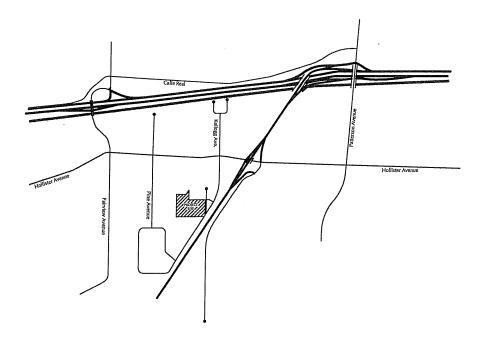
Appendix H Traffic Study

OLD TOWN VILLAGE MIXED-USE PROJECT CITY OF GOLETA, CALIFORNIA

TRAFFIC, CIRCULATION, AND PARKING STUDY



October 1, 2014

ATE Project #14015

Prepared For: City Ventures 1900 Quail Street Newport Beach, CA 92660



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October 1, 2014

14015R01

Bill McReynolds City Ventures 1900 Quail Street Newport Beach, CA 92660

TRAFFIC, CIRCULATION, AND PARKING STUDY FOR THE OLD TOWN VILLAGE MIXED-USE PROJECT - CITY OF GOLETA, CA

Associated Transportation Engineers (ATE) has prepared the following traffic, circulation, and parking study for the Old Town Village Mixed-Use Project, located in the City of Goleta. The study evaluates potential traffic, circulation, and parking impacts associated with the project and identifies improvements where required.

Associated Transportation Engineers

Scott A. Schell, AICP, PTP

Principal Transportation Planner

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INTRODUCTION

The following report contains an analysis of the potential traffic and circulation impacts associated with the Old Town Village Mixed-Use Project, located in the City of Goleta. The report evaluates existing and future traffic conditions within the project study-area and recommends improvements where necessary. The report also contains an analysis of the project's site access, circulation, and parking plan. An analysis of the project's consistency with the policies outlined in the Congestion Management Program (CMP) is provided.

PROJECT DESCRIPTION

The project site is located on the west side of South Kellogg Avenue in the Old Town area of the City of Goleta. Figure 1 shows the location of the project site within the City. The project is proposing to develop the site, which is currently occupied with agricultural uses, with a mixed-use development consisting of 175 residential units. Twenty-eight of the units would be configured as shop-keeper units with an attached 275 square-feet (SF) of commercial-office space (7,700 SF total commercial space) and 34 units would be live-work flex units that would contain 192 SF of space (6,528 total SF) that could be used as a live-work office or additional living space depending on the owners preference. Access to the project site is proposed via driveways on South Kellogg Avenue and the future extension of Ekwill Street that will be constructed along the project's northern frontage. Parking for the project is provided via 461 on-site parking spaces (350 covered and 111 uncovered spaces) and 28 spaces on Ekwill Street adjacent to the project spaces (489 total parking spaces provided). Figure 2 presents the project site plan.

EXISTING CONDITIONS

Street Network

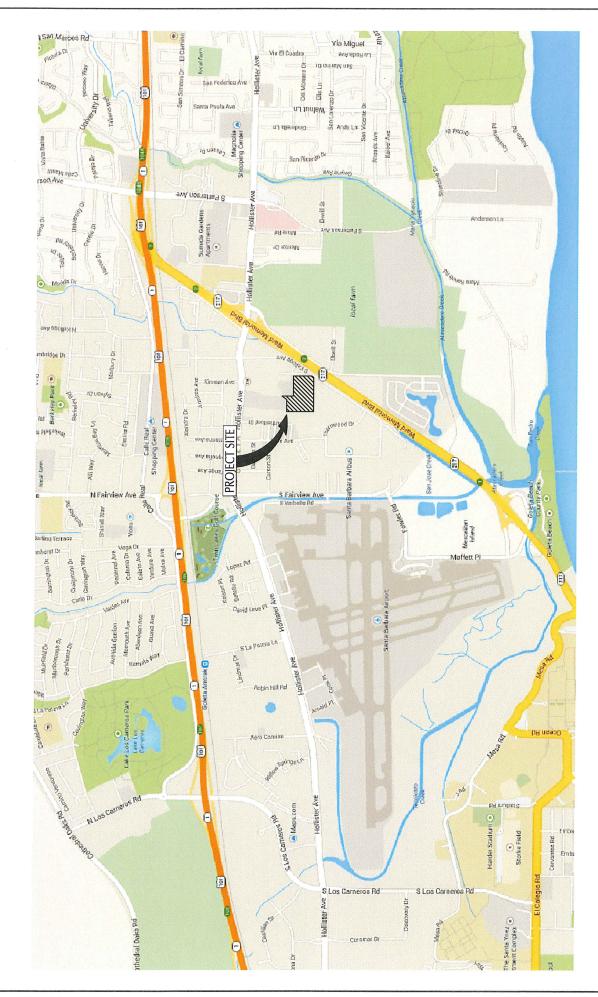
The project site is served by a network of highways, arterial streets, and collector streets, as illustrated in Figure 1. The following text provides a brief discussion of the major components of the study-area street network.

U.S. Highway 101, located north of the project site, is a multi-lane interstate highway serving the Pacific coast between Los Angeles and the state of Washington. This highway is the principal route between the City of Goleta and the adjacent cities of Santa Barbara, Carpenteria, and Ventura to the south and the cities of Buellton and Santa Maria to the north. Access to U.S. Highway 101 would be provided via the Fairview Avenue and State Route (SR) 217 interchanges.

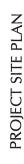
Source: Google Maps



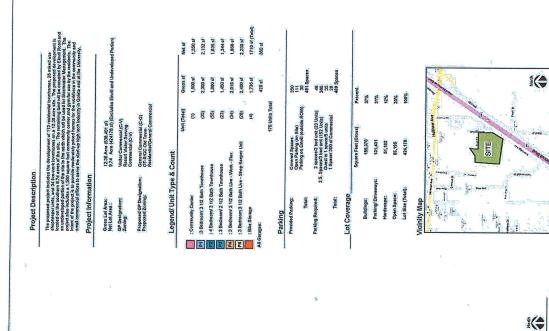


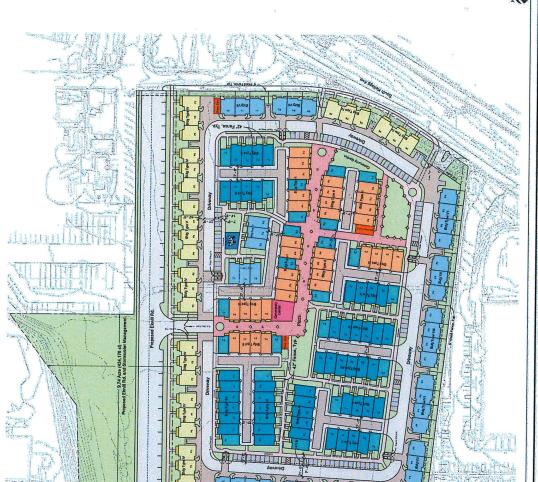


MMF - #14015









Old Town Village

City Ventures

02.25.2014

Site Plan & Project Data

South Kellogg Ave & Ekwill, Goleta, CA

Associated T ransportation

State Route (SR) 217 is a four-lane freeway located east of the project site. SR 217 extends on a northeast to southwest diagonal alignment between U.S. Highway 101 and UCSB. The U.S. 101/SR 217 interchange would provide access to the project site for motorists traveling to and from the east on U.S. 101.

Hollister Avenue, located north of the project site, is a 4-lane arterial roadway that extends westerly from State Route 154 through the Goleta Valley to its terminus at Calle Real. This roadway provides the primary east-west surface street route through the City of Goleta.

Fairview Avenue, located to the west of the project site, is a north-south 2- to 4-lane arterial roadway. North of Hollister Avenue, Fairview Avenue extends as a 4-lane roadway connecting with the U.S. 101 interchange, Calle Real and Cathedral Oaks Road. Fairview Avenue extends south of Hollister Avenue to its terminus at Fowler Road. The U.S. 101/Fairview Avenue Interchange would provide freeway access to the project site for motorists traveling to and from the west.

Pine Avenue, located to the west of the project site, is a two-lane road that extends south from Hollister Avenue and eventually transitions to Thornwood Drive.

Kellogg Avenue, located along the project's eastern frontage, is a two-lane road that extends north from Thornwood Drive to its terminus at Depot Road just south of the U.S. 101 Freeway. A proposed driveway connection to Kellogg Avenue would provide access to the project site.

Ekwill Street, is a two-lane road that connects to Ward Drive east of the SR 217 freeway. The City is proposing to construct an extension of Ekwill Street that would connect from Kellogg Avenue to Fairview Avenue. The eastern portion of the proposed extension would be located adjacent to the project's northern frontage. A proposed driveway connection to the future segment of Ekwill Street would provide access to the site.

Roadway Operations

Figure 3 shows the existing average daily traffic (ADT) volumes for the study-area roadways. Existing roadway volumes were obtained from counts conducted in 2013 by the City of Goleta (count data contained in the Technical Appendix for reference). The operational characteristics of the study-area roadways were analyzed based on the City of Goleta engineering roadway design capacities (summarized in the Technical Appendix). Table 1 shows the existing ADT volumes and the City's Acceptable Capacity thresholds for the key roadways in the project study-area.

