

**Traffic Impact Study for the
Proposed Office at 18002 Colima Road
in Rowland Heights, County of Los Angeles**

November 3, 2014

Prepared for:

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June 30, 2014

Mr. Kenneth Pang
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17528 Rowland Street, 2nd Street
City of Industry, CA 91748

Subject: Traffic Impact Study for the proposed Office at 18002 Colima Road in Rowland Heights,
County of Los Angeles

Dear Mr. Pang:

KOA Corporation is pleased to present the attached Traffic Impact Study for the proposed Office at 18002 Colima Road in the Community of Rowland Heights. The project site is located south of Colima Road between Stoner Creek Road and Larkvane Road in an unincorporated portion of the County of Los Angeles.

The study has been prepared to meet the traffic impact study requirements of the County of Los Angeles. Please contact our office if you have any questions about the report, or if you need additional information regarding the study. If there are any comments that require response or revisions, please notify our office as soon as possible for prompt revision.

It has been a pleasure to prepare this study for Creative Design Associates.

Sincerely,



Min Zhou, PE
Vice President

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I. Executive Summary

The project is an office building to be constructed on a site presently occupied by the existing Colima Nursery at 18002 Colima Road in the Community of Rowland Heights. The approximate 1.2-acre site is located south of Colima Road between Stoner Creek Road and Larkvane Road in an unincorporated portion of the County of Los Angeles. The proposed two-story office building would consist of 33,766 square feet of general office use. Parking for the project would be provided on-site with 106 parking spaces located in surface lots and a basement level.

Access to the proposed project would be provided by a two right-in/right-out only access driveways on Colima Road. The westerly project driveway will have access to a surface parking lot and ramp access to the basement parking garage. The easterly project driveway will have access to a separate surface parking lot.

The site for the proposed project is currently occupied by the existing Colima Nursery. The existing site traffic is estimated to generate 41 daily trips with 2 AM peak hour trips and 4 PM peak hour trips. Existing trip credit attributed to current active use is subtracted in the overall trip calculations. Overall, the proposed project would generate 331 net daily trips with 50 net AM peak hour trips and 46 net PM peak hour trips.

Existing 2014 and future traffic conditions were analyzed at 8 study intersections. The analyses were conducted per County of Los Angeles and City of Industry policies, procedures, and approved methodologies and assumptions. The analysis of future traffic conditions included cumulative traffic attributable to ambient traffic growth and two cumulative developments located in the County of Los Angeles. Based on the results of these analyses, the proposed project is not expected to have any significant traffic impacts.

Based on the freeway off-ramp queuing analysis for Existing 2014 and future conditions, the total 95th percentile queue lengths for each turning movement from the off-ramps are less than the available storage lengths. There are currently adequate storage lengths on the freeway off-ramps for the future traffic demand.

In addition, project impacts were analyzed according to the guidelines in the adopted Los Angeles County Congestion Management Program (CMP). The additional traffic contributed by the project to CMP arterial and freeway-monitoring locations would be below the CMP threshold values required for analysis. Furthermore, the project is not expected to have a significant impact on transit service in the study area.

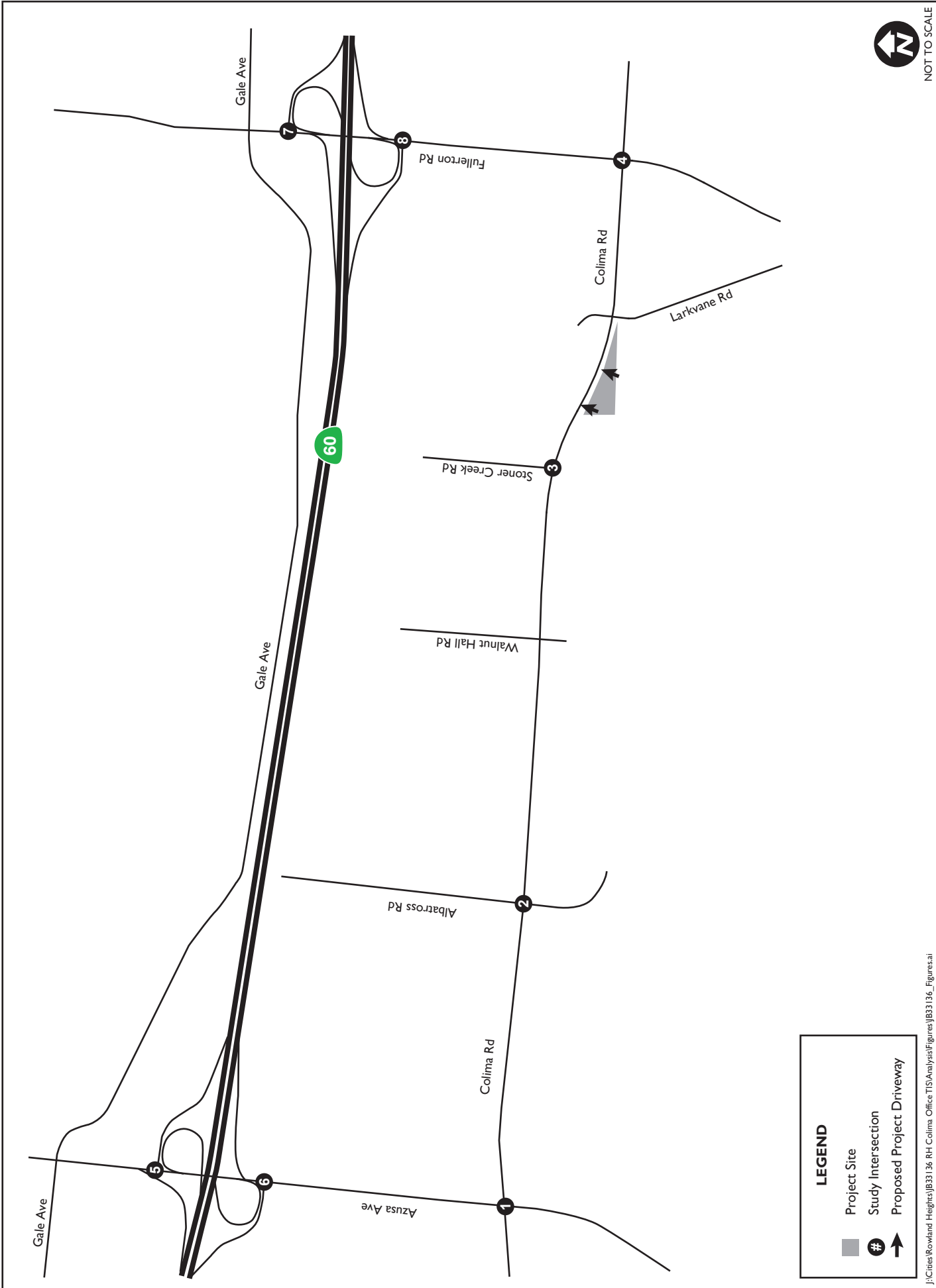
2. Introduction

The project under consideration is an office building to be constructed on a site presently occupied by the existing Colima Nursery at 18002 Colima Road in the Community of Rowland Heights. The approximate 1.2-acre site is located south of Colima Road between Stoner Creek Road and Larkvane Road in an unincorporated portion of the County of Los Angeles. Figure 1 shows the project location.

The developer has retained KOA Corporation to conduct a traffic study in order to assess the traffic impacts of the proposed project on the surrounding roadway system. This study has been prepared in accordance with the *Traffic Impact Analysis Report Guidelines* (County of Los Angeles Department of Public Works, January 1, 1997) and the City of Industry traffic impact guidelines for intersections located within their jurisdiction. This report presents the results of an analysis of existing 2014 conditions, as well as a forecast of future traffic conditions following completion and occupancy of the project. The analysis of potential project traffic impacts examined weekday conditions during the morning (AM) and afternoon (PM) peak hours. A total of 8 intersections were analyzed for existing (2014) and future (2015) traffic conditions. The study intersections are located entirely or partially within two different jurisdictions (County of Los Angeles, and City of Industry), with the freeway ramp approaches maintained by the State of California Department of Transportation (Caltrans). The intersections were analyzed using the methodologies and criteria of the jurisdiction in which the majority of each intersection was located. The freeway off-ramp queuing analysis is assessed for the SR-60 ramp intersections per Caltrans instruction. The 8 study intersection locations are listed below and are shown on Figure 1:

1. Azusa Avenue at Colima Road (100% LA County)
2. Albatross Avenue at Colima Road (70.5% LA County / 29.5% City of Industry)
3. Stoner Creek Road at Colima Road (100% LA County)
4. Fullerton Road at Colima Road (100% LA County)
5. SR-60 Westbound Ramps at Azusa Avenue (25% LA County / 25% City of Industry / 50% State of CA)
6. SR-60 Eastbound Ramps at Azusa Avenue (50% LA County / 50% State of CA)
7. SR-60 Westbound Ramps at Fullerton Road (100% City of Industry)
8. SR-60 Eastbound Ramps at Fullerton Road (25% LA County / 25% City of Industry / 50% State of CA)

Appendix A contains the Memorandum of Understanding (MOU) documenting the “Scoping for Traffic Study” which was approved by Los Angeles County Department of Public Works.



