Lakeview Manor (PAR 2016-09)
Lakeshore Drive at Gunnerson Street
Lake Elsinore, California 92530

Traffic Impact Analysis
January 9, 2017

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Job #1627

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Executive Summary

Lakeview Manor is a 104 unit multi-family residential development to be located on a vacant parcel (APN 379-230-001) on the south side of Lakeshore Drive across from Gunnerson Street in the City of Lake Elsinore, California.

The project trip generation was calculated using the 9th Edition of Institute of Transportation Engineers (ITE) Trip Generation, 2012. The trip generation for 104 apartments is calculated at 685 ADT with 48 AM peak hour trips (10 inbound and 38 outbound) and 60 PM peak hour trips (39 inbound and 21 outbound).

Project traffic will use a driveway that will become a forth leg to the existing Lakeshore Drive/Gunnerson Street T-intersection. A secondary gated and emergency only driveway will be located on Lakeshore Drive west of Gunnerson Street (at the project's westerly boundary).

The operational findings are summarized below by scenario:

1) Under existing conditions, the study intersection of Lakeshore Dr/Gunnerson St was calculated to operate at LOS D or better.

2) Under existing + ambient + project conditions, the study intersection of Lakeshore Dr/Gunnerson St was calculated to have the minor street approach of Gunnerson to operate at LOS E (AM) and LOS F (PM). The project is calculated to have a direct impact because the project traffic degrades the southbound minor approach from LOS D to LOS E and F

3) Under existing + ambient + project + cumulative conditions, the study intersection of Lakeshore Dr/Gunnerson St was calculated to have the minor street approach of Gunnerson to operate at LOS F (AM & PM). The project is calculated to have a cumulatively considerable impact because cumulative traffic degrades the northbound minor approach from LOS D to LOS E and degrades the southbound delay by more than 2.0 seconds at LOS E and by more than 1.0 seconds at LOS F.

In addition to half street improvements and transitions on Lakeshore Drive along the project frontage, the proposed improvements to mitigate the direct and cumulative impacts at Lakeshore Dr/Gunnerson St is to restripe Lakeshore Drive with additional left-turn lanes for eastbound and westbound directions within the additional pavement (as part of the half street widening) and add a stop control (R1-1 stop sign) to the project driveway egress approach all to the satisfaction of the City Engineer.

The City of Lake Elsinore has a Transportation Uniform Mitigation Fee (TUMF), a Traffic Impact Fee, and various other fees. The applicant will have to participate in these funding mechanism.

1.0 Introduction

A. Purpose of the TIA and Study Objectives

The purpose of this Traffic Impact Analysis (TIA) is to evaluate the potential traffic impacts associated with the proposed 104 unit multi-family residential development project. The objectives of this study are to:

1) Document existing traffic conditions in the vicinity of the project site,
2) Evaluate existing plus ambient plus project conditions, and
3) Evaluate existing plus ambient plus cumulative plus project traffic conditions.

B. Site Location and Study Area

The project site is a vacant parcel on the south side of Lakeshore Drive across from Gunnerson Street in the City of Lake Elsinore, California. The project location and study area are shown in **Exhibit 1**.

C. Development Project Identification

The project is being submitted as PAR 2016-09.

D. Development Project Description

1) Project Size and Description

   The multi-family residential development will consist of 104 apartments to be located on approximately 7.5 gross acres.

2) Existing Land Use and Zoning

   The existing land use and zoning includes CRF (Commercial Residential Flex) and AR (Attached Residential).

3) Proposed Land Use and Zoning

   The proposed land use AR (Attached Residential).

4) Site Plan of Proposed Project

   A site plan of proposed project is shown in **Exhibit 2**.

5) Proposed Project Opening Year

   The proposed project opening year is 2018.

6) Proposed Project Phasing

   No project phasing is proposed.

7) Indicated if Project is within another agency sphere of influence

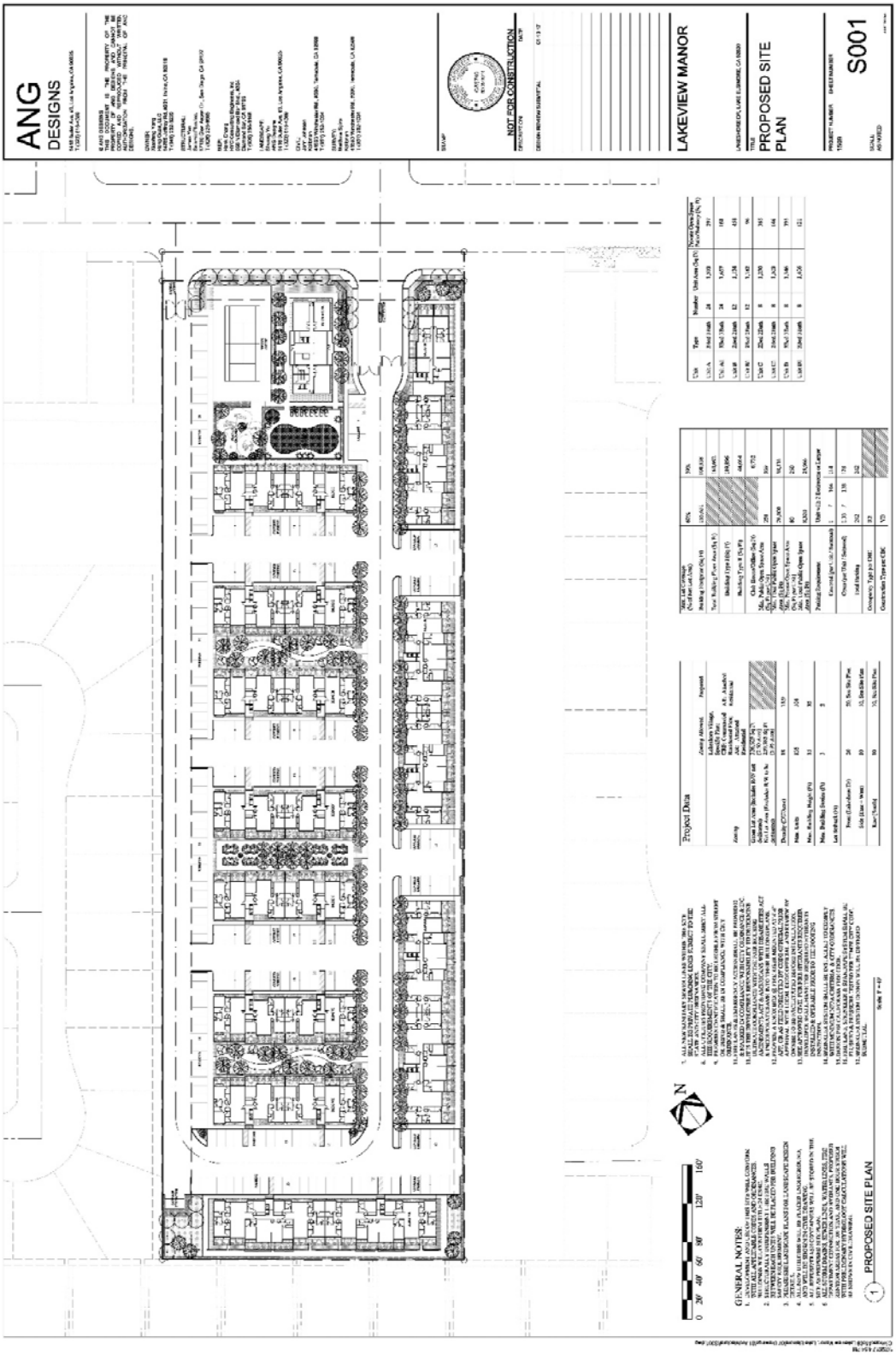
   The project site is located approximately 1.5 miles (as a crow flies) from CALTRANS' Interstate 15.

Exhibit 1: Site Location

VICINITY MAP

Source: ANG Designs

Exhibit 2: Site Plan



Source: ANG Design

2.0 Area Conditions

A. Study Area and Intersections

The study area included the following intersections with count dates noted in brackets below:

1) Lakeshore Drive/Gunnerson Street (Thursday 12/1/2016)

The study area was based on coordination with the City of Lake Elsinore staff and an approved traffic scoping agreement, which is included in **Appendix A**. The counts were collected from 7:00-9:00 AM and 4:00-6:00 PM. Count data are included in **Appendix B**.

B. Existing Traffic Control and Intersection Geometrics

The existing traffic control and intersection geometrics are shown in **Exhibit 3**.

C. Existing Traffic Volumes

The existing (2016) traffic volumes are shown in **Exhibit 4**.

D. Existing Delay, Level of Service at Study Intersections, and Significance Criteria

The traffic analyses prepared for this study are based on the *2010 Highway Capacity Manual* (HCM) operations analysis using LOS evaluation criteria. The operating conditions of the study intersections are measured using the HCM LOS designations, which ranges from A through F. LOS A represents the best operating condition and LOS F denotes the worst operating condition. The study intersections were analyzed based on control delay per vehicle, which is measured in seconds. LOS at the intersections were calculated using the computer software program Synchro 8.0 (Trafficware Corporation). The HCM LOS for the range of delay by seconds for un-signalized and signalized intersections are described in **Appendix C**. The LOS calculated for the study intersections are shown in **Table 1** with LOS calculations included in **Appendix D**.

TABLE 1: EXISTING INTERSECTION LEVEL OF SERVICE

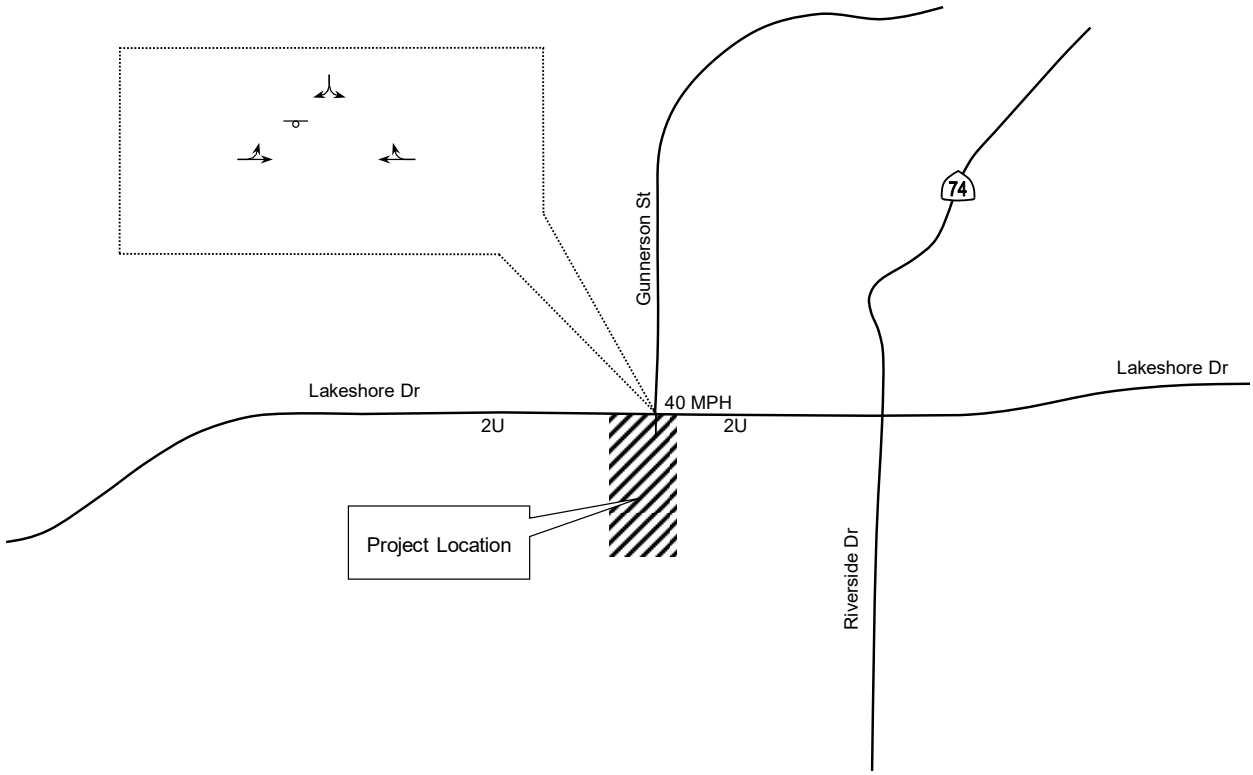
Intersection and (Analysis)[1]	Movement	Study Period	Existing Delay[2]	Existing LOS[3]
1) Lakeshore Dr at Gunnerson St (U)	SBLR	AM	27.0	D
	SBLR	PM	33.0	D
	EBL	AM	8.5	A
	EBL	PM	9.6	A

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service. DNE: Does Not Exist

City of Lake Elsinore Level of Service Criteria

The City of Lake Elsinore typically requires study intersection to maintain a target LOS of D. For existing + ambient + project conditions, a significant impact is calculated at a study intersection if the addition of project traffic degrades the peak hour LOS from acceptable LOS D to LOS E or F. Additionally, a significant impact is calculated if the project traffic would increase the delay by 2.0 or more seconds at LOS E and 1.0 or more seconds at LOS F. Cumulative impacts are typically calculated under the with cumulative scenario using the above criteria.

Exhibit 3: Existing Traffic Controls and Intersection Geometrics



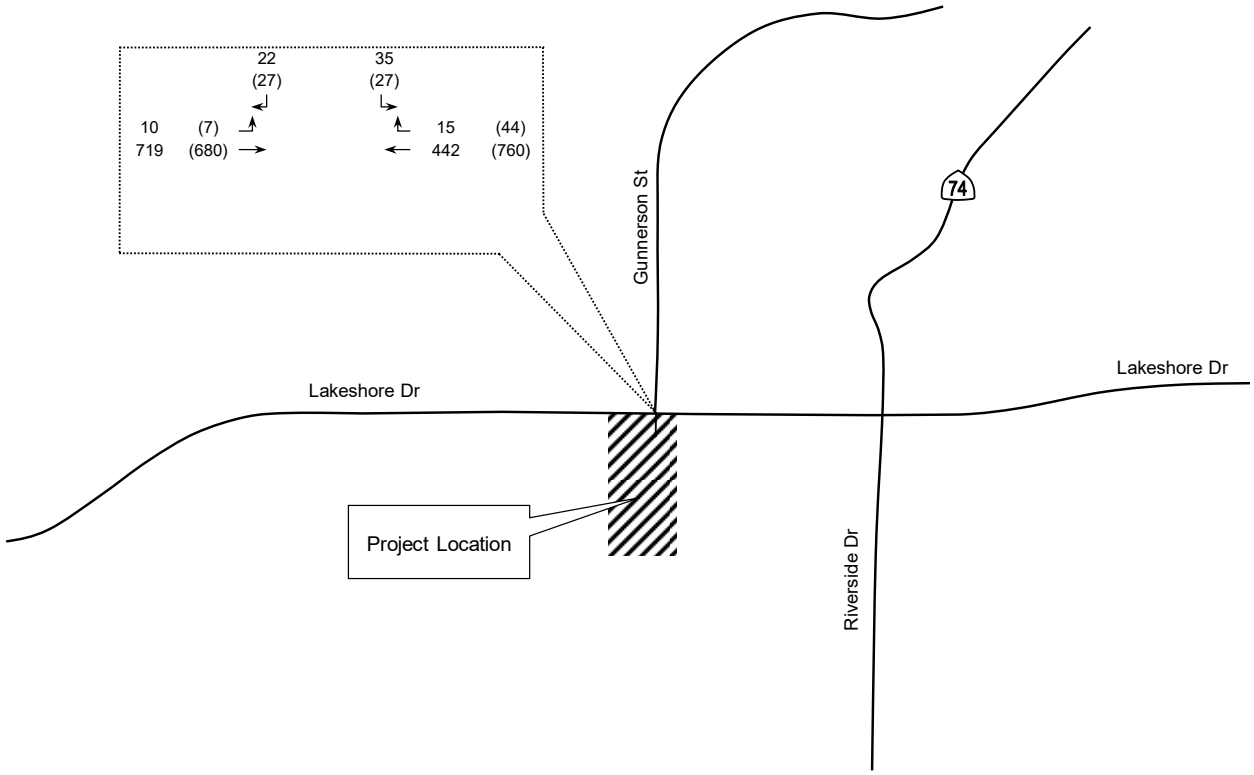
LEGEND

- Stop Sign
- Combination Left-Right Lane
- Combination Left-Thru Lane
- Combination Thru-Right Lane
- 4D Four Lane Divided Roadway

N

No Scale

Exhibit 4: Existing (2016) Traffic Volumes



LEGEND

XX	AM peak hour volumes at intersections
(YY)	PM peak hour volumes at intersections an empty braket ( ) represents a 0 volume
———	Existing Roadways

N

No Scale

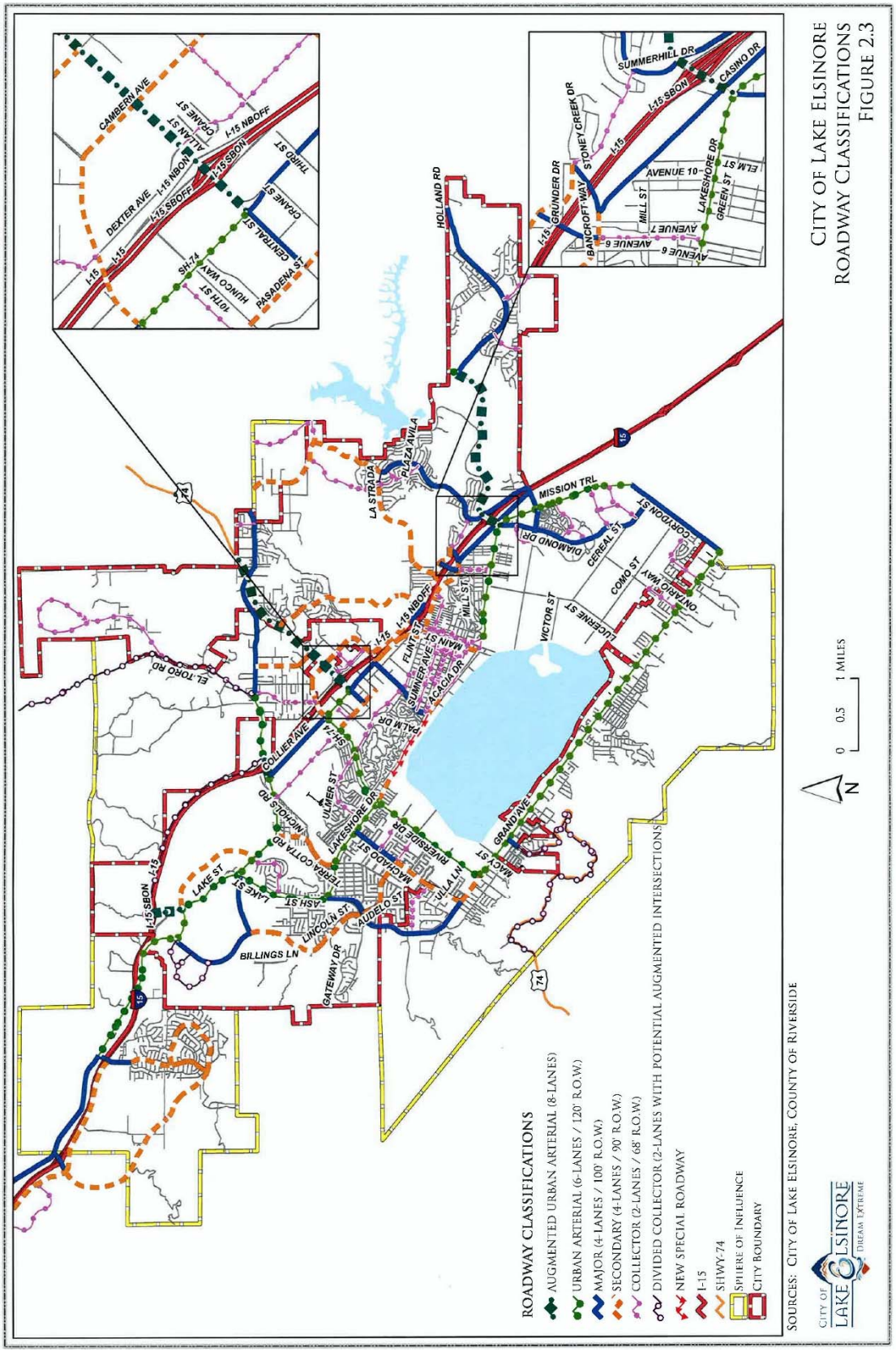
E. General Plan Circulation Element within Project Vicinity

The City of Lake Elsinore Roadway Classifications are shown in **Exhibit 5**.

F. Transit Service Availability in Project Vicinity

In the project vicinity, the Riverside Transit Agency (RTA) provides bus service along Lakeshore Drive as Route 8. Bus stops for Route 8 are generally located at the intersection of Lakeshore Drive at Viscaya Street (approximately 900 east of Gunnerson St). A map showing the bus route 8 and route time tables are included in **Appendix E**.

Exhibit 5: City of Lake Elsinore Roadway Classifications



Source: City of Lake Elsinore

3.0 Projected Future Traffic

A. PROJECT TRAFFIC

1. AMBIENT GROWTH RATE

An ambient growth rate of 2% per year was applied over two years for a total of 4% to represent an opening year of 2018.

2. TRIP GENERATION

The project trip generation was calculated using the 9th Edition of Institute of Transportation Engineers (ITE) Trip Generation, 2012 (ITE rate sheets are included in **Appendix F**) as shown in **Table 2**.

TABLE 2: PROJECT TRIP GENERATION

ITE Land Use (221)	Trip Rate	Size & Units	ADT	AM Peak Hour				PM Peak Hour			
				Rate	Split	IN	OUT	Rate	Split	IN	OUT
Low-Rise Apts (1-2 floors)	6.59 /Unit	104 Units	**685**	0.46 /Unit	0.21 0.79	**10**	**38**	0.58 /Unit	0.65 0.35	**39**	**21**

Source: *ITE 9th Edition Trip Generation*, 2012. ADT=Average Daily Traffic; Split-percent inbound and outbound.

3. TRIP DISTRIBUTION AND ASSIGNMENT

The project trip distribution was based on input from City staff with a majority of 75% traveling to/from the east along Lakeshore Dr (toward town) and 25% traveling to/from the west along Lakeshore Dr. The distribution for the project is shown in **Exhibit 6**.

4. OTHER FACTORS AFFECTING TRIP GENERATION

No other trip generation factors are anticipated for the project.

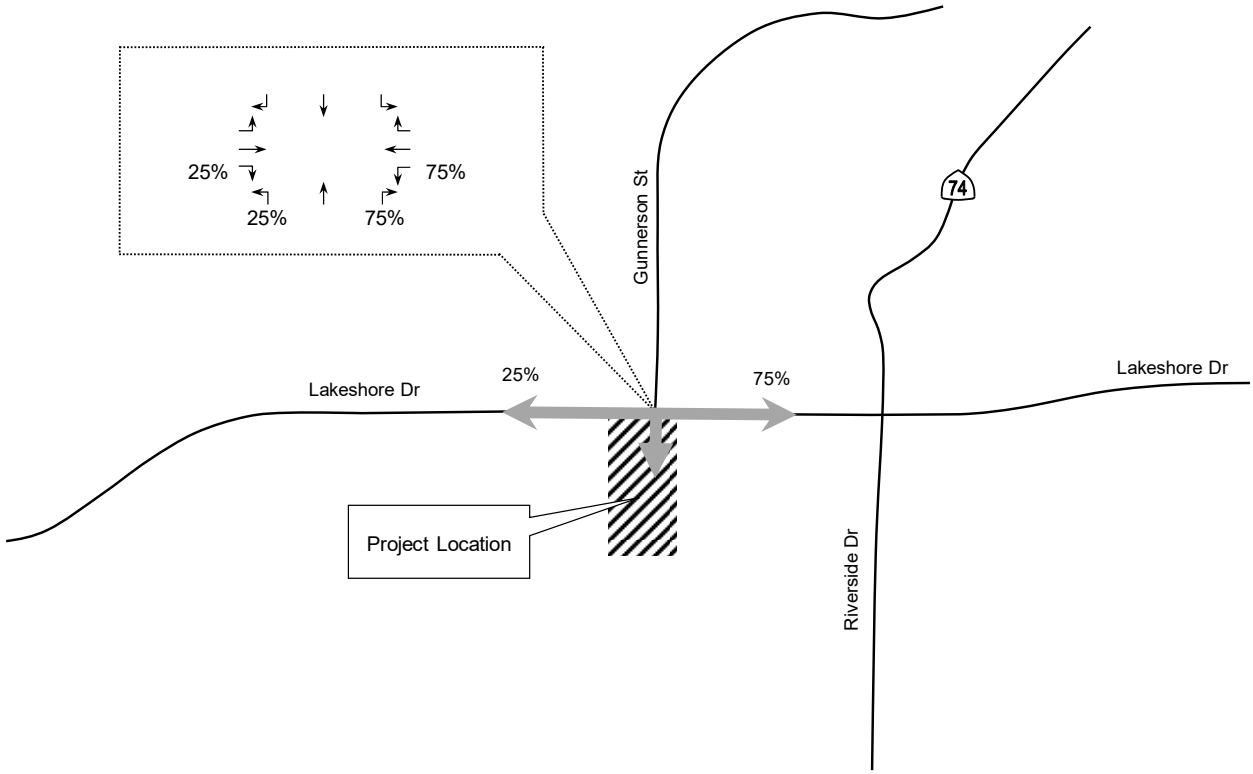
5. PROJECT PEAK HOUR TURNING MOVEMENT TRAFFIC

The project peak hour turning trip assignment is shown in **Exhibit 7**.

6. OTHER FACTORS AFFECTING TRIP GENERATION

No project phasing is planned.