Table 1
Existing Average Daily Roadways Volumes

Roadway Segment	Roadway Classification	Geometry	Acceptable Capacity	Existing ADT
Calle Real e/o Fairview Avenue	Major Arterial	4-Lane	34,000	14,300
Fairview Avenue n/o Hollister Avenue	Major Arterial	4-Lane	34,000	23,700
Fairview Avenue s/o Hollister Avenue	Major Arterial	4-Lane 3-Lane	34,000 25,500	9,000
Hollister Avenue e/o Fairview Avenue	Major Arterial	4-Lane	34,000	20,100
Hollister Avenue e/o Pine Avenue	Major Arterial	4-lane	34,000	20,200
Hollister Avenue e/o Kellogg Avenue	Major Arterial	4-Lane	34,000	20,400
Hollister Avenue e/o Ward Drive	Major Arterial	4-Lane	34,000	13,800
Kellogg Avenue s/o Hollister Avenue	Collector Street	2-Lane	9,280	1,700

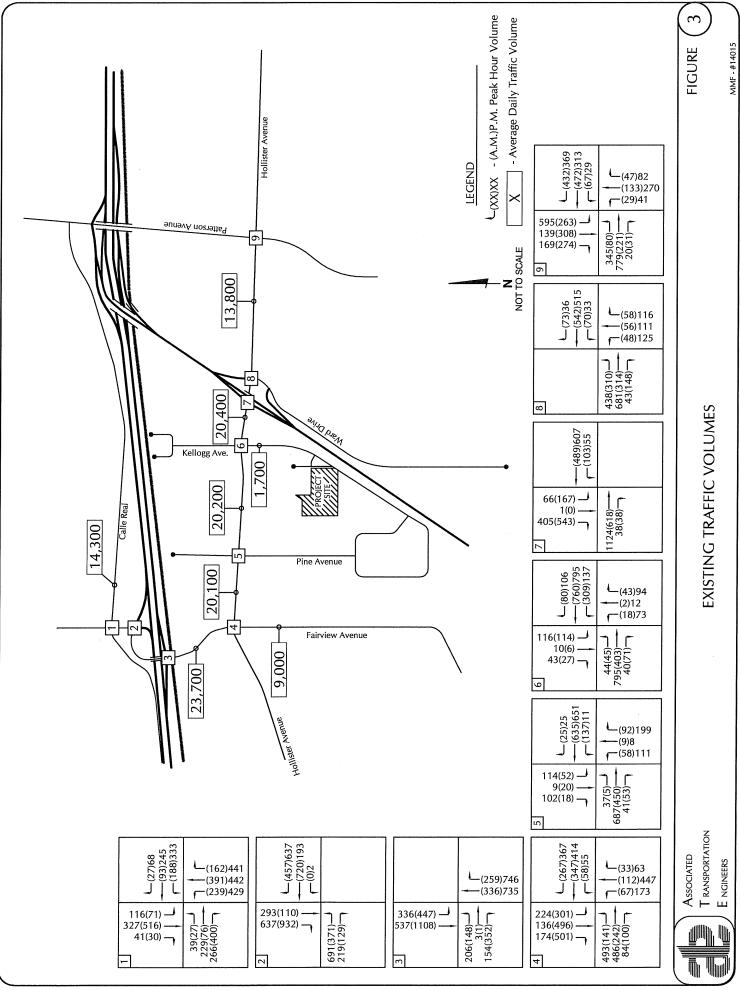
The data in Table 1 shows that the study-area roadway segments currently carry volumes within the City of Goleta's Acceptable Capacity designations.

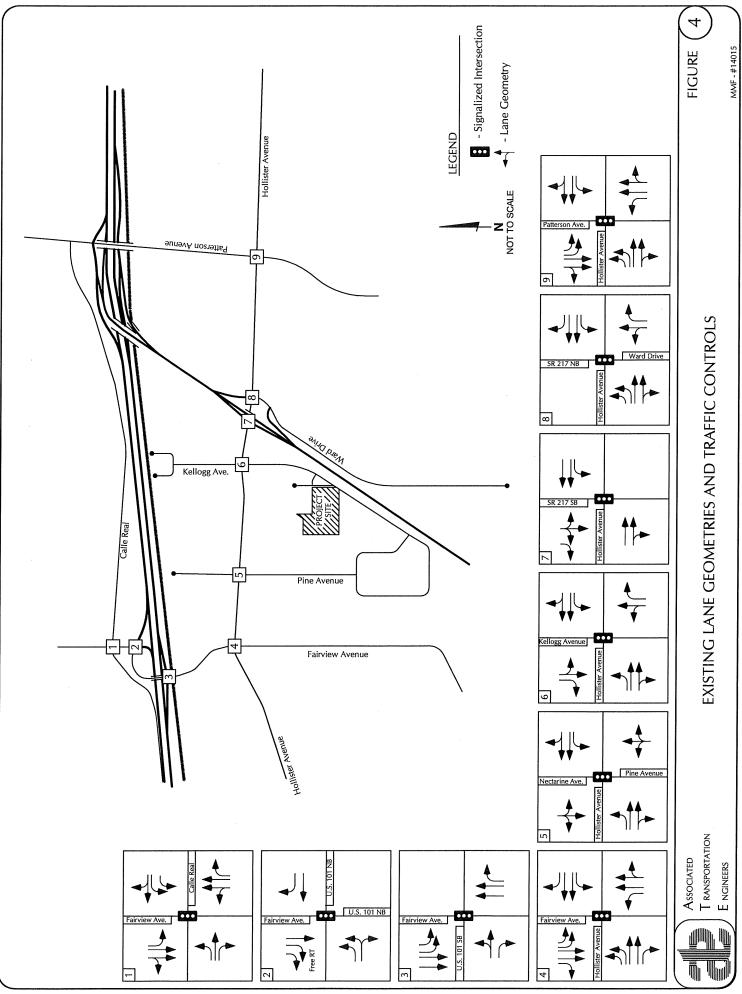
Intersection Operations

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, "Levels 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 included in the Technical Appendix). The City of Goleta has established LOS C as the minimum acceptable operating standard for intersections.

Existing peak hour volumes for the study-area intersections were obtained from traffic counts conducted by the City of Goleta in 2013 (traffic count data is contained in the Technical Appendix for reference). Figure 3 shows the peak hour turning movements for the study-area intersections. Figure 4 presents the existing lane geometry and traffic controls for the study-area intersections.

Levels of service were calculated for the signalized intersections using the "Intersection Capacity Utilization" (ICU) methodology. Table 2 presents the existing levels of service for the study-area intersections (calculation worksheets are contained in the Technical Appendix).





Existing Intersection Levels of Service

Intersection	Control	A.M.	Peak	P.M. Peak		
intersection	Control	ICU	LOS	ICU	LOS	
Calle Real/Fairview Avenue	Signal	0.618	В	0.732	С	
U.S. 101 NB Ramps/Fairview Avenue	Signal	0.735	С	0.650	В	
U.S. 101 SB Ramps/Fairview Avenue	Signal	0.618	В	0.634	В	
Hollister Avenue/Fairview Avenue	Signal	0.493	А	0.612	В	
Hollister Avenue/Pine Avenue	Signal	0.406	А	0.472	А	
Hollister Avenue/Kellogg Avenue	Signal	0.524	А	0.556	A	
SR 217 SB Ramps/Hollister Avenue	Signal	0.583	А	0.637	В	
SR 217 NB Ramps-Ward Drive/Hollister Ave.	Signal	0.431	А	0.546	А	
Hollister Avenue/Patterson Avenue	Signal	0.518	А	0.657	В	

The data presented in Table 2 show that all of the study-area intersections currently operate at LOS C or better during the A.M. and P.M. peak hour periods. These operations are considered acceptable based on the City's LOS C operating standard.

THRESHOLDS OF SIGNIFICANCE

The City of Goleta's CEQA traffic impact thresholds were used for this analysis and include the following criteria:

A. The project will result in a significant impact on transportation and circulation if proposed project traffic increases the volume to capacity (V/C) ratio at local intersections by the values provided in the following table:

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. The project would add traffic to a roadway that has design features (e.g., narrow width, road-side ditches, sharp curves, poor sight distance, inadequate pavement structure) that would become a potential safety problem with the addition of project traffic.
- D. Project traffic would utilize a substantial portion of an intersection's capacity where the intersection is currently operating at acceptable levels of service, but with cumulative traffic would degrade to or approach LOS D (V/C 0.80) or lower. Substantial is defined as a minimum change of 0.03 for an intersection which would operate from 0.80 to 0.85, a change of 0.02 for an intersection which would operate from 0.86 to 0.90 and a change of 0.01 for an intersection which would operate greater than 0.90 (LOS E or worse).

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.

PROJECT-SPECIFIC ANALYSIS

Project Trip Generation

Trip generation estimates were developed for the proposed project based on rates presented in the Institute of Transportation Engineers (ITE) Trip Generation report¹ for Residential Town Home/Condominium (Land Use Code #231) and General Office (Land-Use Code #710) uses. Trip generation estimates for the existing agricultural uses that occupy the site were forecast using the agricultural trip rates presented in the SANDAG trip generation report².

The trip generation analysis assumes that the 7,700 SF of commercial space in the shopkeeper units and the 6,528 SF of flex space in the live-work units would be fully occupied with office uses in order to provide conservative trip forecasts (14,228 SF total office space). A 15% mixed-use reduction was applied to the office trips to account for residents that would live and work on site. The mixed-use factor was not applied to the residential trip forecasts in order to provide a conservative analysis. Table 3 presents the trip generation estimates for the Old Town Village Mixed-Use Project.

¹ <u>Trip Generation</u>, Institute of Transportation Engineers, 9th Edition, 2012.

² Trip Generators, San Diego County Association of Governments, 2002.

