



# ASSOCIATED TRANSPORTATION ENGINEERS

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17040L10

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## **TRAFFIC AND CIRCULATION ANALYSIS FOR THE KELLOGG CROSSING SELF STORAGE PROJECT – CITY OF GOLETA**

Associated Transportation Engineers has prepared the following traffic and circulation analysis for the Kellogg Crossing Self Storage Project (19-003-SCD), proposed in the City of Goleta. The study evaluates the potential traffic impacts of the Project based on City thresholds and provides an assessment of the proposed truck route that would be used to export soil from the Project site during the construction phase.

### **PROJECT DESCRIPTION**

The Project site is located at the north end of South Kellogg Avenue (south of US 101) and currently contains 7,900 SF of light industrial uses. The Project was originally approved with 685 storage units and a manager's apartment unit. The Project was amended in 2017 and the number of storage units was increased to 863 units and the manager's apartment unit was eliminated. The current Project includes minor site plan changes and 1,043 storage units

### **PROJECT TRIP GENERATION ESTIMATES**

Trip generation estimates were developed for the existing light industrial buildings and the proposed Project using the rates presented in the Institute of Transportation Engineers (ITE) Trip Generation Manual for Light Industrial (Land Use Code # 110) Mini-Warehouse (Land Use Code #151) uses. Table 1 compares the trip generation estimates for the existing and proposed land uses and quantifies the net trip additions that would be generated by the Project.

**Table 1**  
**Project Trip Generation Calculations**

Scenario / Land Use	Size	Average Daily Trips		A.M. Peak Hour		P.M. Peak Hour	
		Rate	Trips	Rate	Trips	Rate	Trips
<u>Existing Land Uses</u>							
Light Industrial(a)	7,900 SF	4.96	39	0.7	6	0.63	5
<u>Proposed Project:</u>							
Mini Storage Units(b)	1,043 Units	0.18	188	0.01	10	0.02	21
Net Trip Generation			+ 149		+ 4		+ 16

(a) Trip generation estimates calculated using ITE rates for Light Industrial (ITE Land Use Code 110).

(b) Trip generation estimates calculated using ITE rates for Mini-Warehouse (ITE Land Use Code 151).

The data presented in Table 1 show that the proposed project would generate an additional 149 average daily trips, 4 A.M. peak hour trips and 16 P.M. peak hour trips when compared to the current land uses.

### TRIP GENERATION COMPARISON 2017

The ITE trip generation rates for Mini Storage facilities changed since the amended Project was analyzed in 2017. Table 2 provides a comparison of the 2017 Project and the current Project using the most current ITE rates.

**Table 2**  
**2017 Amended and Proposed Project Trip Generation Comparison**

Scenario / Land Use	Size	Average Daily Trips		A.M. Peak Hour		P.M. Peak Hour	
		Rate	Trips	Rate	Trips	Rate	Trips
<u>Proposed Project:</u>							
Mini Storage Units(a)	1,043 Units	0.18	188	0.01	10	0.02	21
<u>2017 Amended Project:</u>							
Mini Storage Units(a)	863 Units	0.18	155	0.01	9	0.02	17
Differences			+ 33		+ 1		+ 4

(a) Trip generation estimates calculated using current ITE rates for Mini-Warehouse (ITE Land Use Code 151).

The data presented in Table 2 show that the proposed Project would generate an additional 33 average daily trips, 1 A.M. peak hour trips, and 4 P.M. peak hour trips when compared to the 2017 amended Project.

**PROJECT TRIP DISTRIBUTION PERCENTAGES**

Trip distribution percentages were developed for the Project based on existing traffic flows and data derived from traffic studies completed for other Projects located in the study area. Table 3 presents the distribution percentages used to assign Project traffic to the Hollister Avenue/Kellogg Avenue intersection.

**Table 3  
Project Trip Distribution Percentages**

<b>Origin/Destination</b>	<b>Direction</b>	<b>Distribution %</b>
Hollister Avenue	East	70%
Hollister Avenue	West	25%
Kellogg Avenue	South	5%

**POTENTIAL TRAFFIC IMPACTS**

**Traffic Impact Thresholds**

The potential impacts of the Project were evaluated at the Hollister Avenue/Kellogg Avenue intersection (as requested by City staff) based on the City’s traffic impact thresholds, which are summarized below.