NOT TO SCALE

Figure 1

Project Vicinity Map

LEGEND

-  Project Site
-  Study Intersection
-  Proposed Project Driveway

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Office at 18002 Colima Road

County of Los Angeles



3. Project Description

The proposed project entails the construction of a new office building on a site presently occupied by the Colima Nursery at 18002 Colima Road in Rowland Heights. The approximate 1.2-acre site is located south of Colima Road between Stoner Creek Road and Larkvane Road in an unincorporated portion of the County of Los Angeles. The proposed two-story office building would consist of 33,766 square feet of general office use. Parking for the project would be provided on-site with 106 parking spaces located in surface lots and a basement level.

Access to the proposed project would be provided by a two right-in/right-out only access driveways on Colima Road. The westerly project driveway will have access to a surface parking lot and ramp access to the basement parking garage. The easterly project driveway will have access to a separate surface parking lot.

Figure 2 shows the project site plan. Appendix B contains additional details for the proposed project. The project is anticipated to be completed by the year 2015.

18002 COLIMA RD

ROWLAND HEIGHTS, CA 91748

LOT SIZE: 50,693 SQ. FT.
 LOT DIMENSIONS: 521'-3 1/2" X 211'-10 1/4"

PROJECT DATA:
 ROWLAND HEIGHTS CSD
 ZONING: PROPOSED: C-2

USE:
 CURRENT: A-1
 PROPOSED: C-2

BUILDING SQUARE FOOTAGE:
 CURRENT: PLANT NURSERY
 PROPOSED: OFFICE

PARKING:
 FIRST FLOOR: 19,960 SQ. FT.
 SECOND FLOOR: 14,806 SQ. FT.
 TOTAL: 33,766 SQ. FT.

LANDSCAPE:
 REQUIRED: MAX 45' WITH CUP
 PROPOSED: LESS THAN 45'

COVERAGES:
 REQUIRED: MAX 40%
 PROPOSED: 37.4%

BASEMENT GARAGE SQUARE FOOTAGE:
 TOTAL: 33,296 SQ. FT.

PARKING:
 REQUIRED: 1 PER 400 S.F. = 85
 PROPOSED: 106 TOTAL
 (73 BASEMENT + 33 GROUND)
 4 HANDICAP

LANDSCAPE:
 REQUIRED: MIN 10%
 PROPOSED: 31.8% @ 16,099 SQ. FT.

PARKING LANDSCAPE:
 REQUIRED: MIN 5%
 PROPOSED: 18.8%

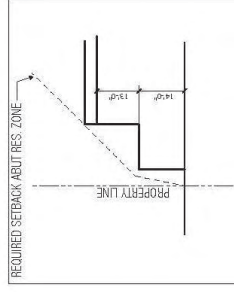
SETBACK:

REQUIRED:
 FRONT - MIN 20'
 SIDE - 0'
 REAR - 0'

*NOTE: ADJOINING RESIDENTIAL ZONE:
 15' & UNDER - MIN 3'
 ABOVE 15': ADD 1" FOR EACH ADDITIONAL
 FOOT OF THE STRUCTURE'S
 HEIGHT OVER 15'

PROPOSED:

FRONT - 20'
 SIDE - 55'-1/4"
 REAR - (ABUT RES. ZONE)
 FIRST FLOOR: 8'
 SECOND FLOOR: 24'
 (SEE DIAGRAM A)



A SETBACK DIAGRAM (ABUT RESIDENTIAL ZONE)



SITE PLAN

CD/A
 CREATIVE DESIGN
 ASSOCIATES



NOT TO SCALE

4. Analysis Methodology

This section documents the methodologies and assumptions used to conduct the traffic impact analysis for the proposed project. This section contains the following background information:

- Study timeframes
- Study area description
- Intersection capacity analysis methodologies
- Freeway off-ramp queuing analysis methodologies

4.1 Study Timeframes

This report presents an analysis of the overall intersection operating conditions during the morning (AM) peak hour and evening (PM) peak hour for the following anticipated timeframes:

- Existing 2014 traffic
- Existing plus Project traffic
- Existing plus Project plus Cumulative traffic

4.2 Project Study Area

Study intersections were identified as those that may potentially impacted by the proposed project. The project study area was determined through consultation with the County of Los Angeles Public Works Department and Caltrans (see Appendix A). The freeway off-ramp queuing analysis is assessed for the SR-60 ramp intersections per Caltrans instruction. As shown on Figure 1, the project study area consists of the following 8 intersections:

1. Azusa Avenue at Colima Road (100% LA County)
2. Albatross Avenue at Colima Road (70.5% LA County / 29.5% City of Industry)
3. Stoner Creek Road at Colima Road (100% LA County)
4. Fullerton Road at Colima Road (100% LA County)
5. SR-60 Westbound Ramps at Azusa Avenue (25% LA County / 25% City of Industry / 50% State of CA)
6. SR-60 Eastbound Ramps at Azusa Avenue (50% LA County / 50% State of CA)
7. SR-60 Westbound Ramps at Fullerton Road (100% City of Industry)
8. SR-60 Eastbound Ramps at Fullerton Road (25% LA County / 25% City of Industry / 50% State of CA)

4.3 Intersection Operations Analysis Methodologies

The Intersection Capacity Utilization (ICU) methodology has been used in this study for the analysis and evaluation of traffic operations at signalized intersections. The Traffix computer software is used for the analysis. This analysis is widely accepted and essentially measures the amount of traffic signal “green”

time required for the intersection. This methodology is consistent with County of Los Angeles Congestion Management Program (CMP) procedures for traffic study analyses and is one of the recommended methods for analyzing traffic conditions in the County's Traffic Impact Analysis Report Guidelines. A lane capacity of 1,600 vehicles per lane (vpl) and 2,880 vpl for dual left-turn lanes with a 10 percent yellow clearance per cycle was used in the analysis. Using the ICU procedures, a determination can be made of the operating characteristics of an intersection in terms of the Level of Service for different levels of traffic volumes and other variables, such as critical signal phases and the number and type of traffic lanes.

The term "Level of Service" (LOS) describes the quality of traffic flow at an intersection. LOS A to C is indicative of excellent to good traffic flow conditions. LOS D corresponds to fair conditions that may experience substantial delay during portions of the peak hours, but without excessive backups. LOS E represents poor conditions, with volumes at or near the capacity of the intersection and long lines of vehicles that may have to wait through several signal cycles. LOS F is characteristic of failure (i.e., the intersection is overloaded, vehicular movements may be restricted or prevented, and delays and queue lengths become increasingly longer).

Table I shows the relationship between level of service and ICU volume to capacity (V/C) ratio for intersections.

Table I – Levels of Service as a Function of ICU Values for Signalized Intersections

Level of Service	Range of ICU Values
A	0.00 – 0.600
B	0.601 – 0.700
C	0.701 – 0.800
D	0.801 – 0.900
E	0.901 – 1.000
F	1.001 and up

For study intersections that are Stop-sign controlled (unsignalized), the Highway Capacity Manual (HCM) method, published by the Transportation Research Board, should be used. Traffix software performs computerized transportation analyses that model (replicate) travel behavior for measured or projected traffic volumes. The analysis results include average vehicle delays for lanes/approaches and expected vehicle queue lengths. The LOS for unsignalized intersections is based on the estimated vehicular delay in seconds per vehicle for the control turning movement or approach of an intersection. Total delay is defined as the time elapsed between when a vehicle stops at the end of a queue and when the vehicle departs from the stop line. A description of the different LOS and their corresponding average vehicular delays is shown in Table 2.

Table 2 – Levels of Service as a Function of Vehicle Delay for Unsignalized Intersections

Level of Service	Range of Delay Values (seconds)*
A	0.0 – 10.0
B	10.1 – 15.0
C	15.1 – 25.0
D	25.1 – 35.0
E	35.1 – 50.0
F	Greater than 50.0

*Highway Capacity Manual (2000), Exhibit 17-2 for two-way stop controlled intersections

The following peak periods during the weekdays were selected for analysis:

- Weekday AM (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM (peak hour between 4:00 PM and 6:00 PM)

4.4 Intersection Performance Criteria

The County of Los Angeles defines a significant traffic impact based on a "stepped scale" defined in the *Traffic Impact Analysis Report Guidelines* (County of Los Angeles Department of Public Works, January 1, 1997). The impact definition recognizes that intersections experiencing high ICU values are more sensitive to additional traffic than those operating with more available capacity. According to County policy, a significant impact is identified as an increase in the ICU value, due to project-related traffic, of 0.010 or more when the final (with project) LOS is E or F, an ICU increase of 0.020 or more when the final LOS is D, or an increase of 0.040 or more when the final LOS is C. No significant impacts are deemed to occur at LOS A or B, as these operating conditions exhibit surplus capacities to accommodate large traffic increases with little effect on traffic delays. These criteria are summarized in Table 3.