Table 3
Project Trip Generation

Landling	Sizo.	Mixed- Use	1 /101		A.M	. Peak Hour	P.M. Peak Hour	
Land Use	Size	Factor	Rate	Trips	Rate	Trips (In/Out)	Rate	Trips (In/Out)
Condominium (a)	175 Units	-	5.81	1,017	0.44	0.44 77 (13/64)		91 (61/30)
Office	14,228 SF	15%	11.03	133	0.65	19 (16/3)	1.49	18 (3/15)
Project Total:				1,150		96 (29/67)		109 (64/45)
Existing Ag. Uses	-12.36 Acres	-	2.00	-25	(b)	-3(-2/-1)	(b)	-3 (-1/-2)
Net New Trips:				1,125		93 (27/66)		106 (63/43)

⁽a) Includes the 28 Shopkeeper units and 34 Live/Work flex units.

The data presented in Table 3 show that the project is forecast to generate 1,125 average daily trips, 93 A.M. peak hour trips, and 106 P.M. peak hour trips.

Project Trip Distribution

The traffic generated by the project was distributed and assigned to the adjacent street network based on the percentages shown in Table 4. The trip distribution percentages were developed for the project based on existing traffic patterns observed in the study-area, data obtained from the City's traffic model, and input provided by City staff. Separate distribution patterns were developed for the residential and commercial/office uses. Figure 5 illustrates the trip distribution pattern and assignment of project-added traffic without the Ekwill Street extension.

⁽b) Peak hour trip rates not provided. Assumes 10% of average daily traffic.

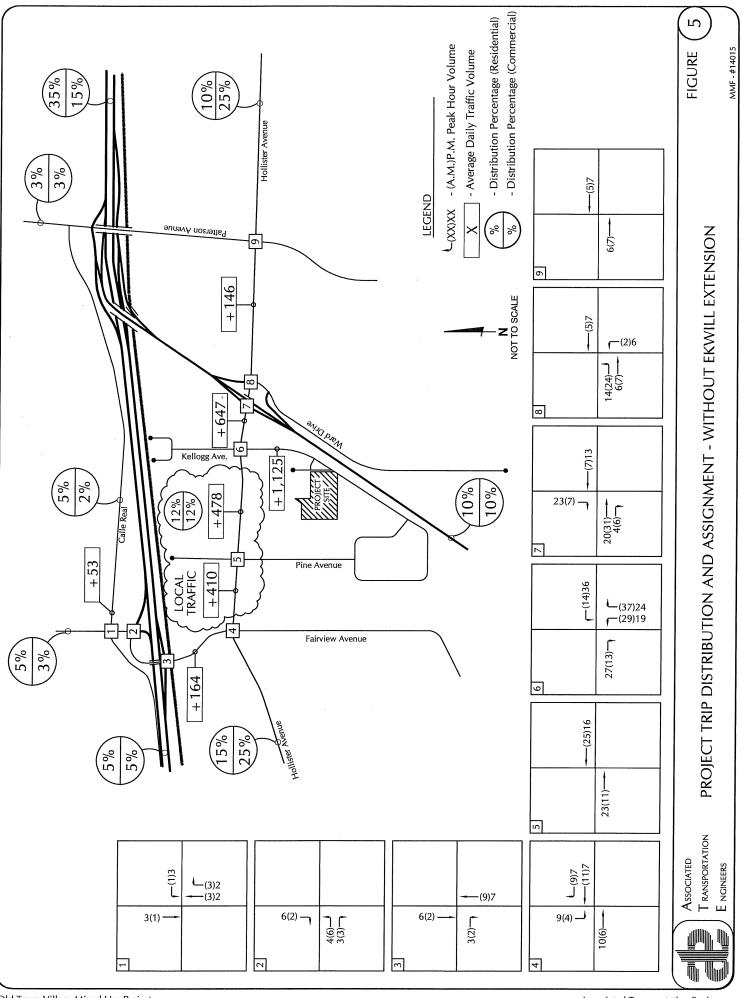


Table 4 Project Trip Distribution Percentages

Origin/Destination	Direction	Residential Distribution %	Commercial/Office Distribution %
U.S. 101	North South	5% 35%	5% 15%
SR 217	South	10%	10%
Hollister Avenue	East West	10% 15%	25% 25%
Calle Real	East	5%	2%
Fairview Avenue	North	5%	3%
Patterson Avenue	North	3%	3%
Local Traffic	Old Town Goleta	12%	12%
Total		100%	100%

Existing + Project Roadway Operations

Existing + Project ADT volumes for the study-area roadways are shown on Figure 6. Table 5 presents the Existing and Existing + Project roadway volumes and identifies potential impacts based on the City of Goleta's Acceptable Capacity thresholds.

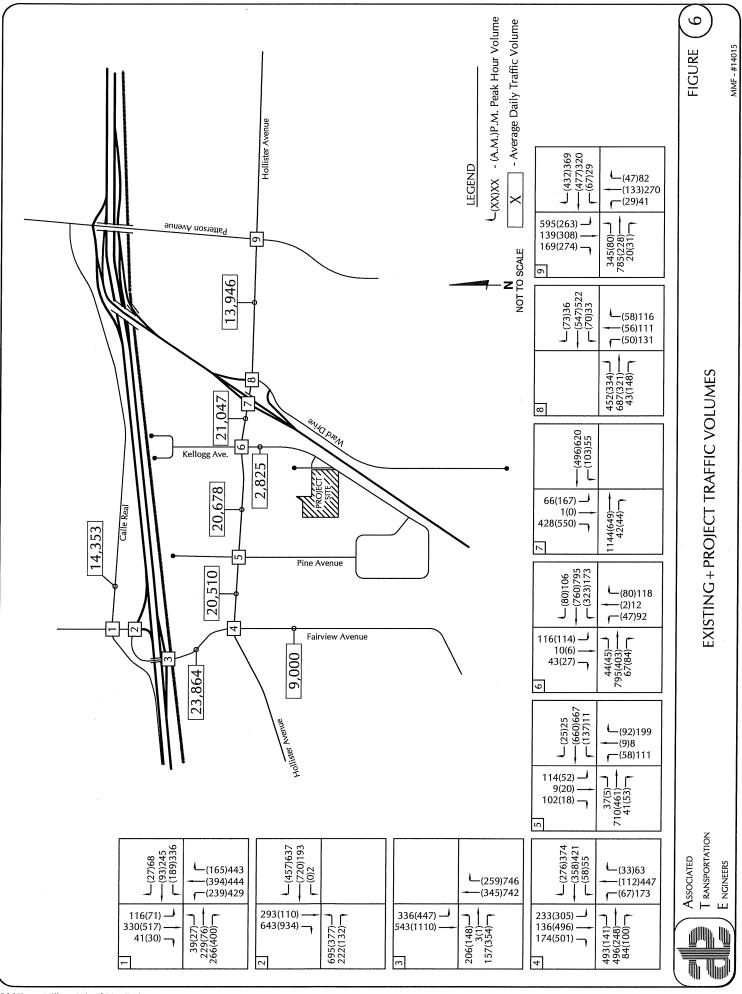


Table 5 Existing + Project Roadway Operations

	Acceptable	Existing	Project Added	Existing + Project	%	
Roadway Segment	Capacity	ADT	ADT	ADT	Change	Impact?
Calle Real e/o Fairview Avenue	34,000	14,300	+ 53	14,353	0.4%	No
Fairview Avenue n/o Hollister Avenue	34,000	23,700	+ 164	23,864	0.7%	No
Fairview Avenue s/o Hollister Avenue	34,000 25,500	9,000	+0	9,000	0%	No
Hollister Avenue e/o Fairview Avenue	34,000	20,100	+ 410	20,510	2.0%	No
Hollister Avenue e/o Pine Avenue	34,400	20,200	+ 478	20,678	2.4%	No
Hollister Avenue e/o Kellogg Avenue	34,000	20,400	+ 647	21,047	3.2%	No
Hollister Avenue e/o Ward Drive	34,000	13,800	+ 146	13,946	1.1%	No
Kellogg Avenue s/o Hollister Avenue	9,280	1,700	+ 1,125	2,825	66.2%	No

The data presented in Table 5 show that the Existing + Project roadway volumes would remain within the City's Acceptable Capacity ratings with the addition of project traffic. The project would therefore not generate project-specific impacts to the study-area roadway segments.

Existing + Project Intersection Operations

Levels of service were calculated for the study-area intersections assuming the Existing + Project traffic volumes presented on Figure 6. Tables 6 and 7 compare the Existing and Existing + Project levels of service and identify project-specific impacts based on City thresholds.