- 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:

<b>Significant Changes In Levels Of Service</b>	
<b>Intersection Level of Service (Including Project)</b>	<b>Increase in V/C or Trips Greater Than</b>
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.

### Intersection Levels of service

Existing and Existing + Project levels of service (LOS) were calculated for the Hollister Avenue/Kellogg Avenue intersection based on traffic count data obtained from the Old Town Village Project Traffic, Circulation and Parking Study (LOS worksheets attached for reference). Table 4 lists the results of the calculations and identifies potential impacts based on City thresholds.

**Table 4**  
**Existing & Existing + Project Intersection Levels of Service**

Intersection	Existing		Existing + Project		Project-Added Trips	Change in V/C	Impact?
	ICU	LOS	ICU	LOS			
Hollister Avenue/Kellogg Avenue – AM	0.524	A	0.527	A	4	0.002	No
Hollister Avenue/Kellogg Avenue – PM	0.556	A	0.558	A	16	0.002	No

The data presented in Table 4 indicate that the Project would not impact the Hollister Avenue/Kellogg Avenue intersection. The intersection would continue to operate at LOS A during both the AM and PM peak hours with the addition of Project traffic.

Cumulative and Cumulative + Project levels of service were calculated for the Hollister Avenue/Kellogg Avenue intersection based on traffic forecasts obtained from the Old Town Village Project Traffic, Circulation and Parking Study (LOS worksheets attached for reference). Table 5 lists the results of the calculations and identifies potential impacts based on City thresholds.

**Table 5  
Cumulative & Cumulative + Project Intersection Levels of Service**

Intersection	Cumulative		Cumulative + Project		Project-Added Trips	Change in V/C	Impact?
	ICU	LOS	ICU	LOS			
AM Peak Hollister Avenue/Kellogg Avenue	0.698	B	0.701	B	4	0.002	No
PM Peak Hollister Avenue/Kellogg Avenue	0.851	D	0.853	D	16	0.002	No

The data presented in Table 5 indicate that the Project would not generate cumulative impacts at the Hollister Avenue/Kellogg Avenue intersection. The intersection would operate acceptably at LOS B during the AM peak hour with cumulative traffic. The intersection is forecast to operate at LOS D during the PM peak hour with cumulative traffic. The Project's traffic additions to the intersection would not, however, exceed the City's cumulative impact thresholds at this location (V/C increase of 0.03 or more).

### **SOIL EXPORT TRUCK ROUTE**

The Kellogg Crossing Self Storage Project is requesting a permit to haul approximately 13,270 cubic yards (CY) of export soil from the site to a receiver site. The material will be exported off-site over a 11-day haul period. Figures 1 and 2 (attached) show the proposed truck routes. Inbound trucks accessing the site from the south would exit U.S. 101 at the SR 217 interchange, travel west on Hollister Avenue to Kellogg Avenue and proceed northerly to the site. Inbound trucks from the north would exit U.S. 101 at the Patterson Avenue interchange, travel north on Patterson Avenue to the U.S. 101 northbound on-ramp and merge onto the SR 217 off-ramp to access Hollister Avenue, proceed westerly to Kellogg Avenue and then proceed northerly to the site. Outbound trucks would travel southerly on Kellogg Avenue, make a left-turn and travel westerly on Hollister Avenue to the SR 217 northbound on-ramp. Trucks traveling south on US 101 would use the SR 217 ramp to U.S. 101 and trucks traveling north on U.S. 101 would exit at Patterson Avenue, proceed north on Patterson Avenue and turn left at the U.S. 101 northbound on-ramp.