Exhibit 6: Project Trip Distribution



LEGEND

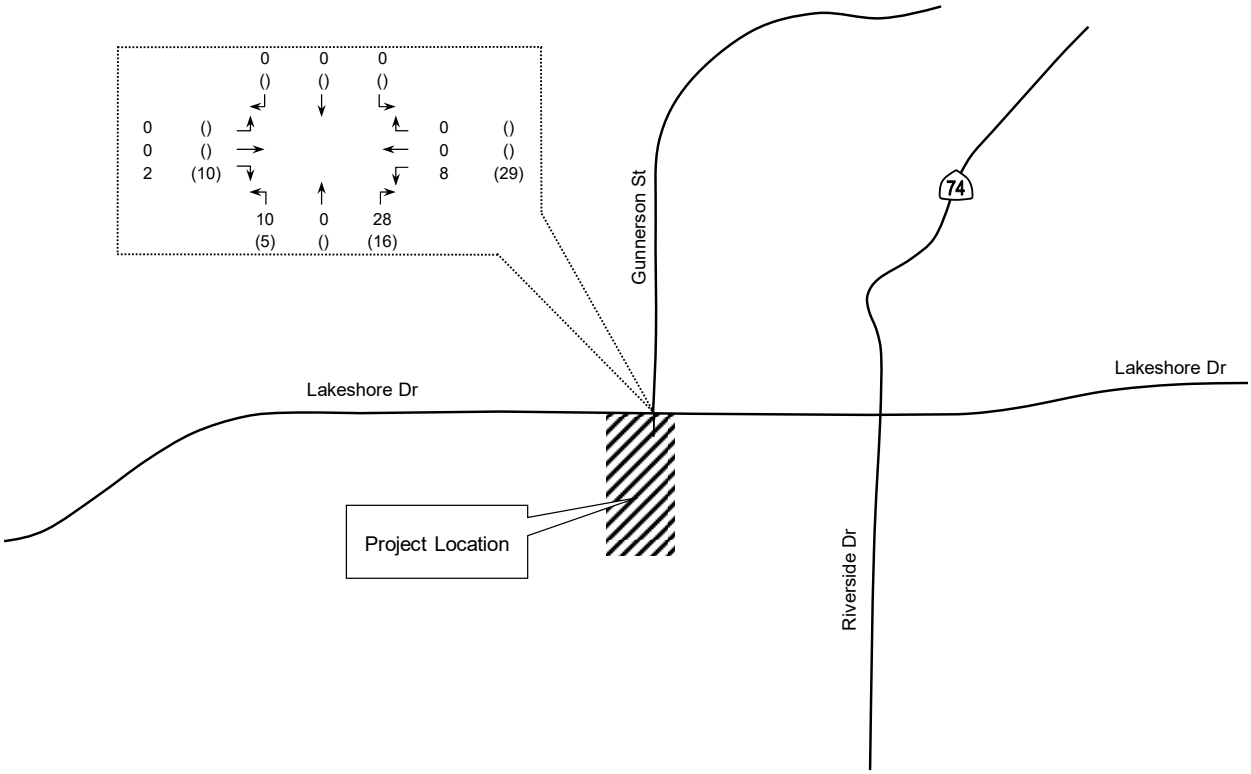
Distribution

Existing Roadways

N

No Scale

Exhibit 7: Project Trip Assignment



LEGEND

XX	AM peak hour volumes at intersections
(YY)	PM peak hour volumes at intersections an empty braket ( ) represents a 0 volume
———	Existing Roadways

N

No Scale

B. CUMULATIVE TRAFFIC

1. AMBIENT GROWTH RATE

An ambient growth rate of 2% per year was applied over two years for a total of 4% to represent an opening year of 2018. The ambient growth volumes are shown in **Exhibit 8**. The Exhibits are included after the text in this section to maintain continuity.

2. IDENTIFY LOCATION OF OTHER APPROVED OR PROPOSED DEVELOPMENT PROJECTS

The volumes of other approved or proposed development projects were obtained from recent EIRs (**Appendix G**) with volumes shown in **Exhibit 9.**

3. TRIP GENERATION FROM OTHER APPROVED PROJECTS

A summary of cumulative development projects is included in **Table 3**.

TABLE 3: CUMULATIVE DEVELOPMENT PROJECTS

Project Number	City / County	Project Name	Location	Land Use	Quantity	Units[1]
1	Lake Elsinore	Greenwald	APN 349-290-009. Approximately 200 feet northeast of the intersection of Greenwald and Bella Vista.	Shopping Center	104.450	TSF
2	Lake Elsinore	Ramsgate	1,300 Acre project area. Project is bounded by Riverside Street to the north, La Strada to the South, Greenwald to the east, and Highway 74 to the west.	Single Family Residential	1306.00	DU
				Condos/Townhomes	120.00	DU
3	Lake Elsinore	Trieste (Tract 36624)	Located at Rosetta Canyon Drive, south of Highway 74. APN: 347-120-047-8	Single Family Residential	75	DU
4	Lake Elsinore	Spyglass Ranch	APN's: 377-250-011, 377-350-004, 007, 008, 010, 014, 015, 016, 017, 377-260-004, 005, 006.	Single Family	523	DU
				Condominiums	171	DU
				Shopping Center	145.000	TSF
5	Lake Elsinore	South Shore I (Tract 31593)	Directly west of South Shore II	Single Family	521	DU
		South Shore II (Tract 36567)	East side of I-15 from Main Street adjacent to and east of TTM 35337. APNs: 363-020-012, 363-020-013, 363-020-014, 363-020-014, 363-020-015, 363-020-018, 363-020-002 and 363-020-003	Single Family	400	DU
6	Lake Elsinore	La Strada (Tract 32077)	Aproximately 1,500 feet east of the intersection of La Strada and Summerhill	Single Family	134	DU
7	Lake Elsinore	Marina Village Condos (Tract: 33820).	Spring St.and Lakeshore Dr. APN: 374-271-007,004,013,015,003.	Condominiums	94	DU
8	Lake Elsinore	TAG Property	APN: 363-130-086. Approximately 1,500 feet northwest of the intersection of Diamond and Auto Center.	Car Dealership	50.000	TSF
9	Lake Elsinore	City Center Condos	southeast quadrant ofl-15, Railroad Canyon and Grape Street.	Condominiums	144	DU
10	Lake Elsinore	Diamond Specific Plan	The Project Site consists of 87.2 acres in the southeast portion of the city, generally located along Diamond Drive between Lakeshore Drive and a point approximately 600 feet south of Malaga Road	Condominiums	600	DU
				Hotel	150	RM
				General Office	425.000	TSF
				Shopping Center	472.000	TSF

Table 3 continued

Project Number	City / County	Project Name	Location	Land Use	Quantity	Units[1]
11	Lake Elsinore	The Colony	East Lake is located in the City of Lake Elsinore along the eastern shore of Lake Elsinore	Apartments	211	DU
		TAG Property		Single Family	2407	DU
				Condominiums	324	DU
		John Laing Homes (Phase 2)		Single Family	506	DU
				Condominiums	1141	DU
				Apartments	308	DU
				Shopping Center	117.000	TSF
12	Lake Elsinore	Lake Elsinore Walmart	Southeast corner of Central and Cambern Avenues. APN's: 377-030-015 & -076 and 377-090-009, & -029 through -032.	Retail	151.397	TSF
				Speciality Retail	5.300	TSF
				ast-Food without Drive-Thr	5.300	TSF
				ast-Food without Drive-Thr	6.800	TSF
13	Lake Elsinore	Summerly	East Lake is located in the City of Lake Elsinore along the eastern shore of Lake Elsinore	Single Family	142	DU
14	Lake Elsinore	Beazer		Single Family	72	DU
		KB Homes		Single Family	106	DU
		McMillin Homes		Single Family	143	DU
		Richmond American		Single Family	74	DU
15	Lake Elsinore	Lakeshore Town Center	Located at the northwest corner of Lakeshore Drive and Main Street and is located on Lake Elsinore (APNs: 374-281-001, 002, 003, 004, 005, 006, 007, 008, 009, and 010/374-282-001, 002, 003, and 004/373-162-001, 002, 003, 004, and 005).	Mixed-Use Commercial	237.400	TSF
16	Lake Elsinore	Canyon Hills Estates	APN: 365-220-026; 365-230-001, 005 thru 007, 009 thru 013	Single Family	302	DU
17	Lake Elsinore	Canyon Hills	Generally located east of the intersection of Railroad Canyon and Canyon Hills	Single Family	2700	DU
				Apartments	1575	DU
				Single Family	1003	DU
18	Lake Elsinore	Alberhill Ridge	APN's: 389-020-035 & 036, 389-080-040, 390-130-026 & 028, 390-160-003 & 006, 390-190-013, 014 & 015, 390-200-008 & 010, 390-210-021	Single Family	1056	DU
				Apartments	345	DU
				Shopping Center	679.000	TSF
				General Office	679.000	TSF
19	Lake Elsinore	Alberhill Ranch	APN: 391-800-001, 391-230-009, 391-240-001, 389-020-063, 390-130-021, 390-160-012, 390-190-019, 391-200-012, 391-230-005, 390-170-001, 390-160-001, 390-160-002-390-190-011, 391-230-002, 391-200-007, 391-230-002, 391-200-004, 391-230-004, 390-130-020, 390-130-006, 391-170-005, 391-170-007,391-200-010, 391-200-003, 391-230-010	Single Family	1986	DU
20	Lake Elsinore	Terracina	APNs: 378-040-004, 378-040-005, 378-040-006, 378-040-012, 378-040-012, 389-040-012, 389-180-002, 389-190-002.	Single Family	365	DU

Table 3 continued

Project Number	City / County	Project Name	Location	Land Use	Quantity	Units[1]
21	Lake Elsinore	Wakerider	APN: 381-030-005	Resort	11.350	TSF
22	Lake Elsinore	Village at Lakeshore (Tract 33267)	APNs:387-180-001, 387-170-004, 387-170-006, 387-080-003, 387-080-004, 379-050-034, 379-050-006.	Condominiums	163	DU
23	Lake Elsinore	Golden Corral	APN: 377-080-059, 377-080-078, 377-080-082	Restaurant	7.798	TSF
24	Lake Elsinore	Circle K	APN: 379-132-013.	Gas Station	4.500	TSF
25	Lake Elsinore	Alberhill Villages	Assessor's Parcel Numbers (APNs): 389-020-032, 390-130-006, 390-130-015, 390-130-016, 390-130-017, 390-130-020, 390-130-021, 390-130-024, 390-160-001, 390-160-002, 390-160-011, 390-160-012, 390-170-001, 390-190-011, 390-190-019, 391-170-005, 391-170-007, 391-200-003, 391-200-004, 391-200-007, 391-200-010, 391-200-011, 391-200-012, 391-200-017, 391-230-002, 391-230-003, 391-230-004, 391-230-005, 391-230-007, 391-230-009, 391-230-010, 391-240-001, 391-800-011.	Single Family Residential	8,244	DU
				Non-Residential	4,007.00	TSF
				University or similar use	6,000	STU
26	Lake Elsinore	Ness Industrial Garage	APN: 377-430-060	Light Industrual	12.000	TSF
27	Lake Elsinore	Fairway Business Park	APN: 377-140-124	Heavy Industrial		
28	Lake Elsinore	La Quinta Inn	APN: 377-090-036	Hotel	64	RM
29	Lake Elsinore	LE Sports Complex	APN: 373-210-378, 389,390, 433 363-161-035-2, 363-161-034-1 363-161-033-0, 363-161-032-9 363-161-031-8, 363-161-030-7, 363-161-029-7, 363-161-032 450	Recreational	525	TSF
30	Lake Elsinore	Central and Collier	APN: 377-080-014; 031; 032; 033; 034;	Commercial	75	TSF
31	Lake Elsinore	Artisan Alley	APN: 365-280-022 & 373-210-041	Commercial	95.1	TSF
32	Lake Elsinore	Quikrete Plant	APN: 378-020-014, 015, & 016	Commercial	163.9	TSF
33	Lake Elsinore	Lakeshore Senior Apartments	APN: 373-176-019, 373-185-022, 023, 036, 037, 038, 046, 024	Apartments	121	DU
34	Lake Elsinore	Southshore (TR 31593)	APN: 347-250-006 thru 008, 347-350-003, 018, 347-360-004 thru 010, and 013	Single Family Residential	521	DU
35	Lake Elsinore	Running Deer (TR 31957)	APN: 391-790-002 & 003	Single Family Residential	101	DU

1. TSF= Thousand Square Feet; DU= Dwelling Unit; AC = Acres; STU = Student; RM= Rooms.

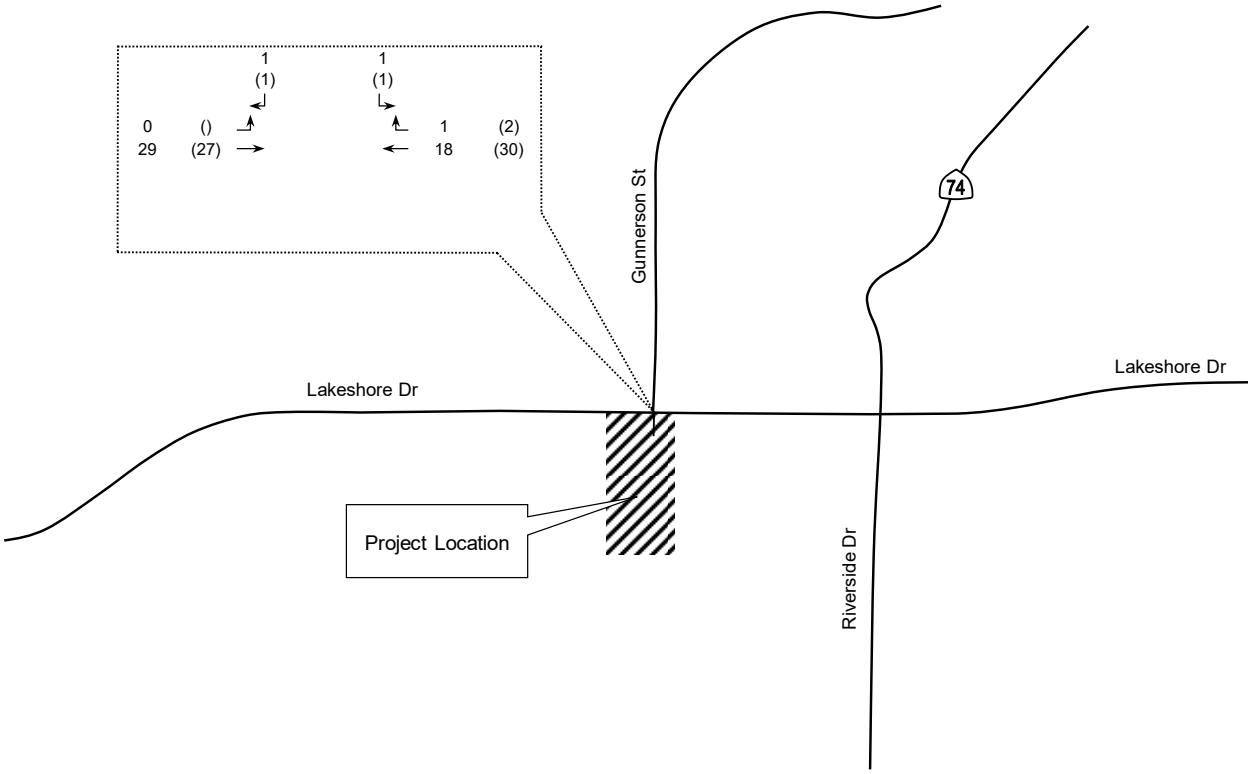
4. TRIP DISTRIBUTION AND ASSIGNMENT OF OTHER APPROVED DEVELOPMENT PROJECTS.

The assignment of other development projects are included in Exhibit 9.

5. TOTAL BACKGROUND PEAK HOUR TURNING MOVEMENT VOLUMES

The existing plus ambient plus project peak hour volumes are shown in **Exhibit 10** while the existing plus ambient plus project plus cumulative peak hour volumes are shown in **Exhibit 11**.

Exhibit 8: Ambient Growth Volumes



LEGEND

XX AM peak hour volumes at intersections

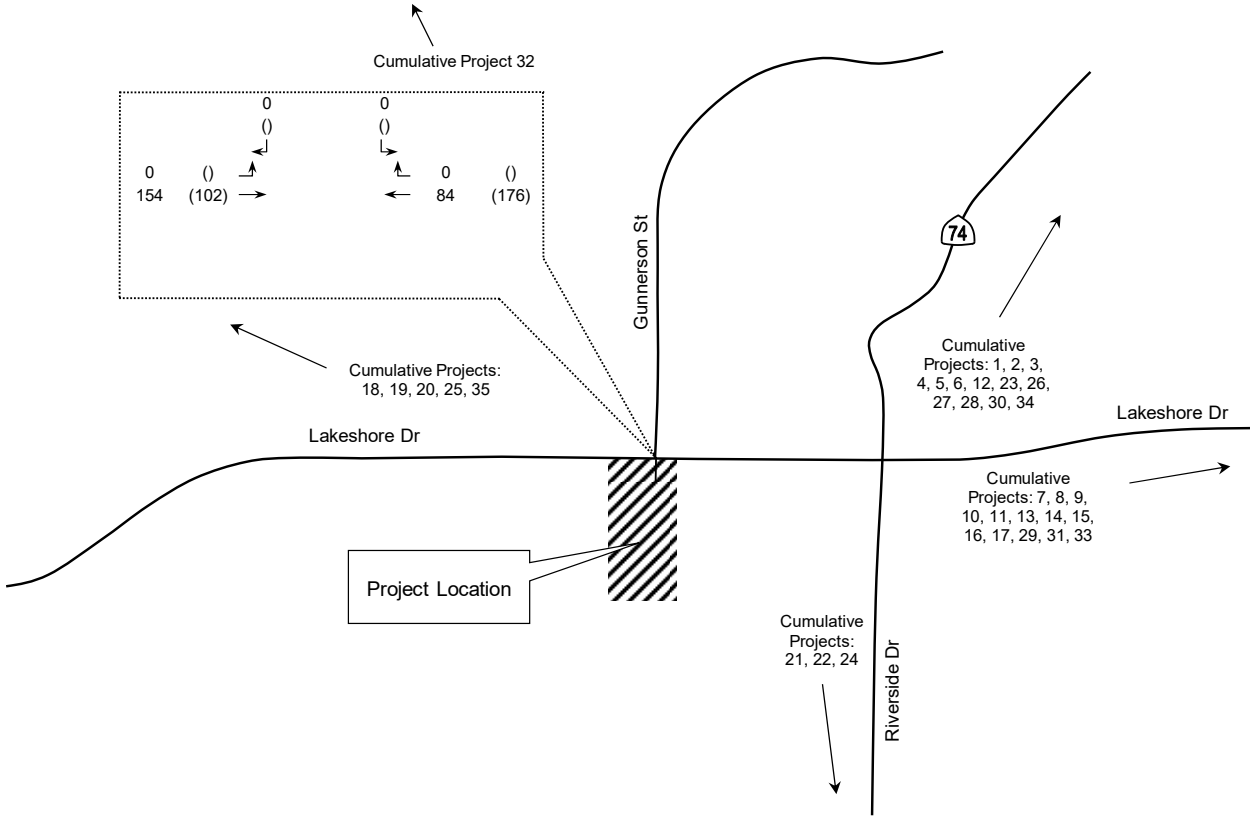
(YY) PM peak hour volumes at intersections
an empty braket ( ) represents a 0 volume

Existing Roadways

N

No Scale

Exhibit 9: Cumulative Project Locations and Volumes



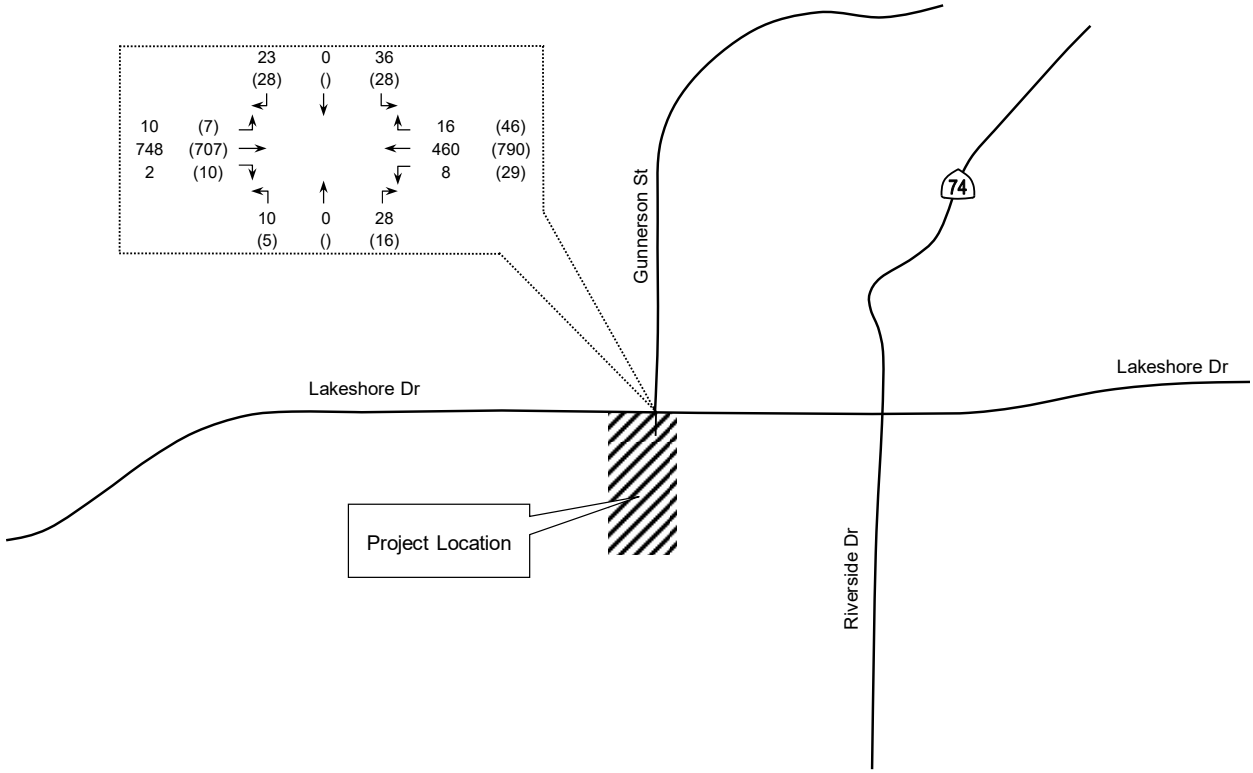
LEGEND

XX	AM peak hour volumes at intersections
(YY)	PM peak hour volumes at intersections an empty braket ( ) represents a 0 volume
———	Existing Roadways

N

No Scale

Exhibit 10: Existing + Ambient + Project Volumes



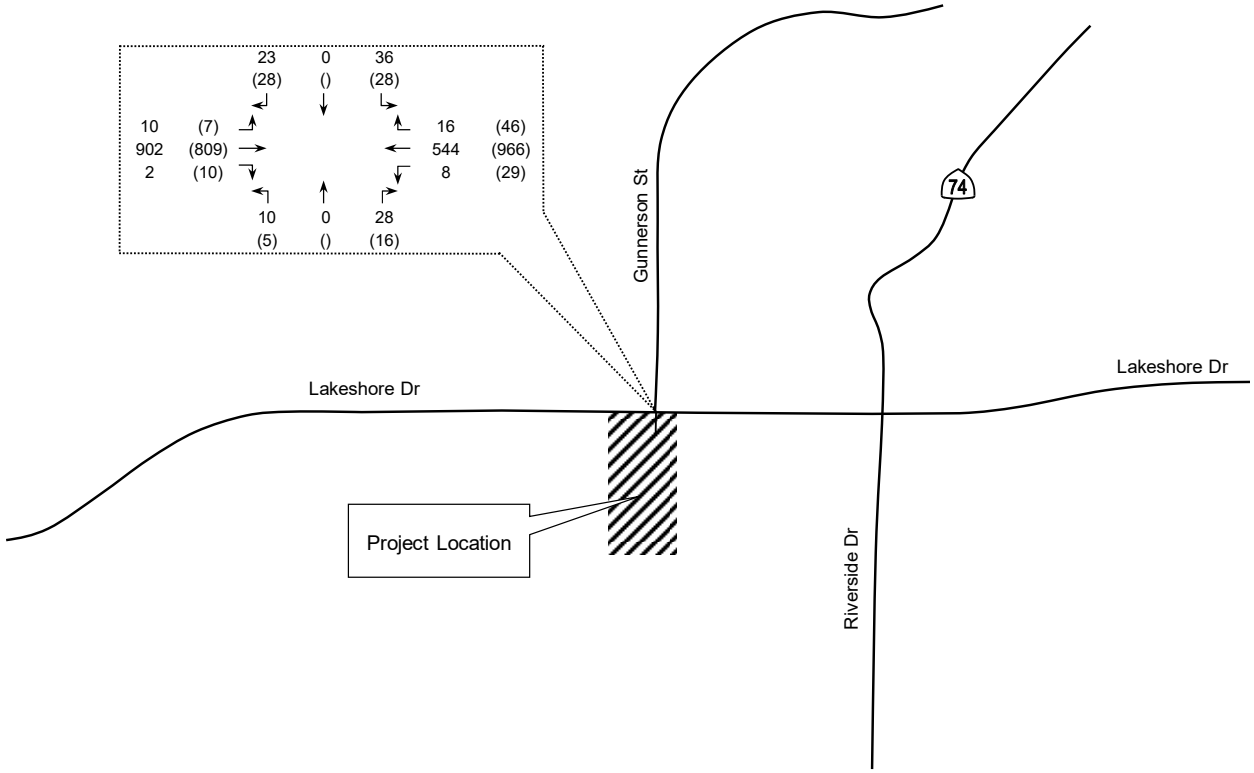
LEGEND

XX	AM peak hour volumes at intersections
(YY)	PM peak hour volumes at intersections an empty braket ( ) represents a 0 volume
———	Existing Roadways

N

No Scale

Exhibit 11: Existing + Ambient + Project + Cumulative Volumes



LEGEND

XX	AM peak hour volumes at intersections
(YY)	PM peak hour volumes at intersections an empty braket ( ) represents a 0 volume
———	Existing Roadways

N

No Scale

4.0 Traffic Analysis

A. CAPACITY AND LEVEL OF SERVICE AND IMPROVEMENT ANALYSIS

The existing plus ambient plus project intersection LOS are shown in **Table 4** to which the project has a direct impact because the project traffic degrades the southbound minor approach from LOS D to LOS E and F (LOS calculations included in **Appendix H**).

TABLE 4: EXISTING + AMBIENT + PROJECT INTERSECTION LOS

Intersection and (Analysis)[1]	Movement	Study Period	Existing Delay[2]	Existing LOS[3]	Existing + Ambient + Project Delay[2]	Existing + Ambient + Project LOS[3]	Existing + Ambient + Project Delta[4]	Existing + Ambient + Project Direct Impact?[5]
1) Lakeshore Dr at Gunnerson St (U)	SBLTR	AM	27.0	D	48.2	E	21.2	**Yes**
	SBLTR	PM	33.0	D	65.8	F	32.8	**Yes**
	EBL	AM	8.5	A	8.5	A	0.0	No
	EBL	PM	9.6	A	9.7	A	0.1	No
	NBLTR	AM	DNE	DNE	25.4	D	NA	No
	NBLTR	PM	DNE	DNE	27.7	D	NA	No
	WBL	AM	DNE	DNE	9.6	A	NA	No
	WBL	PM	DNE	DNE	9.3	A	NA	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Direct Impact if project traffic exceeds threshold.

The existing plus ambient plus project plus cumulative intersection LOS are shown in **Table 5** to which the project is calculated to have a cumulatively considerable impact because cumulative traffic degrades the northbound minor approach from LOS D to LOS E and degrades the southbound delay by more than 2.0 seconds at LOS E and by more than 1.0 seconds at LOS F (LOS calculations included in **Appendix I**).

TABLE 5: EXISTING + AMBIENT + PROJECT + CUMULATIVE INTERSECTION LOS

Intersection and (Analysis)[1]	Movement	Peak Hour	E + A + P Delay[2]	E + A + P LOS[3]	Existing + Ambient + Project + Cumulative Delay[2]	Existing + Ambient + Project + Cumulative LOS[3]	Existing + Ambient + Project + Cumulative Delta[4]	Existing + Ambient + Project + Cumulative Cumulative Impact[5]
1) Lakeshore Dr at Gunnerson St (U)	SBLTR	AM	48.2	E	105.6	F	57.4	Yes
	SBLTR	PM	65.8	F	153.9	F	88.1	Yes
	EBL	AM	8.5	A	8.8	A	0.3	No
	EBL	PM	9.7	A	10.5	B	0.8	No
	NBLTR	AM	25.4	D	36.6	E	11.2	No
	NBLTR	PM	27.7	D	41.9	E	14.2	No
	WBL	AM	9.6	A	10.3	B	0.7	No
	WBL	PM	9.3	A	9.7	A	0.4	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Cumulative Impact if project traffic exceeds threshold.

