOLLISTER AVENUE* North/South Street: *CATHEDRAL OAKS*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	59	25	0	0	19	354
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	0	0	0	249	0	37
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	L	T	T	R			L	R
PHF	0.91	0.91	0.91	0.91			0.91	0.91
Flow Rate (veh/h)	64	27	20	389			273	40
% Heavy Vehicles	2	2	2	2			2	2
No. Lanes	2		2		0		2	
Geometry Group	5		5				1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	1.0	0.0	0.0	0.0			1.0	0.0
Prop. Right-Turns	0.0	0.0	0.0	1.0			0.0	1.0
Prop. Heavy Vehicle	0.0	0.0	0.0	0.0			0.0	0.0
hLT-adj	0.5	0.5	0.5	0.5			0.2	0.2
hRT-adj	-0.7	-0.7	-0.7	-0.7			-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7			1.7	1.7
hadj, computed	0.5	0.0	0.0	-0.7			0.2	-0.6

Departure Headway and Service Time

hd, initial value (s)	3.20	3.20	3.20	3.20			3.20	3.20
x, initial	0.06	0.02	0.02	0.35			0.24	0.04
hd, final value (s)	6.35	5.85	5.52	4.82			5.33	4.54
x, final value	0.113	0.044	0.031	0.521			0.404	0.050
Move-up time, m (s)	2.3		2.3				2.0	
Service Time, t_s (s)	4.1	3.5	3.2	2.5			3.3	2.5

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	582	675	667	748			683	800
Delay (s/veh)	9.9	8.8	8.4	12.6			11.9	7.8
LOS	A	A	A	B			B	A
Approach: Delay (s/veh)	9.5		12.4				11.4	
LOS	A		B				B	
Intersection Delay (s/veh)	11.7							
Intersection LOS	B							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Time Period	AM PEAK HOUR

Site Information

Intersection	04_AM_CU
Jurisdiction	CITY OF GOLETA
Analysis Year	2017

Project ID *FIRE STATION 10 # 17070*

East/West Street: *HOLLISTER AVENUE* North/South Street: *CATHEDRAL OAKS*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	29	20	0	0	28	380
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	0	0	0	221	0	75
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	L	T	T	R			L	R
PHF	0.94	0.94	0.94	0.94			0.94	0.94
Flow Rate (veh/h)	30	21	29	404			235	79
% Heavy Vehicles	2	2	2	2			2	2
No. Lanes	2		2		0		2	
Geometry Group	5		5				1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	1.0	0.0	0.0	0.0			1.0	0.0
Prop. Right-Turns	0.0	0.0	0.0	1.0			0.0	1.0
Prop. Heavy Vehicle	0.0	0.0	0.0	0.0			0.0	0.0
hLT-adj	0.5	0.5	0.5	0.5			0.2	0.2
hRT-adj	-0.7	-0.7	-0.7	-0.7			-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7			1.7	1.7
hadj, computed	0.5	0.0	0.0	-0.7			0.2	-0.6

Departure Headway and Service Time

hd, initial value (s)	3.20	3.20	3.20	3.20			3.20	3.20
x, initial	0.03	0.02	0.03	0.36			0.21	0.07
hd, final value (s)	6.31	5.81	5.42	4.72			5.26	4.46
x, final value	0.053	0.034	0.044	0.529			0.343	0.098
Move-up time, m (s)	2.3		2.3				2.0	
Service Time, t_s (s)	4.0	3.5	3.1	2.4			3.3	2.5

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	600	700	725	762			691	790
Delay (s/veh)	9.4	8.7	8.4	12.6			11.0	7.9
LOS	A	A	A	B			B	A
Approach: Delay (s/veh)	9.1		12.3				10.2	
LOS	A		B				B	
Intersection Delay (s/veh)	11.3							
Intersection LOS	B							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	EKM
Agency/Co.	ATE
Date Performed	11/28/2017
Analysis Time Period	PM PEAK HOUR

Site Information

Intersection	04_PM_CU
Jurisdiction	CITY OF GOLETA
Analysis Year	2017

Project ID *FIRE STATION 10 # 17070*

East/West Street: *HOLLISTER AVENUE* North/South Street: *CATHEDRAL OAKS*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	59	25	0	0	19	354
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	0	0	0	249	0	37
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	L	T	T	R			L	R
PHF	0.91	0.91	0.91	0.91			0.91	0.91
Flow Rate (veh/h)	64	27	20	389			273	40
% Heavy Vehicles	2	2	2	2			2	2
No. Lanes	2		2		0		2	
Geometry Group	5		5				1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	1.0	0.0	0.0	0.0			1.0	0.0
Prop. Right-Turns	0.0	0.0	0.0	1.0			0.0	1.0
Prop. Heavy Vehicle	0.0	0.0	0.0	0.0			0.0	0.0
hLT-adj	0.5	0.5	0.5	0.5			0.2	0.2
hRT-adj	-0.7	-0.7	-0.7	-0.7			-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7			1.7	1.7
hadj, computed	0.5	0.0	0.0	-0.7			0.2	-0.6