## SOIL EXPORT TRAFFIC ASSESSMENT

It is estimated that a maximum of 885 trucks would travel to and from the site over the haul period based on a truck capacity of 15 cubic yards per truck (13,270 yards / 15 cubic yard per truck = 885 trucks). This equates to an average daily volume of 160 trucks per day over an 11-day period (885/11 days = 80 trucks; 80 Trucks \* 2 Trips = 160 ADT). The segment of Kellogg Avenue north of Hollister Avenue carries 3,200 ADT which is well within the City's Acceptable Capacity range for 2-Lane Collector Roads (9,280 ADT). The segment of Hollister Avenue east of Kellogg Avenue carries 20,400 ADT which is also well within the Acceptable Capacity range for 4-Lane Arterial Roads (34,000 ADT). The project would add 160 trucks per day to these two segments over the 11-day haul period. The additional truck traffic would not significantly affect operations on Kellogg Avenue north of the site or Hollister Avenue east of Kellogg Avenue based on the City's traffic impact thresholds. It is noted that hauling operations would be limited to the hours of 9:00 A.M. and 4:00 P.M. to avoid potential impacts to the study-area intersections during the A.M. and P.M. peak commute periods, thus the hauling activities would not generate intersection impacts based on the City's thresholds of significance.

## DEMOLITION PHASE TRIP GENERATION

The demolition phase of the Project is anticipated to last for 2 weeks. There would be an estimated 10 workers at the site on peak days during the demolition period. A total of 71 trucks required to haul the demolition debris (assumes 1,060 cubic yard of waste and 15 cubic yard truck capacity), which equates to 7 trucks per day over the 2-week period. The trucks would use the same haul route identified for the soil export phase of the Project. Table 6 presents the trip generation estimates for the demolition phase of the Project.

**Table 6  
Demolition Phase Trip Generation Forecasts**

Component	Number Per Day	Shift	Trip Generation				
			ADT	A.M. Peak		P.M. Peak	
				In	Out	In	Out
Employees (1)	10	7:00 AM - 4:00 PM	20	0	0	0	10
Trucks (2)	7	9:00 AM - 4:00 PM	14	0	0	0	0
<b>Totals</b>			<b>34</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>
(1) Worker shift starts at 7:00 A.M. and ends at 4:00 P.M. ADT 2 trips per employee. Workers arrive before the 7:00 AM thus no AM peak hour trips. (2) Trucks Deliveries & Miscellaneous Trips assumes one inbound + one outbound trip per delivery. A.M. and P.M. peak hour trip assumes that trucks would be required to haul between 9:00 AM and 4:00 PM thus no peak hour trips.							

As shown in Table 6, the demolition phase of the Project is forecast to generate 34 ADT, 0 AM peak hour trips and 10 PM peak hour trips.

This concludes ATE's traffic and circulation analysis for the proposed Kellogg Crossing Self Storage Project.