Table 3 – County of Los Angeles Criteria for Significant Traffic Impact for Signalized Intersections

Level of Service	Final ICU Value	Project-Related Increase in ICU Value
C	0.701 – 0.800	0.040 and up
D	0.801 – 0.900	0.020 and up
E, F	0.901 and up	0.010 and up

However, the County of Los Angeles does not have traffic impact significance criteria for Stop-sign controlled intersections. It is assumed that a Stop-sign controlled intersection would have a significant traffic impact attributable to a project if the Stop-sign controlled approach or critical turning movement would degrade to LOS E or F following the addition of project traffic.

City of Industry identifies Level of Service D as the minimum allowable “Standard” service level during peak hours at non-CMP signalized intersections. At this service level, traffic will flow at tolerable operating speeds, although with restricted maneuverability. However, City of Industry has determined that Level of Service E is considered acceptable service level for CMP signalized intersections.

4.5 Freeway Off-Ramp Queuing Analysis Methodologies

Caltrans requested off-ramp queuing analysis to assess the project’s impact to the SR-60 freeway mainline traffic flow. HCM methodology has been used in this study for the evaluation of freeway off-ramp vehicular queuing. The Synchro computer software is used for the queuing analysis. The total 95th percentile queue lengths for each turning movement from the off-ramp were calculated to ensure that there is adequate storage length on the off-ramp to avoid impact to the freeway mainline traffic flow. The available storage lengths for the off-ramps are calculated based on the total length of each travel lane, and they are listed as follows:

- SR-60 Westbound Off-Ramp / Azusa Avenue = 2,120 feet (360+450+1310)
- SR-60 Eastbound Off-Ramp / Azusa Avenue = 3,460 feet (480+1480+1500 auxiliary lane)
- SR-60 Westbound Off-Ramp / Fullerton Road = 1,690 feet (100+260+1330)
- SR-60 Eastbound Off-Ramp / Fullerton Road = 2,190 feet (200+500+1400)

5. Environmental Setting

This section documents the existing environmental setting and roadway conditions in the study area. The discussion presented here is limited to specific roadways, transit routes, pedestrian facilities, bikeways, and land uses in the project vicinity.

5.1 Existing Circulation Network

Local streets in the project vicinity that may be affected by the proposed project include Colima Road, Azusa Avenue, Fullerton Road, Albatross Road, Stoner Creek Road and Larkvane Road. Figure 3 shows the existing roadway circulation network and intersection lane configurations in the study area.

Colima Road is a four-lane Major roadway with raised center median west of Larkvane Road. East of Larkvane Road, Colima Road is a six-lane Major roadway with a raised center median.

Azusa Avenue is a four-lane Major roadway with a raised center median south of Colima Road. Between Colima Road and Pepper Brook Way, Azusa Avenue is a six-lane Major Roadway with a raised center median. Azusa Avenue is an eight-lane roadway with a raised center median from Pepper Brook Way to the SR-60 Freeway.

Fullerton Road is a four-lane Major roadway with a striped two-way left-turn lane.

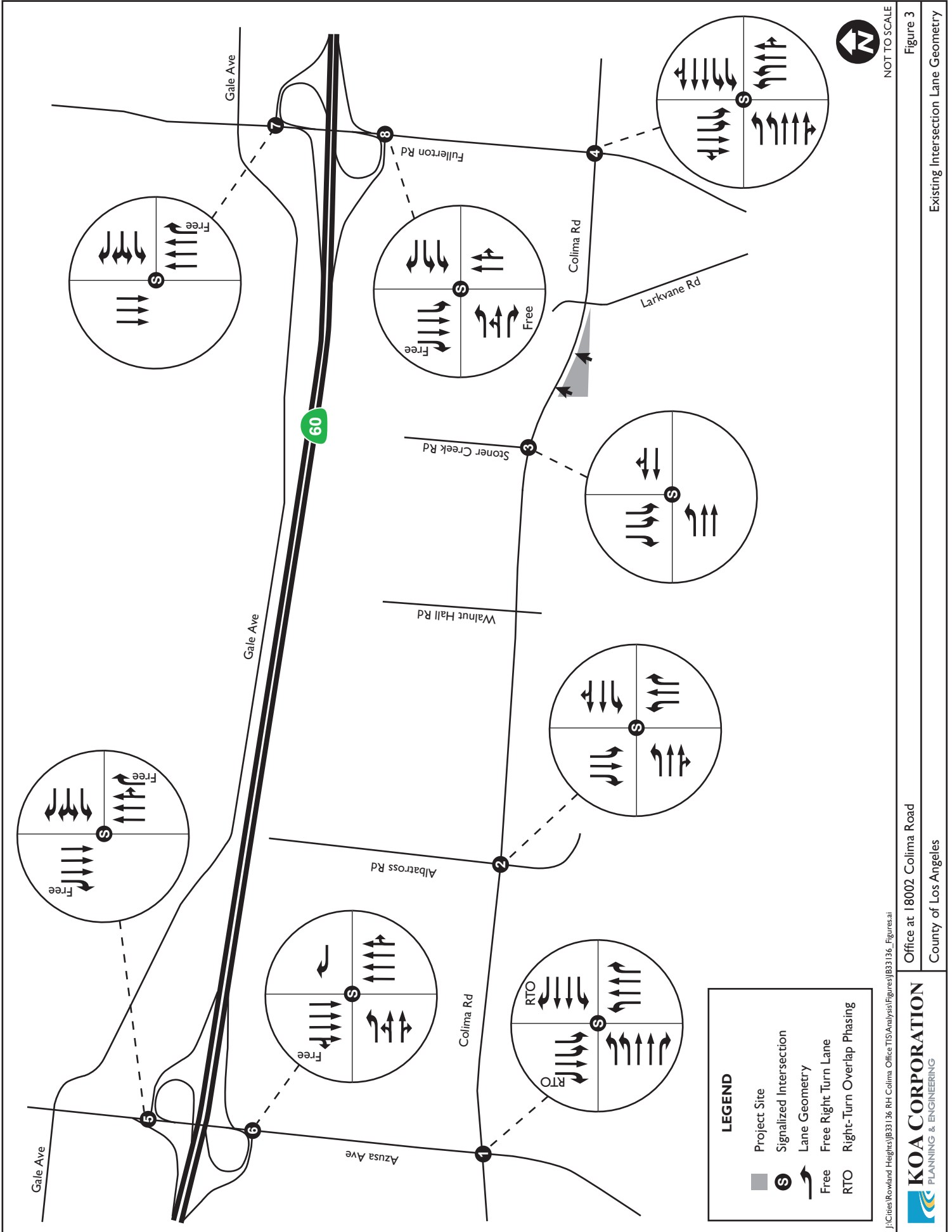
Albatross Road is a four-lane roadway with striped two-way left-turn lane north of Colima Road. South of Colima Road, Albatross Road is a two-lane roadway with a striped double-yellow center line.

Walnut Hall Road is a four-lane roadway with striped two-way left-turn lane north of Colima Road. The south leg of the intersection of Walnut Hall Road and Colima Road is the access road for Pheasant Ridge Apartment complex.

Stoner Creek Road is a four-lane roadway with a striped two-way left-turn lane north of Colima Road.

Larkvane Road is a two-lane roadway with a striped two-way left-turn lane south of Colima Road. North of Colima Road, Larkvane Road is a two-lane roadway with a striped double-yellow center line.

The SR-60 Freeway is located approximately 3/8 mile north of the project site, and it provides full interchanges at Azusa Avenue and Fullerton Avenue.



5.2 Public Transit

The fixed route bus service in the project vicinity includes Foothill Transit Authority bus service. Foothill Transit Routes 178, 289, 482 and 493 have services along Colima Road east of Azusa Avenue. Routes 185 and 282 serve Colima Road west of Azusa Avenue. Azusa Avenue north Colima Avenue is served by Routes 280, 285, 493 and 497.

The Puente Hills Mall TransCenter is located at the northeast corner of Azusa Avenue and Colima Road within the Puente Hills Mall, and it serves as a connection hub for 9 different bus routes. The Puente Hills Mall TransCenter is located within one mile from the project site. The closest bus stop in proximity to the project site is located on Colima Road at Larkvane Road approximately 300 feet to the east. There is also another bus stop located on Colima Road at Walnut Hall Road approximately ¼ mile to the west of the project site. Appendix C includes the transit route maps for Foothill Transit Authority bus service.

Typically, the Foothill Transit Authority bus service operates between 5:00 AM and 9:00 PM on weekdays with a half-hour frequency. On weekends the bus service operates between 6:00 AM and 10:00 PM with a half-hour frequency between 8:00 AM to 5:00 PM. During the weekend mornings and evenings, the bus runs at an hourly frequency from 6:00 AM to 8:00 AM and from 5:00 PM to 10:00 PM.

5.3 Bikeways

There are existing on-street Class II bike lanes along Colima Avenue west of Larkvane Road immediately adjacent to the project site. The 2012 County of Los Angeles Bicycle Master Plan (see Appendix D) shows future on-street Class II bike lanes for the following locations:

- Colima Road, east of Larkvane Road
- Azusa Avenue, south of Colima Road
- Fullerton Road, south of Colima Road

During field observation of the project site, there are very low volumes of bicycle activity in the vicinity of the project site.