Departure Headway and Service Time

hd, initial value (s)	3.20	3.20	3.20	3.20			3.20	3.20
x, initial	0.06	0.02	0.02	0.35			0.24	0.04
hd, final value (s)	6.35	5.85	5.52	4.82			5.33	4.54
x, final value	0.113	0.044	0.031	0.521			0.404	0.050
Move-up time, m (s)	2.3		2.3				2.0	
Service Time, t_s (s)	4.1	3.5	3.2	2.5			3.3	2.5

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	582	675	667	748			683	800
Delay (s/veh)	9.9	8.8	8.4	12.6			11.9	7.8
LOS	A	A	A	B			B	A
Approach: Delay (s/veh)	9.5		12.4				11.4	
LOS	A		B				B	
Intersection Delay (s/veh)	11.7							
Intersection LOS	B							

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City of Goleta

Cumulative Projects List - External

Updated 11/13/17

Case #	Project	Address	APN	Land Use	Acreage	Project Description	Planner	Status
PROJECTS UNDER CONSTRUCTION								
10-043-DP- et al.	Village at Los Carneros	Calle Koral and Los Carneros Road	073-330-024, -026, -027, -028, -029	Residential	43.14	465 units on 43.14 acres	K. Allen	Under construction
01-SB-DP; CUP	Fairview Commercial Center	151 S. Fairview Avenue	073-080-019	Commercial	0.8	7,476 sf commercial/retail building	J. Pearson	Under construction
12-086-RZ, -VTM	Harvest Hill Ranch	880 Cambridge Drive	069-620-044	Residential	4.73	7 lot subdivision with net of 6 homes	B. Hiefield	Under construction
03-051-RZ, -DP, -CUP	Islamic Society of SB	N/E Corner of Los Carneros and Calle Real	077-160-035	Commercial	0.59	6,183 sf building with prayer room, meeting area and 1 caretaker unit	J. Pearson	Under construction
04-226-TM, -DP	Citrus Village	7388 Calle Real	077-490-043	Residential	1.02	10 residential units	J. Pearson	Under construction
14-026-GPA, -RZ, -VTM, -DP	Old Town Village	South Kellogg Avenue	071-130-02	Residential and Commercial	12.31	Mixed Use of 175 townhomes with shopkeeper and livework unit	M. Chang	Under construction
09-075-TPM, -DP and 09-079-DP AM	Marriott Residence Inn	6300 Hollister Avenue	073-050-020	Commercial	10.57	80,989 sf hotel (118 rooms)	J. Pearson	Under construction
09-133-DP; 15-177-LUP	Highway Recycling	909 South Kellogg Avenue	071-190-034	Industrial	11.71	Concrete and asphalt recycling facility with temporary and permament equipment. Includes new creek restoration, fencing, landscaping, trash enclosure, retaining wall, and drainage improvements.	K. Phung / Lisa Prasse	Under Construction

City of Goleta

Cumulative Projects List - External

Updated 11/13/17

Case #	Project	Address	APN	Land Use	Acreage	Project Description	Planner	Status
APPROVED PROJECTS (NOT CONSTRUCTED)								
16-063-DPAM-DRB	McDonalds Drive Thru Expansion	1465 South Fairview Avenue	071-051-025	Commercial	0.72	Second drive thru lane, revised parking and circulation, and new landscaping	B. Hiefield	Approved
14-118-DP-CDP	Rancho Estates Mobile Home Park Fire Improvements (Rancho Goleta)	7465 Hollister Avenue	079-210-058, 079-442-023	Residential and Open Space	19.11	New fire access road, new/upgraded fire hydrants, new water lines, and bring existing car wash into conformance	J. Pearson	Approved
17-047-PCR	Pacific Beverage at Cabrillo Business Park Reduced Project	355 Coromar Drive	073-610-036	Industrial	7.6	Reduction in 24,398 sf from previously approved building	D. Mimick	Approved
15-107-DPRV-DRB	Site Improvements	130 Robin Hill Road	073-050-015	Industrial (Business Park)	3	768-sf elevator addition, 1,100-sf new building, and 314-sf addition to rear of building	B. Hiefield	Approved
17-055-DPRV (17-055-DPRV, 07-229-DP)	Schwann Self Storage	10 S. Kellogg Avenue	071-090-082	Industrial	2.06	Addition of basements to 3 previously approved but unconstructed buildings for a 135,741 sf self-storage facility	J. Pearson	Approved
09-140-DP (17-023-DPAM)	Cortona Apartments	6830 Cortona Drive	073-140-016	Residential	8.82	176 residential units	J. Hubbell / K. Phung	Approved
15-063-DP-DRB	Fuel Depot	180 N. Fairview Avenue	069-110-054	Commercial	0.28	Reconstruction of convenience store/auto-service building (2,396 sf); No changes to existing fueling stations or canopy.	D. Mimick	Approved