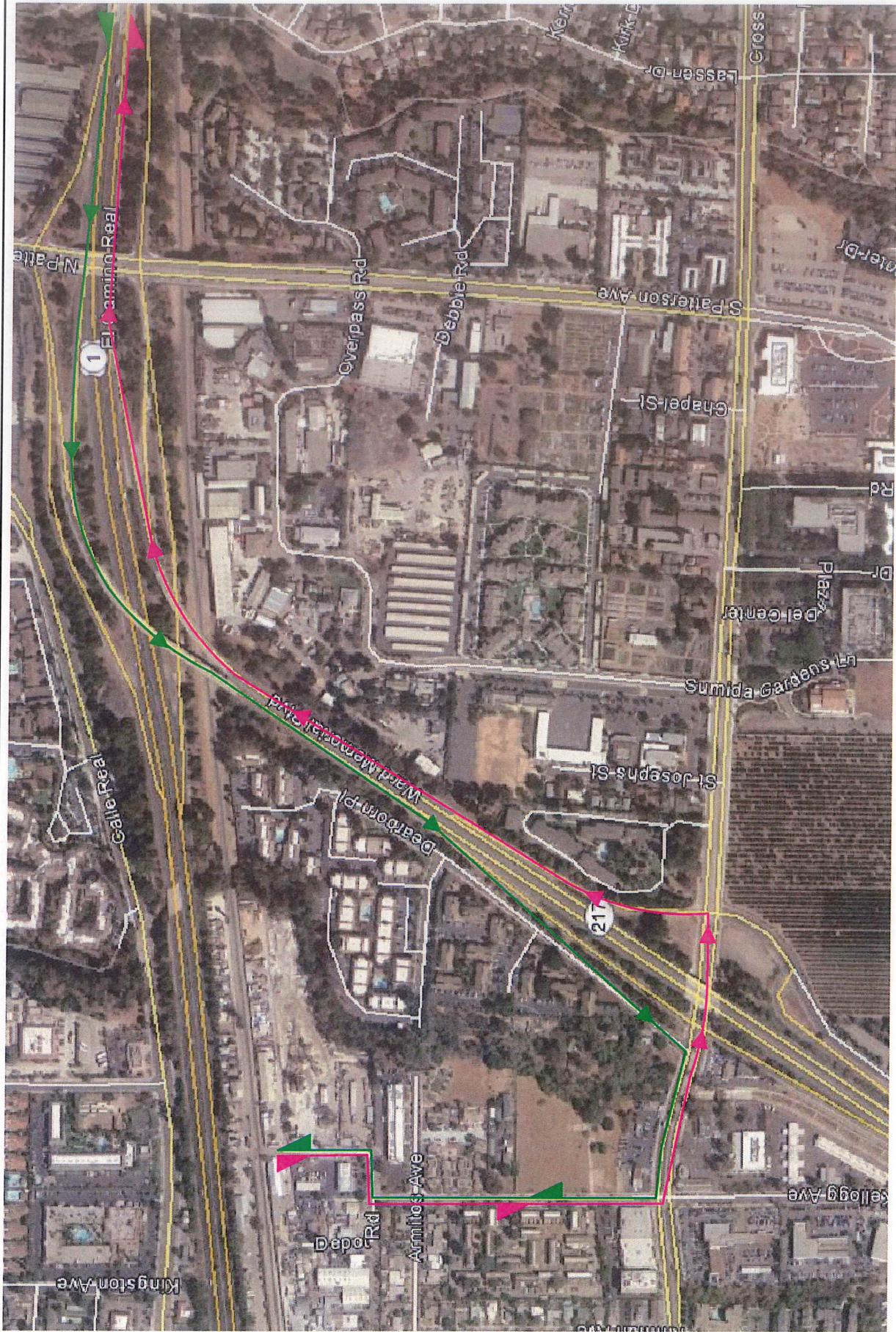
Associated Transportation Engineers

A handwritten signature in black ink, appearing to read 'SAS' followed by a stylized flourish.