5.4 Existing Traffic Volumes

Figure 4 shows the Existing 2014 traffic volumes. New traffic counts were collected at 8 intersections in March, 2014. Traffic count sheets are included in Appendix E. The counts for following peak periods during the weekdays were collected:

- Weekday AM (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM (peak hour between 4:00 PM and 6:00 PM)

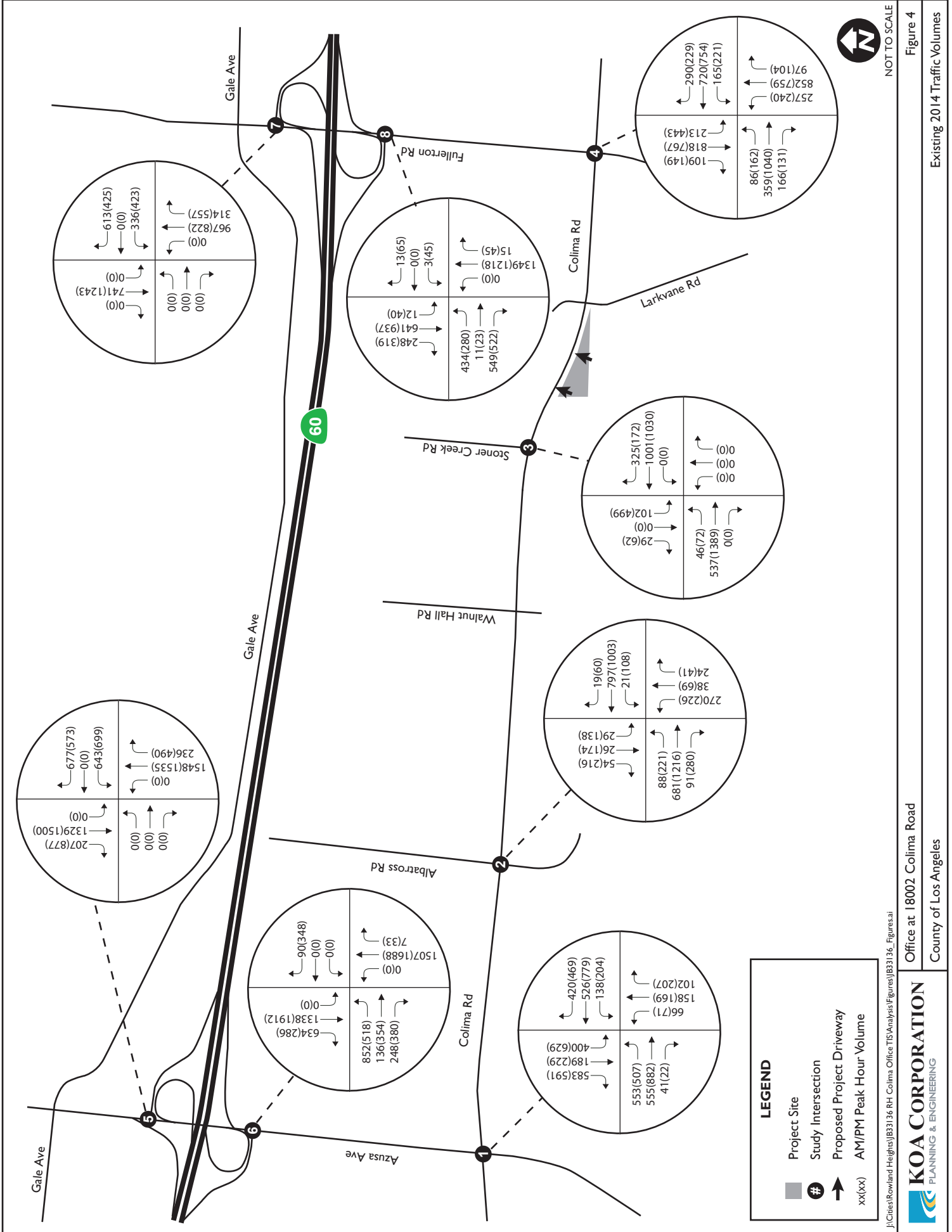


Table 4

**Existing 2014 Conditions
Intersection Operations Analysis Summary**

Study Area Intersection		Existing 2014 Conditions			
		AM		PM	
No.	Name	V/C ¹	LOS	V/C ¹	LOS
1	Azusa Av / Colima Rd	0.675	B	0.865	D
2	Albatross Rd / Colima Rd	0.637	B	0.934	E
3	Stoner Creek Rd / Colima Rd	0.582	A	0.699	B
4	Fullerton Rd / Colima Rd	0.719	C	0.844	D
5	SR-60 WB Ramps / Azusa Av	0.718	C	0.702	C
6	SR-60 EB Ramps / Azusa Av	0.673	B	0.901	E
7	SR-60 WB Ramps / Fullerton Rd	0.520	A	0.548	A
8	SR-60 EB Ramps / Fullerton Rd	0.689	B	0.663	B

Note:

¹ Intersection Capacity Utilization (ICU) volume-to-capacity (V/C) ratio

5.5 Existing 2014 Conditions Intersection Operations Analysis

Table 3 summarizes the results of the intersection operations analysis for the Existing 2014 Conditions. Appendix F contains the Existing Conditions intersection operations analysis worksheets. As shown on Table 3, most of the study intersections are currently operating at Level of Service D or better, except for the following two locations:

- Albatross Road / Colima Road – PM LOS E
- SR-60 Eastbound Ramps / Azusa Avenue – PM LOS E

5.6 Existing 2014 Conditions Freeway Off-Ramp Queuing Analysis

Table 4 summarizes the results of the freeway off-ramp queuing analysis for the Existing 2014 Conditions. As shown on Table 4, the total 95th percentile queue lengths for each turning movement from the off-ramps are less than the available storage lengths. There are currently adequate storage lengths on the freeway off-ramps for the Existing 2014 Conditions. Appendix G contains the Existing Conditions freeway off-ramp queuing analysis worksheets.

Table 5

**Existing 2014 Conditions
Freeway Off-Ramp Queuing Analysis Summary**

Ramp Location		Existing Storage Length ¹	Off-Ramp Vehicle Queue Length	
No.	Name		AM	PM
5	SR-60 WB Ramps / Azusa Av	2120'	697'	768'
6	SR-60 EB Ramps / Azusa Av	3460'	895'	930'
7	SR-60 WB Ramps / Fullerton Rd	1690'	786'	673'
8	SR-60 EB Ramps / Fullerton Rd	2100'	496'	371'

Note:

- ¹ Available vehicle storage length from the surface street intersection to the freeway mainline

6. Project Traffic

The following section describes the methodology and procedures used to determine the trip generation, distribution, and assignment of traffic resulting from the proposed project. The proposed project entails the construction of a new office building on a site presently occupied by the Colima Nursery at 18002 Colima Road in the Community of Rowland Heights. The proposed two-story office building would consist of 33,766 square feet of general office use. Project-related traffic consists of trips on any portion of the street system that will begin or end on the project site as a result of the development of the proposed project. Project-related traffic is a function of the intensity and type of development proposed for the site. This information is used to establish traffic generation for the site.

6.1 Project Traffic Generation

Trip generation is a measure or forecast of the number of trips that will be made to or from the project. It is generally equal to the traffic volume expected at the project entrances. Trip generation characteristics for projects are normally estimated based on rates published in *Trip Generation Manual*, published by the Institute of Transportation Engineers, (ITE). Table 6 shows the ITE trip rates.

The project site is currently occupied by the existing Colima Nursery. Existing trip credit attributed to current active use is subtracted in the overall trip calculations. Existing site traffic is calculated based on an approximate 600 square foot sales building for the nursery using ITE trip rates. The existing site is estimated to generate 41 daily trips with 2 AM peak hour trips and 4 PM peak hour trips. Traffic count has also been conducted for the existing nursery driveway to justify the trip credit. Traffic count sheets are included in Appendix E. The proposed office use would generate 372 daily trips with 52 AM peak hour trips and 50 PM peak hour trips. As shown in Table 6, overall the proposed project would generate 331 net daily trips with 50 net AM peak hour trips and 46 net PM peak hour trips.