5.0 Findings and Recommendations

A. IMPROVEMENTS

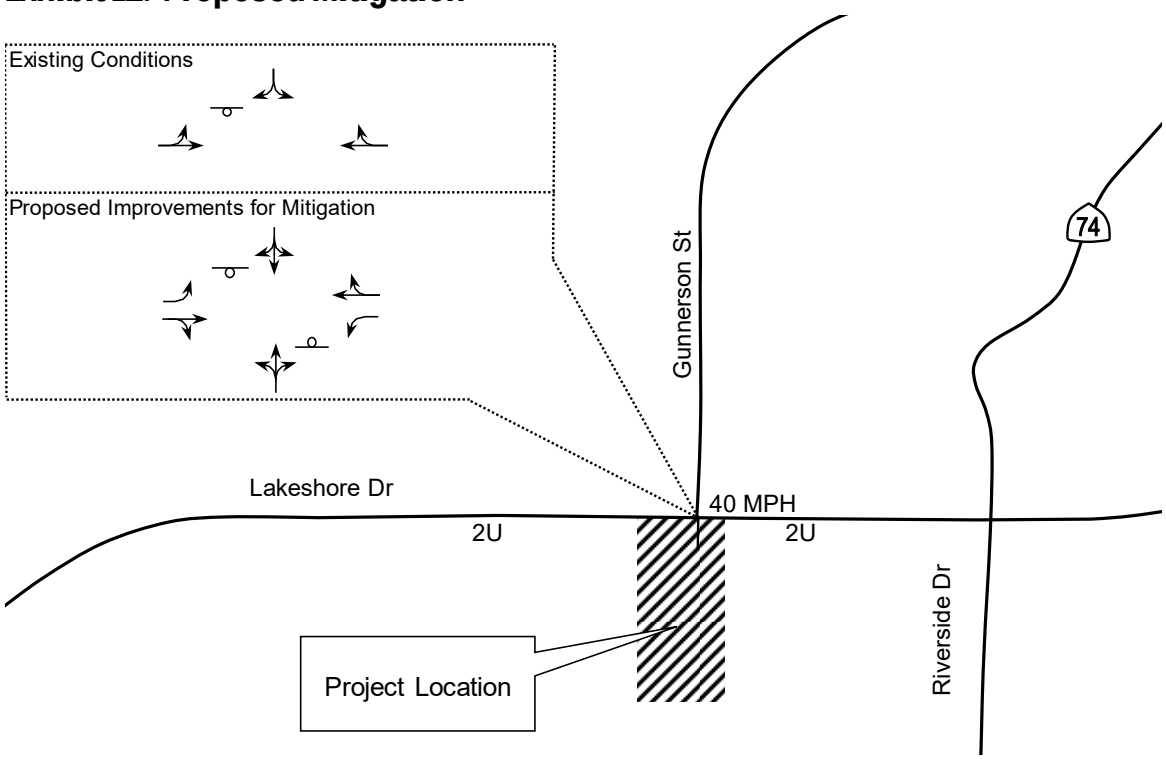
In addition to half street improvements and transitions on Lakeshore Drive along the project frontage, the proposed improvements to mitigate the direct and cumulative impacts at Lakeshore Dr/Gunnerson St is to restripe Lakeshore Drive with additional left-turn lanes for eastbound and westbound directions within the additional pavement (as part of the half street widening) and add a stop control (R1-1 stop sign) to the project driveway egress approach all to the satisfaction of the City Engineer as shown in **Exhibit 12**. The LOS with the proposed improvement is shown in **Table 6** with calculations included in **Appendix J**.

TABLE 6: PROPOSED MITIGATION INTERSECTION LOS

Intersection	Move-ment	Study Period	Existing + Ambient + Project		Existing + Ambient + Project + Cumulative	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]
1) Lakeshore Dr at Gunnerson St (U)	SBLR	AM	21.8	C	28.0	D
	SBLR	PM	24.6	C	32.3	D
	EBL	AM	8.5	A	8.8	A
	EBL	PM	9.8	A	10.6	B
	NBLR	AM	18.3	C	22.4	C
	NBLR	PM	17.3	C	20.2	C
	WBL	AM	9.6	A	10.4	B
	WBL	PM	9.3	A	9.7	A

Notes: 1) Delay - HCM Average Control Delay in seconds. 2) LOS: Level of Service.

Exhibit 12: Proposed Mitigation



The City of Lake Elsinore Capital Improvement Program (CIP) was reviewed and the intersection of Lakeshore Drive/Gunnerson Street was not listed as a location of proposed improvement. Excerpts from the CIP are included in **Appendix K**.

B. TRAFFIC SIGNAL WARRANT ANALYSIS

As noted in the traffic scoping agreement, signal warrants #1, #2, and #3 were performed at the intersection of Lakeshore Dr/Gunnerson St for existing, existing plus ambient plus project, and existing plus ambient plus project plus cumulative conditions. The signal warrant analyses were completed using the California Manual on Uniform Traffic Control Devices (MUTCD) 2014 Edition traffic signal warrants. The approach volumes to each leg of the intersection, the 85th percentile speeds on Lakeshore Drive (measured with at 43 MPH) and the signal warrant calculations are included in **Appendix L**. Warrants 1, 2, and 3 were not satisfied under existing, existing plus ambient plus project, and existing plus ambient plus project plus cumulative conditions due to insufficient minor street volumes. A summary of the signal warrant findings is shown in **Table 7**.

TABLE 7: SIGNAL WARRANT SUMMARY

California MUTCD[1] 2014 Edition Warrants	Existing Conditions Satisfied?	Existing + Ambient + Project Conditions Satisfied?	Existing + Ambient + Project + Cumulative Conditions Satisfied?
Warrant 1 – Eight Hour Vehicular Volume	No	No	No
Warrant 2 – Four Hour Vehicular Volume	No	No	No
Warrant 3 – Peak Hour	No	No	No

Notes: [1]MUTCD: Manual on Uniform Traffic Control Devices.

C. CIRCULATION RECOMMENDATIONS

1. ON-SITE

On-site circulation is provided by a u-shaped drive that connect the main entrance and a secondary emergency access only entrance. The gated entrance has been designed by the Architect to meet the Fire Department's requirements.

2. AREA WIDE

The project applicant is not proposing any area wide improvements.

3. PHASING

No project phasing is proposed.

4. PARKING

On-site parking is proposed with 242 spaces as noted on the Architectural site plan.

D. SAFETY AND OPERATIONAL IMPROVEMENTS

The Project has frontage on Lakeshore Drive. Any required improvements will be constructed to maintain existing conditions as they relate to existing design features.

E. SPECIFIC PLAN SIGNALIZATION ANALYSIS (for Specific Plans only)

The project does not propose a Specific Plan.

F. GENERAL PLAN CONFORMANCE (for Specific Plans and General Plan Amendments)

The project does not propose a General Plan Amendment.

G. CETAP CONFORMANCE

The Community and Environmental Transportation Acceptability Process (CETAP) identifies SR-74 in the Elsinore Area Plan "The Hemet to Corona/Lake Elsinore CETAP Corridor passes through the Elsinore Area Plan along State Route 74, or to the north of it. This corridor could accommodate a number of transportation options, including vehicular traffic and high occupancy vehicle lanes." The project does not have frontage on SR-74.

H. IDENTIFY EXISTING OR PROPOSED REGIONAL FUNDING MECHANISMS

The City of Lake Elsinore has a Transportation Uniform Mitigation Fee (TUMF), a Traffic Impact Fee, and various other fees. The applicant will have to participate in these funding mechanism.

# # #

Appendix A

Approved Traffic Scoping Agreement

Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the City of Lake Elsinore Traffic Engineering Division requirements for traffic impact analysis of the following project. The analysis must follow the Riverside County Transportation Department Traffic Study Guidelines dated April 2008.

Case No. PAR 2016-09
Related Cases -
SP No.
EIR No.
GPA No.
CZ No.
Project Name: Lakeview Manor
Project Location: Lakeshore Drive, Lake Elsinore, CA 92530
Project Description: 104 unit multi-family residential development

	Consultant	Developer
Name:	LOS Engineering, Inc.	Hong Guan, LLC
	11622 El Camino Real, Suite 100	14785 Jeffrey Rd, #201
	San Diego, CA 92130	Irvine, CA 92618
Telephone:	Justin Rasas, P.E. 619-890-1253	Chyiluu Chi 949-232-9239

A. Trip Generation Source: ITE *Trip Generation Manual, 9th Edition* (most recent)

Existing Land Use: Multi-Family Residential — Proposed Land Use: Multi-Family Residential
Existing Zoning: CRF/AR — Proposed Zoning: AR
Total Daily Trips: 685 ADT

ITE Land Use (221)	Trip Rate	Size & Units	ADT	AM Rate	AM Split	AM IN	AM OUT	PM Rate	PM Split	PM IN	PM OUT
Low-Rise Apts (1-2 floors)	6.59 /Unit	104 Units	**685**	0.46 /Unit	0.21	0.79	**10**	**38**	0.58 /Unit	0.65	0.35	**39**	**21**

Source: *ITE 9th Edition Trip Generation*, 2012. ADT=Average Daily Traffic; Split-percent inbound and outbound.

Internal Trip Allowance ☐ Yes ■ No (% Trip Discount)
Pass-By Trip Allowance ☐ Yes ■ No (% Trip Discount)
(Attach additional sheet if this is a multi-use site with a breakdown of trips generated)

B. Trip Geographic Distribution: N 0% S 0% E 75% W 25%
(See attached exhibit for detailed assignment) Lakeshore Dr Lakeshore Dr

C. Background Traffic

Project Completion Year: 2018 Annual Ambient Growth Rate: 2%

Other area projects to be included: Need input from City staff

Model/Forecast methodology if required Analysis to include existing, existing + ambient + project; existing + ambient + cumulative + project. California MUTCD 2014 Edition signal warrants #1, #2 and #3 for each scenario above.

D. Study intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

1. Lakeshore Dr/Gunnerson St/Project Entrance
2.
3.
4.
5.
6.
7.
8.
9.
10.

E. Study Roadway Segments (For GP level study):

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

F. Other Jurisdictional Impacts

Is this project within any other Agency's Sphere of Influence or one-mile radius of boundaries? ☐ Yes ■ No

If so, name of Jurisdiction: _____

G. Site Plan (please attach reduced copy)

H. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Public Works Traffic Department)

Recommended by:

Justin Rasas, P.E. — 10/25/2016
Consultant's Representative — Date

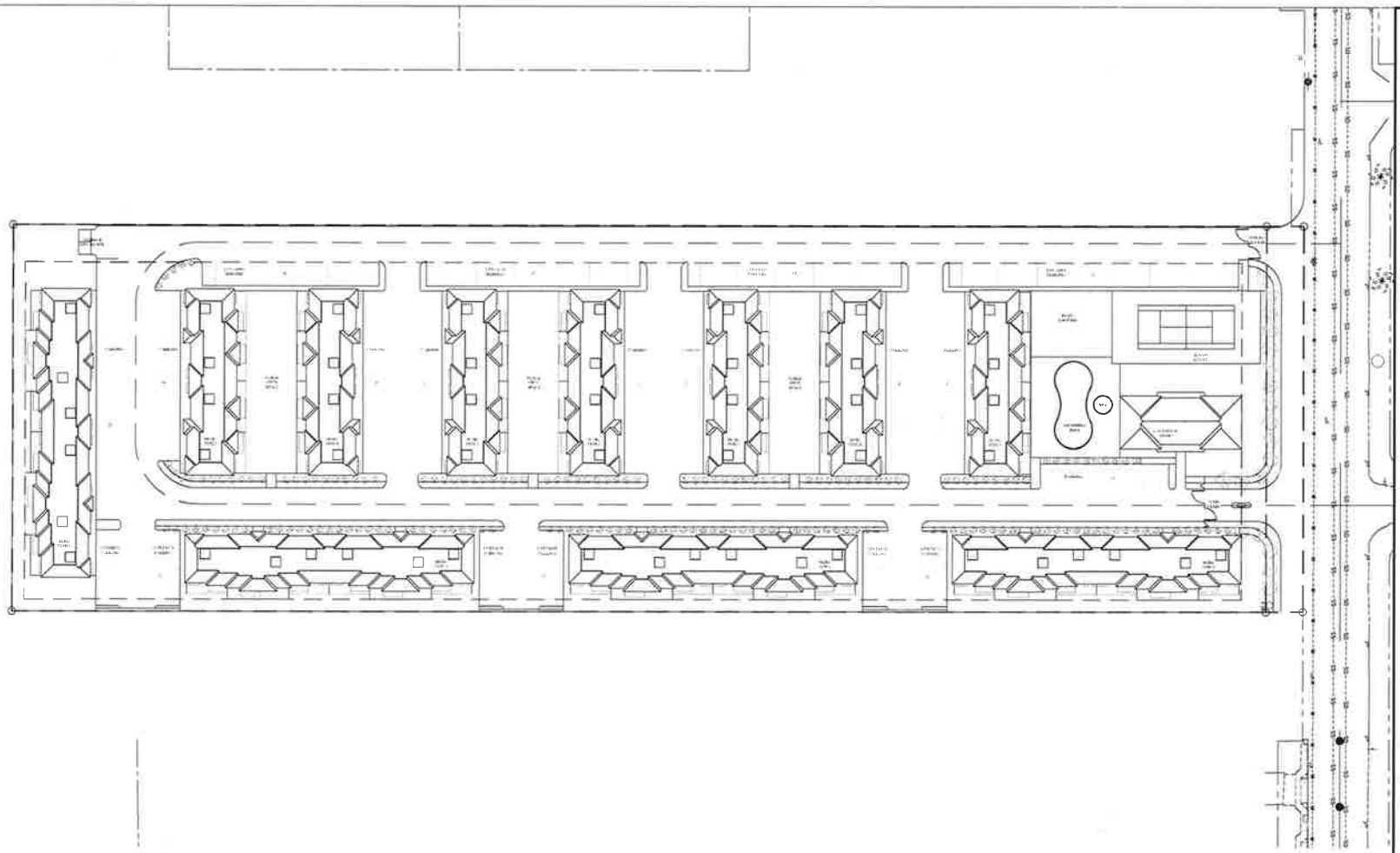
Scoping Agreement Resubmitted on — 10/27/2016 Date

Scoping Agreement Resubmitted on — Date

Approved Scoping Agreement:

_____ — 10/27/2016
City of Lake Elsinore — Date
Traffic Engineering Division

cc: Planning Division
Land Development Section



0 20' 40' 60' 80' 120' 160'

N

GENERAL NOTES:

1. ~~DEVELOPMENT AND USE OF THIS SITE SHALL CONFORM~~ WITH ALL APPLICABLE CODES AND ORDINANCES. BUILDINGS WILL CONFORM TITLE 24 CBC
2. STRUCTURALLY INDEPENDENT 1-HR FIRE WALLS BETWEEN EACH UNITS WILL BE PLACED PER BUILDING SAFETY REQUIREMENT.
3. PLEASE SEE LANDSCAPE PLANS FOR LANDSCAPE DESIGN DETAILS
4. ALL NEW UTILITIES WILL BE PLACED UNDERGROUND AND WILL BE SHOWN IN CIVIL DRAWING
5. ALL RESIDENTIAL TRASH CONTAINERS WILL BE STORED IN THE SITE AS PROPOSED SITE PLAN
6. ALL STORM DRAINS, SEWER LINES, WATER LINES, FIRE DEPARTMENT CONNECTION AND HYDRANTS, PROPOSED RETENTION AREAS FOR 100 YEAR, AND ONE HOUR STORM WITH PRELIMINARY HYDROLOGY CALCULATIONS WILL BE SHOWN IN CIVIL DRAWING
7. ALL NEW SANITARY SEWER LINES WITHIN THE SITE SHALL BE PRIVATE PLUMBING LINES SUBJECT TO THE STATE AND CITY ORDINANCES
8. ALL UTILITIES PROVIDING COMPANY SHALL MEET ALL THE REQUIREMENTS OF THE CITY

1 PROPOSED SITE PLAN

Scale: 1" = 40'

Project Data

	Zoning Allowed	Proposed
Zoning	Lakeshore Village Specific Plan CRF: Commercial Residential Flex MR: Attached Residential	MR: Attached Residential
Gross Lot Area (Includer R/W not dedicated)	336,505 Sq Ft (7.59 Acre)	
Net Lot Area (Excludes R/W to be dedicated)	259,395 Sq Ft (5.95 Acre)	
Density (DU/Acre)	18	15.6
Max. Units	130	104
Max. Building Height (Ft)	35	35
Max. Building Stories (Ft)	3	2
Lot Setback (Ft)		
Front (Lakeshore Dr)	20	20, See Site Plan
Side (East + West)	10	10, See Site Plan
Rear (South)	10	10, See Site Plan

Max. Lot Coverage (% of Net Lot Area)	60%	39%
Building Footprint (Sq Ft)	155,651	100,938
Total Building Floor Area (Sq Ft)		166,687
Building Type I (Sq Ft)		100,936
Building Type II (Sq Ft)		44,064
Club House/Office (Sq Ft)		6,752
Min. Public Open Space Area (Sq Ft per Unit)	250	169
Min. Total Public Open Space Area (Sq Ft)	26,000	18,336
Min. Private Open Space Area (Sq Ft per Unit)	80	250
Min. Total Public Open Space Area (Sq Ft)	8,320	25,900
Parking Requirement	Unit with 2 Bedrooms or Larger	
Covered/Open Unit / Subtotal	1 : 104	147
Open Unit Unit / Subtotal	1.33 : 136	137
Total Parking	243	284
Occupancy Type per CBC	R2	
Construction Type per CBC	VB	

Unit	Type	Number	Unit Area (Sq Ft)	Private Open Space Area/Balcony (Sq Ft)
Unit A	3bed 3bath	24	1,571	297
Unit A1	3bed 3bath	24	1,627	168
Unit B	2Bed 2bath	12	1,134	80
Unit B1	2Bed 2bath	12	1,192	96
Unit C	2bed 2bath	8	1,230	265
Unit C1	2bed 2bath	8	1,303	146
Unit D	3bed 3bath	8	1,386	393
Unit D1	3bed 3bath	8	1,406	123

ANG DESIGNS

1418 Buller Ave, #3, Los Angeles, CA 90025
T (404) 452-5174

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Schmitz Plus Inc
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T (626) 328-8855

MEP:
Hua Yan
Y & T Engineers
1935 E. Las Tunas Dr., #255 San Gabriel CA 91776
T (626) 400-8639

LANDSCAPE:
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ANG Designs
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SURVEY:
Matthew Suhs
KoBrien
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STAMP

LICENSED ARCHITECT C-35740 STATE OF CALIFORNIA

NOT FOR CONSTRUCTION

DESCRIPTION	DATE
PROGRESS DWG.	10-14-16

LAKEVIEW MANOR

LAKESHORE DR, LAKE ELSINORE, CA 92530

TITLE

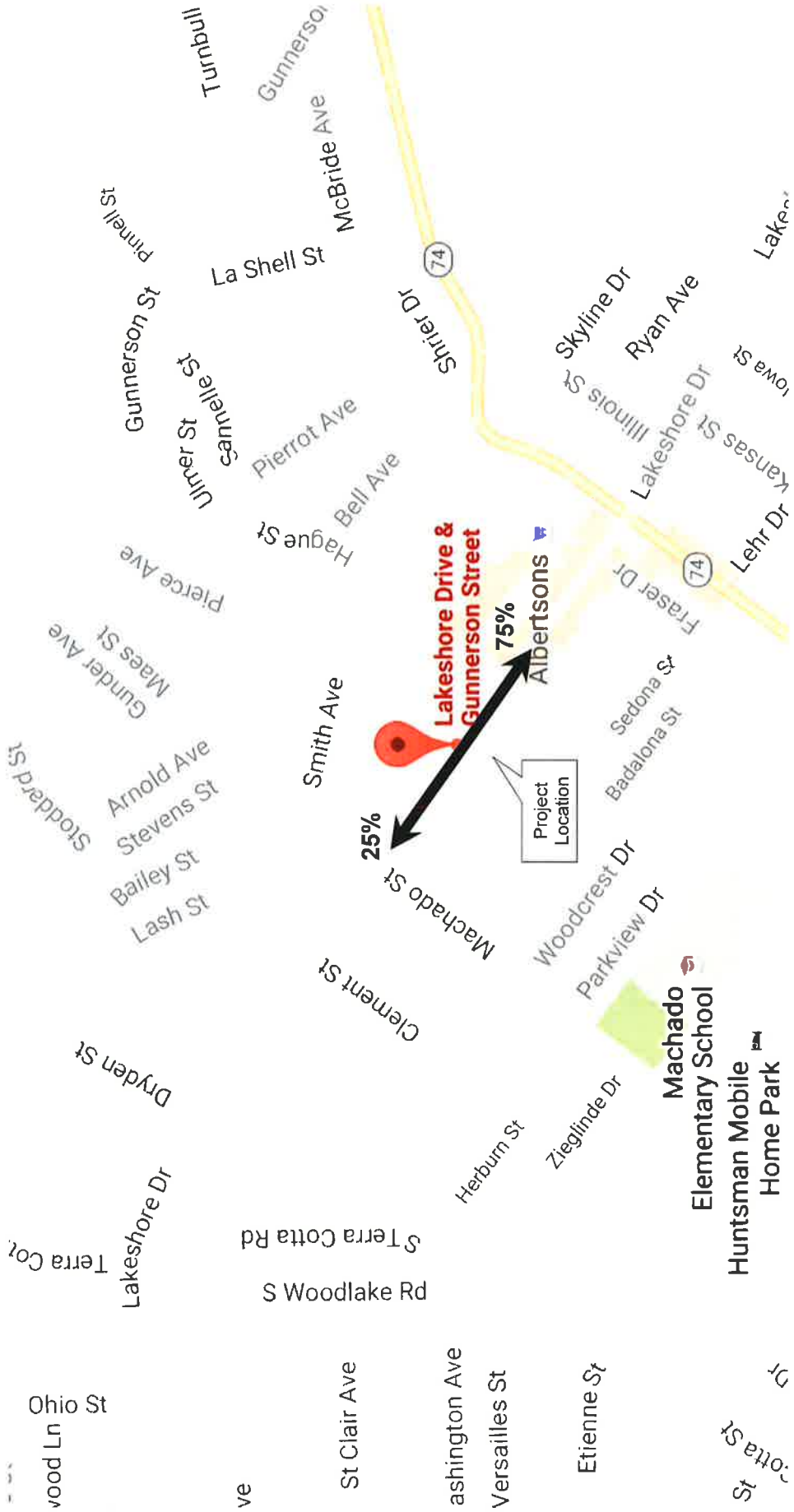
PROPOSED SITE PLAN

PROJECT NUMBER: 1509

SHEET NUMBER: S001

SCALE: AS NOTED

10/14/2016 12:07 PM
C:\Project\1509 Lakeview Manor Lake Elsinore\007 Drawings\01 Architectural\S001.dwg


Lakeshore Drive &
Gunnerson Street
75%
25%
Albertsons
Project Location
Machado Elementary School
Huntsman Mobile Home Park
Lakeshore Dr
Machado St
Smith Ave
Clement St
Woodcrest Dr
Parkview Dr
Sedona St
Badalona St
Fraser Dr
Skyline Dr
Ryan Ave
Lehr Dr
Shirley Dr
Herburn St
Zieglinde Dr
S Terra Cotta Rd
S Woodlake Rd
Dryden St
Stoddard St
Arnold Ave
Stevens St
Bailey St
Lash St
Gunder Ave
Maes St
Pierce Ave
Hague St
Bell Ave
Pierrot Ave
Ulmer St
Gunnerson St
La Shell St
McBride Ave
Turnbull
Ohio St
St Clair Ave
Versailles St
Etienne St
74

Appendix B

Count Data

Prepared by NDS/ATD

VOLUME

Lakeshore Dr E/O Gunnerson St

Day: Thursday
Date: 12/1/2016

City: Lake Elsinore
Project #: CA16_6176_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,883	8,849	17,732

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			7		17		24		12:00			129		127		256	
0:15			10		11		21		12:15			148		121		269	
0:30			7		10		17		12:30			129		154		283	
0:45			5	29	14	52	19	81	12:45			132	538	138	540	270	1078
1:00			5		9		14		13:00			121		159		280	
1:15			8		3		11		13:15			128		140		268	
1:30			9		7		16		13:30			137		145		282	
1:45			5	27	6	25	11	52	13:45			173	559	183	627	356	1186
2:00			7		5		12		14:00			214		187		401	
2:15			5		6		11		14:15			208		160		368	
2:30			4		5		9		14:30			184		181		365	
2:45			2	18	4	20	6	38	14:45			198	804	180	708	378	1512
3:00			5		4		9		15:00			158		160		318	
3:15			11		6		17		15:15			157		183		340	
3:30			10		9		19		15:30			178		187		365	
3:45			17	43	10	29	27	72	15:45			149	642	162	692	311	1334
4:00			17		25		42		16:00			170		205		375	
4:15			19		16		35		16:15			164		202		366	
4:30			37		17		54		16:30			187		194		381	
4:45			56	129	21	79	77	208	16:45			192	713	181	782	373	1495
5:00			56		26		82		17:00			169		219		388	
5:15			52		30		82		17:15			166		210		376	
5:30			55		24		79		17:30			159		184		343	
5:45			45	208	25	105	70	313	17:45			152	646	215	828	367	1474
6:00			73		25		98		18:00			139		190		329	
6:15			63		61		124		18:15			126		178		304	
6:30			92		57		149		18:30			129		175		304	
6:45			105	333	61	204	166	537	18:45			104	498	171	714	275	1212
7:00			131		69		200		19:00			123		165		288	
7:15			170		137		307		19:15			96		147		243	
7:30			220		121		341		19:30			98		147		245	
7:45			180	701	108	435	288	1136	19:45			77	394	144	603	221	997
8:00			184		93		277		20:00			66		98		164	
8:15			101		90		191		20:15			82		98		180	
8:30			120		57		177		20:30			70		101		171	
8:45			103	508	65	305	168	813	20:45			76	294	73	370	149	664
9:00			98		70		168		21:00			57		104		161	
9:15			100		66		166		21:15			47		79		126	
9:30			107		88		195		21:30			55		60		115	
9:45			128	433	93	317	221	750	21:45			41	200	56	299	97	499
10:00			109		80		189		22:00			39		58		97	
10:15			121		85		206		22:15			19		43		62	
10:30			124		102		226		22:30			24		38		62	
10:45			114	468	86	353	200	821	22:45			21	103	40	179	61	282
11:00			105		119		224		23:00			17		28		45	
11:15			125		118		243		23:15			15		29		44	
11:30			156		123		279		23:30			13		16		29	
11:45			151	537	129	489	280	1026	23:45			13	58	21	94	34	152
TOTALS				3434		2413		**5847**	**TOTALS**				5449		6436		**11885**
SPLIT %				58.7%		41.3%		**33.0%**	**SPLIT %**				45.8%		54.2%		**67.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,883	8,849	17,732

AM Peak Hour			7:15	11:45	**7:15**	**PM Peak Hour**			14:00	17:00	**16:30**
AM Pk Volume			754	531	**1213**	**PM Pk Volume**			804	828	**1518**
Pk Hr Factor			0.857	0.862	**0.889**	**Pk Hr Factor**			0.939	0.945	**0.978**
7 - 9 Volume	0	0	1209	740	**1949**	**4 - 6 Volume**	0	0	1359	1610	**2969**
7 - 9 Peak Hour			7:15	7:15	**7:15**	**4 - 6 Peak Hour**			16:30	17:00	**16:30**
7 - 9 Pk Volume	0	0	754	459	**1213**	**4 - 6 Pk Volume**	0	0	714	828	**1518**
Pk Hr Factor	0.000	0.000	0.857	0.838	**0.889**	**Pk Hr Factor**	0.000	0.000	0.930	0.945	**0.978**