Scott A. Schell, AICP, PTP  
Principal Transportation Planner

SAS/BDS

Attachments



LEGEND  
 - Outbound Route  
 - Inbound Route

NOT TO SCALE

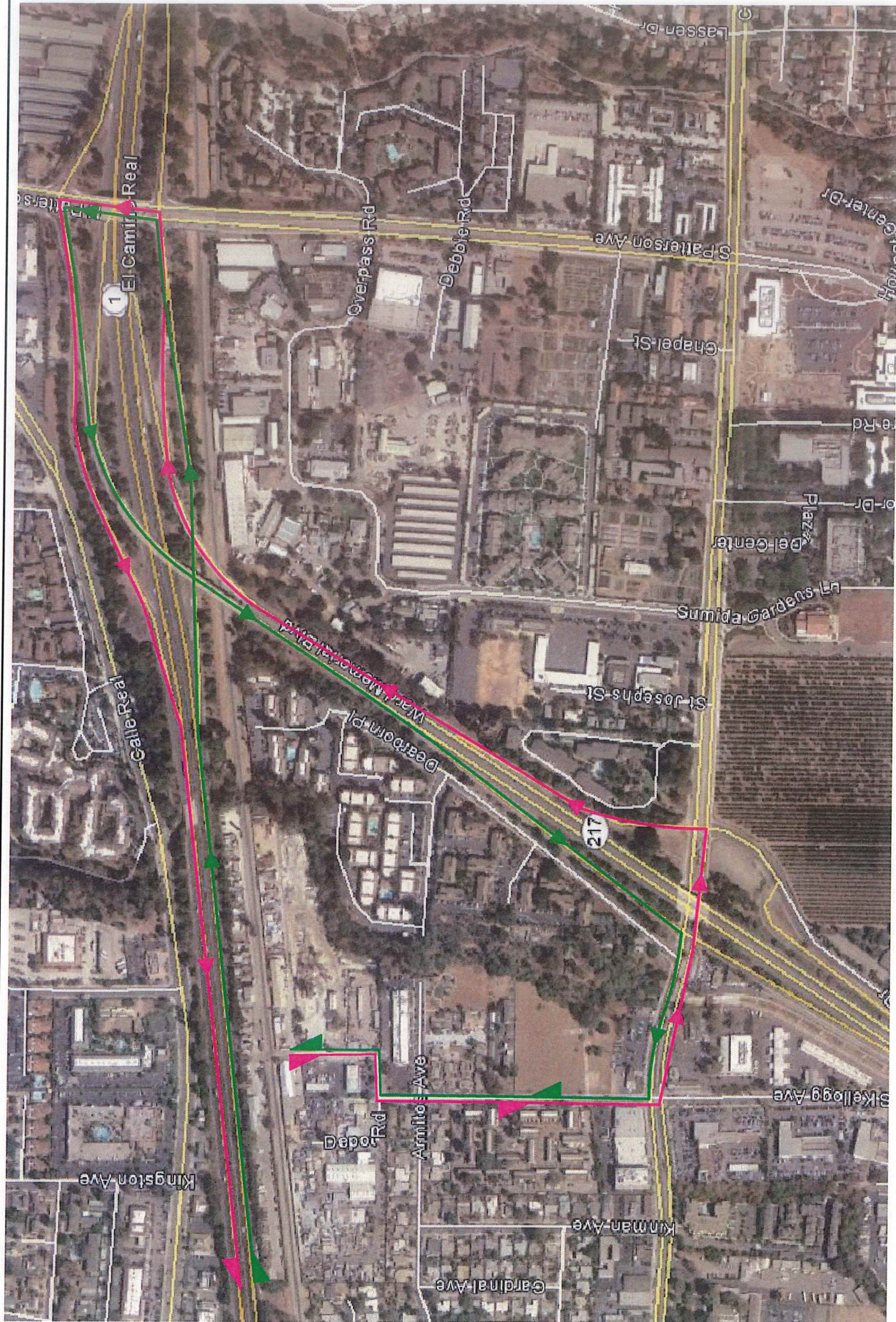
FIGURE 1

INBOUND/OUTBOUND TRUCK ROUTE -  
 RECEIVER SITE S/O PATTERSON AVENUE INTERCHANGE

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EKM - ATE#17040





LEGEND  
 - Outbound Route  
 - Inbound Route  
 NOT TO SCALE

INBOUND/OUTBOUND TRUCK ROUTE -  
 RECEIVER SITE N/O PATTERSON AVENUE INTERCHANGE

#17040 - KELLOGG CROSSING PROJECT

REF: 06 AM\_2

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *MAY 22, 2013*

TIME PERIOD: *A.M. PEAK HOUR*

WITH EKWILL STREET EXTENSION

N/S STREET: *KELLOGG AVENUE*

E/W STREET: *HOLLISTER AVENUE*

CONTROL TYPE: *SIGNAL*

**TRAFFIC VOLUME SUMMARY**

VOLUMES	NORTH BOUND			SOUTH BOUND			EAST BOUND			WEST BOUND		
	L	T	R	L	T	R	L	T	R	L	T	R
(A) EXISTING:	18	2	43	114	6	27	45	403	71	309	760	80
(B) PROJECT-ADDED:	0	0	0	3	0	0	0	0	1	0	0	0
(C) CUMULATIVE:	6	19	153	120	32	37	91	247	36	582	918	133

**GEOMETRICS**

LANE GEOMETRICS	NORTH BOUND		SOUTH BOUND		EAST BOUND		WEST BOUND		
	LT	R	LT	R	L	T	TR	L	T

**TRAFFIC SCENARIOS**

- SCENARIO 1 = EXISTING VOLUMES (A)
- SCENARIO 2 = EXISTING + PROJECT VOLUMES (A+B)
- SCENARIO 3 = CUMULATIVE (C)
- SCENARIO 4 = CUMULATIVE + PROJECT VOLUMES (B+C)