Table 6
Existing + Project A.M. Peak Hour Levels of Service

	Existing		Existing + Project		Project- Added	Change	
Intersection	ICU	LOS	ICU	LOS	Trips	in V/C	Impact?
Calle Real/Fairview Avenue	0.618	В	0.619	В	8	0.001	No
U.S. 101 NB Ramps/Fairview Avenue	0.735	С	0.737	С	11	0.002	No
U.S. 101 SB Ramps/Fairview Avenue	0.618	В	0.620	В	13	0.002	No
Hollister Avenue/Fairview Avenue	0.493	Α	0.497	Α	30	0.004	No
Hollister Avenue/Pine Avenue	0.406	Α	0.409	А	36	0.003	No
Hollister Avenue/Kellogg Avenue	0.524	Α	0.548	Α	93	0.024	No
SR 217 SB Ramps/Hollister Avenue	0.583	Α	0.59 <i>7</i>	Α	51	0.014	No
SR 217 NB Ramps/Hollister Avenue	0.431	Α	0.441	Α	38	0.01	No
Hollister Avenue/Patterson Avenue	0.518	Α	0.519	Α	12	0.001	No

Table 7
Existing + Project P.M. Peak Hour Levels of Service

	Existing		Existing + Project		Project- Added	Change in	
Intersection	ICU	LOS	ICU	LOS	Trips	Change in V/C	Impact?
Calle Real/Fairview Avenue	0.732	С	0.734	С	10	0.002	No
U.S. 101 NB Ramps/Fairview Avenue	0.650	В	0.651	В	- 13	0.001	No
U.S. 101 SB Ramps/Fairview Avenue	0.634	В	0.634	В	16	0.000	No
Hollister Avenue/Fairview Avenue	0.612	В	0.618	В	33	0.006	No
Hollister Avenue/Pine Avenue	0.472	А	0.477	A ⁻	39	0.005	No
Hollister Avenue/Kellogg Avenue	0.556	Α	0.593	Α	106	0.037	No
SR 217 SB Ramps/Hollister Avenue	0.637	В	0.651	В	60	0.014	No
SR 217 NB Ramps/Hollister Avenue	0.546	Α	0.555	Α	33	0.009	No
Hollister Avenue/Patterson Avenue	0.657	В	0.659	В	13	0.002	No

The data presented in Tables 6 and 7 show that the study-area intersections are forecast to operate at LOS C or better with the addition of project traffic. The project would not generate significant impacts to the study-area intersections based on the City's project-specific traffic impact thresholds.

Ekwill Street Extension

The City has developed plans to extend Ekwill Street from Kellogg Avenue to Fairview Avenue. The new roadway extension would create a new east-west travel path in the Old Town Goleta area that is anticipated to relieve congestion along Hollister Avenue. The project proposes to build the segment of Ekwill Street along the northern frontage of the project site.

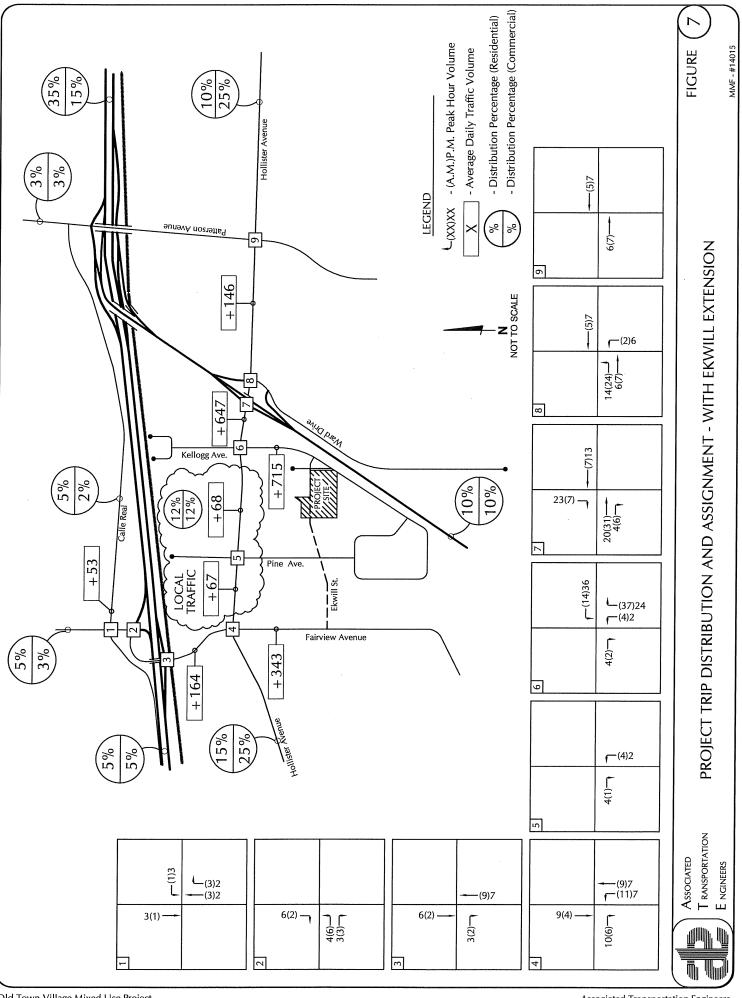
The proposed extension would alter the travel routes to and from the project site. An operational analysis was therefore performed to assess potential impacts to the study-area roadways and intersections assuming completion of the Ekwill Street extension. The analysis assumes that the City would construct the remaining segments of Ekwill Street between the project site and Fairview Avenue at the same time as the project is built. Figure 7 presents the trip distribution and assignment of project-added traffic assuming the Ekwill Street extension, and Figure 8 presents the Existing + Project traffic volumes with the Ekwill Street extension.

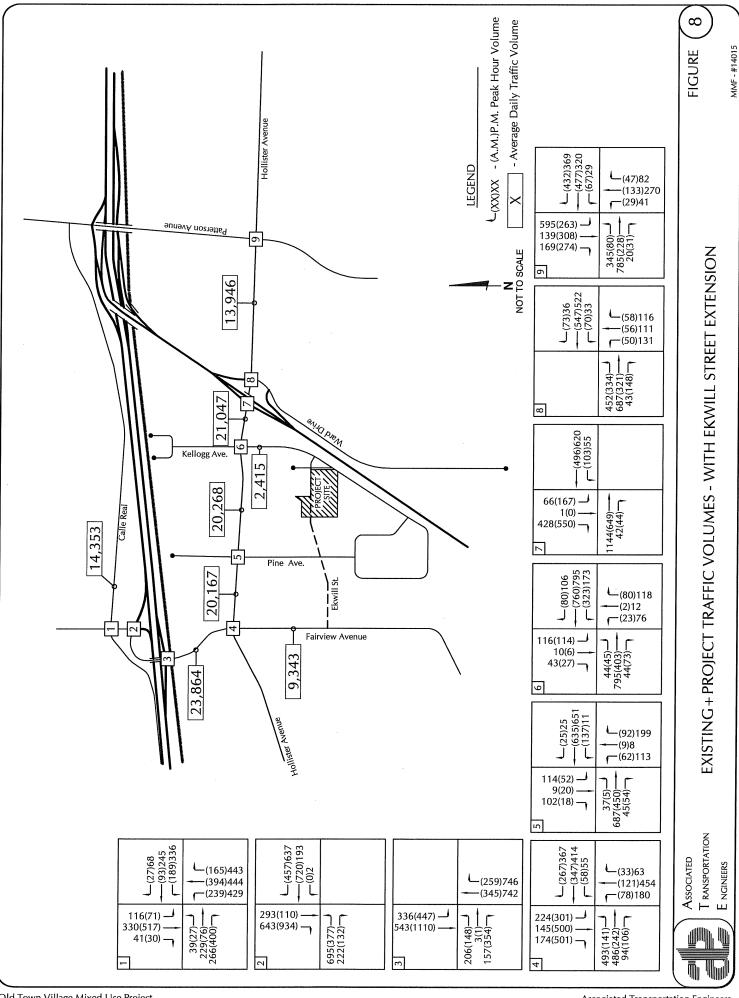
Existing + Project Roadway Operations with Ekwill Street Extension

Table 8 presents the Existing and Existing + Project roadway volumes and identifies potential impacts based on the City of Goleta's Acceptable Capacity thresholds assuming the extension of Ekwill Street.

Table 8
Existing + Project Roadway Operations with Ekwill Street Extension

Roadway Segment	Acceptable Capacity	Existing ADT	Project Added ADT	Existing + Project ADT	% Change	Impact?
Calle Real e/o Fairview Avenue	34,000	14,300	+ 53	14,353	0.4%	No
Fairview Avenue n/o Hollister Avenue	34,000	23,700	+ 164	23,864	0.7%	No
Fairview Avenue s/o Hollister Avenue	34,000 25,500	9,000	+ 343	9,343	3.8%	No
Hollister Avenue e/o Fairview Avenue	34,000	20,100	+ 67	20,167	0.3%	No
Hollister Avenue e/o Pine Avenue	34,400	20,200	+68	20,268	0.3%	No
Hollister Avenue e/o Kellogg Avenue	34,000	20,400	+ 647	21,047	3.2%	No
Hollister Avenue e/o Ward Drive	34,000	13,800	+ 146	13,946	1.1%	No
Kellogg Avenue s/o Hollister Avenue	9,280	1,700	+ <i>7</i> 15	2,415	42.1%	No





The data presented in Table 8 show that the Existing + Project roadway volumes would remain within the City's Acceptable Capacity ratings assuming the extension of Ekwill Street. The project would therefore not generate project-specific impacts to the study-area roadway segments.

Existing + Project Intersection Operations with Ekwill Street Extension

Levels of service were calculated for the study-area intersections assuming the Existing + Project traffic volumes with the Ekwill Street Extension. Tables 9 and 10 compare the Existing and Existing + Project levels of service and identify project-specific impacts based on City thresholds.