Prepared by NDS/ATD

VOLUME

Lakeshore Dr W/O Gunnerson St

Day: Thursday
Date: 12/1/2016

City: Lake Elsinore
Project #: CA16_6176_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,715	8,839	17,554

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			8		17		25		12:00			121		125		246	
0:15			10		11		21		12:15			148		123		271	
0:30			8		10		18		12:30			130		154		284	
0:45			5	31	13	51	18	82	12:45			129	528	138	540	267	1068
1:00			5		9		14		13:00			117		159		276	
1:15			7		3		10		13:15			124		144		268	
1:30			9		7		16		13:30			140		152		292	
1:45			5	26	6	25	11	51	13:45			168	549	185	640	353	1189
2:00			6		5		11		14:00			213		185		398	
2:15			6		7		13		14:15			205		162		367	
2:30			4		5		9		14:30			181		178		359	
2:45			1	17	5	22	6	39	14:45			195	794	182	707	377	1501
3:00			6		4		10		15:00			155		165		320	
3:15			12		6		18		15:15			155		182		337	
3:30			10		9		19		15:30			176		193		369	
3:45			18	46	12	31	30	77	15:45			147	633	166	706	313	1339
4:00			15		27		42		16:00			171		203		374	
4:15			18		17		35		16:15			166		195		361	
4:30			37		19		56		16:30			180		192		372	
4:45			56	126	21	84	77	210	16:45			186	703	179	769	365	1472
5:00			53		26		79		17:00			165		217		382	
5:15			50		33		83		17:15			162		201		363	
5:30			52		24		76		17:30			150		187		337	
5:45			41	196	26	109	67	305	17:45			151	628	212	817	363	1445
6:00			71		25		96		18:00			137		186		323	
6:15			60		63		123		18:15			123		178		301	
6:30			95		61		156		18:30			125		175		300	
6:45			102	328	66	215	168	543	18:45			99	484	166	705	265	1189
7:00			125		80		205		19:00			122		161		283	
7:15			156		135		291		19:15			94		140		234	
7:30			218		124		342		19:30			98		140		238	
7:45			174	673	112	451	286	1124	19:45			77	391	142	583	219	974
8:00			177		89		266		20:00			67		101		168	
8:15			97		91		188		20:15			77		94		171	
8:30			122		61		183		20:30			66		94		160	
8:45			97	493	62	303	159	796	20:45			73	283	69	358	142	641
9:00			99		71		170		21:00			55		101		156	
9:15			101		64		165		21:15			45		74		119	
9:30			100		87		187		21:30			57		61		118	
9:45			127	427	95	317	222	744	21:45			42	199	58	294	100	493
10:00			108		84		192		22:00			37		57		94	
10:15			122		84		206		22:15			21		39		60	
10:30			126		102		228		22:30			22		34		56	
10:45			113	469	86	356	199	825	22:45			18	98	36	166	54	264
11:00			103		120		223		23:00			19		24		43	
11:15			124		123		247		23:15			14		30		44	
11:30			153		125		278		23:30			16		15		31	
11:45			151	531	131	499	282	1030	23:45			13	62	22	91	35	153
TOTALS				3363		2463		5826	TOTALS				5352		6376		11728
SPLIT %				57.7%		42.3%		33.2%	SPLIT %				45.6%		54.4%		66.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,715	8,839	17,554

AM Peak Hour			7:15	11:45	7:15	PM Peak Hour			14:00	17:00	14:00
AM Pk Volume			725	533	1185	PM Pk Volume			794	817	1501
Pk Hr Factor			0.831	0.865	0.866	Pk Hr Factor			0.932	0.941	0.943
7 - 9 Volume	0	0	1166	754	1920	4 - 6 Volume	0	0	1331	1586	2917
7 - 9 Peak Hour			7:15	7:15	7:15	4 - 6 Peak Hour			16:00	17:00	16:30
7 - 9 Pk Volume	0	0	725	460	1185	4 - 6 Pk Volume	0	0	703	817	1482
Pk Hr Factor	0.000	0.000	0.831	0.852	0.866	Pk Hr Factor	0.000	0.000	0.945	0.941	0.970

Prepared by NDS/ATD

VOLUME

Gunnerson St Bet. Ames Ave & Lakeshore Dr

Day: Thursday
Date: 12/1/2016

City: Lake Elsinore
Project #: CA16_6176_002

DAILY TOTALS	NB	SB	EB	WB	Total
	541	699	0	0	1,240

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
0:00	1		0						1		12:00	9		15						24	
0:15	2		2						4		12:15	7		9						16	
0:30	1		0						1		12:30	12		11						23	
0:45	1	5	0	2					1	7	12:45	10	38	13	48					23	86
1:00	1		1						2		13:00	6		10						16	
1:15	0		1						1		13:15	6		14						20	
1:30	0		0						0		13:30	10		14						24	
1:45	0	1	0	2					0	3	13:45	11	33	18	56					29	89
2:00	0		1						1		14:00	17		16						33	
2:15	2		2						4		14:15	9		14						23	
2:30	0		0						0		14:30	8		8						16	
2:45	0	2	2	5					2	7	14:45	11	45	16	54					27	99
3:00	1		0						1		15:00	6		14						20	
3:15	1		0						1		15:15	12		13						25	
3:30	0		0						0		15:30	7		15						22	
3:45	1	3	2	2					3	5	15:45	6	31	12	54					18	85
4:00	0		4						4		16:00	11		16						27	
4:15	1		3						4		16:15	6		10						16	
4:30	0		2						2		16:30	14		12						26	
4:45	1	2	1	10					2	12	16:45	16	47	16	54					32	101
5:00	0		3						3		17:00	10		14						24	
5:15	0		5						5		17:15	15		11						26	
5:30	0		3						3		17:30	13		15						28	
5:45	1	1	6	17					7	18	17:45	12	50	12	52					24	102
6:00	1		3						4		18:00	12		10						22	
6:15	4		9						13		18:15	7		10						17	
6:30	4		5						9		18:30	7		11						18	
6:45	2	11	10	27					12	38	18:45	13	39	13	44					26	83
7:00	8		11						19		19:00	12		9						21	
7:15	6		13						19		19:15	13		8						21	
7:30	3		14						17		19:30	9		2						11	
7:45	3	20	15	53					18	73	19:45	6	40	4	23					10	63
8:00	12		15						27		20:00	4		6						10	
8:15	7		11						18		20:15	9		10						19	
8:30	4		9						13		20:30	9		6						15	
8:45	6	29	12	47					18	76	20:45	8	30	7	29					15	59
9:00	3		3						6		21:00	5		4						9	
9:15	7		4						11		21:15	7		5						12	
9:30	7		13						20		21:30	5		4						9	
9:45	3	20	6	26					9	46	21:45	2	19	3	16					5	35
10:00	3		8						11		22:00	1		2						3	
10:15	8		6						14		22:15	6		0						6	
10:30	6		4						10		22:30	6		4						10	
10:45	5	22	6	24					11	46	22:45	5	18	4	10					9	28
11:00	6		9						15		23:00	6		0						6	
11:15	4		10						14		23:15	0		2						2	
11:30	5		10						15		23:30	5		1						6	
11:45	8	23	10	39					18	62	23:45	1	12	2	5					3	17
TOTALS		139		254						393	TOTALS		402		445						847
SPLIT %		35.4%		64.6%						31.7%	SPLIT %		47.5%		52.5%						68.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	541	699	0	0	1,240

AM Peak Hour	11:45	7:15			7:15	PM Peak Hour	16:30	13:15			16:45
AM Pk Volume	36	57			81	PM Pk Volume	55	62			110
Pk Hr Factor	0.750	0.950			0.750	Pk Hr Factor	0.859	0.861			0.859
7 - 9 Volume	49	100	0	0	149	4 - 6 Volume	97	106	0	0	203
7 - 9 Peak Hour	8:00	7:15			7:15	4 - 6 Peak Hour	16:30	16:45			16:45
7 - 9 Pk Volume	29	57	0	0	81	4 - 6 Pk Volume	55	56	0	0	110
Pk Hr Factor	0.604	0.950	0.000	0.000	0.750	Pk Hr Factor	0.859	0.875	0.000	0.000	0.859

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6175-001 **Day:** Thursday

City: Lake Elsinore **Date:** 12/1/2016

AM

NS/EW Streets:	Gunnerson St			Gunnerson St			Lakeshore Dr			Lakeshore Dr				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	0	0	0	1	0	0	1	0	0	1	0					
7:00 AM	0	0	0	5	0	9	3	124	0	0	67	4	212	0	0	0	0
7:15 AM	0	0	0	7	0	6	1	159	0	0	132	5	310	0	0	0	0
7:30 AM	0	0	0	7	0	7	2	214	0	0	117	2	349	0	0	0	0
7:45 AM	0	0	0	9	0	6	3	174	0	0	105	3	300	0	0	0	0
8:00 AM	0	0	0	12	0	3	4	172	0	0	88	5	284	0	0	0	0
8:15 AM	0	0	0	2	0	7	1	96	0	0	87	6	199	0	0	0	0
8:30 AM	0	0	0	4	0	5	3	118	0	0	54	1	185	0	0	0	0
8:45 AM	0	0	0	6	0	4	1	96	0	0	61	4	172	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	52	0	47	18	1153	0	0	711	30	2011	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	52.53%	0.00%	47.47%	1.54%	98.46%	0.00%	0.00%	95.95%	4.05%					
PEAK HR START TIME :	715 AM												TOTAL				
PEAK HR VOL :	0	0	0	35	0	22	10	719	0	0	442	15	1243				
PEAK HR FACTOR :		0.000			0.950			0.844			0.834		0.890				

CONTROL : 1-Way Stop (NB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6175-001 **Day:** Thursday

City: Lake Elsinore **Date:** 12/1/2016

PM

NS/EW Streets:	Gunnerson St			Gunnerson St			Lakeshore Dr			Lakeshore Dr				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	0	0	0	1	0	0	1	0	0	1	0					
4:00 PM	0	0	0	7	0	9	3	166	0	0	197	5	387	0	0	0	0
4:15 PM	0	0	0	2	0	4	2	164	0	0	191	9	372	0	0	0	0
4:30 PM	0	0	0	8	0	4	1	175	0	0	186	11	385	0	0	0	0
4:45 PM	0	0	0	7	0	9	3	183	0	0	170	11	383	0	0	0	0
5:00 PM	0	0	0	6	0	9	2	165	0	0	211	8	401	0	0	0	0
5:15 PM	0	0	0	6	0	5	1	157	0	0	193	14	376	0	0	0	0
5:30 PM	0	0	0	7	0	10	4	151	0	0	177	10	359	0	0	0	0
5:45 PM	0	0	0	4	0	8	1	148	0	0	204	11	376	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	47	0	58	17	1309	0	0	1529	79	3039	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	44.76%	0.00%	55.24%	1.28%	98.72%	0.00%	0.00%	95.09%	4.91%					
PEAK HR START TIME :	430 PM												TOTAL				
PEAK HR VOL :	0	0	0	27	0	27	7	680	0	0	760	44	1545				
PEAK HR FACTOR :	0.000			0.844			0.923			0.918			0.963				

CONTROL : 1-Way Stop (NB)

ITM Peak Hour Summary

Prepared by:
NDS
National Data & Surveying Services

Gunnerson St and Lakeshore Dr , Lake Elsinore

Date:	12/1/2016
Day:	Thursday

Project #:	16-6175-001
City:	Lake Elsinore

AM Peak Hour	715 AM
NOON Peak Hour	None
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Gunnerson St)

	Lanes 0	1	0		
AM	22	0	35	25	AM
NOON	0	0	0	0	NOON
PM	27	0	27	51	PM

Eastbound Approach (Lakeshore Dr)

Lanes	AM	NOON	PM
	464	0	787
0	10	0	7
1	719	0	680
0	0	0	0

Westbound Approach

AM	NOON	PM	Lanes
15	0	44	0
442	0	760	1
0	0	0	0
754	0	707	

CONTROL: 1-Way Stop (NB)

Northbound Approach

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

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	none	none
PM	4:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	57	0	54
	25	0	51
East Leg	457	0	804
	754	0	707
West Leg	464	0	787
	729	0	687
South Leg	0	0	0
	0	0	0

Total Volume Per Leg

	AM	NOON	PM
North Leg	82	0	105
East Leg	1211	0	1511
West Leg	1193	0	1474
South Leg	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6175-001
N/S Street: Gunnerson St
E/W Street: Lakeshore Dr
DATE: 12/1/2016 DAY: Thursday
CITY: Lake Elsinore

AM	3
NOON	0
PM	0

0	AM
0	NOON
7	PM

AM	NOON	PM
0	0	0

AM	NOON	PM
0	0	0

NORTH LEG

WEST LEG

EAST LEG

0	0	0
AM	NOON	PM

0	0	0
AM	NOON	PM

SOUTH LEG

AM	0
NOON	0
PM	0

0	AM
0	NOON
0	PM

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

PROJECT#:	16-6175-001
N/S Street:	Gunnerson St
E/W Street:	Lakeshore Dr
DATE:	12/1/2016
CITY:	Lake Elsinore

DAY: Thursday

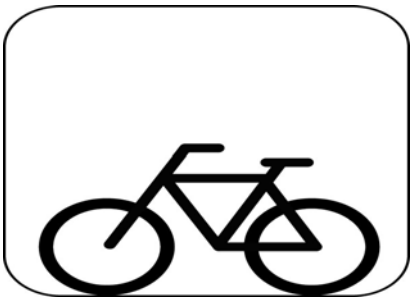
	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

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

NORTH LEG

WEST LEG

AM	NOON	PM
0	0	0
1	0	2
0	0	0



EAST LEG

AM	NOON	PM
0	0	1
0	0	0
0	0	0

SOUTH LEG

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

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-6175-001
N/S Street: Gunnerson St
E/W Street: Lakeshore Dr
DATE: 12/1/2016
CITY: Lake Elsinore

DAY: Thursday

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	1	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	2	0	0	0	0	0	0	0
TOTALS	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	3	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0
4:30 PM	0	2	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0
5:00 PM	0	1	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	1	0	0	0	0	0	0
TOTALS	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	2	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**

Appendix C

HCM LOS Delays

INTERSECTION LEVEL OF SERVICE DEFINITIONS (HCM 2010)

Level of Service	Un-Signalized (TWSC and AWSC) Control Delay (seconds/vehicle)	Signalized Control Delay (seconds/vehicle)
A	0-10	≤ 10
B	> 10-15	> 10-20
C	> 15-25	> 20-35
D	> 25-35	> 35-55
E	> 35-50	> 55-80
F	> 50	> 80

TWSC: Two Way Stop Control. AWSC: All Way Stop Control. Source: Highway Capacity Manual 2010 (exhibit 19-1 for two way stop control, exhibit 20-2 for all way stop control, and exhibit 18-4 for signalized intersections).

Appendix D

Existing Intersection LOS

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	10	719	442	15	35	22
Conflicting Peds, #/hr	3	0	0	3	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	808	497	17	39	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	516	0	-	0	1338	511
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	830	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1050	-	-	-	169	563
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	428	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1047	-	-	-	165	560
Mov Cap-2 Maneuver	-	-	-	-	165	-
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	419	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	27
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1047	-	-	-	227
HCM Lane V/C Ratio	0.011	-	-	-	0.282
HCM Control Delay (s)	8.5	0	-	-	27
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	1.1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	7	680	760	44	27	27
Conflicting Peds, #/hr	7	0	0	7	7	7
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	708	792	46	28	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	845	0	-	0	1545	829
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	723	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	792	-	-	-	126	370
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	481	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	787	-	-	-	123	366
Mov Cap-2 Maneuver	-	-	-	-	123	-
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	471	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	33
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	787	-	-	-	184
HCM Lane V/C Ratio	0.009	-	-	-	0.306
HCM Control Delay (s)	9.6	0	-	-	33
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	1.2

Appendix E

Transit Map and Schedules

8 Lake Elsinore, Wildomar Loop Routes

Information Center
(951) 565-5002
Web site
www.RiversideTransit.com

Routing and timetables subject to change.
Rutas y horarios son sujetos a cambios.

Also serving: Stater Bros, Albertsons, Lake Elsinore Recreation Center. **Sunday service on:** Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day and New Year's Day.

8 Weekdays | Counterclockwise Loop via Grand Ave

A.M. times are in PLAIN, **P.M. times are in BOLD** | Times are approximate
S = Operates when school is in session only; X = Does not serve Lakepoint Park at Senior Center

	Lake Elsinore Outlet Center	Lakeshore & Riverside	Grand & Riverside	Grand & Baldwin	Central & Palomar	Wildomar Independent & Assisted Living	Malaga & Mission Trail	Lake Elsinore Walmart	Graham & Langstaff	Lake Elsinore Outlet Center
	1	2	3	4	5	6	7	8	9	1
	4:43	4:51	5:01	5:09	5:21	5:29	5:41	5:47	6:02	6:20
	5:55	6:03	6:13	6:21	6:33	6:41	6:54	7:00	7:18	7:36
	6:52	7:00	7:12	7:21	7:35	7:43	7:56	8:04	8:20	8:38
	7:53	8:01	8:12	8:21	8:35	8:43	8:56	9:04	9:19	9:35
	8:50	8:58	9:09	9:17	9:31	9:39	9:52	10:00	10:17	10:35
	9:50	9:58	10:09	10:17	10:31	10:39	10:52	11:00	11:17	11:35
	10:47	10:55	11:06	11:14	11:28	11:36	11:49	11:57	**12:14**	**12:32**
	11:47	11:55	**12:06**	**12:14**	**12:28**	**12:36**	**12:49**	**12:57**	**1:16**	**1:34**
	12:42	**12:50**	**1:01**	**1:09**	**1:23**	**1:31**	**1:44**	**1:52**	**2:11**	**2:29**
	1:50	**1:58**	**2:09**	**2:17**	**2:31**	**2:39**	**2:52**	**3:02**	**3:19**	**3:37**
S	**2:32**	**2:40**	**2:53**	**3:01**	**3:15**	**—**	**3:27**	**3:35**	**3:52**	**4:10**
	2:49	**2:57**	**3:09**	**3:17**	**3:31**	**3:39**	**3:53**	**4:03**	**4:22**	**4:40**
	3:49	**3:57**	**4:09**	**4:17**	**4:31**	**4:39**	**4:51**	**5:02**	**5:17**	**5:35**
X	**4:47**	**4:55**	**5:07**	**5:17**	**5:31**	**5:39**	**5:51**	**6:02**	**6:17**	**6:35**
X	**5:45**	**5:53**	**6:05**	**6:13**	**6:27**	**6:35**	**6:46**	**6:56**	**7:09**	**7:24**
X	**6:47**	**6:55**	**7:06**	**7:15**	**7:28**	**7:36**	**7:47**	**7:56**	**8:08**	**8:22**
X	**7:50**	**7:58**	**8:09**	**8:17**	**8:29**	**—**	**—**	**—**	**—**	**—**

8 Weekdays | Clockwise Loop via Walmart

A.M. times are in PLAIN, **P.M. times are in BOLD** | Times are approximate

Lake Elsinore Outlet Center	Graham & Langstaff	Lake Elsinore Walmart	Malaga & Mission Trail	Wildomar Independent & Assisted Living	Central & Palomar	Grand & Baldwin	Grand & Riverside	Lakeshore & Riverside	Lake Elsinore Outlet Center
1	9	8	7	6	5	4	3	2	1
4:50	5:03	5:13	5:20	5:36	5:38	5:49	5:57	6:07	6:15
5:52	6:09	6:19	6:28	6:46	6:48	7:01	7:11	7:24	7:32
6:47	7:04	7:16	7:25	7:43	7:45	7:57	8:05	8:17	8:25
7:46	8:02	8:14	8:23	8:40	8:42	8:54	9:01	9:13	9:21
8:45	9:01	9:13	9:22	9:39	9:41	9:53	10:00	10:12	10:20
9:45	10:01	10:13	10:22	10:39	10:41	10:53	11:00	11:12	11:20
10:45	11:01	11:13	11:22	11:39	11:41	11:53	**12:01**	**12:13**	**12:22**
11:38	11:54	**12:07**	**12:17**	**12:34**	**12:36**	**12:48**	**12:56**	**1:08**	**1:17**
12:44	**1:00**	**1:13**	**1:23**	**1:40**	**1:42**	**1:58**	**2:06**	**2:18**	**2:27**
1:38	**1:56**	**2:09**	**2:20**	**2:37**	**2:39**	**2:51**	**2:59**	**3:11**	**3:21**
2:39	**2:57**	**3:10**	**3:21**	**3:38**	**3:40**	**3:53**	**4:01**	**4:13**	**4:23**
3:45	**4:01**	**4:14**	**4:24**	**4:41**	**4:43**	**4:55**	**5:02**	**5:14**	**5:24**
4:43	**4:59**	**5:12**	**5:22**	**5:39**	**5:41**	**5:53**	**6:00**	**6:12**	**6:22**
5:38	**5:54**	**6:07**	**6:17**	**6:34**	**6:36**	**6:48**	**6:55**	**7:06**	**7:15**
6:47	**7:03**	**7:16**	**7:25**	**7:40**	**7:42**	**7:53**	**8:00**	**8:09**	**8:17**
7:50	**8:05**	**8:15**	**8:20**	—	**8:30**	—	—	—	—

8 Weekends | Counterclockwise Loop via Grand Ave

A.M. times are in PLAIN, **P.M. times are in BOLD** | Times are approximate

Lake Elsinore Outlet Center	Lakeshore & Riverside	Grand & Riverside	Grand & Baldwin	Central & Palomar	Wildomar Independent & Assisted Living	Malaga & Mission Trail	Lake Elsinore Walmart	Graham & Langstaff	Lake Elsinore Outlet Center
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**1**
—	—	—	—	6:46	—	6:56	7:01	7:11	7:22
6:42	6:49	6:58	7:04	7:16	7:24	7:34	7:40	7:52	8:05
7:38	7:45	7:55	8:02	8:14	8:22	8:34	8:40	8:52	9:05
8:36	8:43	8:53	9:00	9:12	9:20	9:32	9:38	9:51	10:06
9:33	9:40	9:50	9:57	10:09	10:17	10:29	10:37	10:50	11:05
10:33	10:40	10:50	10:57	11:09	11:17	11:29	11:37	11:51	**12:06**
11:33	11:40	11:50	11:57	**12:09**	**12:17**	**12:29**	**12:37**	**12:51**	**1:06**
12:33	**12:40**	**12:50**	**12:57**	**1:09**	**1:17**	**1:29**	**1:37**	**1:51**	**2:06**
1:33	**1:40**	**1:50**	**1:57**	**2:09**	**2:17**	**2:29**	**2:37**	**2:51**	**3:06**
2:33	**2:40**	**2:50**	**2:57**	**3:09**	**3:17**	**3:29**	**3:37**	**3:51**	**4:06**
3:33	**3:40**	**3:50**	**3:57**	**4:09**	**4:17**	**4:29**	**4:36**	**4:49**	**5:02**
4:35	**4:42**	**4:52**	**4:59**	**5:11**	**5:19**	**5:29**	**5:36**	**5:48**	**6:01**
5:35	**5:42**	**5:52**	**5:59**	**6:11**	**6:22**	**6:32**	**6:39**	**6:51**	**7:04**
6:12	**6:18**	**6:27**	**6:33**	**6:45**	—	—	—	—	—

8 Weekends | Clockwise Loop via Walmart

A.M. times are in PLAIN, **P.M. times are in BOLD** | Times are approximate

Lake Elsinore Outlet Center	Graham & Langstaff	Lake Elsinore Walmart	Malaga & Mission Trail	Wildomar Independent & Assisted Living	Central & Palomar	Grand & Baldwin	Grand & Riverside	Lakeshore & Riverside	Lake Elsinore Outlet Center
1	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
—	—	—	—	—	6:51	7:01	7:07	7:17	7:25
6:41	6:53	7:03	7:09	7:24	7:26	7:36	7:42	7:52	8:00
7:38	7:51	8:01	8:07	8:22	8:24	8:35	8:42	8:54	9:04
8:32	8:47	8:57	9:05	9:20	9:22	9:33	9:40	9:52	10:02
9:26	9:41	9:53	10:01	10:17	10:19	10:30	10:37	10:49	11:01
10:26	10:41	10:53	11:01	11:17	11:19	11:30	11:37	11:49	**12:01**
11:26	11:41	11:53	**12:01**	**12:17**	**12:19**	**12:30**	**12:37**	**12:49**	**1:01**
12:24	**12:39**	**12:51**	**1:01**	**1:17**	**1:19**	**1:30**	**1:37**	**1:49**	**2:01**
1:24	**1:39**	**1:51**	**2:01**	**2:17**	**2:19**	**2:30**	**2:37**	**2:49**	**3:01**
2:24	**2:39**	**2:51**	**3:01**	**3:17**	**3:19**	**3:30**	**3:37**	**3:49**	**4:01**
3:24	**3:39**	**3:51**	**4:01**	**4:17**	**4:19**	**4:30**	**4:37**	**4:49**	**5:01**
4:26	**4:41**	**4:53**	**5:03**	**5:19**	**5:21**	**5:31**	**5:37**	**5:49**	**6:01**
5:26	**5:41**	**5:53**	**6:03**	**6:22**	**6:24**	**6:34**	**6:40**	**6:50**	**7:00**
6:13	**6:25**	**6:37**	**6:45**	—	**6:55**	—	—	—	—

Lakeview Manor Traffic Study Appendix Page 26 of 84

Appendix F

ITE 9th Edition Trip Generation Rate

Low-Rise Apartment
(221)

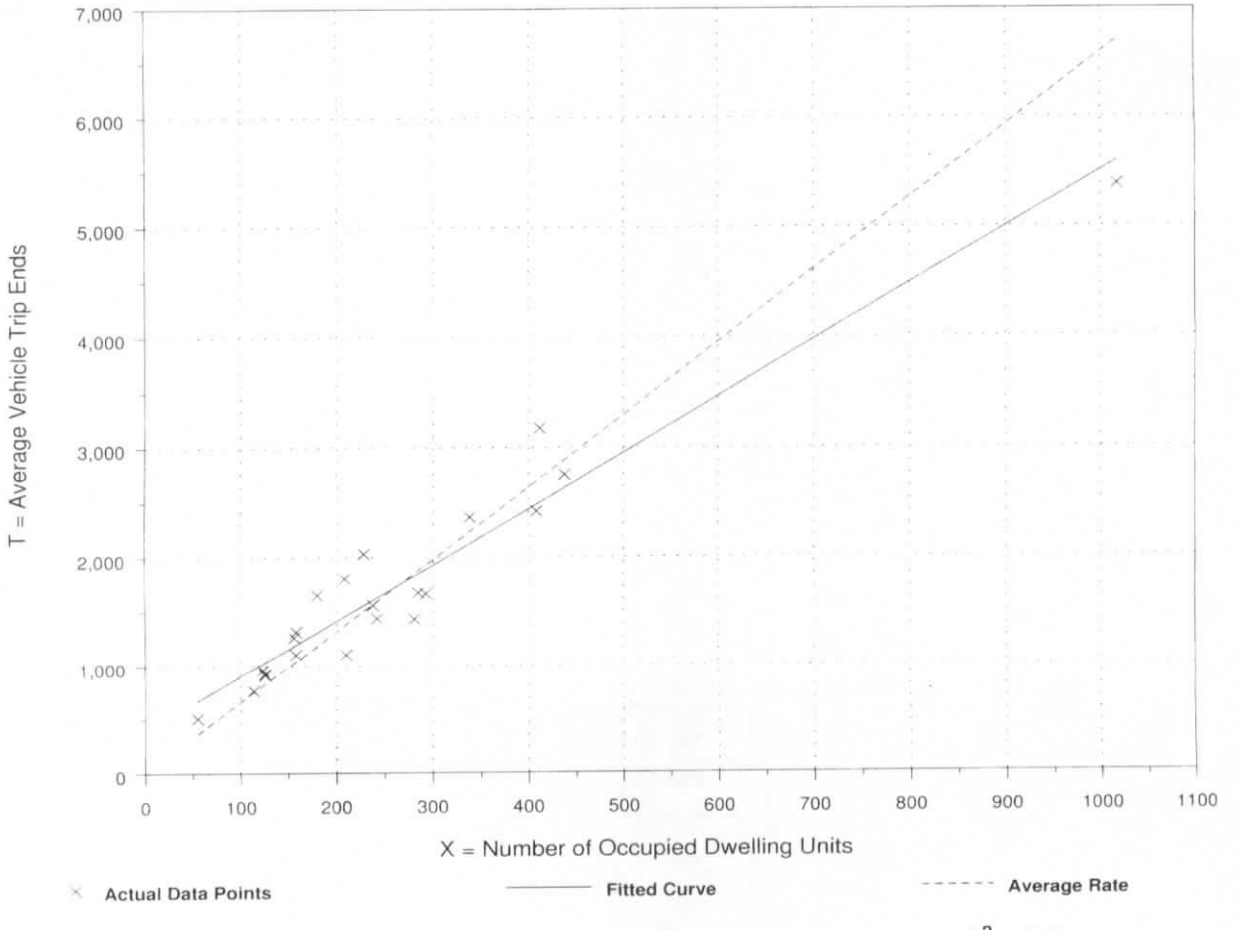
Average Vehicle Trip Ends vs: Occupied Dwelling Units
On a: Weekday