**LEVEL OF SERVICE CALCULATIONS**

MOVE- MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES				SCENARIO V/C RATIOS					
			1	2	3	4	1	2	3	4		
NBL	0	0	18	18	6	6	-	-	-	-		
NBT	1	1600	2	2	19	19	0.013	0.013	0.016	0.016		
NBR (a)	1	1600	24	24	86	86	0.015 *	0.015 *	0.054 *	0.054 *		
SBL	0	0	114	117	120	123	-	-	-	-		
SBT	1	1600	6	6	32	32	0.075 *	0.077 *	0.095 *	0.097 *		
SBR (b)	1	1600	25	25	34	34	0.016	0.016	0.021	0.021		
EBL	1	1600	45	45	91	91	0.028	0.028	0.057	0.057		
EBT	2	3200	403	403	247	247	0.141 *	0.141 *	0.085 *	0.085 *		
EBR (c)	0	0	47	48	24	24	-	-	-	-		
WBL	1	1600	309	309	582	582	0.193 *	0.193 *	0.364 *	0.364 *		
WBT	2	3200	760	760	918	918	0.259	0.259	0.323	0.323		
WBR (d)	0	0	69	69	114	114	-	-	-	-		
<i>LOST TIME:</i>							0.100 *	0.100 *	0.100 *	0.100 *		
<b>TOTAL INTERSECTION CAPACITY UTILIZATION:</b>							<b>0.524</b>	<b>0.526</b>	<b>0.698</b>	<b>0.700</b>		
SCENARIO LEVEL OF SERVICE:							<b>A</b>	<b>A</b>	<b>B</b>	<b>B</b>		

**NOTES:**

- RTOR: (a) 44%
- (b) 7%
- (c) 34%
- (d) 14%

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#17040 - KELLOGG CROSSING PROJECT

REF: 06 PM\_2

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: MAY 22, 2013

TIME PERIOD: P.M. PEAK HOUR WITH EKWILL STREET EXTENSION

N/S STREET: KELLOGG AVENUE

E/W STREET: HOLLISTER AVENUE

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND			SOUTH BOUND			EAST BOUND			WEST BOUND		
	L	T	R	L	T	R	L	T	R	L	T	R
(A) EXISTING:	73	12	94	116	10	43	44	795	40	137	795	106
(B) PROJECT-ADDED:	0	1	0	4	0	2	2	0	0	0	0	7
(C) CUMULATIVE:	100	38	365	184	25	62	46	977	34	284	798	120

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND		SOUTH BOUND		EAST BOUND		WEST BOUND		
	LT	R	LT	R	L	T	TR	L	T

TRAFFIC SCENARIOS

- SCENARIO 1 = EXISTING VOLUMES (A)
- SCENARIO 2 = EXISTING + PROJECT VOLUMES (A + B)
- SCENARIO 3 = CUMULATIVE (C)
- SCENARIO 4 = CUMULATIVE + PROJECT VOLUMES (B + C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES				SCENARIO V/C RATIOS					
			1	2	3	4	1	2	3	4		
NBL	0	0	73	73	100	100	-	-	-	-		
NBT	1	1600	12	13	38	39	0.053	0.054	0.086	0.087		
NBR (a)	1	1600	53	53	204	204	0.033 *	0.033 *	0.128 *	0.128 *		
SBL	0	0	116	120	184	188	-	-	-	-		
SBT	1	1600	10	10	25	25	0.079 *	0.081 *	0.131 *	0.133 *		
SBR (b)	1	1600	30	32	43	45	0.019	0.020	0.027	0.028		
EBL	1	1600	44	46	46	48	0.028	0.029	0.029	0.030		
EBT	2	3200	795	795	977	977	0.258 *	0.258 *	0.314 *	0.314 *		
EBR (c)	0	0	32	32	27	27	-	-	-	-		
WBL	1	1600	137	137	284	284	0.086 *	0.086 *	0.178 *	0.178 *		
WBT	2	3200	795	795	798	798	0.278	0.280	0.283	0.285		
WBR (d)	0	0	94	101	107	113	-	-	-	-		
LOST TIME:							0.100 *	0.100 *	0.100 *	0.100 *		
<b>TOTAL INTERSECTION CAPACITY UTILIZATION:</b>							<b>0.556</b>	<b>0.558</b>	<b>0.851</b>	<b>0.853</b>		
SCENARIO LEVEL OF SERVICE:							<b>A</b>	<b>A</b>	<b>D</b>	<b>D</b>		

NOTES:

- RTOR: (a) 44%
- (b) 30%
- (c) 20%
- (d) 11%

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