Table 6 – Project Traffic Generation

Land Use	Unit ¹	Daily Trip	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Trip Rates²								
Nursery/Garden Center (ITE 817)	TSF	68.10	1.26	1.17	2.43	3.40	3.54	6.94
General Office (ITE 710)	TSF	11.03	1.37	0.19	1.56	0.25	1.24	1.49
Trip Generation								
Nursery (Existing Trip Credit)	-0.600 TSF	-41	-1	-1	-2	-2	-2	-4
Office (Proposed New Trip)	33,766 TSF	372	46	6	52	8	42	50
Total Project Trips		331	45	5	50	6	40	46

Note:

¹ TSF = Thousand Square Feet

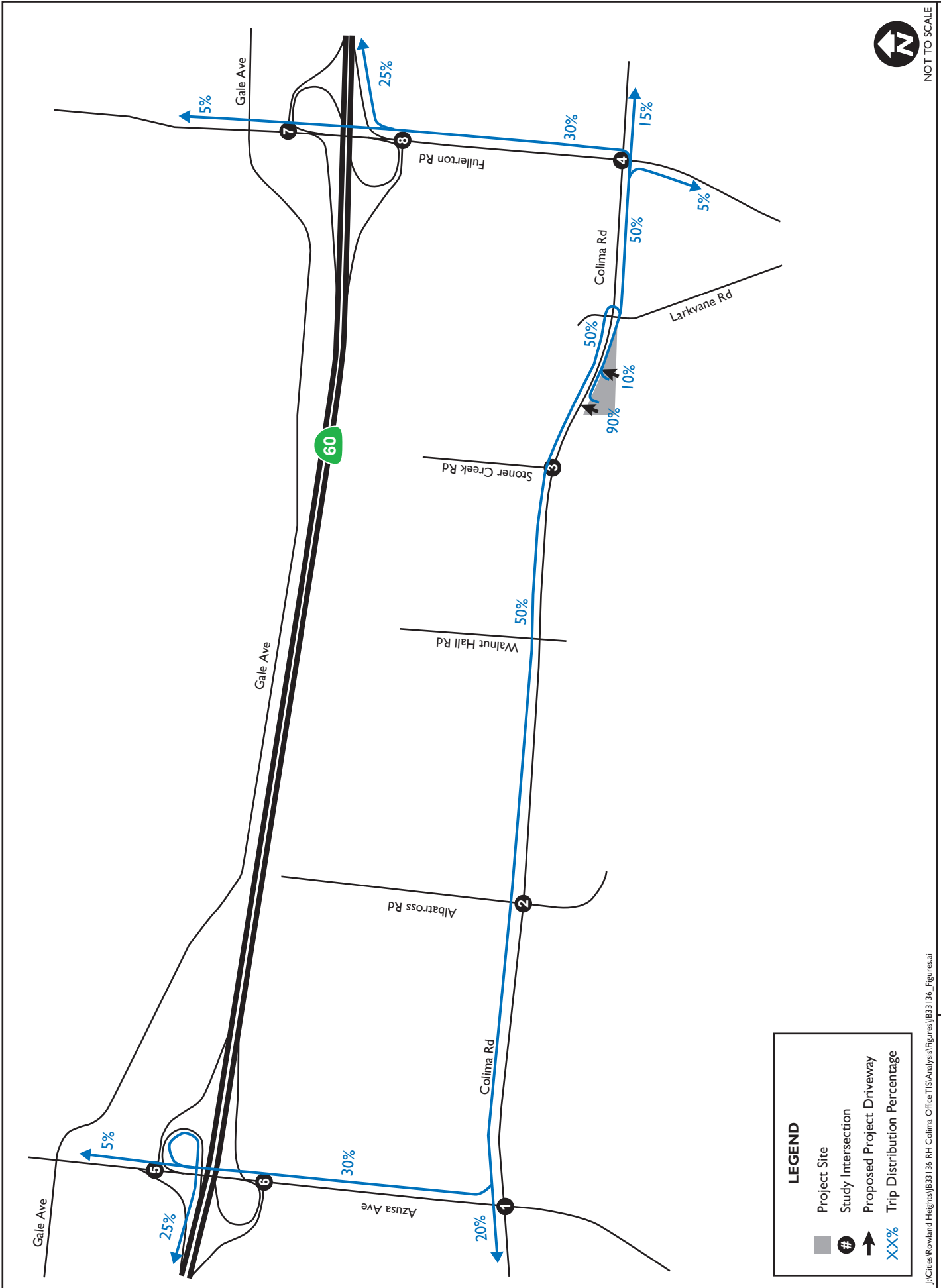
² Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition, 2012.

6.2 Project Trip Distribution

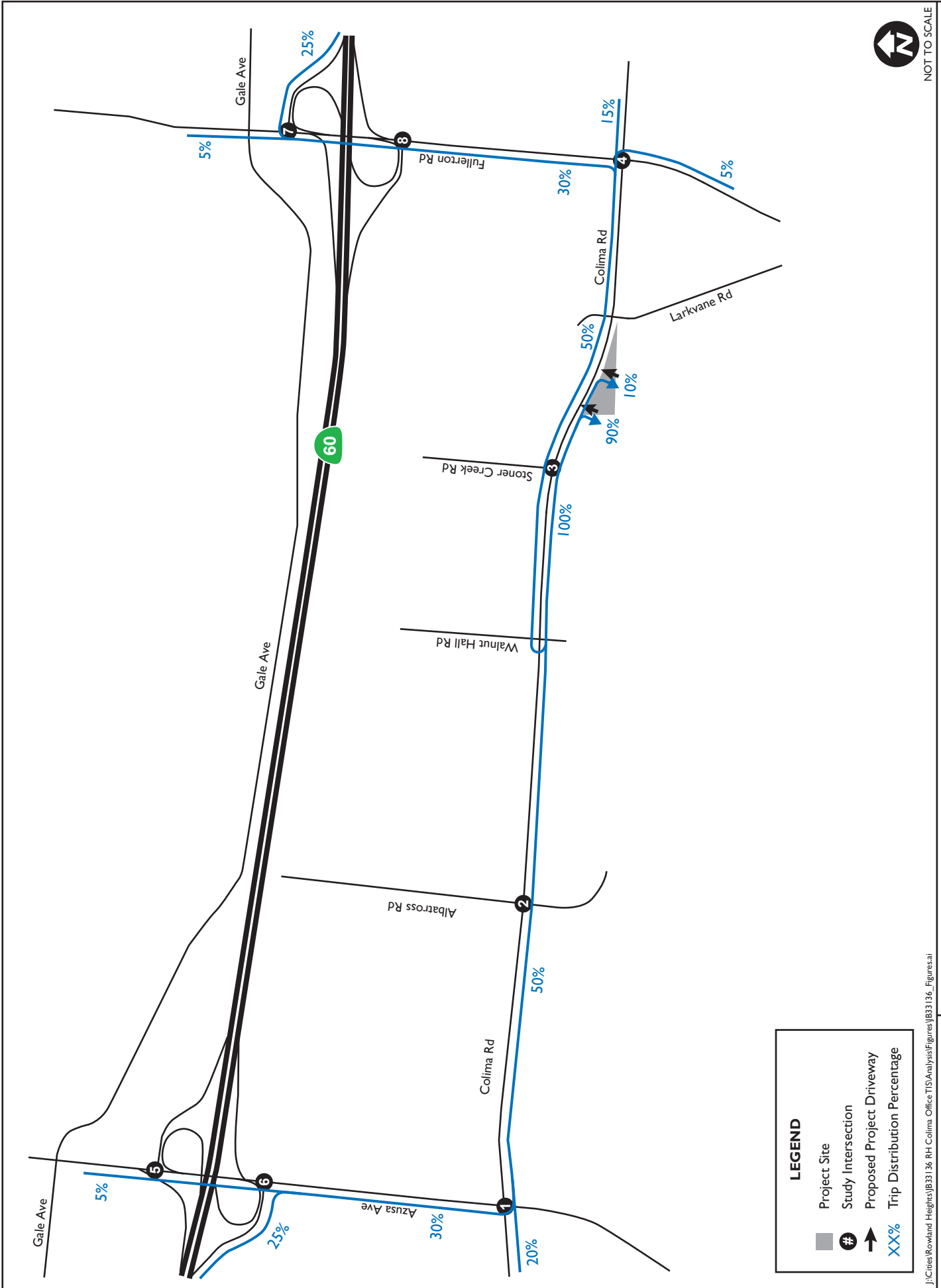
Estimation of the geographic distribution of trips for the proposed project uses was the next step in the analytical process. The primary factors affecting the trip distribution for the project are the nature of the uses; existing traffic patterns; the geographic location of the site and its proximity to freeways and major travel routes; and the relative distribution of the population from which prospective employees and visitors of the project would expect to be drawn. Based on these factors, the overall project directional trip distribution was determined and is shown on Figures 5 and 6 for outbound and inbound directions, respectively. The estimated trip assignment percentages for the project were approved by County of Los Angeles (see Appendix A).