Number of Studies: 22
Avg. Num. of Occupied Dwelling Units: 264
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Occupied Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
6.59	5.10 - 9.24	2.84

Data Plot and Equation



Fitted Curve Equation: T = 5.12(X) + 387.53

R^2 = 0.93

Low-Rise Apartment
(221)

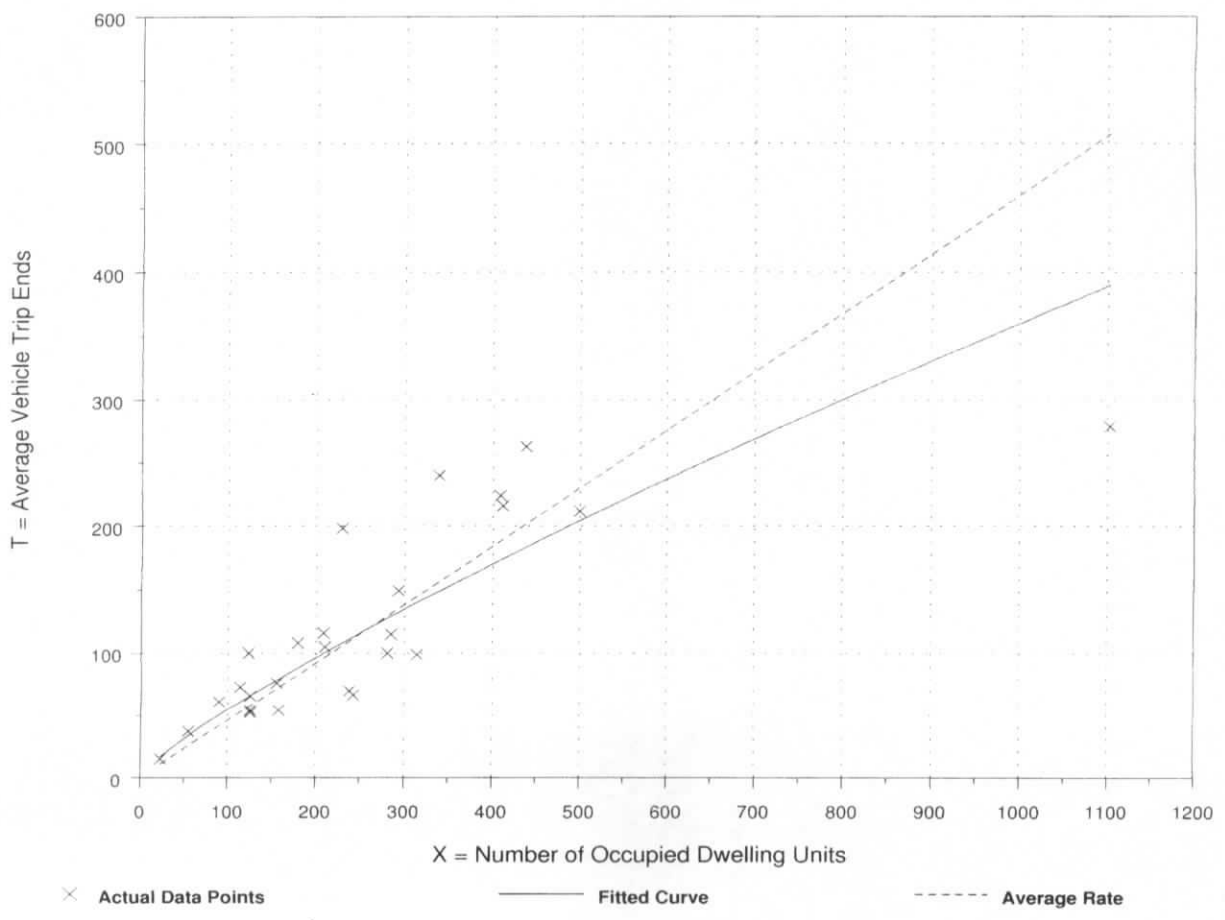
Average Vehicle Trip Ends vs: Occupied Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 27
Avg. Num. of Occupied Dwelling Units: 257
Directional Distribution: 21% entering, 79% exiting

Trip Generation per Occupied Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.25 - 0.86	0.70

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.82 Ln(X) + 0.23 $R^2 = 0.81$

Low-Rise Apartment
(221)

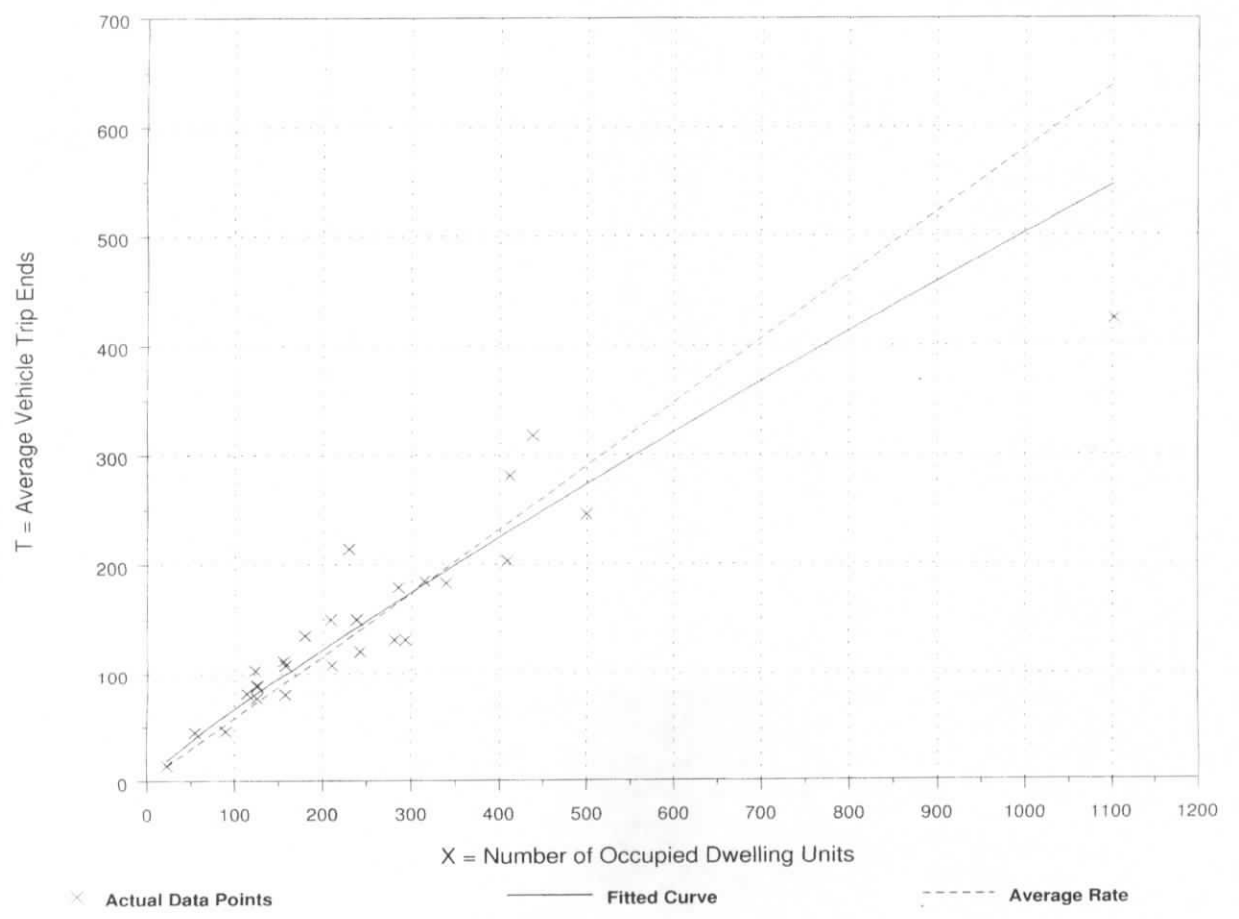
Average Vehicle Trip Ends vs: Occupied Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 27
Avg. Num. of Occupied Dwelling Units: 257
Directional Distribution: 65% entering, 35% exiting

Trip Generation per Occupied Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.58	0.38 - 0.93	0.77

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.88 Ln(X) + 0.16

R^2 = 0.92

Appendix G

Cumulative Project Details

URBAN CROSSROADS

41 Corporate Park, Suite 300
Irvine, CA 92606

Prepared by:

Aric Evatt, PTP
Charlene So, PE

REGISTERED PROFESSIONAL ENGINEER
CHARLENE HWANG SO
No. TR2414
Exp. 10/30/2015
TRAFFIC
STATE OF CALIFORNIA

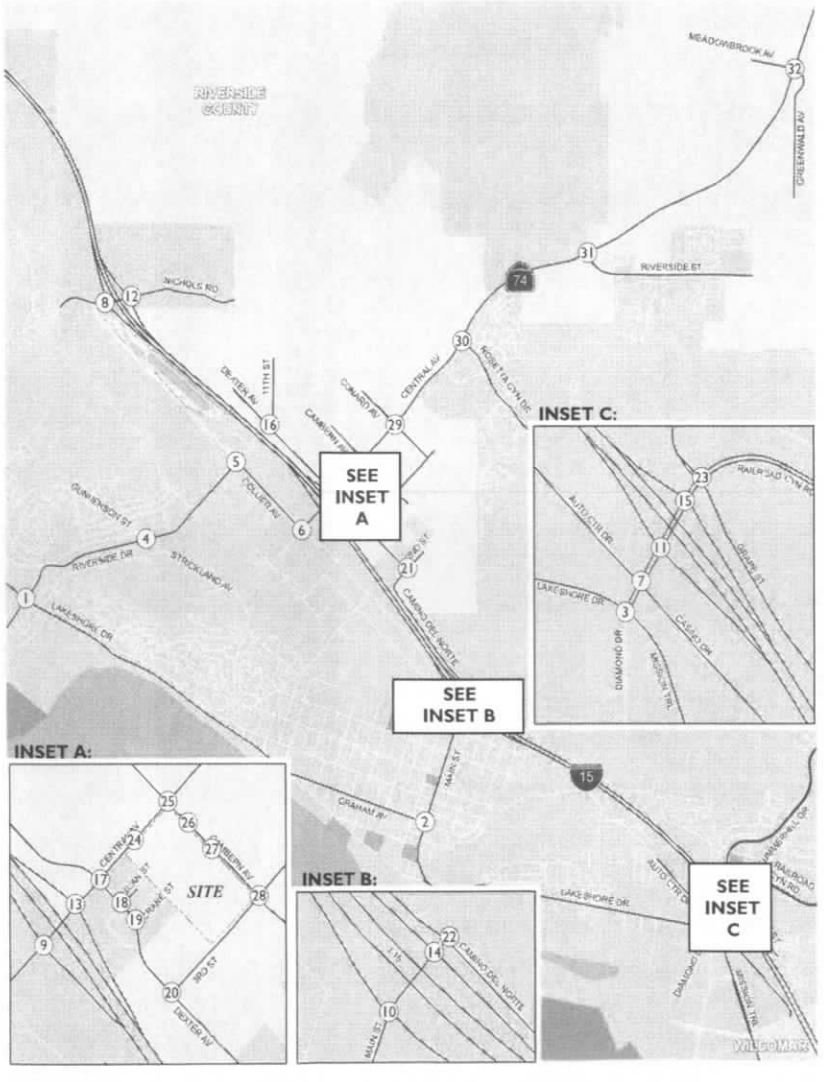
LAKE ELSINORE WALMART
TRAFFIC IMPACT ANALYSIS (REVISED)
CITY OF LAKE ELSINORE, CALIFORNIA

June 11, 2015 (Revised)
November 13, 2013

JN:08651-09 Report
AE:CS:rd

EXHIBIT 4-4

PROJECT ONLY
WEEKDAY AM PEAK HOUR INTERSECTION VOLUMES



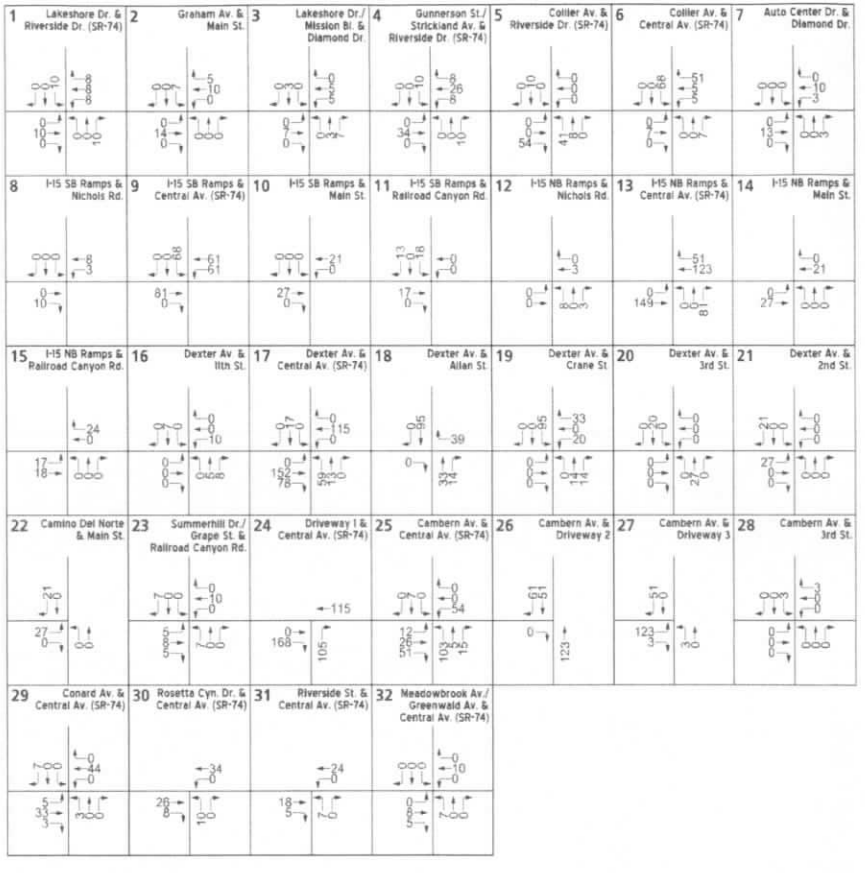
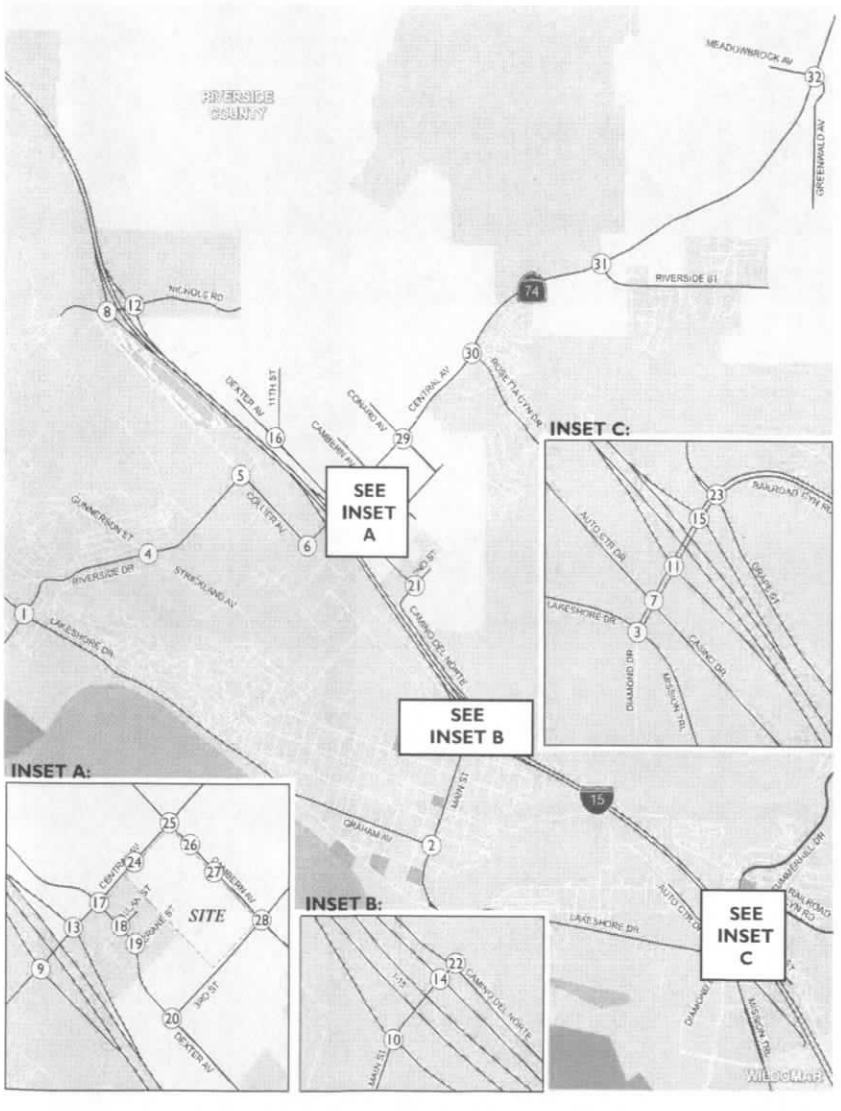


EXHIBIT 4-5

PROJECT ONLY
WEEKDAY PM PEAK HOUR INTERSECTION VOLUMES

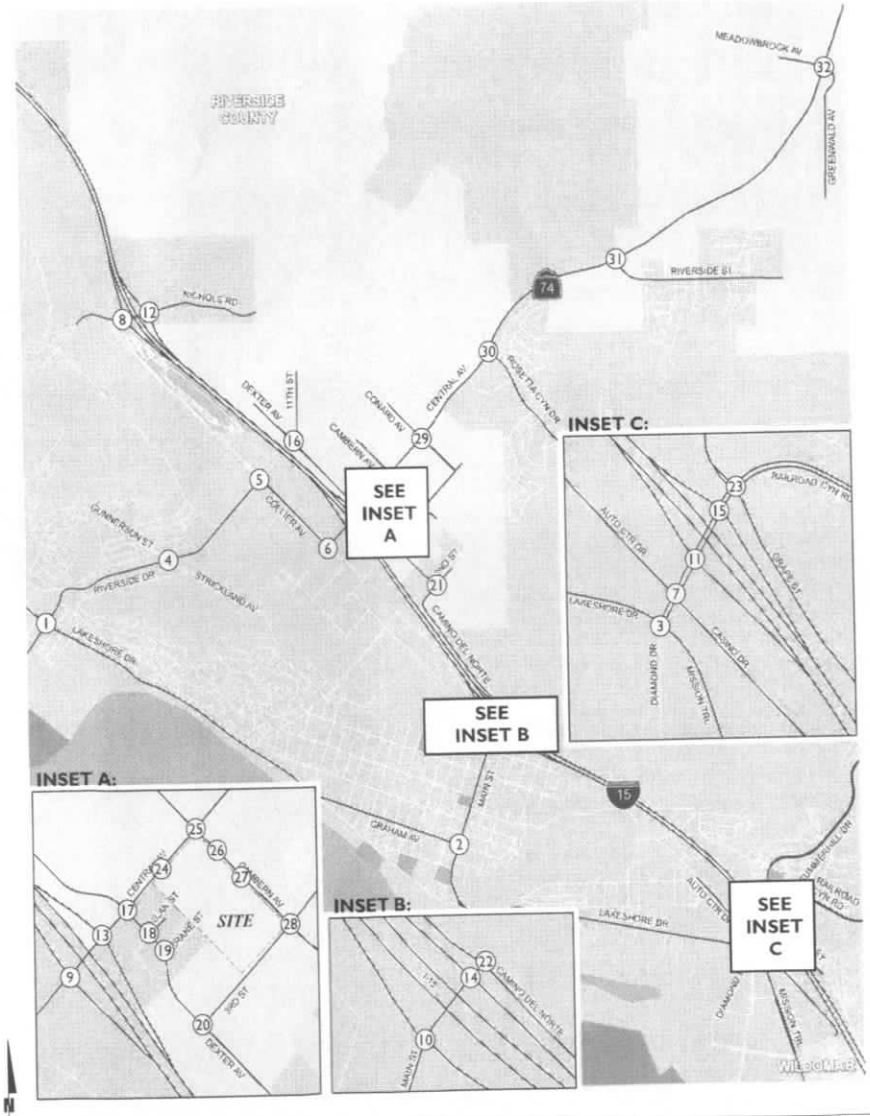


1	Lakeshore Dr. & Riverside Dr. (SR-74)
2	Graham Av. & Main St.
3	Lakeshore Dr./ Mission Bl. & Diamond Dr.
4	Gunnerson St./ Strickland Av. & Riverside Dr. (SR-74)
5	Collier Av. & Riverside Dr. (SR-74)
6	Collier Av. & Central Av. (SR-74)
7	Auto Center Dr. & Diamond Dr.
8	I-15 SB Ramps & Nichols Rd.
9	I-15 SB Ramps & Central Av. (SR-74)
10	I-15 SB Ramps & Main St.
11	I-15 SB Ramps & Railroad Canyon Rd.
12	I-15 NB Ramps & Nichols Rd.
13	I-15 NB Ramps & Central Av. (SR-74)
14	I-15 NB Ramps & Main St.
15	I-15 NB Ramps & Railroad Canyon Rd.
16	Dexter Av. & 11th St.
17	Dexter Av. & Central Av. (SR-74)
18	Dexter Av. & Allan St.
19	Dexter Av. & Crane St.
20	Dexter Av. & 3rd St.
21	Dexter Av. & 2nd St.
22	Camino Del Norte & Main St.
23	Summerhill Dr./ Grape St. & Railroad Canyon Rd.
24	Driveway 1 & Central Av. (SR-74)
25	Cambern Av. & Central Av. (SR-74)
26	Cambern Av. & Driveway 2
27	Cambern Av. & Driveway 3
28	Cambern Av. & 3rd St.
29	Conard Av. & Central Av. (SR-74)
30	Rosetta Cyn. Dr. & Central Av. (SR-74)
31	Riverside St. & Central Av. (SR-74)
32	Meadowbrook Av./ Greenwald Av. & Central Av. (SR-74)

AM ↓ 529 32 10 | 31 | 602
E 0.0612 P | C | OPENING Y2 2016
↑ 364 22 8 | 37 | 431

EXHIBIT 3-11

EXISTING (2013) WEEKDAY AM PEAK HOUR INTERSECTION VOLUMES



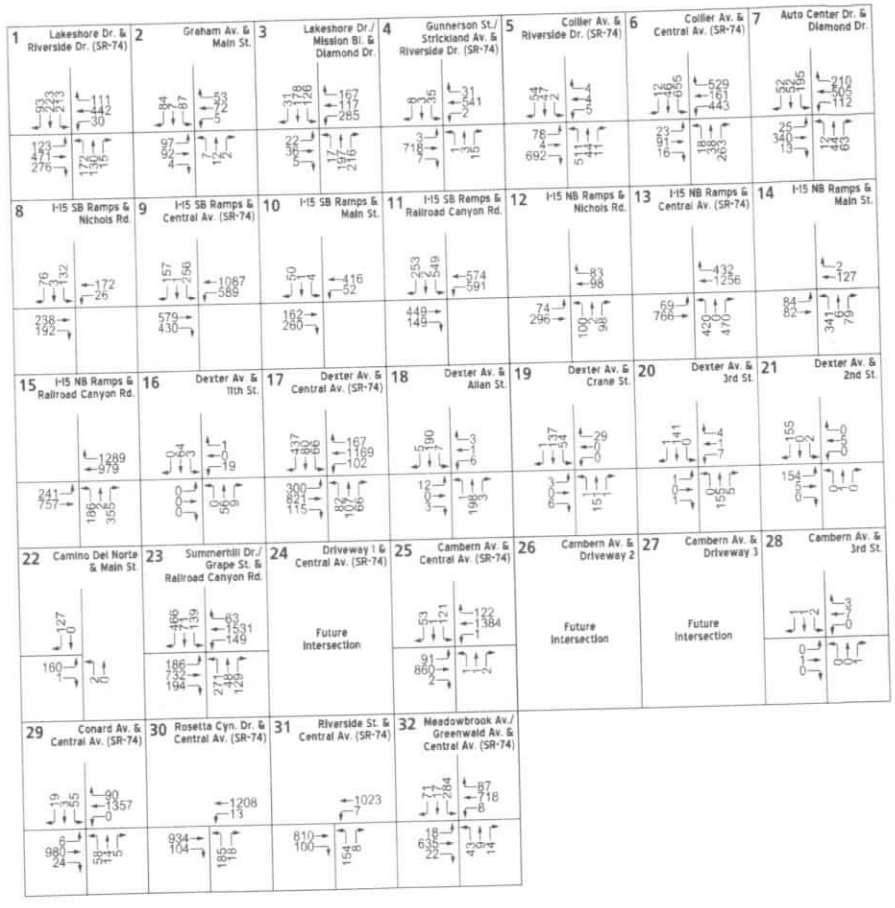
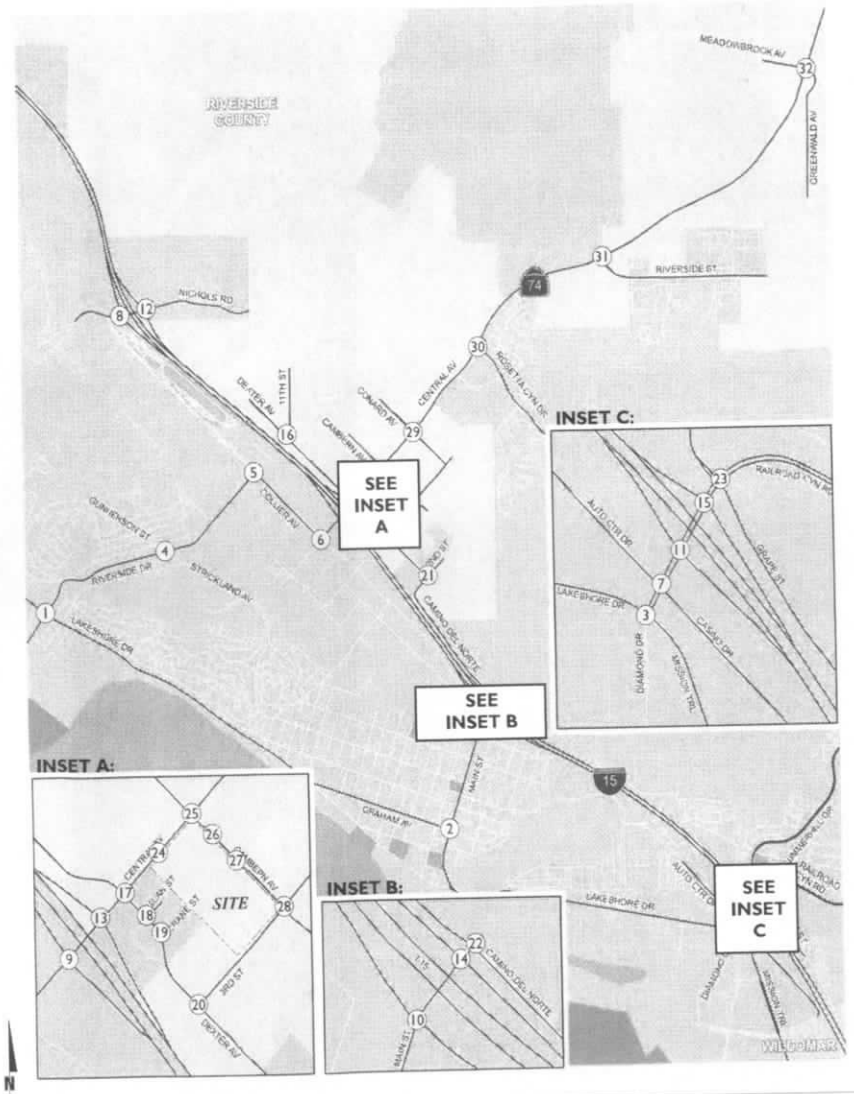