Table 9
Existing + Project A.M. Peak Hour Levels of Service with Ekwill Street Extension

	Existing		Existing + Project		Project- Added	Change	
Intersection	ICU	LOS	ICU	LOS	Trips	in V/C	Impact?
Calle Real/Fairview Avenue	0.618	В	0.619	В	8	0.001	No
U.S. 101 NB Ramps/Fairview Avenue	0.735	С	0.737	С	11	0.002	No
U.S. 101 SB Ramps/Fairview Avenue	0.618	В	0.620	В	13	0.002	No
Hollister Avenue/Fairview Avenue	0.493	Α	0.500	Α	30	0.007	No
Hollister Avenue/Pine Avenue	0.406	Α	0.409	Α	. 5	0.003	No
Hollister Avenue/Kellogg Avenue	0.524	А	0.546	Α	58	0.022	No
SR 217 SB Ramps/Hollister Avenue	0.583	Α	0.597	Α	51	0.014	No
SR 217 NB Ramps/Hollister Avenue	0.431	Α	0.441	Α	38	0.01	No
Hollister Avenue/Patterson Avenue	0.518	Α	0.519	Α	12	0.001	No

Table 10 Existing + Project P.M. Peak Hour Levels of Service with Ekwill Street Extension

	Existing		Existing + Project		Project- Added	Change in	
Intersection	ICU	LOS	ICU	LOS	Trips	V/C	Impact?
Calle Real/Fairview Avenue	0.732	С	0.734	С	10	0.002	No
U.S. 101 NB Ramps/Fairview Avenue	0.650	В	0.651	В	13	0.001	No
U.S. 101 SB Ramps/Fairview Avenue	0.634	В	0.634	В	16	0.000	No
Hollister Avenue/Fairview Avenue	0.612	В.	0.614	В	33	0.002	No
Hollister Avenue/Pine Avenue	0.472	Α	0.475	А	6	0.003	No
Hollister Avenue/Kellogg Avenue	0.556	Α	0.587	Α	67	0.031	No
SR 217 SB Ramps/Hollister Avenue	0.637	В	0.651	В	60	0.014	No
SR 217 NB Ramps/Hollister Avenue	0.546	Α	0.555	А	33	0.009	No
Hollister Avenue/Patterson Avenue	0.657	В	0.659	В	13	0.002	No

The data presented in Tables 6 and 7 show that the study-area intersections are forecast to operate at LOS C or better assuming the Ekwill Street extension. The project would not generate significant impacts to the study-area intersections based on the City's project-specific traffic impact thresholds.

CUMULATIVE ANALYSIS

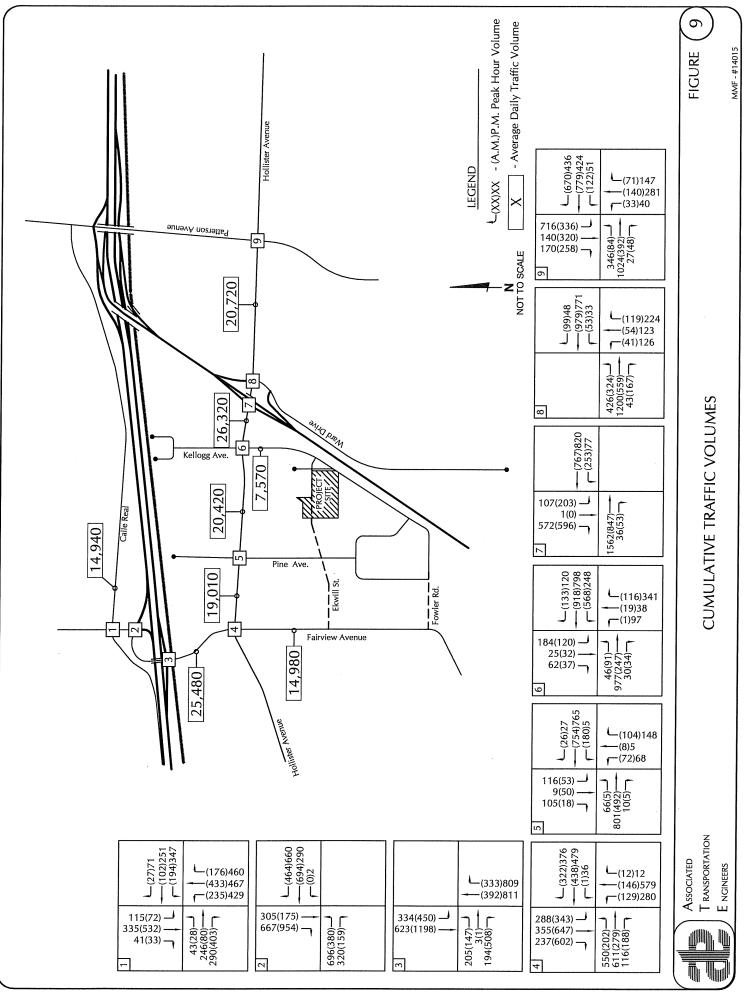
Cumulative Traffic Volumes

Cumulative traffic volumes were forecast using the City's current traffic model. The cumulative forecasts include traffic generated by approved and pending projects proposed within the City of Goleta (a list summarizing the approved and pending projects is contained in the Technical Appendix for reference) as well as development of the UCSB Long Range Development Plan (LRDP), the Santa Barbara Airport Specific Plan and terminal expansion, and regional growth in the Goleta-Santa Barbara area. Cumulative traffic volumes are shown on Figure 9.

Cumulative Improvements

The planned improvements that are assumed in the City's traffic model that would affect traffic patterns within the study area are outlined below.

- Ekwill Street extension from South Kellogg Avenue to Fairview Avenue.
- Fowler Road extension from South Kellogg Avenue to Fairview Avenue.



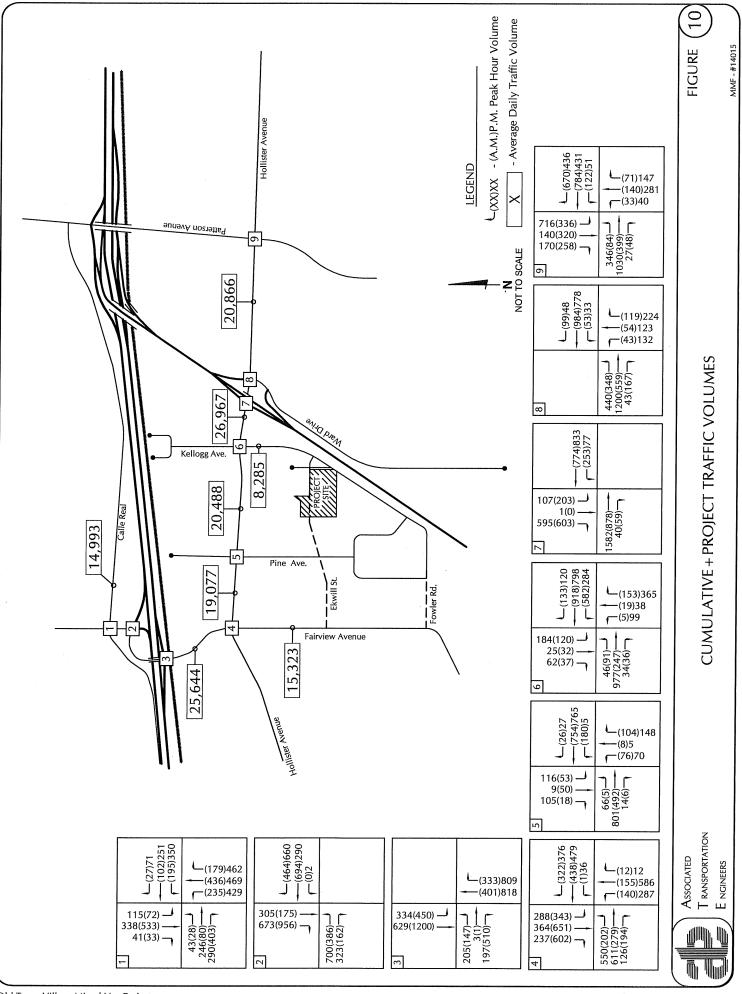
Cumulative + Project Roadway Operations

Cumulative + Project ADT volumes are shown on Figure 10. Table 11 compares the Cumulative and Cumulative + Project roadway volumes and identifies the impact of project-added traffic based on the City of Goleta's Acceptable Capacity thresholds.

Table 11
Cumulative + Project Roadway Operations

	Acceptable	Cumulative	Project Added	Cumulative + Project	%	
Roadway Segment	Capacity	ADT	ADT	ADT	Change	Impact?
Calle Real e/o Fairview Avenue	34,000	14,940	+ 53	14,993	0.4%	No
Fairview Avenue n/o Hollister Avenue	34,000	25,480	+ 164	25,644	0.6%	No
Fairview Avenue s/o Hollister Avenue	34,000 25,500	14,980	+ 343	15,323	2.3%	No
Hollister Avenue e/o Fairview Avenue	34,000	19,010	+67	19,077	0.4%	No
Hollister Avenue e/o Pine Avenue	34,400	20,420	+68	20,488	0.3%	No
Hollister Avenue e/o Kellogg Avenue	34,000	26,320	+ 647	26,967	2.5%	No
Hollister Avenue e/o Ward Drive	34,000	20,720	+ 146	20,866	0.7%	No
Kellogg Avenue s/o Hollister Avenue	9,280	7,570	+ 715	8,285	9.5%	No

The data presented in Table 11 show that the Cumulative + Project roadway volumes would remain within the City's Acceptable Capacity ratings with the addition of project traffic. The project would therefore not generate cumulative impacts to the study-area roadway segments.



Cumulative + Project Intersection Operations

Levels of service were calculated for the study-area intersections assuming the Cumulative and Cumulative + Project traffic volumes presented on Figures 9 and 10. Tables 12 and 13 compare the Cumulative and the Cumulative + Project levels of service for the study-area intersections and identify cumulative impacts based on City thresholds.