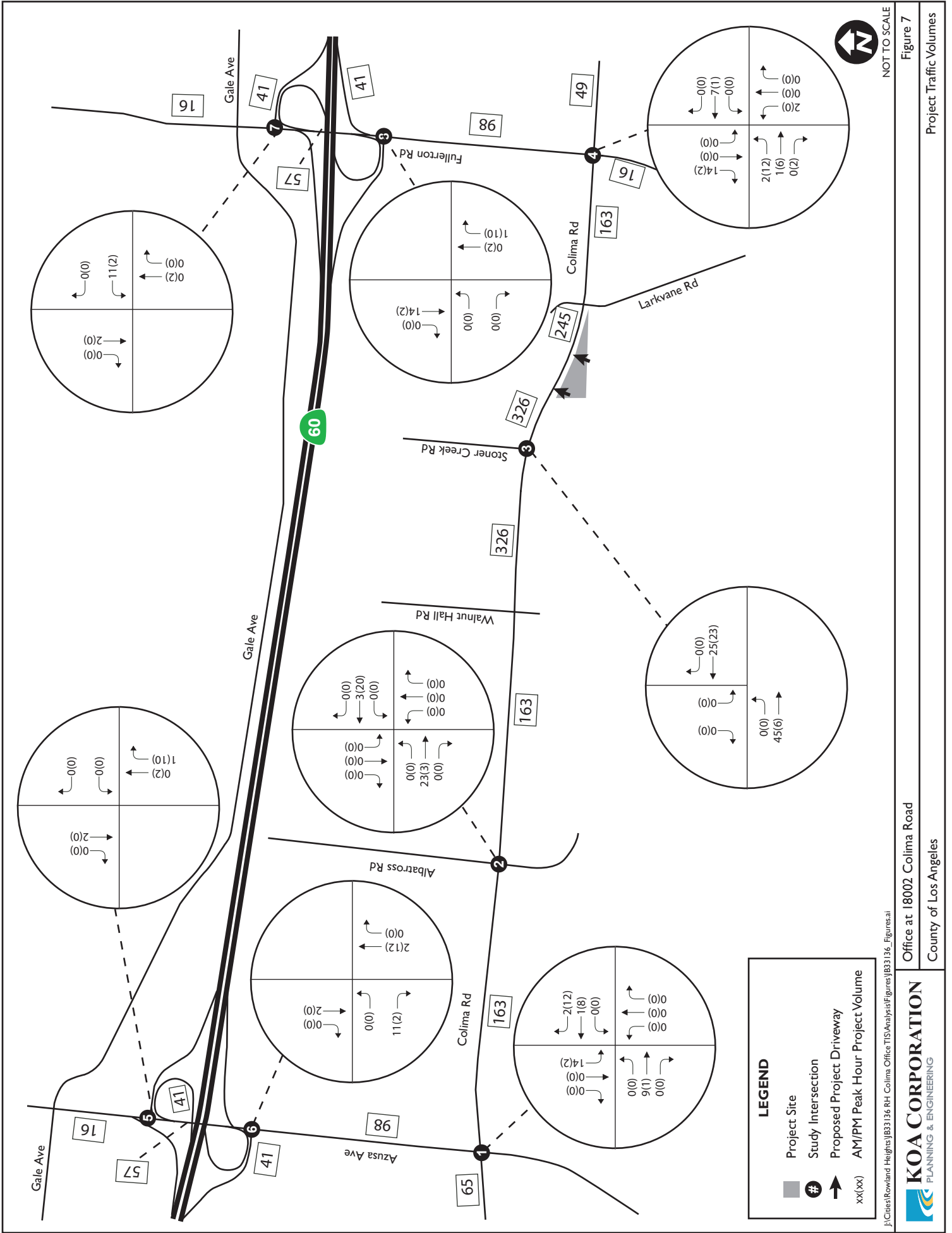
6.3 Project Traffic Assignment

The general distribution percentages for the project in Figures 5 and 6 were then disaggregated and assigned to specific routes and intersections expected to be used for project access. By applying the trip assignment percentages to the project trip generation, the project only peak-hour traffic volumes were determined for each of the study intersections. Project-only traffic volumes are depicted on Figure 7.



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7. Existing Plus Project Conditions Traffic Analysis

This section documents the traffic analysis for Existing conditions with the addition of project-related traffic to the surrounding street system.

7.1 Existing Plus Project Traffic Volumes

Figure 8 illustrates the Existing Plus Project traffic volumes.

7.2 Existing Plus Project Conditions Intersection Operations Analysis

The analysis of the Existing Plus Project Conditions at the study intersections was performed using the same analysis procedures described previously in Section 4 of this report. Table 8 summarizes the results of the intersection operations analysis for the Existing Plus Project Conditions. Appendix H contains the Existing Plus Project Conditions intersection operations analysis worksheets. As shown on Table 7, most of the study intersections are projected to operate at Level of Service D or better for the Existing Plus Project Conditions, except for the following two locations:

- Albatross Road / Colima Road – PM LOS E
- SR-60 Eastbound Ramps / Azusa Avenue – PM LOS E

Table 7 also shows that the project is not expected to result in significant traffic impacts at any of the study intersections for the Existing Plus Project Conditions. Project impact is assessed based on the performance criteria described in previous Section 4.4 of this report.

7.3 Existing Plus Project Conditions Freeway Off-Ramp Queuing Analysis

Table 8 summarizes the results of the freeway off-ramp queuing analysis for the Existing Plus Project Conditions. As shown on Table 8, the total 95th percentile queue lengths for each turning movement from the off-ramps are less than the available storage lengths. There are currently adequate storage lengths on the freeway off-ramps for the Existing Plus Project Conditions. Table 8 also shows the project traffic has insignificant changes to the overall off-ramp queue lengths for the Existing Plus Project conditions. Appendix I contains the Existing Plus Project Conditions freeway off-ramp queuing analysis worksheets.

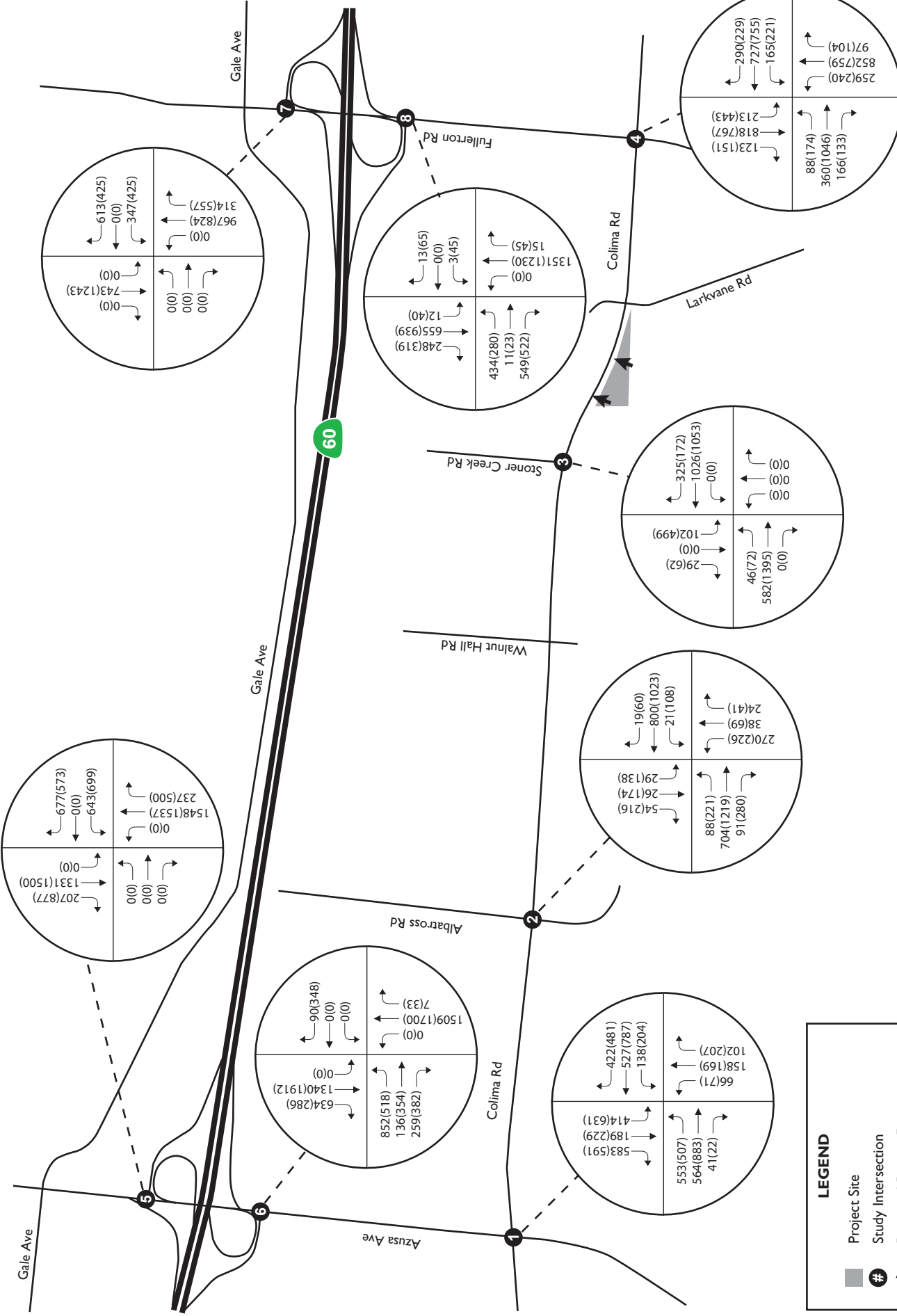
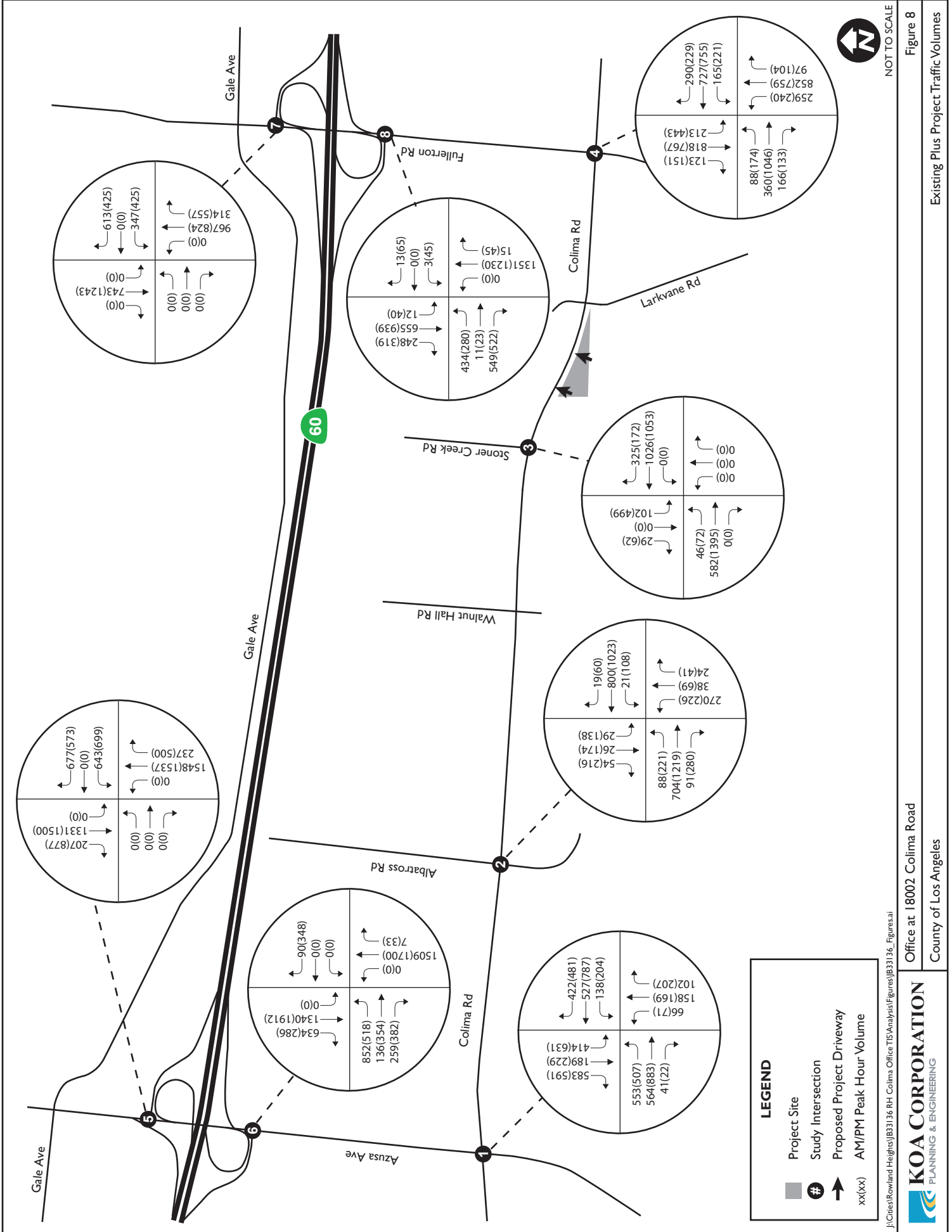