EXHIBIT 4-4

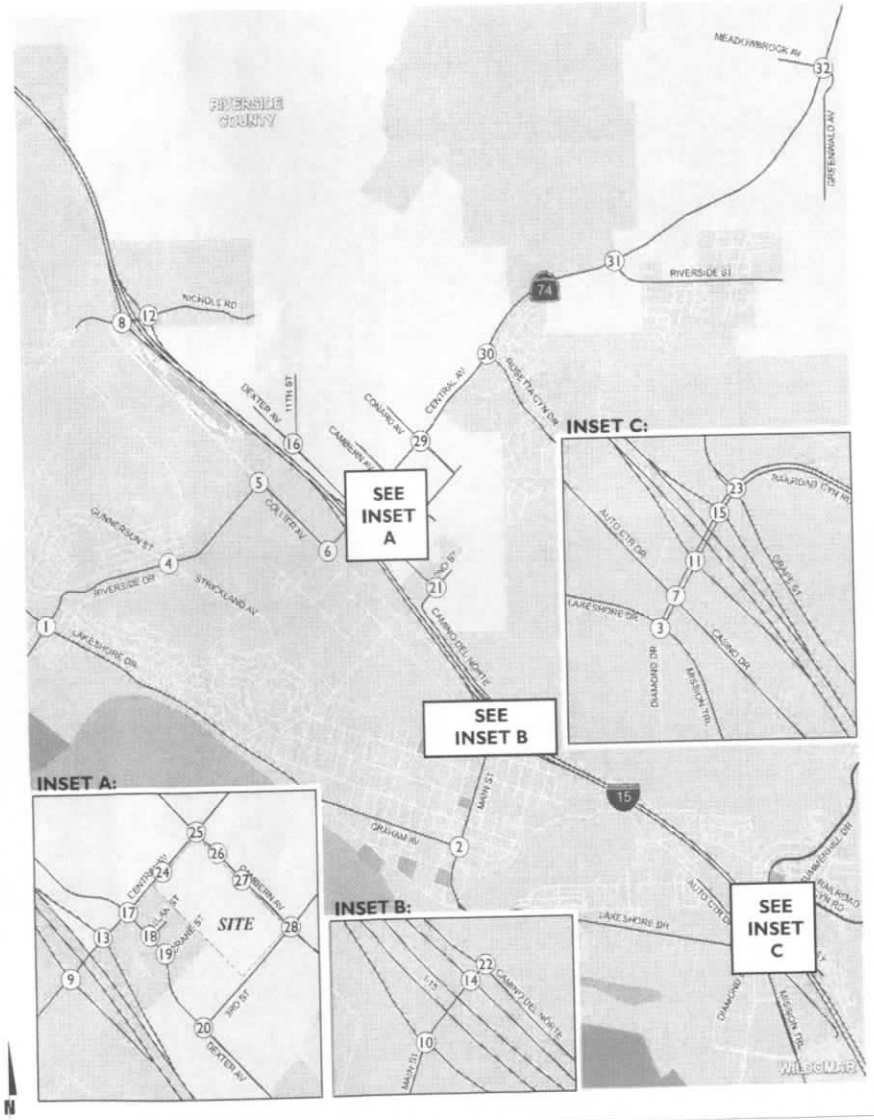
PROJECT ONLY
WEEKDAY AM PEAK HOUR INTERSECTION VOLUMES



1 Lakeshore Dr. & Riverside Dr. (SR-74)	2 Graham Av. & Main St.	3 Lakeshore Dr./ Mission Bl. & Diamond Dr.	4 Gunnerson St./ Strickland Av. & Riverside Dr. (SR-74)	5 Collier Av. & Riverside Dr. (SR-74)	6 Collier Av. & Central Av. (SR-74)	7 Auto Center Dr. & Diamond Dr.
8 I-15 SB Ramps & Nichols Rd.	9 I-15 SB Ramps & Central Av. (SR-74)	10 I-15 SB Ramps & Main St.	11 I-15 SB Ramps & Railroad Canyon Rd.	12 I-15 NB Ramps & Nichols Rd.	13 I-15 NB Ramps & Central Av. (SR-74)	14 I-15 NB Ramps & Main St.
15 I-15 NB Ramps & Railroad Canyon Rd.	16 Dexter Av. & 11th St.	17 Dexter Av. & Central Av. (SR-74)	18 Dexter Av. & Allan St.	19 Dexter Av. & Crane St.	20 Dexter Av. & 3rd St.	21 Dexter Av. & 2nd St.
22 Camino Del Norte & Main St.	23 Summerhill Dr./ Grape St. & Railroad Canyon Rd.	24 Driveway 1 & Central Av. (SR-74)	25 Cambern Av. & Central Av. (SR-74)	26 Cambern Av. & Driveway 2	27 Cambern Av. & Driveway 3	28 Cambern Av. & 3rd St.
29 Conard Av. & Central Av. (SR-74)	30 Rosetta Cyn. Dr. & Central Av. (SR-74)	31 Riverside St. & Central Av. (SR-74)	32 Meadowbrook Av./ Greenwald Av. & Central Av. (SR-74)			

EXHIBIT 6-2

OPENING YEAR (2016) WITHOUT PROJECT WEEKDAY AM PEAK HOUR INTERSECTION VOLUMES



1 Lakeshore Dr. & Riverside Dr. (SR-74)	2 Graham Av. & Main St.	3 Lakeshore Dr./ Mission Bl. & Diamond Dr.	4 Gunnerson St./ Strickland Av. & Riverside Dr. (SR-74)	5 Collier Av. & Riverside Dr. (SR-74)	6 Collier Av. & Central Av. (SR-74)	7 Auto Center Dr. & Diamond Dr.	
107 / 241 / 254 → 131 / 516 / 37 ←	90 / 8 / 92 → 60 / 0 / 61 ←	47 / 216 / 159 → 200 / 166 / 315 ←	8 / 3 / 41 → 38 / 659 / 0 ←	72 / 39 / 34 → 0 / 0 / 0 ←	17 / 10 / 976 → 61 / 19 / 466 ←	71 / 72 / 215 → 248 / 589 / 132 ←	
147 / 675 / 293 → 185 / 17 / 19 ←	103 / 113 / 10 → 7 / 13 / 3 ←	33 / 74 / 8 → 236 / 264 / 254 ←	5 / 946 / 1 → 1 / 3 / 17 ←	108 / 0 / 845 → 600 / 54 / 17 ←	30 / 117 / 19 → 24 / 54 / 292 ←	40 / 424 / 24 → 20 / 66 / 65 ←	
8 I-15 SB Ramps & Nichols Rd.	9 I-15 SB Ramps & Central Av. (SR-74)	10 I-15 SB Ramps & Main St.	11 I-15 SB Ramps & Railroad Canyon Rd.	12 I-15 NB Ramps & Nichols Rd.	13 I-15 NB Ramps & Central Av. (SR-74)	14 I-15 NB Ramps & Main St.	
104 / 0 / 57 → 223 / 40 ←	202 / 0 / 307 → 1212 / 627 ←	70 / 0 / 7 → 464 / 65 ←	321 / 2 / 583 → 649 / 627 ←	98 / 0 / 368 → 108 / 147 ←	106 / 0 / 875 → 471 / 1350 ←	113 / 103 → 4 / 173 ←	
310 / 217 →	673 / 512 →	209 / 272 →	516 / 209 →	116 / 0 / 134 →	490 / 0 / 526 →	356 / 0 / 102 →	
15 I-15 NB Ramps & Railroad Canyon Rd.	16 Dexter Av. & 11th St.	17 Dexter Av. & Central Av. (SR-74)	18 Dexter Av. & Allan St.	19 Dexter Av. & Crane St.	20 Dexter Av. & 3rd St.	21 Dexter Av. & 2nd St.	
1368 / 1079 ←	0 / 76 / 4 → 2 / 0 / 24 ←	474 / 62 / 92 → 183 / 1250 / 106 ←	5 / 104 / 10 → 5 / 1 / 7 ←	1 / 252 / 61 → 35 / 0 / 0 ←	22 / 518 / 20 → 27 / 0 / 10 ←	198 / 0 / 31 → 0 / 0 / 0 ←	
256 / 843 → 197 / 2 / 377 ←	0 / 0 / 0 → 0 / 63 / 13 ←	341 / 931 / 30 → 98 / 110 / 81 ←	12 / 0 / 3 → 1 / 270 / 4 ←	3 / 0 / 0 → 1 / 236 / 0 ←	52 / 0 / 0 → 5 / 16 / 7 ←	162 / 0 / 0 → 0 / 0 / 0 ←	
22 Camino Del Norte & Main St.	23 Summerhill Dr./ Grape St. & Railroad Canyon Rd.	24 Driveway 1 & Central Av. (SR-74)	25 Cambern Av. & Central Av. (SR-74)	26 Cambern Av. & Driveway 2	27 Cambern Av. & Driveway 3	28 Cambern Av. & 3rd St.	
142 / 0 →	530 / 84 / 168 → 84 / 1625 / 191 ←	Future Intersection	125 / 2 / 145 → 155 / 1426 / 2 ←	Future Intersection	Future Intersection	2 / 3 → 5 / 10 / 0 ←	
180 / 24 → 34 / 0 ←	194 / 807 / 220 → 292 / 57 / 152 ←		115 / 984 / 4 → 2 / 2 / 4 ←			0 / 0 / 0 → 0 / 0 / 2 ←	
29 Conard Av. & Central Av. (SR-74)	30 Rosetta Cyn. Dr. & Central Av. (SR-74)	31 Riverside St. & Central Av. (SR-74)	32 Meadowbrook Av./ Greenwald Av. & Central Av. (SR-74)				
31 / 3 / 60 → 95 / 1456 / 5 ←	→ 1296 / 20 ←	→ 1103 / 11 ←	72 / 18 / 295 → 91 / 143 / 13 ←				
14 / 1088 / 29 → 61 / 16 / 6 ←	1015 / 12 / 125 → 207 / 28 ←	895 / 121 → 171 / 13 ←	25 / 742 / 34 → 68 / 17 / 21 ←				

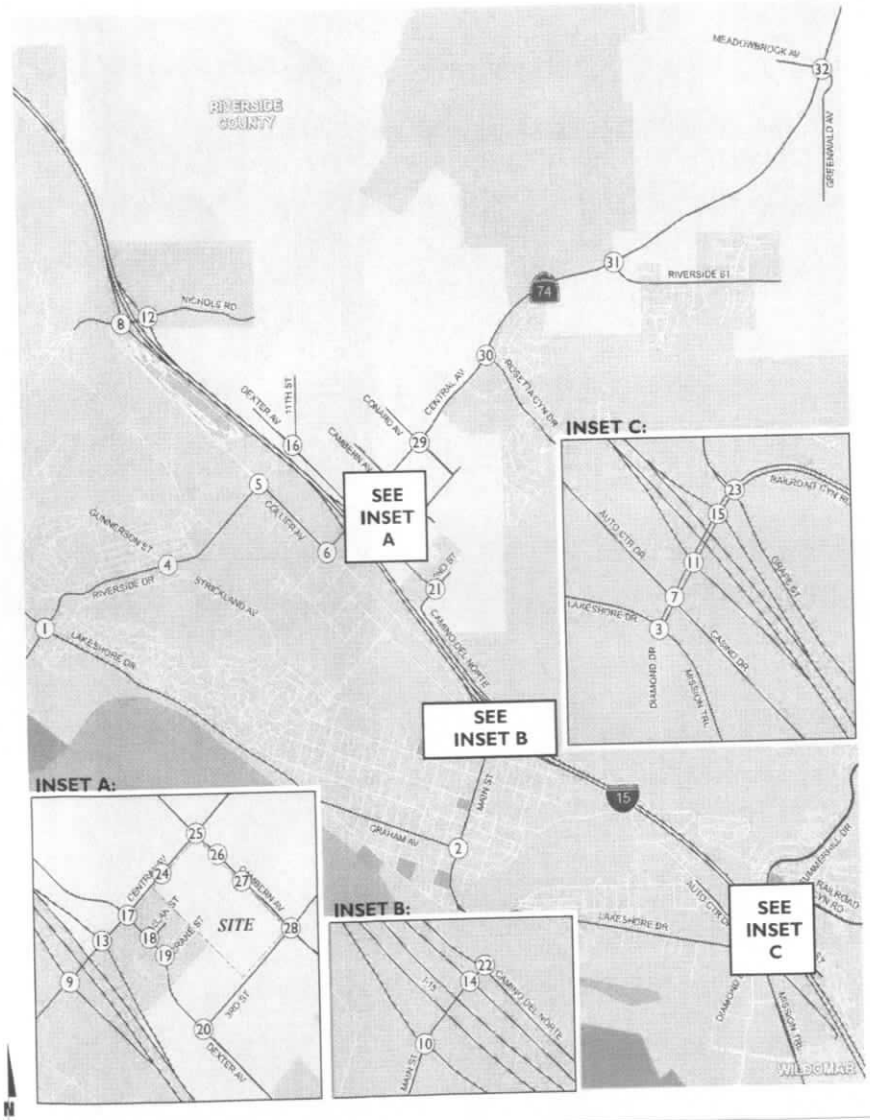
PM

↓	617	38	12	41	708
	E	0.0612	P	C	OPENING YR 2016
↑	770	47	13	28	858

FM

EXHIBIT 3-12

EXISTING (2013) WEEKDAY PM PEAK HOUR INTERSECTION VOLUMES



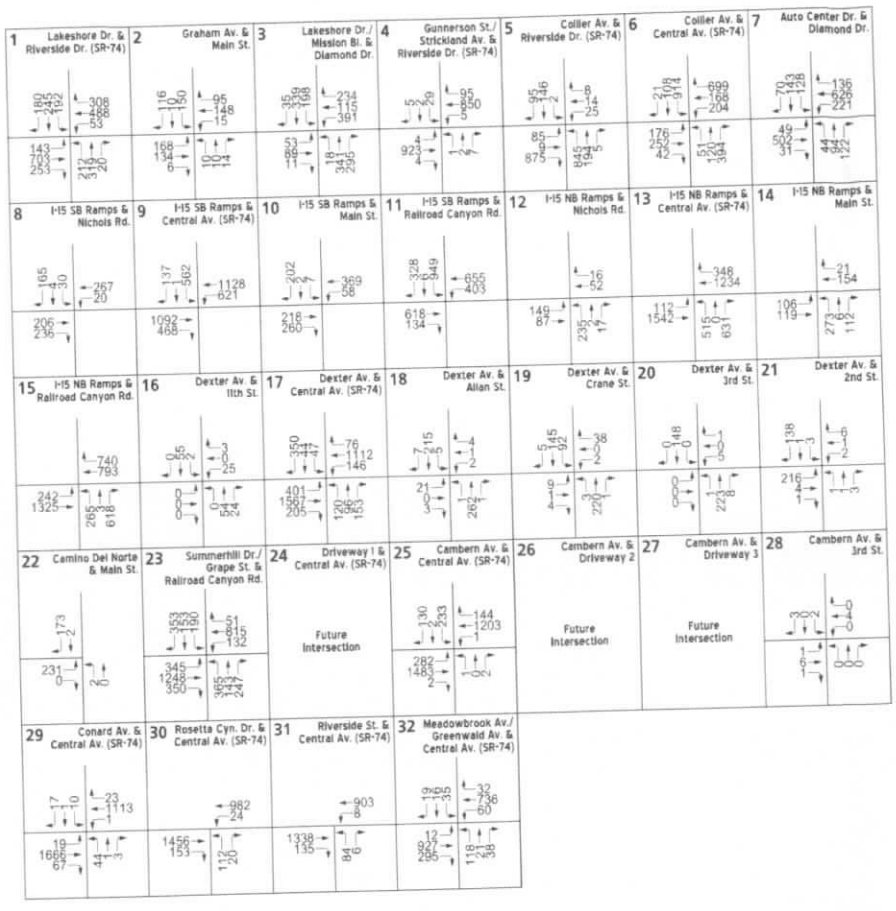
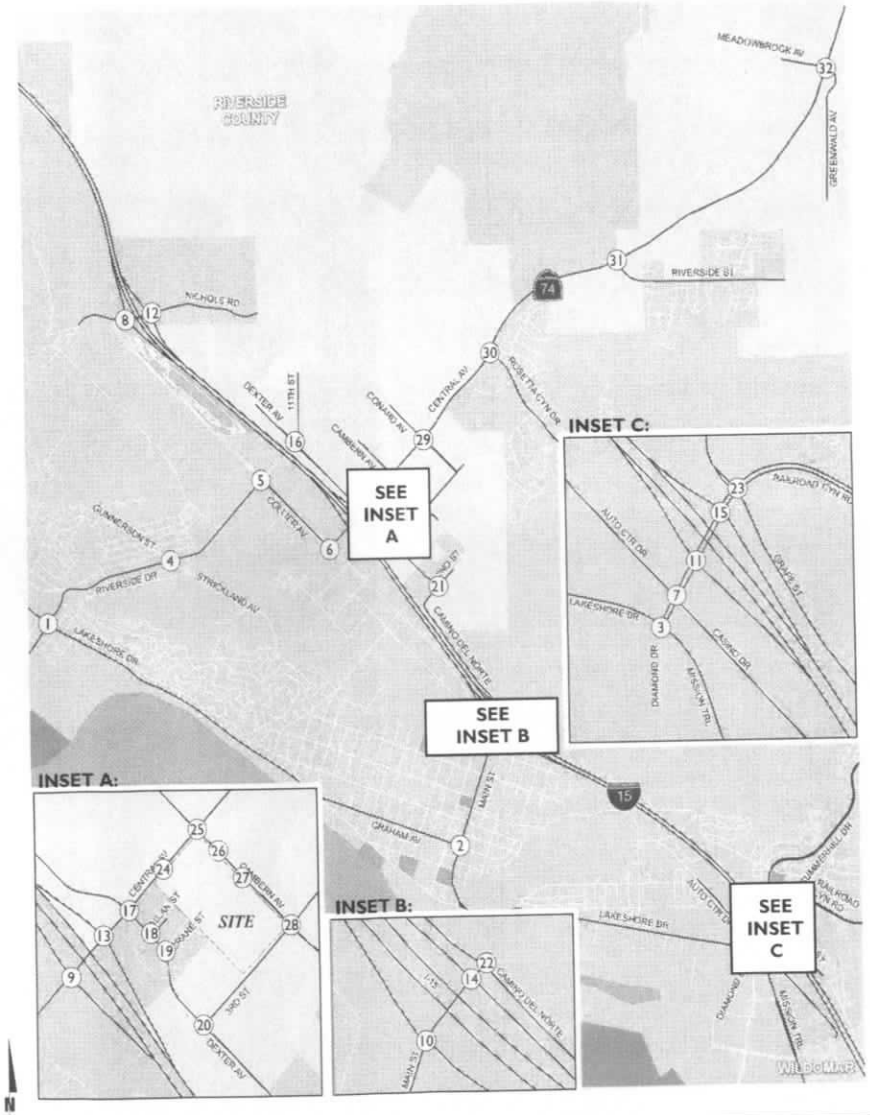


EXHIBIT 4-5

PROJECT ONLY
WEEKDAY PM PEAK HOUR INTERSECTION VOLUMES



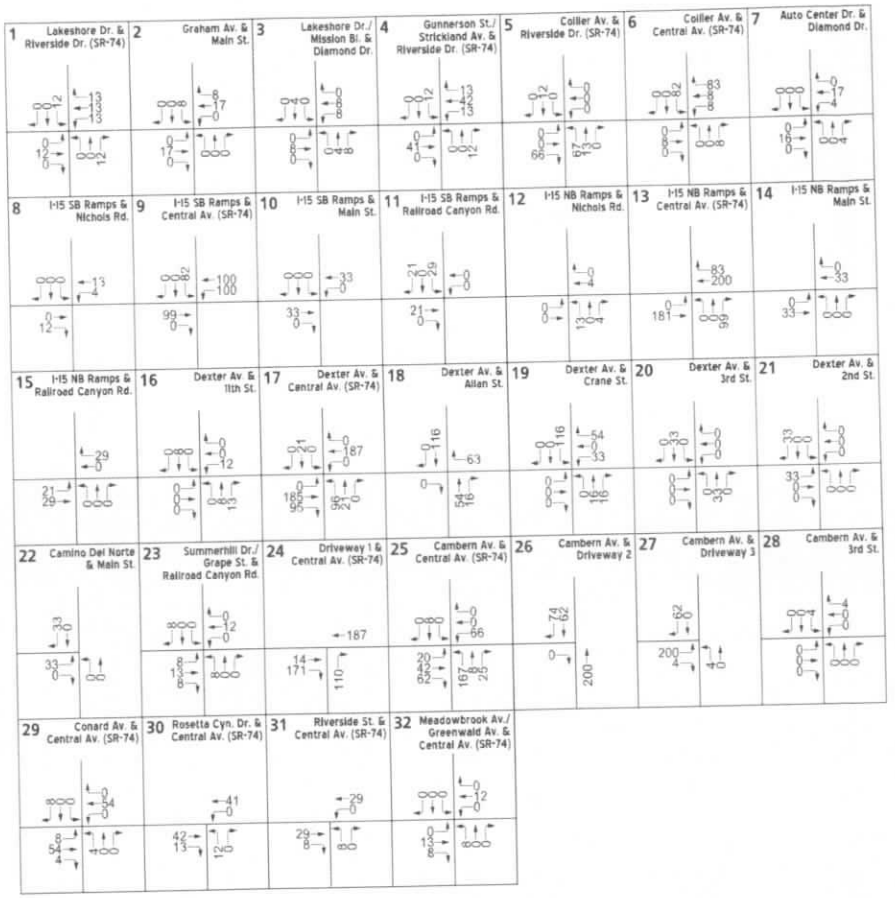
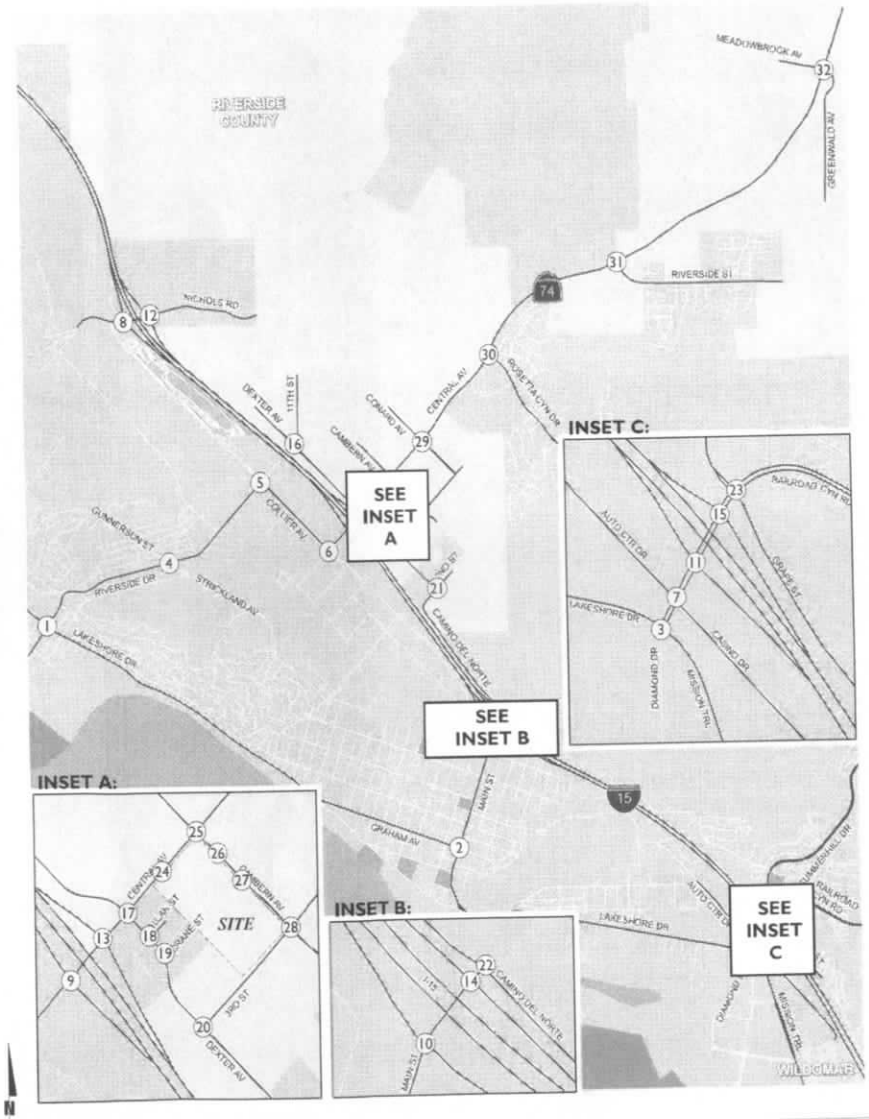