Table 12
Cumulative + Project Intersection Operations - A.M. Peak Hour

	Cumu	lative	Cumulative	+ Project	Project- Added	Change	
Intersection	ICU	LOS	ICU	LOS	Trips	in V/C	Impact?
Calle Real/Fairview Avenue	0.638	В	0.639	В	8	0.001	No
U.S. 101 NB Ramps/Fairview Avenue	0.762	С	0.764	С	11	0.002	No
U.S. 101 SB Ramps/Fairview Avenue	0.722	С	0.724	С	13	0.002	No
Hollister Avenue/Fairview Avenue	0.613	В	0.620	В	30	0.007	No
Hollister Avenue/Pine Avenue	0.444	Α	0.447	Α	5	0.003	No
Hollister Avenue/Kellogg Avenue	0.675	В	0.698	В	58	0.023	No
SR 217 SB Ramps/Hollister Avenue	0.779	С	0.792	С	51	0.013	No
SR 217 NB Ramps/Hollister Avenue	0.566	Α	0.578	Α	38	0.012	No
Hollister Avenue/Patterson Avenue	0.659	В	0.660	В	12	0.001	No

Table 13
Cumulative + Project Intersection Operations - P.M. Peak Hour

	Cumu	lative	Cumulative	+ Project	Project- Added	Change in	
Intersection	ICU	LOS	ICU	LOS	Trips	V/C	Impact?
Calle Real/Fairview Avenue	0.757	С	0.760	С	10	0.003	No
U.S. 101 NB Ramps/Fairview Avenue	0.692	В	0.693	В	13	0.001	No
U.S. 101 SB Ramps/Fairview Avenue	0.658	В	0.658	В	16	0.000	No
Hollister Avenue/Fairview Avenue	0.708	С	0.715	С	33	0.007	No
Hollister Avenue/Pine Avenue	0.530	Α	0.533	Α	6	0.003	No
Hollister Avenue/Kellogg Avenue	0.818	D	0.851	D	67	0.033	Yes
SR 217 SB Ramps/Hollister Avenue	0.851	D	0.865	D	60	0.014	No
SR 217 NB Ramps/Hollister Avenue	0.665	В	0.670	В	33	0.005	No
Hollister Avenue/Patterson Avenue	0.808	D	0.810	D	13	0.002	No

Bolded values exceed the City's LOS C operating standard.

The data presented in Table 13 show that Hollister Avenue/Kellogg Avenue, SR 217 SB Ramps/Hollister Avenue, and Hollister Avenue/Patterson Avenue intersections are forecast to operate at LOS D with Cumulative and Cumulative + Project traffic volumes. These operations exceed the City's LOS C operating standard.

The project would result in a significant cumulative impact to the Hollister Avenue/Kellogg Avenue intersection as the traffic additions would increase the V/C ratio by more than the City's 0.03 increase impact threshold for intersections forecast to operate at LOS D (V/C 0.80 to 0.85). A Mitigation measure for this location is discussed in the following section.

Programmed Improvements

The City of Goleta has identified several programmed improvements within the study-area as part of The Goleta Transportation Improvement Plan (GTIP), which is responsible for funding future improvement projects in the City. The GTIP improvements in the study-area include installing roundabouts at the SR 217 SB Ramps/Hollister Avenue/Dearborn Place and SR 217 NB Ramps/Hollister Avenue intersections and constructing a free right-turn lane on the northbound approach of the Kellogg Avenue/Hollister Avenue intersection. Figures showing the proposed improvements are contained in the Technical appendix. Tables 14 and 15 compare the Cumulative and Cumulative + Project levels of service assuming the proposed improvements.

Table 14
Cumulative + Project Intersection Operations - A.M. Peak Hour w/ Programmed Improvements

	Cumulative + Project		
Intersection	ICU/Delay	LOS	
Hollister Avenue/Kellogg Avenue	0.644	В	
SR 217 SB Ramps/Hollister Avenue (a)	6.3 sec.	А	
SR 217 NB Ramps/Hollister Avenue (a)	3.9 sec.	A	

⁽a) Operations based on data contained in the Two Lane Hollister Draft Traffic Operation Study.

Table 15
Cumulative + Project Intersection Operations - P.M. Peak Hour
w/ Programmed Improvements

	Cumulative + Project	
Intersection	ICU/Delay	LOS
Hollister Avenue/Kellogg Avenue	0.723	С
SR 217 SB Ramps/Hollister Avenue (a)	3.9 sec.	A
SR 217 NB Ramps/Hollister Avenue (a)	4.0 sec.	А

⁽a) Operations based on data contained in the Two Lane Hollister Draft Traffic Operation Study.

The data presented in Tables 14 and 15 show that study-area intersections would operate acceptable at LOS C or better with Cumulative+Project traffic volumes assuming the programmed GTIP improvements.

PARKING ANALYSIS

Parking Supply

The project is proposing to provide a total of 461 parking spaces on site with an additional 28 parking spaces provided on Ekwill Street adjacent to the site (489 total parking spaces provided). The on-street parking spaces would be located on private property and would provide convenient curb-side parking for the proposed shopkeeper commercial/office units located along the Ekwill Street frontage. A Home Owners Association (HOA) would be created as part of the project, that would be responsible for operating and enforcing the on-street parking operations. The HOA would be responsible for providing signange indicating that public parking is prohibited adjacent to the site and would have the authority to tow public vehicles that utilize the private parking spaces.

City of Goleta Zoning Ordinance Parking Requirements

Table 16 presents the City of Goleta's Zoning Ordinance parking requirements for each project component.

Table 16
City of Goleta Zoning Ordinance Parking Requirements

Land-Use	Size	Parking Rate	Spaces Required
Residential Units			
2 Bedroom Units	23 Units	2 Spaces/Unit	46 Spaces
3-4 Bedroom Units	152 Units	2.5 Spaces/Unit	380 Spaces
Guest Parking	175 Units	1 Space/5 Units	35 Spaces
Commercial	7,700 SF	1 Space/300 SF	26 Spaces
Total Parking Requi	red:		487 Spaces
Total Parking Provid	led:		489 Spaces

The data presented in Table 16 show that the City's parking requirement for the project is 487 spaces. It is noted that the analysis assumes that the flex space provided in the 34 live/work units would be utilized as an extra bedroom and is accounted for in the parking requirements of the residential units. This assumption was made for two reasons. First, if the space is used as an office rather than a bedroom, no additional demand for commercial tenant parking would result as the owner already has parking that is provided under the residential requirements. Second, the demand for office related guest parking and the demand for residential guest parking occur at opposite hours. More specifically, the office demand occurs on weekdays during working hours and the residential guest demands peak during the evening hours and on weekends. Therefore the guest parking spaces that are provided as part of the residential parking requirements (1 space per 5 units) can easily be shared. The proposed parking supply of 489 spaces would therefore meet the City's Zoning Ordinance parking requirement for the project.

SITE ACCESS AND CIRCULATION

Access to the project site would be provided via a driveway connection to South Kellogg Avenue and a driveway connection to Ekwill Street. The segments of South Kellogg Avenue and Ekwill Street adjacent to the site are both flat and straight thus adequate sight distance would be provided to allow vehicles to safely enter and exit the site. An internal loop road would provide on-site circulation. The proposed access plan would adequately accommodate project traffic.

MITIGATION MEASURES

Hollister Avenue/Kellogg Avenue. The impact analysis found that the project would contribute to significant cumulative impacts at the Hollister Avenue/Kellogg Avenue intersection during the P.M. peak hour. As discussed previously, the City is programmed to install a free right-turn lane to the northbound approach of the intersection. The programmed improvement would provide LOS C operations during the P.M. peak hour with Cumulative + Project traffic volumes (see Table 15). The project would be required to pay GTIP fees to contribution to the costs of implementing the programmed improvement.

CONGESTION MANAGEMENT PROGRAM ANALYSIS

Impact Criteria

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. The following guidelines were developed by SBCAG to determine the significance of project-generated traffic impacts on the regional CMP system.

- 1. For any roadway or intersection operating at "Level of Service" (LOS) A or B, a decrease of two levels of service resulting from the addition of project-generated traffic.
- 2. For any roadway or intersection operating at LOS C, project-added traffic that results in LOS D or worse.
- 3. For intersections within the CMP system with existing congestion, the following table defines significant impacts.

	Project-Added
Level of Service	Peak Hour Trips
LOS D	20
LOS E	10
LOS F	10

4. For freeway or highway segments with existing congestion, the following table defines significant impacts.

	Project-Added
Level of Service	Peak Hour Trips
LOS D	100
LOS E	50
LOS F	50

Potential Intersection Impacts

The Fairview Avenue/U.S. 101 NB Ramps, Fairview Avenue/U.S. 101 SB Ramps, Fairview Avenue/Hollister Avenue, Hollister Avenue/SR 217 NB Ramps, Hollister Avenue/SR 217 SB Ramps, and Hollister Avenue/Patterson Avenue intersections are located within the CMP network. As shown on Tables 6, 7, 9, and 10, the CMP intersections are forecast to operate at LOS C or better under Existing+Project traffic conditions. The project would therefore not generate a significant project impact to the CMP network based on CMP impact criteria.

Table 13 shows that the SR 217 SB Ramps/Hollister Avenue intersection is forecast to operate at LOS D during the P.M. peak hour period. The project is forecast to add 60 P.M. peak hour trips to this location which would be considered a significant impact based on CMP criteria.

Table 13 shows that the Hollister Avenue/Patterson Avenue intersection is forecast to operate at LOS D during the P.M. peak hour. The project is forecast to add 13 P.M. peak hour trips to this intersection, which would not be considered a significant impact based on CMP impact criteria.

As reviewed in the programmed improvement section of this report, the City of Goleta has improvements to install roundabouts at the SR 217/Hollister Avenue interchange intersections. Installation of roundabouts would provide for LOS A operations at the SR 217 NB Ramps/Hollister Avenue and SR 217 SB Ramps/Hollister Avenue intersections. The programmed improvements would therefore mitigate the cumulative CMP impacts.