Table 7

**Existing Plus Project Conditions
Intersection Operations Analysis Summary**

Study Area Intersection		Existing 2014				Existing Plus Project				Change in V/C		Project Significant Impact ²
		AM		PM		AM		PM				
No.	Name	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	AM	PM	
1	Azusa Av / Colima Rd	0.675	B	0.865	D	0.675	B	0.870	D	0.000	0.005	No
2	Albatross Rd / Colima Rd	0.637	B	0.934	E	0.638	B	0.935	E	0.001	0.001	No
3	Stoner Creek Rd / Colima Rd	0.582	A	0.699	B	0.590	A	0.709	C	0.008	0.010	No
4	Fullerton Rd / Colima Rd	0.719	C	0.844	D	0.726	C	0.846	D	0.007	0.002	No
5	SR-60 WB Ramps / Azusa Av	0.718	C	0.702	C	0.718	C	0.702	C	0.000	0.000	No
6	SR-60 EB Ramps / Azusa Av	0.673	B	0.901	E	0.673	B	0.901	E	0.000	0.000	No
7	SR-60 WB Ramps / Fullerton Rd	0.520	A	0.548	A	0.522	A	0.549	A	0.002	0.001	No
8	SR-60 EB Ramps / Fullerton Rd	0.689	B	0.663	B	0.690	B	0.667	B	0.001	0.004	No

Note:

- ¹ Intersection Capacity Utilization (ICU) volume-to-capacity (V/C) ratio
- ² Project significant impact threshold: LOS E, F > 0.01; LOS D > 0.02; LOS C > 0.04

Table 8

**Existing Plus Project Conditions
Freeway Off-Ramp Queuing Analysis Summary**

Ramp Location		Existing Storage Length ¹	Off-Ramp Vehicle Queue Length					
			Existing		Existing Plus Project		Project Change	
No.	Name		AM	PM	AM	PM	AM	PM
5	SR-60 WB Ramps / Azusa Av	2120'	697'	768'	697'	768'	0'	0'
6	SR-60 EB Ramps / Azusa Av	3460'	895'	930'	905'	932'	10'	2'
7	SR-60 WB Ramps / Fullerton Rd	1690'	786'	673'	800'	676'	14'	3'
8	SR-60 EB Ramps / Fullerton Rd	2100'	496'	371'	496'	371'	0'	0'

Note:

- ¹ Available vehicle storage length from the surface street intersection to the freeway mainline

8. Existing Plus Project Plus Cumulative Traffic Analysis

This section documents the traffic analysis for the Existing plus Project plus Cumulative conditions. There are a number of projects either under construction or planned for development in the surrounding area that may contribute future traffic to the study locations. For this reason, the analysis of future traffic conditions was expanded to include potential traffic volume increases expected to be generated by these other cumulative projects.

The methodology for estimating cumulative traffic volumes for study area intersections is described below. First, an ambient traffic growth factor, compounded annually, is applied to the Existing plus Project volumes at the study intersections to develop the Existing plus Ambient Growth plus Project traffic volumes. County of Los Angeles Department of Public Works has instructed that no growth be applied for this analysis (zero percent growth) because the Community of Rowland Heights is generally build-out with nominal growth. Next, traffic expected to be generated by "related projects," or cumulative projects, was then added to the Existing plus Ambient Growth plus Project traffic volumes in order to develop the Existing plus Project plus Cumulative traffic volumes.

8.1 Ambient Growth Rate

Based on a review of the General Traffic Volume Growth Factors for Regional Statistical Area 26 (area generally bounded by Azusa, Glendora, Diamond Bar and Hacienda Heights) contained in the 2010 Congestion Management Program for Los Angeles County, an annual ambient traffic growth factor of approximately 0.5 percent was calculated for the study area (see Appendix J). County of Los Angeles Department of Public Works has instructed that no growth be applied for this analysis (zero percent growth) because the Community of Rowland Heights is generally build-out with nominal growth.

8.2 Cumulative Projects

Listings of potential cumulative projects located in the study area that might be developed or under construction within the study time frame were obtained from the County of Los Angeles. A review of these project listings indicated that there are two projects within the study area that could add traffic to the study intersections by the 2015 study year. Detailed information of the following two cumulative projects is included in Appendix K of this report:

- 1380 Fullerton Road, Unit #15, Rowland Heights, CA – 3,538 square feet of restaurant (high-turnover sit-down)
- 18505 Colima Road, Rowland Heights, CA – 3,481 square feet of specialty retail, 2,216 square feet of medical office, 2,306 square feet of restaurant (high-quality)

The vehicular traffic expected to be generated by these cumulative projects was either found in project traffic study reports or determined by applying the appropriate trip generation rates from the *ITE Trip Generation Manual* (9th Edition, 2012). The resulting trip generation estimates for these cumulative projects are summarized in Table 9. The anticipated trip distribution patterns for the two cumulative projects are shown in Appendix L.

Table 9 – Cumulative Development Trip Generation Summary

Project	Daily Trip	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
1380 Fullerton Road, Rowland Heights	450	21	17	38	21	14	35
18505 Colima Road, Rowland Heights	441	7	3	10	18	17	35
Total Project Trips	891	28	20	48	39	31	70

8.3 Existing Plus Project Plus Conditions Traffic Volumes

Figure 9 illustrates the Existing plus Project plus Cumulative traffic volumes.

8.4 Existing Plus Project Plus Cumulative Conditions Intersection Operations Analysis

Table 10 summarizes the results of the intersection operations analysis for the Existing plus Project plus Cumulative Conditions. Appendix M contains the Existing plus Project plus Cumulative Conditions intersection operations analysis worksheets. As shown on Table 10, most of the study intersections are projected to operate at Level of Service D or better for the Existing plus Project plus Cumulative Conditions, except for the following two locations:

- Albatross Road / Colima Road – PM LOS E
- SR-60 Eastbound Ramps / Azusa Road – PM LOS E

Table 10 also shows that the project is not expected to result in significant traffic impacts at any of the study intersections for the Existing plus Project plus Cumulative Conditions. Cumulative impact is assessed based on the performance criteria described in previous Section 4.4 of this report.