EXHIBIT 6-3

OPENING YEAR (2016) WITHOUT PROJECT WEEKDAY PM PEAK HOUR INTERSECTION VOLUMES



1	Lakeshore Dr. & Riverside Dr. (SR-74)	211 / 41 / 226	338 / 710 / 58	171 / 864 / 267	231 / 342 / 25	2	Graham Av. & Main St.	123 / 113 / 159	100 / 178 / 16	178 / 163 / 7	11 / 11 / 15	3	Lakeshore Dr./ Mission Bl. & Diamond Dr.	51 / 395 / 235	257 / 175 / 443	74 / 136 / 15	20 / 400 / 331	4	Gunnerson St./ Strickland Av. & Riverside Dr. (SR-74)	7 / 2 / 33	104 / 1092 / 7	6 / 1109 / 6	2 / 2 / 10
5	Collier Av. & Riverside Dr. (SR-74)	128 / 179 / 4	13 / 24 / 38	111 / 17 / 973	997 / 237 / 9	6	Collier Av. & Central Av. (SR-74)	29 / 246 / 1012	837 / 212 / 238	195 / 332 / 52	61 / 163 / 431	7	Auto Center Dr. & Diamond Dr.	96 / 179 / 153	149 / 221 / 254	72 / 58 / 48	59 / 134 / 135						
8	I-15 SB Ramps & Nichols Rd.	201 / 0 / 47	341 / 33	279 / 269		9	I-15 SB Ramps & Central Av. (SR-74)	199 / 0 / 605	1300 / 643	1221 / 554		10	I-15 SB Ramps & Main St.	225 / 2 / 13	406 / 72	281 / 263		11	I-15 SB Ramps & Railroad Canyon Rd.	379 / 3 / 1007	745 / 428	706 / 184		12	I-15 NB Ramps & Nichols Rd.	26 / 119	186 / 140	254 / 0 / 28		13	I-15 NB Ramps & Central Av. (SR-74)	396 / 1317	159 / 1667	625 / 0 / 680		14	I-15 NB Ramps & Main St.	32 / 187	133 / 161	292 / 0 / 130	
15	I-15 NB Ramps & Railroad Canyon Rd.	785 / 892	281 / 3 / 656	307 / 1406		16	Dexter Av. & 11th St.	0 / 59 / 3	4 / 0 / 30	0 / 0 / 0	0 / 114 / 27	17	Dexter Av. & Central Av. (SR-74)	375 / 29 / 39	100 / 1196 / 153	431 / 1693 / 223	141 / 100 / 160	18	Dexter Av. & Allan St.	7 / 415 / 1	7 / 1 / 3	21 / 0 / 4	2 / 374 / 2
19	Dexter Av. & Crane St.	5 / 115 / 101	47 / 0 / 3	0 / 0 / 0	4 / 32 / 2	20	Dexter Av. & 3rd St.	55 / 214 / 55	32 / 0 / 0	61 / 0 / 0	2 / 235 / 11	21	Dexter Av. & 2nd St.	191 / 3 / 33	15 / 2 / 2	232 / 0 / 0	1 / 1 / 3						
22	Camino Del Norte & Main St.	201 / 4	261 / 31	17 / 0		23	Summerhill Dr./ Grape St. & Railroad Canyon Rd.	378 / 182 / 223	73 / 924 / 169	400 / 1274 / 430	375 / 160 / 287	24	Driveway 1 & Central Av. (SR-74)	Future Intersection				25	Cambern Av. & Central Av. (SR-74)	165 / 4 / 265	184 / 1302 / 2	300 / 1609 / 4	2 / 4 / 4
26	Cambern Av. & Driveway 2	Future Intersection				27	Cambern Av. & Driveway 3	Future Intersection				28	Cambern Av. & 3rd St.	6 / 4 / 0	0 / 0 / 0	2 / 2 / 2	12 / 16 / 16						
29	Conard Av. & Central Av. (SR-74)	30 / 15 / 1	30 / 1246 / 1	32 / 1817 / 69	49 / 4 / 4	30	Rosetta Cyn. Dr. & Central Av. (SR-74)	1083 / 36	1593 / 187	138 / 32		31	Riverside St. & Central Av. (SR-74)	1004 / 13	1461 / 159	102 / 16		32	Meadowbrook Av./ Greenwald Av. & Central Av. (SR-74)	26 / 57 / 37	41 / 854 / 78	14 / 1075 / 302	133 / 122 / 125

LINSCOTT
LAW &
GREENSPAN
engineers

TRAFFIC IMPACT ANALYSIS REPORT

ALBERHILL VILLAGES SPECIFIC PLAN

Lake Elsinore, California
October 14, 2015
(Update of July 14, 2015 Report)

Prepared for:
Castle & Cooke
4113 Pearl Street
Lake Elsinore, CA 92530

LLG Ref. 2-10-3129-2

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STATE OF CALIFORNIA

Prepared by:
Zawwar Saiyed, P.E.
Senior Transportation Engineer

Under the Supervision of:
Keil D. Maberry, P.E.
Principal

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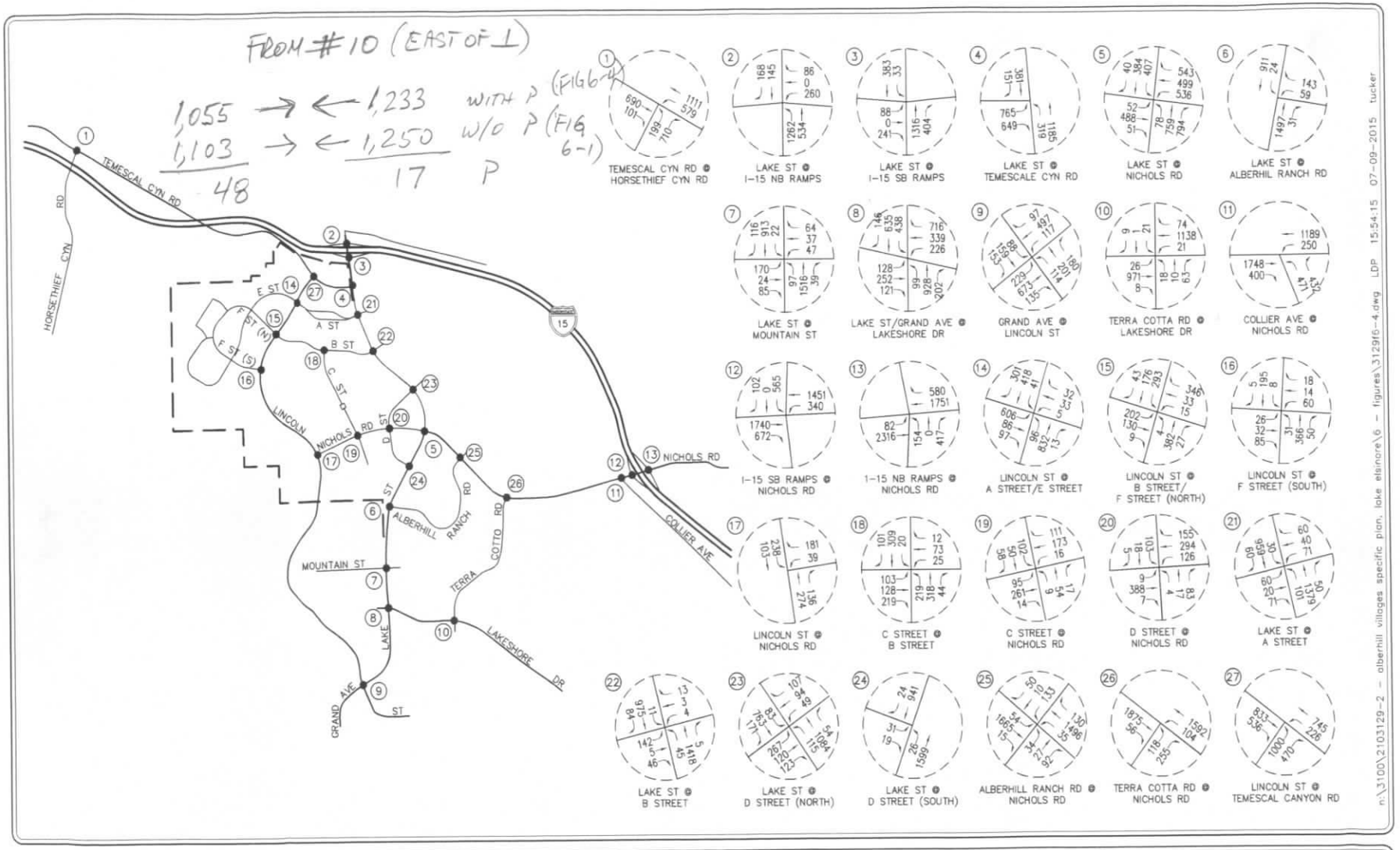


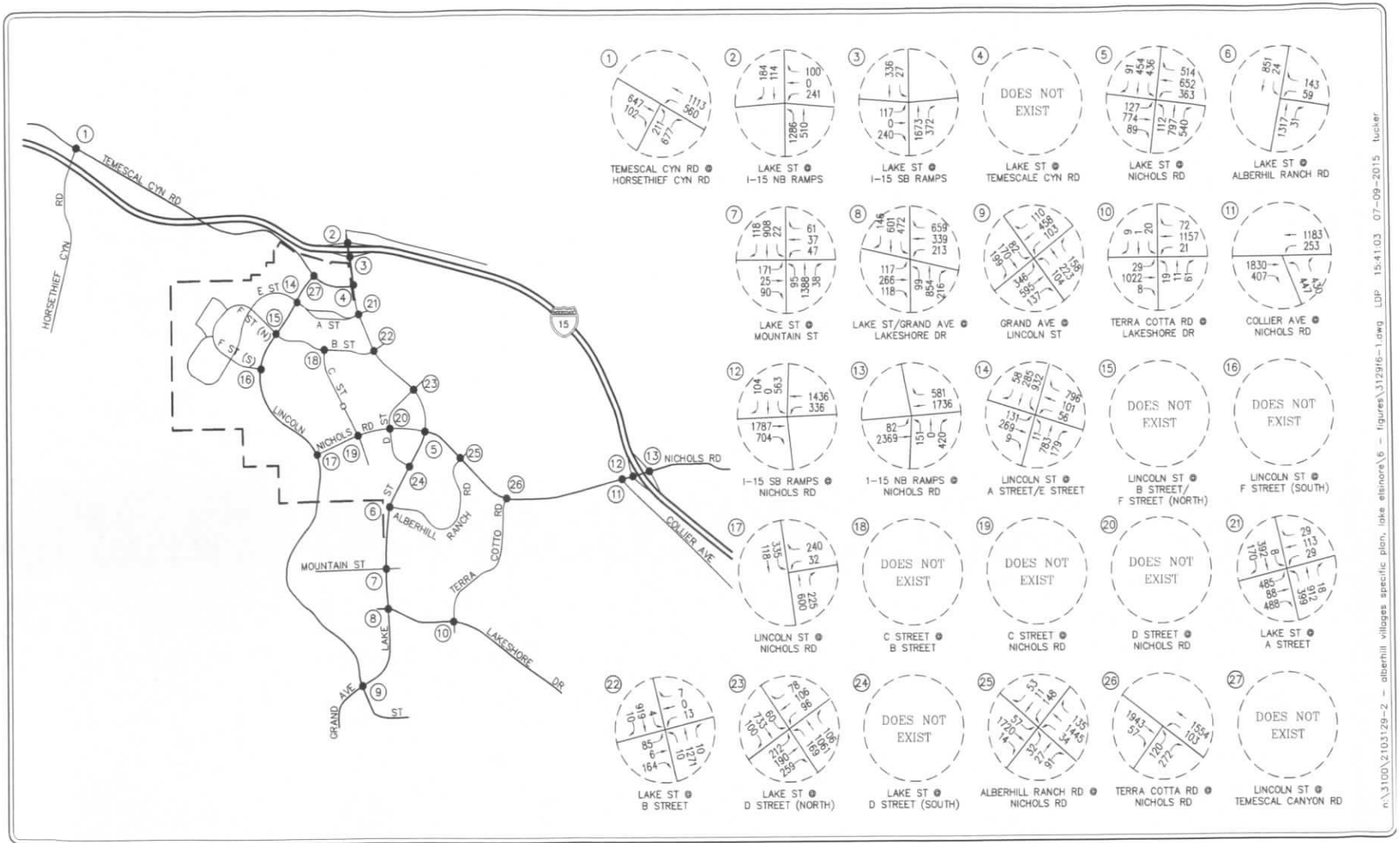
LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY
(#) = STUDY INTERSECTION
— — = ALBERHILL VILLAGES SPECIFIC PLAN BOUNDARY

FIGURE 6-4

GENERAL PLAN BUILDOUT WITH PROJECT
AM PEAK HOUR TRAFFIC VOLUMES
ALBERHILL VILLAGES SPECIFIC PLAN, LAKE ELSINORE



LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

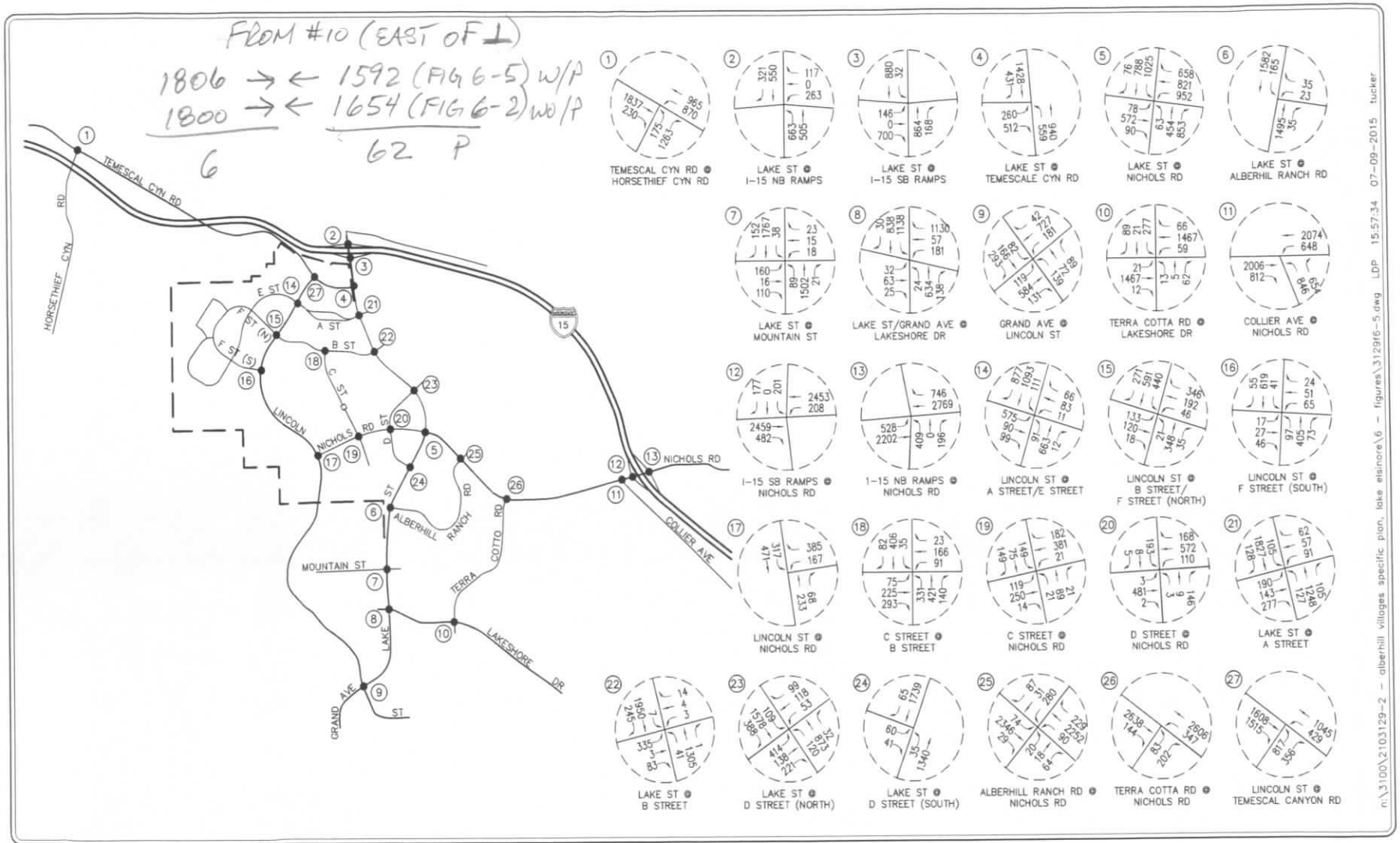
KEY

(#) = STUDY INTERSECTION

— — = ALBERHILL VILLAGES SPECIFIC PLAN BOUNDARY

FIGURE 6-1

GENERAL PLAN BUILDOUT WITHOUT PROJECT
AM PEAK HOUR TRAFFIC VOLUMES
ALBERHILL VILLAGES SPECIFIC PLAN, LAKE ELSINORE



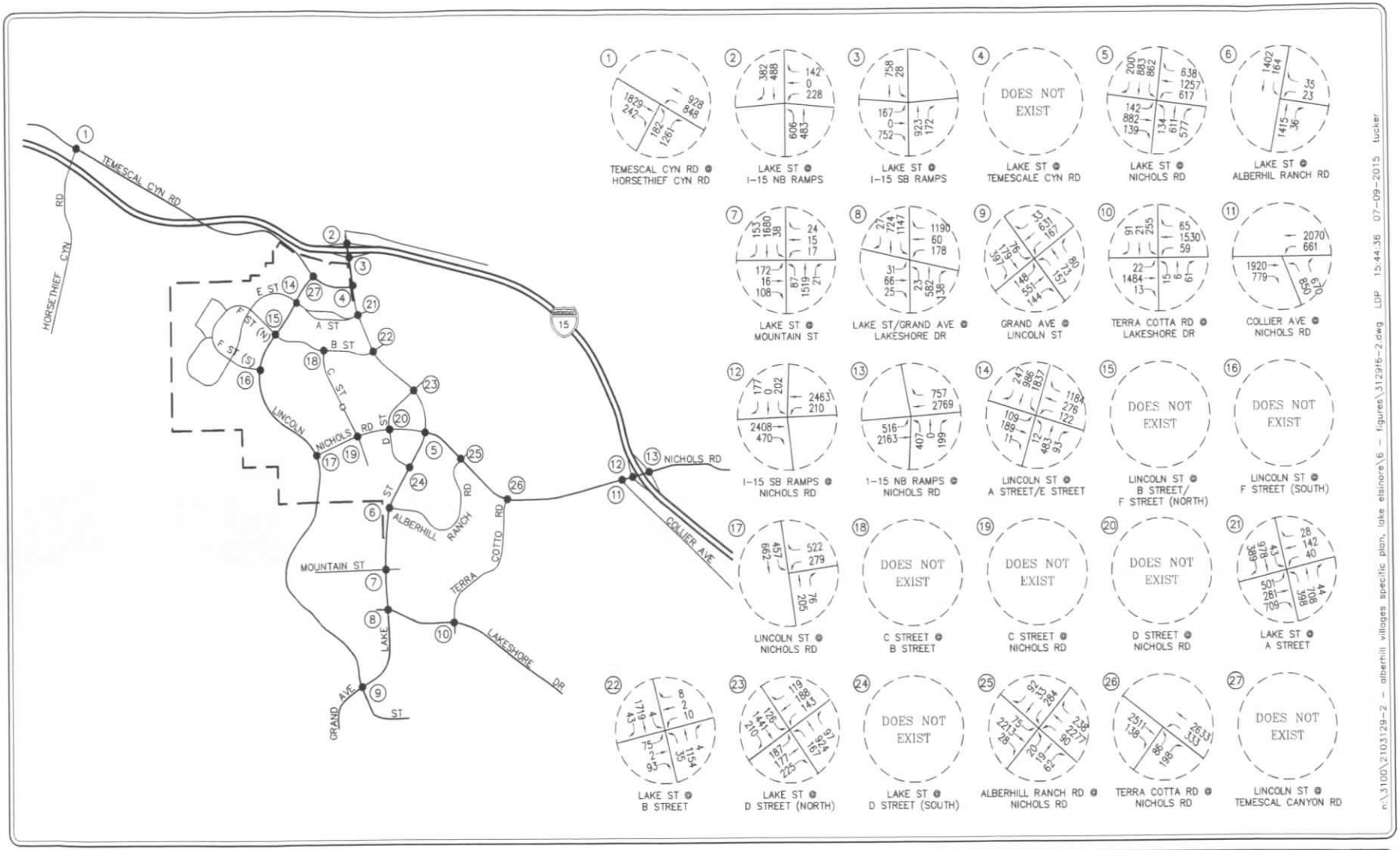
LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY
(#) = STUDY INTERSECTION
— — = ALBERHILL VILLAGES SPECIFIC PLAN BOUNDARY

FIGURE 6-5

GENERAL PLAN BUILDOUT WITH PROJECT
PM PEAK HOUR TRAFFIC VOLUMES
ALBERHILL VILLAGES SPECIFIC PLAN, LAKE ELSINORE



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N NO SCALE

KEY
(#) = STUDY INTERSECTION
— — = ALBERHILL VILLAGES SPECIFIC PLAN BOUNDARY

FIGURE 6-2

GENERAL PLAN BUILDOUT WITHOUT PROJECT
PM PEAK HOUR TRAFFIC VOLUMES
ALBERHILL VILLAGES SPECIFIC PLAN, LAKE ELSINORE

KUNZMAN ASSOCIATES, INC.

TERRACINA

TRAFFIC IMPACT ANALYSIS (REVISED)

January 29, 2014

Prepared by:

Carl Ballard, LEED GA
William Kunzman, P.E.

William Kunzman

REGISTERED PROFESSIONAL ENGINEER
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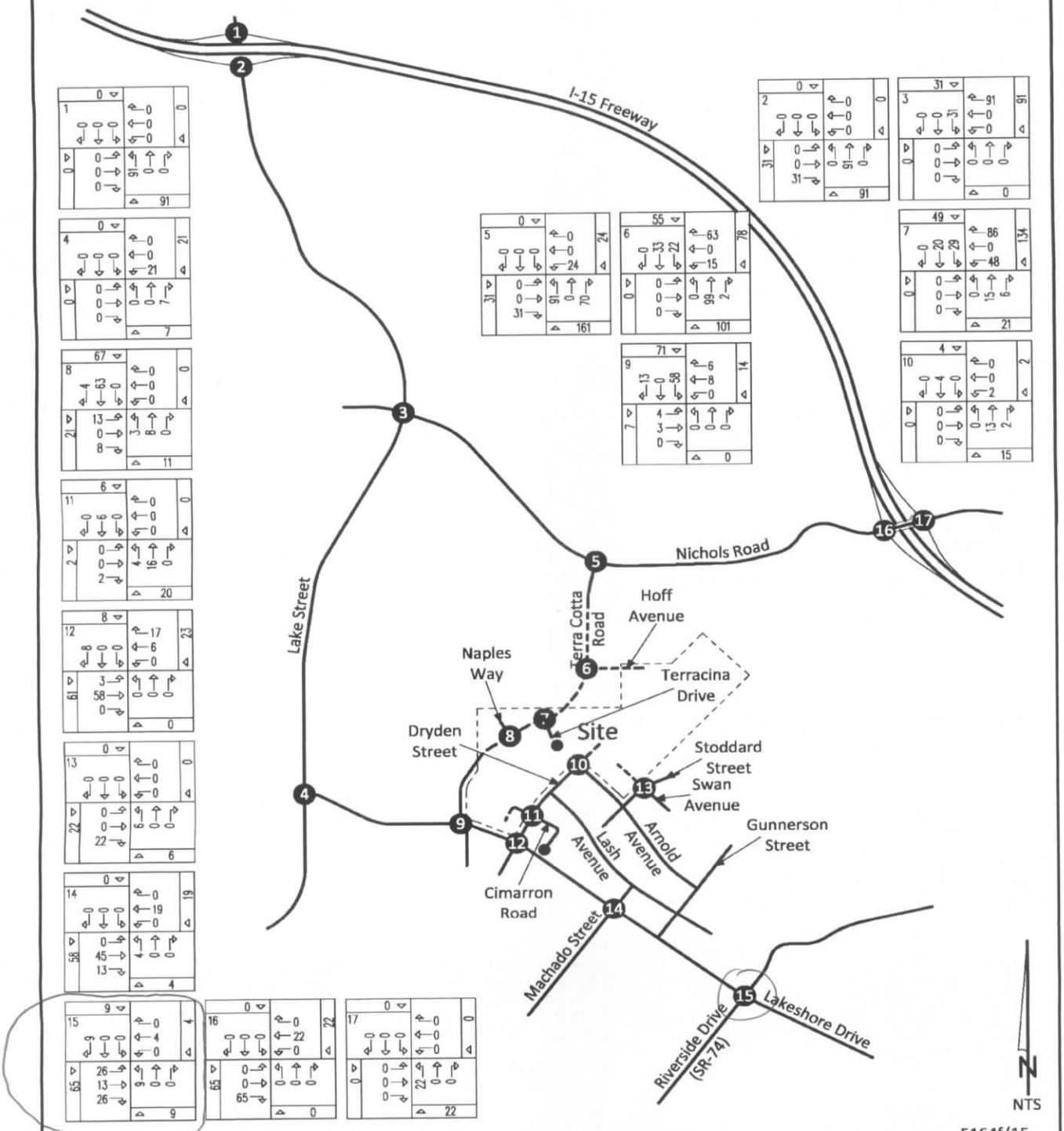
5164f

Figure 15
Project Morning
Peak Hour Intersection Turning Movement Volumes - Option A

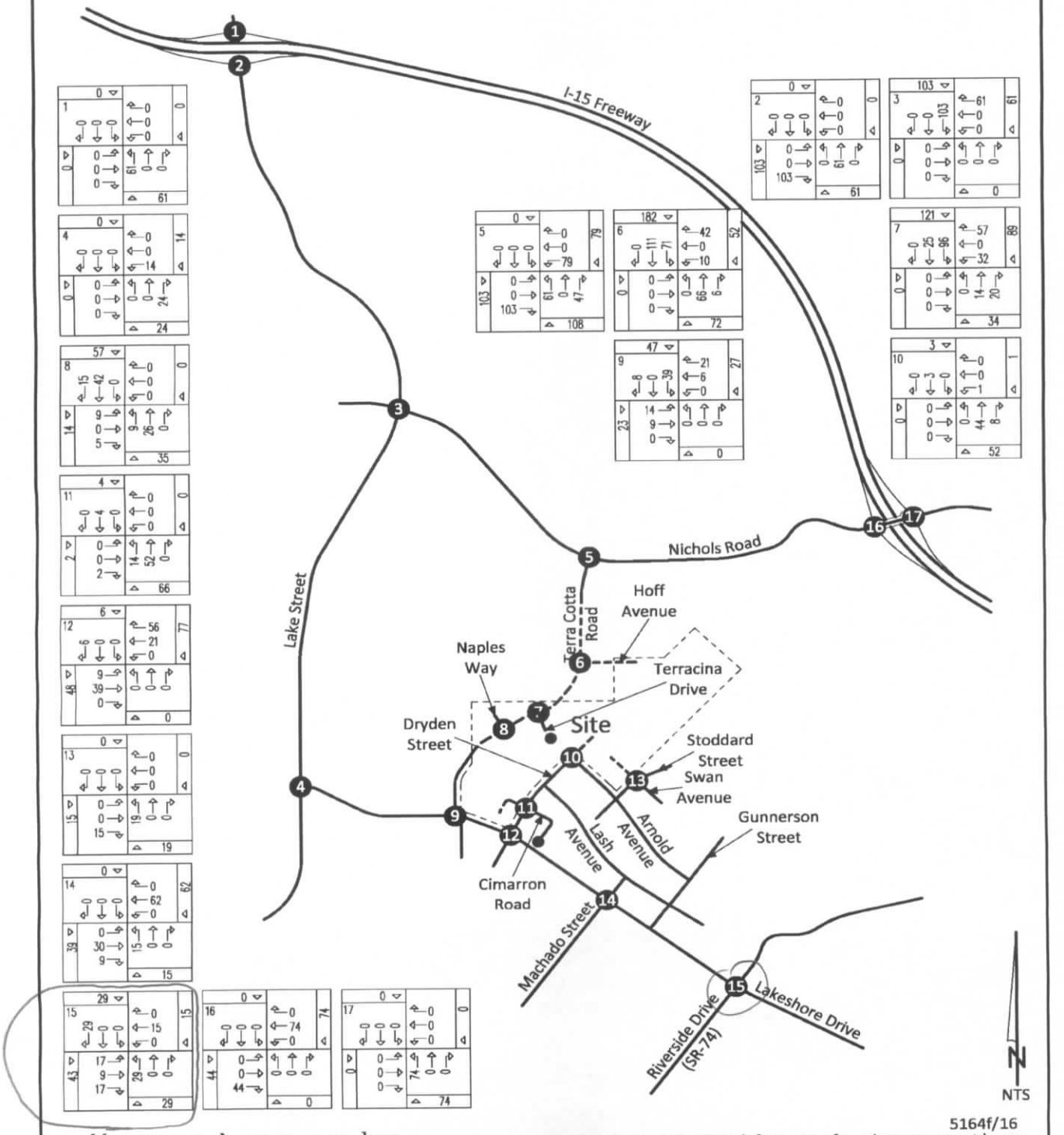


5164f/15

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 35 YEARS OF EXCELLENT SERVICE