Potential Freeway Impacts

The proposed project is forecast to add 10 P.M. peak hour trips to U.S. 101 north of Fairview Avenue and 37 P.M. peak hour trips to U.S. 101 south of Patterson Avenue. The CMP threshold for freeway impacts is 50 trips for segments operating at LOS E or LOS F and 100 trips for segments operating at LOS D. Based on these CMP impact criteria, the project would not generate a significant impact to the freeway segments located in the study-area.

REFERENCES AND PERSONS CONTACTED

Associated Transportation Engineers

Scott A. Schell, AICP, PTP Principal Transportation Planner Dan Dawson, PTP Supervising Transportation Planner Matthew Farrington, Transportation Planner I

References

<u>Trip Generation</u>, Institute of Transportation Engineers, 9th Edition, 2012.

<u>Trip Generators</u>, San Diego County Association of Governments, 2002.

Ekwill Street and Fowler Road Extensions Project - Draft EIR, City of Goleta, August 2011.

Two-Lane Hollister Draft Traffic Operation Study, Kittelson & Associates, Inc. August 2013.

Persons Contacted

Damkowitch, Jim, Kittleson & Associates, Inc. Milan, Marti, City of Goleta

TECHNICAL APPENDIX

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TRAFFIC COUNT DATA

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LEVEL OF SERVICE DEFINITIONS

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

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Reference 2 U.S. 101 NB Ramps/Fairview Avenue

Reference 3 U.S. 101 SB Ramps/Fairview Avenue

Reference 4 Hollister Avenue/Fairview Avenue

Reference 5 Hollister Avenue/Pine Avenue

Reference 6 Hollister Avenue/Kellogg Avenue

Reference 7 SR 217 SB Ramps/Hollister Avenue

Reference 8 SR 217 NB Ramps/Hollister Avenue

Reference 9 Hollister Avenue/Patterson Avenue

CITY OF GOLETA CUMULATIVE PROJECT LIST

PROGRAMMED IMPROVEMENT FIGURES

ROADWAY DESIGN CAPACITY TABLE

Dowling Associates, Inc.

Transportation Engineering • Planning • Research • Education

The state of the s	way Classification & Level of Servic		City of Goleta ADT Design Capacity			City of Goleta LOS C ADT Threshold		
City of Goleta Functional Street Classification	City of Goleta Purpose and Design Factors	2 Lan	1 2 3	4+	1 100		4+	
Major Arterial (MA)	Continuous roadways that carry through traffic between various neighborhoods and communities, frequently providing access to major traffic generators such as shopping areas, employment centers, and higher density residential areas. Roadways would have a minimum of 1 foot wide lanes with shoulders. Signals are typically spaced at a minimum 0.5-mile intervals.	y 17,90	0 42,480	58,750	14,300	34,000	47,000	
Minor Arterial (MNA)	Roadways that serve as a secondary type of arterial facility carrying local and through traffic within communities, frequently connecting neighborhood areas within the City, providing access to shopping areas, employment centers, and higher density residential areas. Roadways would have a minimum of 12-foot wide lanes with shoulders. Signal intervals typically range from 0.25 to 0.5 mile.	15,700	37,680	NA	12,500	30,100	NA	
Collector Streets (Col)	Roadways designed to collect traffic from local streets and connect to major or minor arterials. Collector Streets provide access to local streets within residential and commercial areas and conect streets of higher calssifications to permit adequate traffic circulation. Generally no more than 2 travel lanes and signalized at intersections with arterial roadways.		NA	9,280	NA	NA		
Local Streets (L)	Roadways designed to provide access to individual properties carrying traffic to and from a collector street. Intended to serve adjacent uses and are not intended for through traffic. Designed with two lanes and close to moderately close driveways.	9,100	NA	NA	7,280	NA	NA	
County		County ADT Design Capacity		Los	County LOS C ADT Threshold			
Functional Street Classification	County Purpose and Design Factors	2 Lanes	4 Lanes	4+ Lanes ¹	2 Lanes	4 Lanes	4+ Lanes ¹	
Primary 1 (P-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	NA	15,900	38,200	NA	
Primary 2 (P-2)	Roadways designed to serve a high proportion of non- residential development with some residential lots and few or no driveway curb cuts. Roadways would have a minimum of 12-foot wide lanes with few curb cuts. Signals spacing at minimum of 1/2 mile.		42,480	NA	14,300	34,000	NA	
Primary 3 (P-3)	Roadways designed to serve non-residential development and residential development. More frequent driveways are acceptable. Potential signal spacing of ½ to ¼ mile.		37,680	NA	12,500	30,100	NA	
Secondary 1 (S-1)	Roadways designed to serve non-residential development and large lot residential development with well spaced driveways. Roadways would be 2-lanes with infrequent driveways. Signals would generally occur at intersections of primary roadways.		NA	NA	9,300	NA	NA	
Secondary 2 (S-2) re	coadways designed to serve residential and non- esidential land uses. Roadways would be 2-lanes with lose to moderately spaced driveways.	9,100	NA	NA	7,300	NA	NA	
Roadways designed to primarily serve residential with small to medium size lots. Roadways would be 2-lanes with more frequent driveways.		7,900	NA	NA	6,300	NA	NA	

with more frequent driveways.
* Source: City of Goleta & County of Santa Barbara Public Works Department

LEVEL OF SERVICE DEFINITIONS

Signalized Intersection Level of Service Definitions

LOS	Delay ^a	V/C Ratio	Definition		
А	< 10.0	< 0.60	Progression is extremely favorable. Most vehicles arrive during the green phase. Many vehicles do not stop at all.		
В	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.		
С	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 HCM¹ 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
А	< 10.0
В	10.1 - 15.0
С	15.1 - 25.0
D	25.1 - 35.0
E	35.1 - 50.0
F	> 50.0

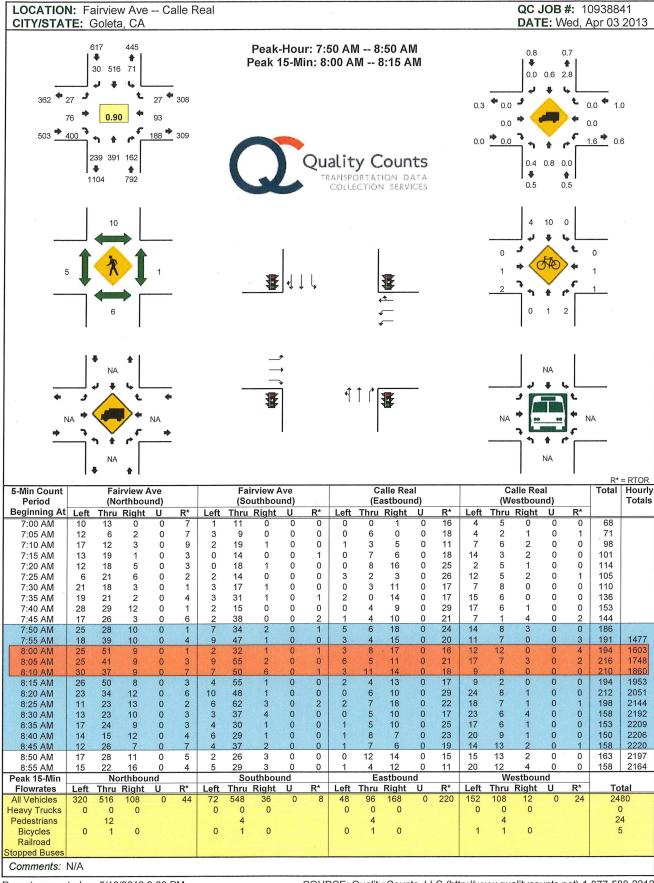
Highway Capacity Manual, National Research Board, 2010