8.5 Existing Plus Project Plus Cumulative Conditions Freeway Off-Ramp Queuing Analysis

Table 11 summarizes the results of the freeway off-ramp queuing analysis for the Existing plus Project plus Cumulative Conditions. As shown on Table 11, the total 95th percentile queue lengths for each turning movement from the off-ramps are less than the available storage lengths. There are currently adequate storage lengths on the freeway off-ramps for the Existing plus Project plus Cumulative Conditions. Table 11 also shows the project traffic has insignificant changes to the overall off-ramp queue lengths for the Existing plus Project plus Cumulative conditions. Appendix O contains the Existing plus Project plus Cumulative Conditions freeway off-ramp queuing analysis worksheets.

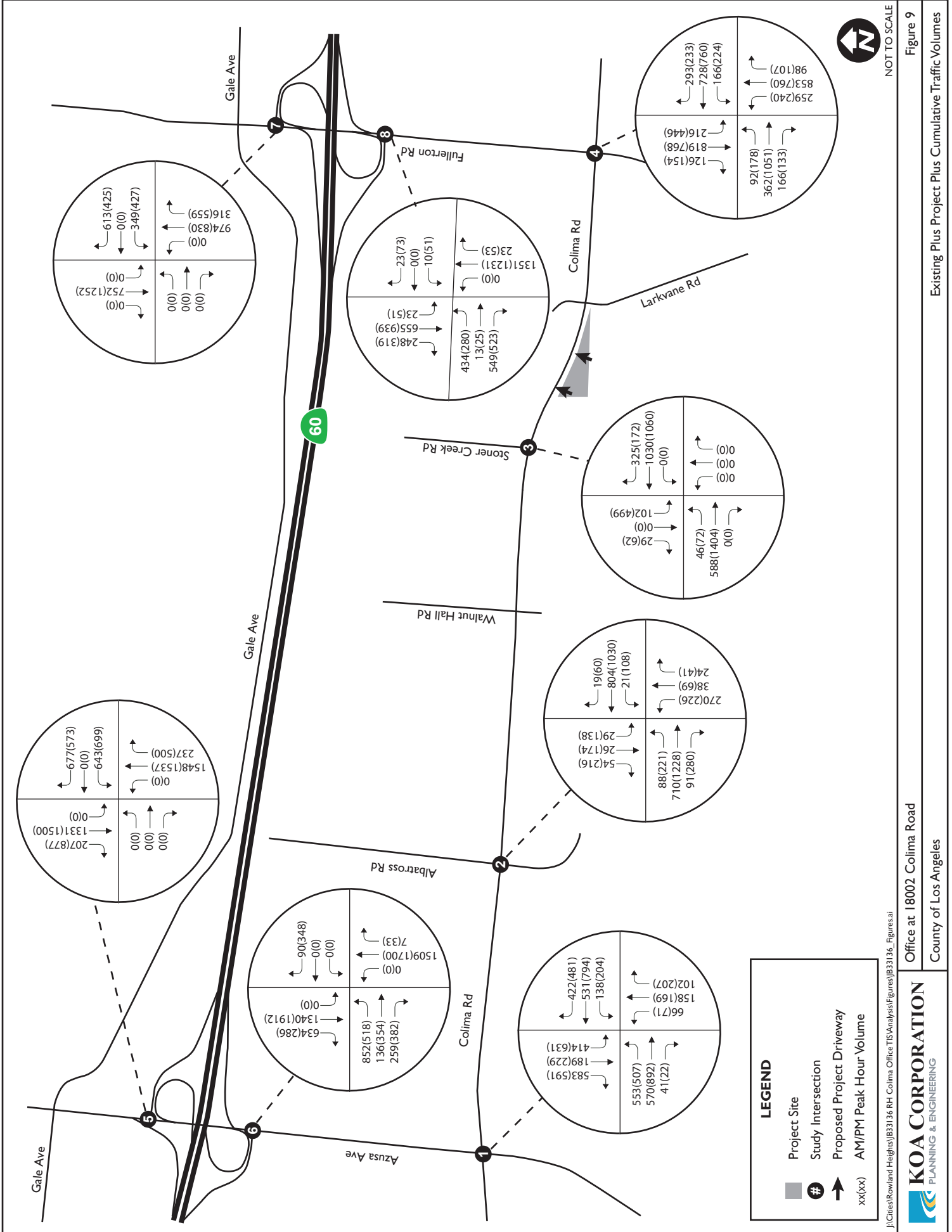


Table 10

**Existing Plus Project Plus Cumulative Conditions
Intersection Operations Analysis Summary**

Study Area Intersection		Existing 2014				Existing Plus Project Plus Cumulative				Change in V/C		Cumulative Significant Impact ²
		AM		PM		AM		PM				
No.	Name	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	AM	PM	
1	Azusa Av / Colima Rd	0.675	B	0.865	D	0.676	B	0.873	D	0.001	0.008	No
2	Albatross Rd / Colima Rd	0.637	B	0.934	E	0.640	B	0.938	E	0.003	0.004	No
3	Stoner Creek Rd / Colima Rd	0.582	A	0.699	B	0.591	A	0.708	C	0.009	0.009	No
4	Fullerton Rd / Colima Rd	0.719	C	0.844	D	0.730	C	0.850	D	0.011	0.006	No
5	SR-60 WB Ramps / Azusa Av	0.718	C	0.702	C	0.718	C	0.702	C	0.000	0.000	No
6	SR-60 EB Ramps / Azusa Av	0.673	B	0.901	E	0.673	B	0.901	E	0.000	0.000	No
7	SR-60 WB Ramps / Fullerton Rd	0.520	A	0.548	A	0.524	A	0.551	A	0.004	0.003	No
8	SR-60 EB Ramps / Fullerton Rd	0.689	B	0.663	B	0.707	C	0.683	B	0.018	0.020	No

Note:

- ¹ Intersection Capacity Utilization (ICU) volume-to-capacity (V/C) ratio
- ² Cumulative significant impact threshold: LOS E, F > 0.01; LOS D > 0.02; LOS C > 0.04

Table II

**Existing Plus Project Plus Cumulative Conditions
Freeway Off-Ramp Queuing Analysis Summary**

Ramp Location		Existing Storage Length ¹	Off-Ramp Vehicle Queue Length					
			Existing Traffic		Existing Plus Project & Cumulative		Project & Cumulative Change	
No.	Name		AM	PM	AM	PM	AM	PM
5	SR-60 WB Ramps / Azusa Av	2120'	697'	768'	697'	768'	0'	0'
6	SR-60 EB Ramps / Azusa Av	3460'	895'	930'	905'	932'	10'	2'
7	SR-60 WB Ramps / Fullerton Rd	1690'	786'	673'	801'	679'	15'	6'
8	SR-60 EB Ramps / Fullerton Rd	2100'	496'	371'	498'	373'	2'	2'

Note: -

¹ Available vehicle storage length from the surface street intersection to the freeway mainline

9. Congestion Management Plan (CMP) Analysis

To address the increasing public concern that traffic congestion was impacting the quality of life and economic vitality of the State of California, Proposition III enacted the Congestion Management Program (CMP) in 1990. The intent of the CMP is to provide the analytical basis for transportation decisions through the State Transportation Improvement Program (STIP) process. A countywide approach has been established by the Metropolitan Transportation Authority (Metro), the local CMP agency, designating a highway network that includes all state highways and principal arterials within the County. The Level of Service at each CMP monitoring station is supervised by local jurisdictions in order to implement the statutory requirements of the CMP. If Level of Service standards deteriorate, then local jurisdictions must prepare a deficiency plan to meet conformance standards outlined in the countywide plan.

The local CMP requires that a traffic impact analysis be made of all CMP monitoring intersections where a project would likely add 50 or more peak-hour trips. In addition, a traffic impact analysis is to be conducted for any CMP freeway monitoring segment where a project is expected to add 150 or more peak-hour trips in either direction. As shown previously in Table 6, the project is expected to generate 50 trips during the AM peak hour and 46 trips during the PM peak hour. Given the distribution of project traffic, the number of project trips added to any CMP monitoring intersection or freeway monitoring segment is expected to be below the respective thresholds warranted for analysis. Thus, no significant project impacts to CMP monitoring locations are anticipated.

The local CMP also requires that all projects consider potential transit impacts. The project site is located within reasonable walking distance of the Foothill Transit Authority bus lines and the Puente Hills Mall TransCenter. Due to the project's low traffic generation, it is expected that the proposed project would not have a significant impact on transit service in the study area.

10. Mitigation Measures

Based on the results of the intersection operations and freeway off-ramp queuing analyses, the proposed project would have no significant adverse traffic impacts on the study area intersections and the freeway off-ramp facilities. Therefore no additional off-site intersection improvements are needed.

No significant project impacts to CMP monitoring locations are anticipated.