City of Goleta

Cumulative Projects List - External

Updated 11/13/17

Case #	Project	Address	APN	Land Use	Acreage	Project Description	Planner	Status
12-091-DP	Somera Medical Office Building	454 S. Patterson Avenue	065-090-013	Commercial	8	20,000 sf net new medical/dental office building	B. Hiefield	Approved
15-126-DP-TPM	Ward Renovations and Lot Split	749 and 759 Ward Drive	071-170-035, -014	Industrial	2.88	New building façade, new site renovations, and lot split	J. Pearson	Approved

City of Goleta

Cumulative Projects List - External

Updated 11/13/17

Case #	Project	Address	APN	Land Use	Acreage	Project Description	Planner	Status
PENDING PROJECTS (Complete Applications)								
05-154-GPA, -RZ, -VTM	Shelby	7400 Cathedral Oaks Road	077-530-019	Residential	15.8 (gross); 14.88 (net)	60 residential units	L. Prasse	Pending/On Hold - due to water availability.
08-205-GPA, -RZ, -VTM	Kenwood Village	Calle Real w/o Calaveras Avenue	077-130-066, -019; 077-141-049	Residential	10	60 residential units	K. Allen	Pending/On Hold - due to water availability.
13-054-TE-CUP RV; 08-139-CUP; and 08-138-OA, -CUP	Fairview Gardens	598 North Fairview Avenue	069-090-052	Agriculture	11.65	Master Use Permit and Special Events	B. Hiefield	Pending - Waiting on applicant to submit revised project description.
14-049-, -VTM, -DR, -CUP	Heritage Ridge	North of Calle Koral and West of Los Carneros	073-060-031 thru -043	Residential	16.2	228 residential apartments and 132 senior apartments	S. Diaz	Pending - Preparation of Final EIR.
13-039-CUP	Ellwood Mesa Coastal Trails and Habitat Restoration Project	NA	079-210-024, -069, -015, -014, -013, -072, -071, -70	Recreation	724	Improve 7.1 miles of trails, improve 3 drainage crossings, improve 2 beach access points, and 13 acres of habitat restoration	A. Newkirk	Pending Coastal Commission Approval (City Complete).
PENDING PROJECTS (Incomplete Applications)								
16-161-PCR-OSP	Cabrillo Business Park, Lot 5	6789 Navigator Way	073-610-024	Office/Light Industrial	1.93	New 23,882-sf builidng within Cabrillo Business Park	D. Mimick	Pending - City issued Incomplete Letter on 10.18.17. Waiting on applicants resubmittal.
16-162-PCR-OSP	Cabrillo Business Park, Lot 6	6765 Navigator Way	073-610-025	Office/Light Industrial	1.27	New 16,750-sf builidng within Cabrillo Business Park	D. Mimick	Pending - City issued Incomplete Letter on 10.18.17. Waiting on applicants resubmittal.