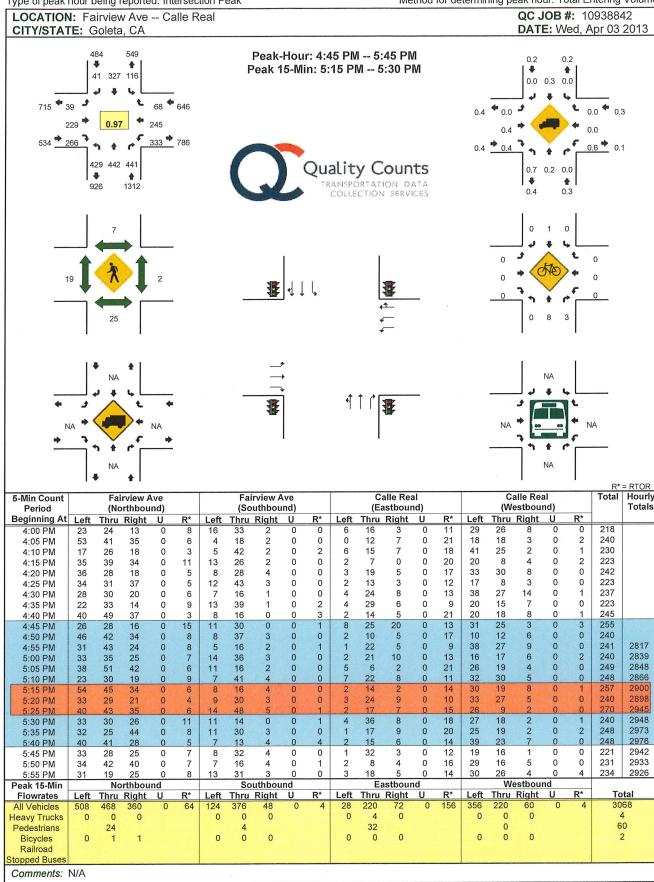


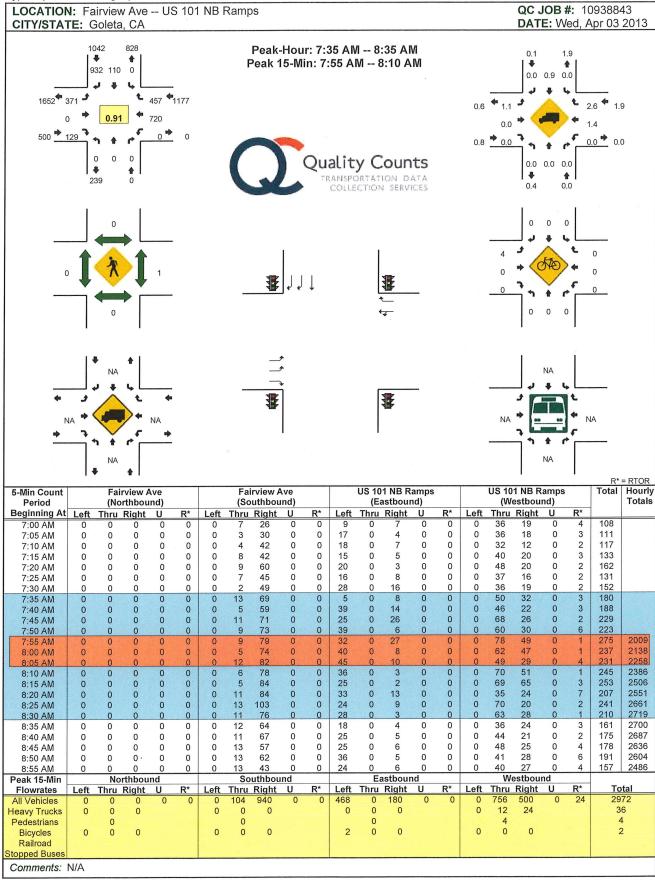
ASSOCIATED TRANSPORTATION ENGINEERS

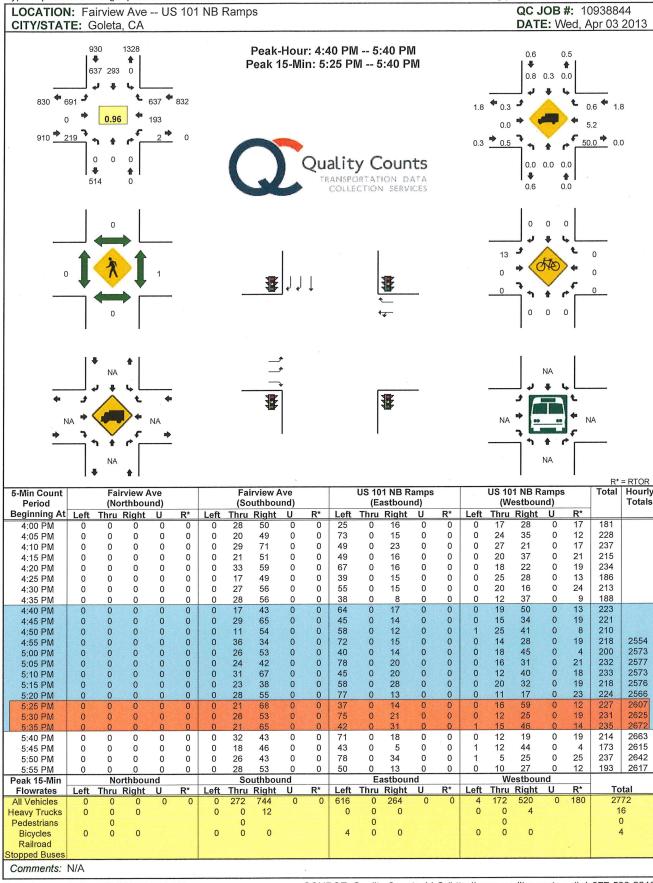
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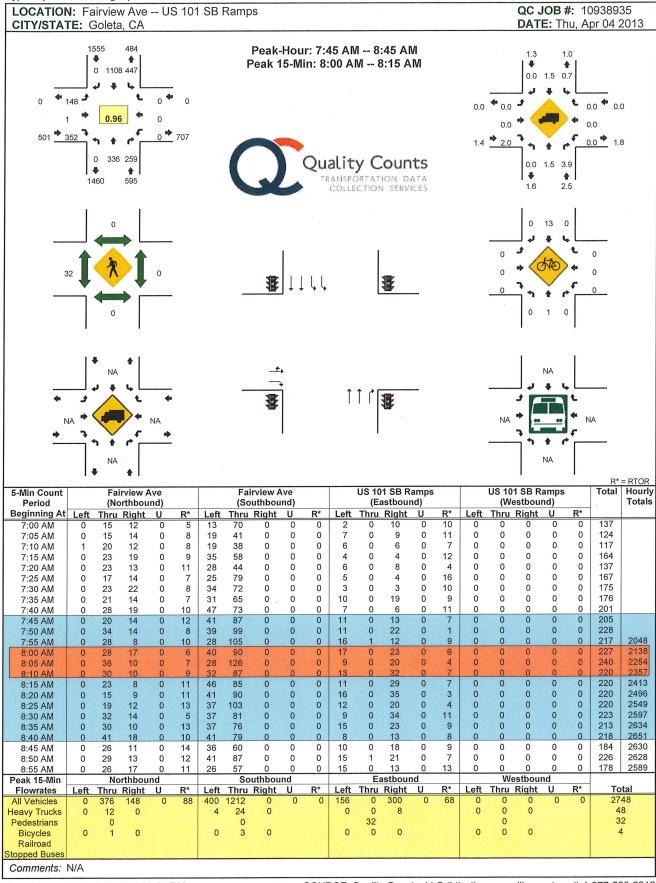
TRAFFIC COUNT DATA





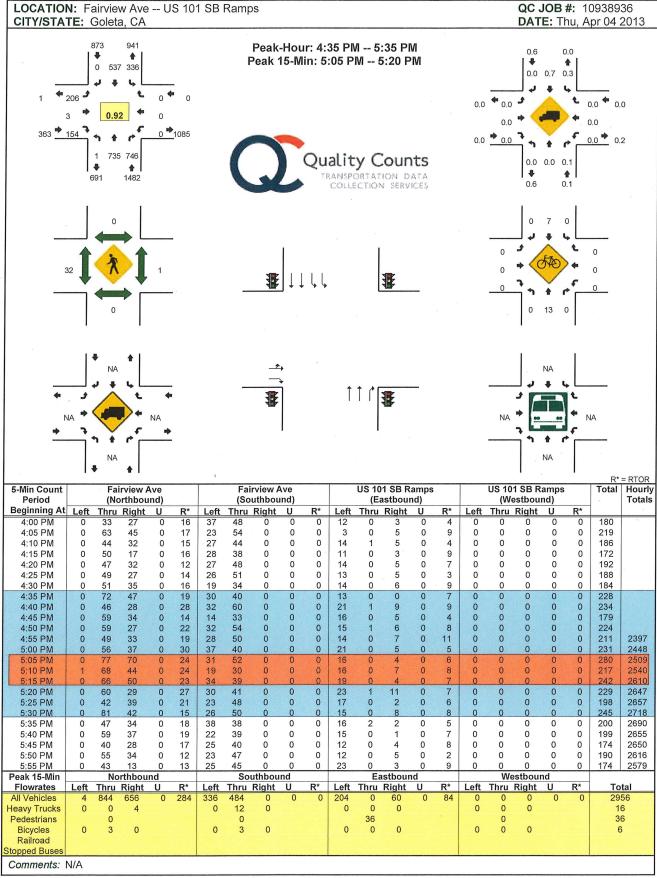


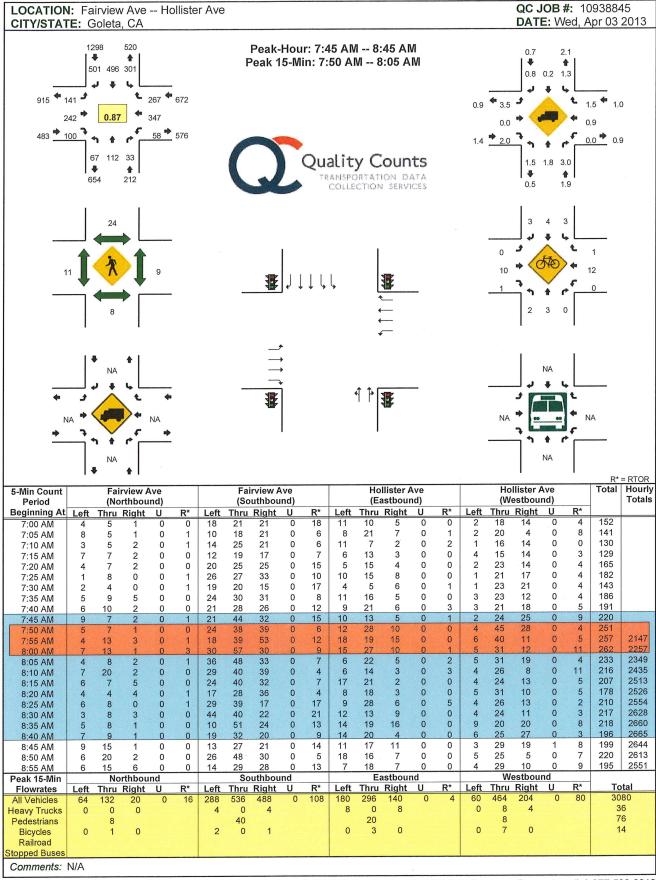




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