City of Goleta

Cumulative Projects List - External

Updated 11/13/17

Case #	Project	Address	APN	Land Use	Acreage	Project Description	Planner	Status
16-163-PCR-OSP	Cabrillo Business Park, Lot 7	6759 Navigator Way	073-610-026	Office/ Light Industrial	2.11	New 31,584-sf builidng within Cabrillo Business Park	D. Mimick	Pending - City issued Incomplete Letter on 10.18.17. Waiting on applicants resubmittal.
16-164-PCR-OSP	Cabrillo Business Park, Lot 9	301 Coromar Drive	073-210-027	Office/Light Industrial	3.12	New 44,924-sf builidng within Cabrillo Business Park	D. Mimick	Pending - City issued Incomplete Letter on 10.18.17. Waiting on applicants resubmittal.
16-165-PCR-OSP	Cabrillo Business Park, Lot 14	289 Coromar Drive	073-310-003	Office/Light Industrial	2.94	Option A: New 27,499-sf builidng within Cabrillo Business Park. Option B: New 44,004-sf building within Cabrillo Business Park.	K. Allen	Pending - City issued Incomplete Letter on 10.18.17. Waiting on applicants resubmittal.
16-097-DP-DRB	Calle Real Hotel	5955 Calle Real	069-110-018	Commercial	1.98	134-room 3-story hotel	B. Hiefield	Pending - City issued Incomplete Letter on 8.22.17. Waiting on applicants resubmittal.
13-141-DRB, -CUP, -DP	Fuel Depot with Car Washes	370 Storke Road	073-100-008	Commercial	1	1,667 sf new drive-in carwash, self-serve car wash, gas fueling dispensers and manager's residence; Zizzo's Coffee building to remain	D. Mimick	Pending - City issued Incomplete Letter on 2.6.14. Waiting on applicants resubmittal.
14-019-DRB, -DP, -VTM	Willow Industrial Park	891 S. Kellogg Avenue	071-170-079, -080, -083	Industrial	14.76	146,000 sf new Light Industrial with outdoor storage and 2,587 sf office building	J. Pearson	Pending - City issued Incomplete Letter on 8.18.17. Waiting on applicants resubmittal.

City of Goleta

Cumulative Projects List - External

Updated 11/13/17

Case #	Project	Address	APN	Land Use	Acreage	Project Description	Planner	Status
17-033-DPAM-DRB	Providence Middle/High School	5385 Holiister Avenue	071-140-075	Commercial	2.3	Façade improvement to exisitng 21,408 sf building and other associated site improvements	J. Hubbell	Pending - In 30 day review by the City.
17-094-DP-TPM-DRB	Cortona Industrial Project	6864/6868 Cortona Drive	073-140-027	Light Industrial	0.61	23,000-sf light industrial building use building and tentative parcel map.	K. Allen	Pending - City issued Incomplete Letter on 9.8.17. Waiting on applicants resubmittal.
17-122-DPAM	Santa Barbara Honda	475 South Kellogg	071-140-067, 071-140-068	Commercial	7.53	Includes façade improvements, a 1.628 sf enclosure of existing canopy for added showroom, a new 5,175 sf new enclosed canopy, and a new 300 sf new parts room.	K. Phung	Pending - City issued Incomplete Letter on 11.3.17. Waiting on applicants resubmittal.
17-110-CUP-DRB	Verizon Wireless Antenna at U.S. Post Office	400 Storke Road	073-610-007	Industrial	19.99	New 66 ft tall monopine wireless tower	J. Pearson	Pending - City issued Incomplete Letter on 9.15.17. Waiting on applicants resubmittal.
17-121-DP-DRB	Sywest	907 South Kellogg Avenue	071-190-035	Industrial	11.71	70,594 sf high cube industrial building	B. Hiefield	Pending - City issued Incomplete Letter on 11.3.17. Waiting on applicants resubmittal.

Associated Transportation Engineers
Trip Generation Worksheet - With In/Out Splits

CUMULATIVE TRIP GENERATION (#17070)																
Land-Use	Size		ADT		A.M.						P.M.					
			Rate	Trips	Rate	Trips	In %	Trips	Out %	Trips	Rate	Trips	In %	Trips	Out %	Trips
CITRUS VILLAGE - RESIDENTIAL	10	Units	9.44	94	0.740	7	25%	2	75%	5	0.99	10	63%	6	37%	4
SHELBY - RESIDENTIAL (b)	60	Units	9.57	574	0.750	45	25%	11	75%	34	1.01	61	64%	39	36%	22
KENWOOD VILLAGE - SFD	13	Units	9.52	124	0.750	10	30%	3	70%	7	1.00	13	50%	7	50%	6
KENWOOD VILLAGE - TOWNHOMES	47	Units	5.81	273	0.440	21	17%	4	83%	17	0.52	24	68%	16	32%	8
TOTAL PROJECT TRIPS:				**1,065**		**62**		**16**		**46**		**84**		**52**		**40**

(a) ITE trip generation rate for Single Family Detached Housing (#210)
(b) 7400 Cathedral Oaks Road Traffic and Circulation Study, Associated Transportation Engineers, 2011.
(c) Kenwood Village Updated Traffic and Circulation Study, Associated Transportation Engineers, 2016.