Figure 16
Project Evening
Peak Hour Intersection Turning Movement Volumes - Option A



5164f/16

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 35 YEARS OF EXCELLENT SERVICE

Appendix H

Existing + Ambient + Project Intersection LOS

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	748	2	8	460	16	10	0	28	36	0	23
Conflicting Peds, #/hr	3	0	0	0	0	3	0	0	0	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	840	2	9	517	18	11	0	31	40	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	538	0	0	843	0	0	1424	1420	845	1427	1412	532
Stage 1	-	-	-	-	-	-	864	864	-	547	547	-
Stage 2	-	-	-	-	-	-	560	556	-	880	865	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1030	-	-	793	-	-	113	136	363	113	138	547
Stage 1	-	-	-	-	-	-	349	371	-	521	517	-
Stage 2	-	-	-	-	-	-	513	513	-	342	371	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1027	-	-	791	-	-	104	131	362	100	133	544
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	131	-	100	133	-
Stage 1	-	-	-	-	-	-	342	364	-	509	507	-
Stage 2	-	-	-	-	-	-	480	504	-	305	364	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	25.4	48.2
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	219	1027	-	-	791	-	-	147
HCM Lane V/C Ratio	0.195	0.011	-	-	0.011	-	-	0.451
HCM Control Delay (s)	25.4	8.5	0	-	9.6	0	-	48.2
HCM Lane LOS	D	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	2

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	707	10	29	790	46	5	0	16	28	0	28
Conflicting Peds, #/hr	3	0	0	0	0	3	0	0	0	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	736	10	30	823	48	5	0	17	29	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	874	0	0	747	0	0	1681	1690	745	1675	1671	853
Stage 1	-	-	-	-	-	-	756	756	-	910	910	-
Stage 2	-	-	-	-	-	-	925	934	-	765	761	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	772	-	-	861	-	-	75	93	414	76	96	359
Stage 1	-	-	-	-	-	-	400	416	-	329	353	-
Stage 2	-	-	-	-	-	-	323	345	-	396	414	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	770	-	-	859	-	-	64	85	413	68	88	357
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	85	-	68	88	-
Stage 1	-	-	-	-	-	-	394	409	-	323	328	-
Stage 2	-	-	-	-	-	-	276	321	-	373	407	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	27.7	65.8
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	180	770	-	-	859	-	-	114
HCM Lane V/C Ratio	0.122	0.009	-	-	0.035	-	-	0.512
HCM Control Delay (s)	27.7	9.7	0	-	9.3	0	-	65.8
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	2.4

Appendix I

Existing + Ambient + Project + Cumulative Intersection LOS

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	902	2	8	544	16	10	0	28	36	0	23
Conflicting Peds, #/hr	3	0	0	0	0	3	0	0	0	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	0	0	2	2	0	0	0	2	0	2
Mvmt Flow	11	1013	2	9	611	18	11	0	31	40	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	632	0	0	1016	0	0	1691	1687	1018	1694	1679	626
Stage 1	-	-	-	-	-	-	1037	1037	-	641	641	-
Stage 2	-	-	-	-	-	-	654	650	-	1053	1038	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.2	7.12	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.5	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4	3.3	3.518	4	3.318
Pot Cap-1 Maneuver	951	-	-	691	-	-	75	95	291	73	96	484
Stage 1	-	-	-	-	-	-	282	311	-	463	473	-
Stage 2	-	-	-	-	-	-	459	468	-	274	311	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	949	-	-	689	-	-	68	90	290	62	91	482
Mov Cap-2 Maneuver	-	-	-	-	-	-	68	90	-	62	91	-
Stage 1	-	-	-	-	-	-	274	303	-	449	462	-
Stage 2	-	-	-	-	-	-	425	457	-	237	303	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	36.6	105.6
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	156	949	-	-	689	-	-	94
HCM Lane V/C Ratio	0.274	0.012	-	-	0.013	-	-	0.705
HCM Control Delay (s)	36.6	8.8	0	-	10.3	0	-	105.6
HCM Lane LOS	E	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-	3.5

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	809	10	29	966	46	5	0	16	28	0	28
Conflicting Peds, #/hr	3	0	0	0	0	3	0	0	0	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	0	0	2	2	0	0	0	2	0	2
Mvmt Flow	7	843	10	30	1006	48	5	0	17	29	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1057	0	0	853	0	0	1971	1981	851	1965	1962	1036
Stage 1	-	-	-	-	-	-	863	863	-	1094	1094	-
Stage 2	-	-	-	-	-	-	1108	1118	-	871	868	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.2	7.12	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.5	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4	3.3	3.518	4	3.318
Pot Cap-1 Maneuver	659	-	-	795	-	-	47	62	363	47	64	281
Stage 1	-	-	-	-	-	-	352	374	-	259	292	-
Stage 2	-	-	-	-	-	-	257	285	-	346	372	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	657	-	-	793	-	-	38	55	362	41	57	280
Mov Cap-2 Maneuver	-	-	-	-	-	-	38	55	-	41	57	-
Stage 1	-	-	-	-	-	-	345	367	-	253	264	-
Stage 2	-	-	-	-	-	-	209	258	-	323	365	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	41.9	153.9
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	119	657	-	-	793	-	-	72
HCM Lane V/C Ratio	0.184	0.011	-	-	0.038	-	-	0.81
HCM Control Delay (s)	41.9	10.5	0	-	9.7	0	-	153.9
HCM Lane LOS	E	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	3.9

Appendix J

With Mitigation Intersection LOS

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	748	2	8	460	16	10	0	28	36	0	23
Conflicting Peds, #/hr	3	0	0	0	0	3	0	0	0	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	840	2	9	517	18	11	0	31	40	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	538	0	0	843	0	0	1424	1420	845	1427	1412	532
Stage 1	-	-	-	-	-	-	864	864	-	547	547	-
Stage 2	-	-	-	-	-	-	560	556	-	880	865	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1030	-	-	793	-	-	113	136	363	113	138	547
Stage 1	-	-	-	-	-	-	349	371	-	521	517	-
Stage 2	-	-	-	-	-	-	513	513	-	342	371	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1027	-	-	791	-	-	106	133	362	101	135	544
Mov Cap-2 Maneuver	-	-	-	-	-	-	229	251	-	214	251	-
Stage 1	-	-	-	-	-	-	345	367	-	514	510	-
Stage 2	-	-	-	-	-	-	482	506	-	308	367	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	18.3	21.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	314	1027	-	-	791	-	-	280
HCM Lane V/C Ratio	0.136	0.011	-	-	0.011	-	-	0.237
HCM Control Delay (s)	18.3	8.5	-	-	9.6	-	-	21.8
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.9

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	707	10	29	790	46	5	0	16	28	0	28
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	7	0	7
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	0	0	2	2	0	0	0	2	0	2
Mvmt Flow	7	736	10	30	823	48	5	0	17	29	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	878	0	0	747	0	0	1685	1694	749	1679	1675	861
Stage 1	-	-	-	-	-	-	756	756	-	914	914	-
Stage 2	-	-	-	-	-	-	929	938	-	765	761	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.2	7.12	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.5	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4	3.3	3.518	4	3.318
Pot Cap-1 Maneuver	769	-	-	870	-	-	75	94	415	75	96	355
Stage 1	-	-	-	-	-	-	403	419	-	327	355	-
Stage 2	-	-	-	-	-	-	324	346	-	396	417	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	765	-	-	865	-	-	66	89	413	69	91	351
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	206	-	183	206	-
Stage 1	-	-	-	-	-	-	399	415	-	322	341	-
Stage 2	-	-	-	-	-	-	285	332	-	374	413	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	17.3	24.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	314	765	-	-	865	-	-	241
HCM Lane V/C Ratio	0.07	0.01	-	-	0.035	-	-	0.242
HCM Control Delay (s)	17.3	9.8	-	-	9.3	-	-	24.6
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.9

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	902	2	8	544	16	10	0	28	36	0	23
Conflicting Peds, #/hr	3	0	0	0	0	3	0	0	0	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	1013	2	9	611	18	11	0	31	40	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	632	0	0	1016	0	0	1691	1687	1018	1694	1679	626
Stage 1	-	-	-	-	-	-	1037	1037	-	641	641	-
Stage 2	-	-	-	-	-	-	654	650	-	1053	1038	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	951	-	-	683	-	-	74	94	288	73	95	484
Stage 1	-	-	-	-	-	-	279	308	-	463	469	-
Stage 2	-	-	-	-	-	-	456	465	-	274	308	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	949	-	-	681	-	-	69	91	287	63	92	482
Mov Cap-2 Maneuver	-	-	-	-	-	-	181	205	-	165	204	-
Stage 1	-	-	-	-	-	-	276	304	-	456	462	-
Stage 2	-	-	-	-	-	-	425	458	-	241	304	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	22.4	28
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	249	949	-	-	681	-	-	222
HCM Lane V/C Ratio	0.171	0.012	-	-	0.013	-	-	0.299
HCM Control Delay (s)	22.4	8.8	-	-	10.4	-	-	28
HCM Lane LOS	C	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	1.2

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	809	10	29	966	46	5	0	16	28	0	28
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	7	0	7
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	0	0	2	2	0	0	0	2	0	2
Mvmt Flow	7	843	10	30	1006	48	5	0	17	29	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1061	0	0	853	0	0	1975	1985	855	1969	1966	1044
Stage 1	-	-	-	-	-	-	863	863	-	1098	1098	-
Stage 2	-	-	-	-	-	-	1112	1122	-	871	868	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.2	7.12	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.5	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4	3.3	3.518	4	3.318
Pot Cap-1 Maneuver	657	-	-	795	-	-	47	62	361	47	64	278
Stage 1	-	-	-	-	-	-	352	374	-	258	291	-
Stage 2	-	-	-	-	-	-	256	284	-	346	372	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	653	-	-	790	-	-	40	59	359	43	61	275
Mov Cap-2 Maneuver	-	-	-	-	-	-	137	167	-	144	167	-
Stage 1	-	-	-	-	-	-	348	370	-	254	278	-
Stage 2	-	-	-	-	-	-	219	272	-	324	368	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	20.2	32.3
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	259	653	-	-	790	-	-	189
HCM Lane V/C Ratio	0.084	0.011	-	-	0.038	-	-	0.309
HCM Control Delay (s)	20.2	10.6	-	-	9.7	-	-	32.3
HCM Lane LOS	C	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	1.2

Appendix K

City of Lake Elsinore CIP Excerpts

City of Lake Elsinore, California

Capital Improvement Plan Budget

FY2016-17 to FY2020-21

PROJECTED REVENUE SUMMARY

FUNDING SOURCE	Available Fund Balance	Projected 2016-2017 Revenue	Projected 2017-2018 Revenue	Projected 2018-2019 Revenue	Projected 2019-2020 Revenue	Projected 2020-2021 Revenue	Projected Funds Available
Assembly Bill 2766	$ 70,295	$ 43,890	$ 44,768	$ 45,663	$ 46,576	$ 47,508	$ 298,700
Capital Reserves	568,214	3,628,252	-	-	-	-	4,196,466
Community Development Block Grant (CDBG)	(433,614)	1,786,817	-	-	-	-	1,353,203
Community Facilities Districts (CFDs)							
Rosetta Community Facilities District 2004-3 IA1	-	233,545	-	-	-	-	233,545
Serenity Community Facilities District 2005-3	95,337	800	-	-	-	-	96,137
La Laguna Lease Revenue Bonds	-	10,000,000	-	-	-	-	10,000,000
Development Impact Fees (DIF)							
Animal Shelter DIF	(29,195)	50,000	50,000	51,000	52,020	53,060	226,885
City Hall/Public Works DIF	1,016,062	102,000	104,040	106,121	108,243	110,408	1,546,874
Community Center DIF	44,148	51,000	52,020	53,060	54,122	55,204	309,554
Fire Protection DIF	-	125,400	127,908	130,466	133,075	135,737	652,587
Lake Side Facilities DIF	40,990	105,000	107,100	109,242	111,427	113,655	587,414
Library DIF	693	69,000	70,380	71,788	73,223	74,688	359,772
Quimby DIF	21,159	197,600	201,552	205,583	209,695	213,889	1,049,477
Gas Tax	310,927	1,519,760	1,359,224	1,386,409	1,414,137	1,442,420	7,432,877
Geothermal	20,022	150	-	-	-	-	20,172
Grants							
Department of Commerce	-	3,000,000	-	-	-	-	3,000,000
FHWA	-	244,377	-	-	-	-	244,377
IMD	-	238,000	-	-	-	-	238,000
Rule 20A	-	1,328,156	-	-	-	-	1,328,156
STPL	-	286,000	-	-	-	-	286,000
Measure A (Local Streets and Roads)	1,003,104	1,165,019	1,308,000	1,330,000	1,374,000	1,415,000	7,595,123
NPDES	188,137	379,905	387,503.10	395,253	403,158	411,221	2,165,178
Redevelopment Agency							
RDA Affordable Housing	2,627,028	282,672	-	-	-	-	2,909,700
RDA Tax Increment	7,429,063	-	-	-	-	-	7,429,063
Reimbursements/Other							
Developer Agreement Fees	1,006,024	200,000	204,000	208,080	212,242	216,486	2,046,832
Developer Contribution	-	89,148	-	-	-	-	89,148
Public - In - Lieu	865,422	90,000	-	-	-	-	955,422
Public Education Grant	(11,771)	50,000	51,000	52,020	53,060	54,122	248,431
Signal Fee	-	-	-	-	-	-	-
Storm Drain Fee	2,104,933	617,811	630,167	642,770	655,626	668,738	5,320,045
Traffic Impact Fee	(297,947)	320,000	326,400	332,928	339,587	346,378	1,367,346
Senate Bill 821	(347,500)	347,500	-	-	-	-	-
Transportation Uniform Mitigation Fee (TUMF)	(83,058)	5,007,424	-	-	-	-	4,924,366
Transportaton Road Improvement Program (TRIP)	1,705,442	500,000	-	-	-	-	2,205,442
TOTAL REVENUE	$ 17,913,915	$ 32,059,226	$ 5,024,062	$ 5,120,384	$ 5,240,191	$ 5,358,515	$ 70,716,293

PROJECT SUMMARY BY TYPE OF PROJECT

PROJECT	SOURCE OF FUNDS	ACTUALS TO DATE	FY2016-17	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FUTURE YEARS	TOTAL PROJECT COST	COST TO COMPLETE
CIRCULATION										
Annual Citywide Crack Seal & Pothole Improvement Program	Gas Tax		110,000	110,000	110,000	110,000	110,000	110,000	660,000	660,000
Annual Citywide Curb, Gutter, and Sidewalk Improvement Program	General Projects		148,636						148,636	148,636
	Measure A		55,000	55,000	55,000	55,000	90,000	90,000	400,000	400,000
Annual Citywide Landscape Renovation	Unspecified			73,201	80,000	85,000	90,000	95,000	423,201	423,201
Annual Citywide Roadway Drainage Improvement Program	Measure A		100,000	140,000	190,000	200,000	200,000	200,000	1,030,000	1,030,000
Annual Citywide Sidewalk Improvements	CDBG		73,257						73,257	73,257
	Measure A	10,008	50,000	50,000	50,000	50,000	50,000	50,000	310,008	300,000
	Unspecified			50,000					50,000	50,000
Annual Citywide Slurry Seal Program	Gas Tax			30,562	41,575	202,562	44,564	500,000	819,263	819,263
	Measure A	85,500	351,700	348,000	324,000	354,000			1,463,200	1,377,700
Annual Traffic Striping Program	Measure A		175,000	215,000	215,000	215,000	215,000	215,000	1,250,000	1,250,000
Camino Del Norte	Developer Contribution	36,552							36,552	
	EDA Grant		1,500,000						1,500,000	1,500,000
	TIF	10,585	1,500,000						1,510,585	1,500,000
Casino Drive Bridge Retrofit	FHWA Grant	350,000		144,000				3,775,194	4,269,194	3,919,194
	Gas Tax	30,000	209,457	36,000				116,000	391,457	361,457
Citywide Dirt Roads Dust Suppression	AB2766		108,185						108,185	108,185
Citywide Pavement Rehabilitation Program	Measure A	145,157							145,157	
	TRIP	2,775,941	2,259,857						5,035,798	2,259,857
Elsinore Middle School Area Sidewalk Improvements	CDBG		297,500						297,500	297,500
	SB821		296,775						296,775	296,775
Grand Avenue Landscape Renovation	Unspecified							155,000	155,000	155,000
Gunnerson Rehabilitation Phase I	Gas Tax		588,444						588,444	588,444
	Measure A		436,423						436,423	436,423
	STPL - Local Grant			5,000,000	5,000,000	647,000			10,647,000	10,647,000
	STPL Grant		286,000						286,000	286,000
	TRIP	192,461	116,362						308,823	116,362
	Unspecified			442,332				2,000,000	2,442,332	2,442,332

PROJECT SUMMARY BY TYPE OF PROJECT - Continued

PROJECT	SOURCE OF FUNDS	ACTUALS TO DATE	FY2016-17	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FUTURE YEARS	TOTAL PROJECT COST	COST TO COMPLETE
CIRCULATION - Continued										
I-15/Railroad Canyon Road Ultimate Interchange Phase I	IMD Grant		238,000						238,000	238,000
	NSFHP Grant						19,000,000		19,000,000	19,000,000
	Tiger Grant				28,000,000				28,000,000	28,000,000
	TUMF - RCTC	125,113	2,920,000						3,045,113	2,920,000
	TUMF - WRCOG	7,159,887	1,051,000	4,000,000					12,210,887	5,051,000
	Unspecified					18,100,000		28,700,000	46,800,000	46,800,000
I-15/State Route 74 (Central Ave.) Interchange Project	Measure A	12,079	300,000						312,079	300,000
	TUMF		950,000			8,000,000			8,950,000	8,950,000
	Unspecified						49,000,000		49,000,000	49,000,000
Lakeshore Drive & Terra Cotta Streetscape Renovation	Unspecified							335,000	335,000	335,000
Lakeshore Drive Parking Lot	Gas Tax	59,004	64,103						123,107	64,103
Landstaff Street - Curb, Gutter, and Sidewalk Improvements	Gas Tax		140,000						140,000	140,000
Main Street Interchange	EDA Grant		1,500,000						1,500,000	1,500,000
	Measure A		200,000						200,000	200,000
	TIF		1,638,667						1,638,667	1,638,667
	TRIP	35,976	61,333						97,309	61,333
	Unspecified							40,515,000	40,515,000	40,515,000
Rosetta Canyon Bike Lane Striping	Gas Tax	303	50,000						50,303	50,000
	SB821	16,487	34,543						51,030	34,543
State Route 74 & Gunnerson Project	Unspecified			154,000	396,000	45,000		1,855,000	2,450,000	2,450,000
State Route 74 Widening	General Projects	4,745							4,745	
	TUMF				5,600,000	4,400,000			10,000,000	10,000,000
	Unspecified			1,500,000					1,500,000	1,500,000
Temescal Canyon Road Bridge and Road Widening Phase I	FHWA Grant	300,236	244,377	755,000			15,705,000		17,004,613	16,704,377
	Gas Tax	29,174	12,576	98,000			2,034,000		2,173,750	2,144,576
	Measure A	1,399							1,399	
	TUMF	185,814	86,424						272,238	86,424

PROJECT SUMMARY BY TYPE OF PROJECT - Continued

PROJECT	SOURCE OF FUNDS	ACTUALS TO DATE	FY2016-17	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FUTURE YEARS	TOTAL PROJECT COST	COST TO COMPLETE
CIRCULATION - Continued										
Traffic Signal Installation - Grand Avenue & Riverside Drive	Signal DIF	6,432							6,432	
	TIF		205,189						205,189	205,189
	Public Improvement In Lieu		61,015						61,015	61,015
	Unspecified			2,760,000					2,760,000	2,760,000
TOTAL CIRCULATION PROJECTS		**$11,572,853**	**$18,419,823**	**$15,961,095**	**$40,061,575**	**$32,463,562**	**$86,538,564**	**$78,711,194**	**$ 283,728,666**	**$ 272,155,813**
FACILITIES										
Aquatics Center	Unspecified							5,000,000	5,000,000	5,000,000
Artist Detour Building Improvements	General Projects		25,000						25,000	25,000
Building Facilities Fire Sprinkler System	Unspecified				195,000				195,000	195,000
City Civic Center Facilites Expansion	City Hall/Public Works DIF		118,062						118,062	118,062
	Public Improvement In Lieu		564,000						564,000	564,000
City Library	CDBG		1,000,000						1,000,000	1,000,000
	Library DIF	157	1,679,357						1,679,514	1,679,357
	Unspecified							2,820,486	2,820,486	2,820,486
City Parking Infrastructure	City Hall/Public Works DIF		1,000,000						1,000,000	1,000,000
City Yard Restroom and Locker Room Renovation	City Hall/Public Worl	275	50,000						50,275	50,000
Community Center - East	Unspecified			2,000,000	4,000,000				6,000,000	6,000,000
Community Center - West	Unspecified			2,000,000	4,000,000				6,000,000	6,000,000
Community Center Renovation	CDBG		286,203						286,203	286,203
Cultural Center 2nd Floor Renovation	DAG		200,000						200,000	200,000
Senior Center A/C Replacement	CDBG		19,154						19,154	19,154
Senior Center Improvements	General Projects		20,000						20,000	20,000
	DAG		30,000						30,000	30,000
TOTAL FACILITIES PROJECTS		**$ 432**	**$ 4,991,776**	**$ 4,000,000**	**$ 8,195,000**	**$ -**	**$ -**	**$ 7,820,486**	**$ 25,007,694**	**$ 25,007,262**

Appendix L

Data and Signal Warrant Worksheets

Spot Speed Study

Prepared by: National Data & Surveying Services

City of Lake Elsinore

DATE: 12/1/2016 **Location:** Lakeshore Dr Bet. Riverside Dr & Grand Ave
TIME: 09:00-09:45 **Posted Speed:** 40 MPH Good **Project #:** 16-6177-001

Eastbound Spot Speeds

Speed mph	ALL Vehicles
<=10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	1
32	1
33	2
34	
35	2
36	2
37	3
38	5
39	8
40	10
41	6
42	5
43	5
44	3
45	2
46	
47	
48	
49	
50	
51	
52	
53	
54	
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62	
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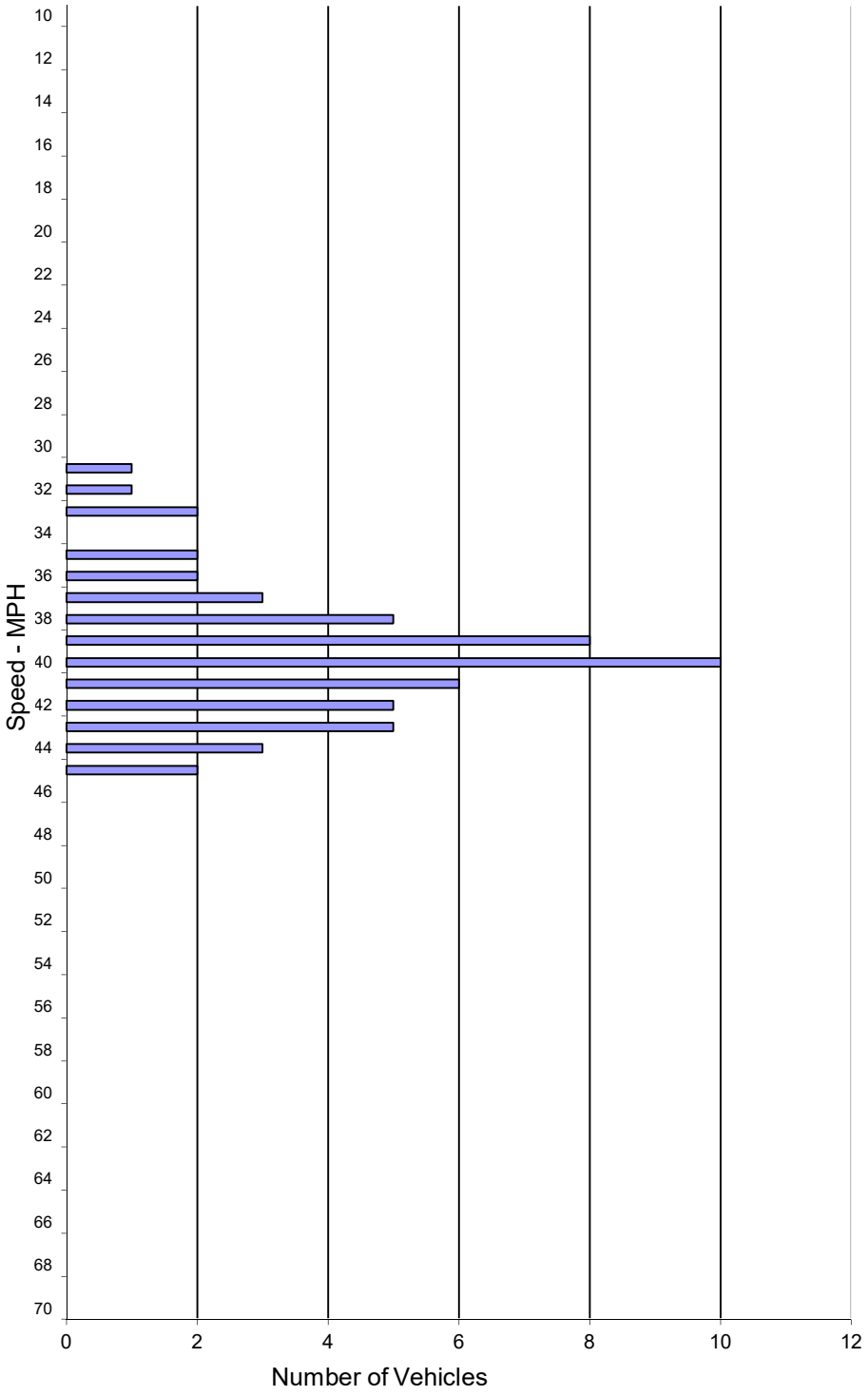
64	
65	
66	
67	
68	
69	
>=70	



SPEED PARAMETERS

Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
All	55	33 - 45	40 mph	43 mph	35 - 44	49	89%	7% / 4	4% / 2

Spot Speed Study

Prepared by: National Data & Surveying Services

City of Lake Elsinore

DATE: 12/1/2016 **Location:** Lakeshore Dr Bet. Riverside Dr & Grand Ave
TIME: 09:00-09:45 **Posted Speed:** 40 MPH Good **Project #:** 16-6177-001

Westbound Spot Speeds

Speed mph	ALL Vehicles
<=10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	1
33	2
34	2
35	4
36	3
37	1
38	5
39	8
40	10
41	3
42	4
43	
44	1
45	6
46	
47	
48	
49	
50	
51	
52	
53	
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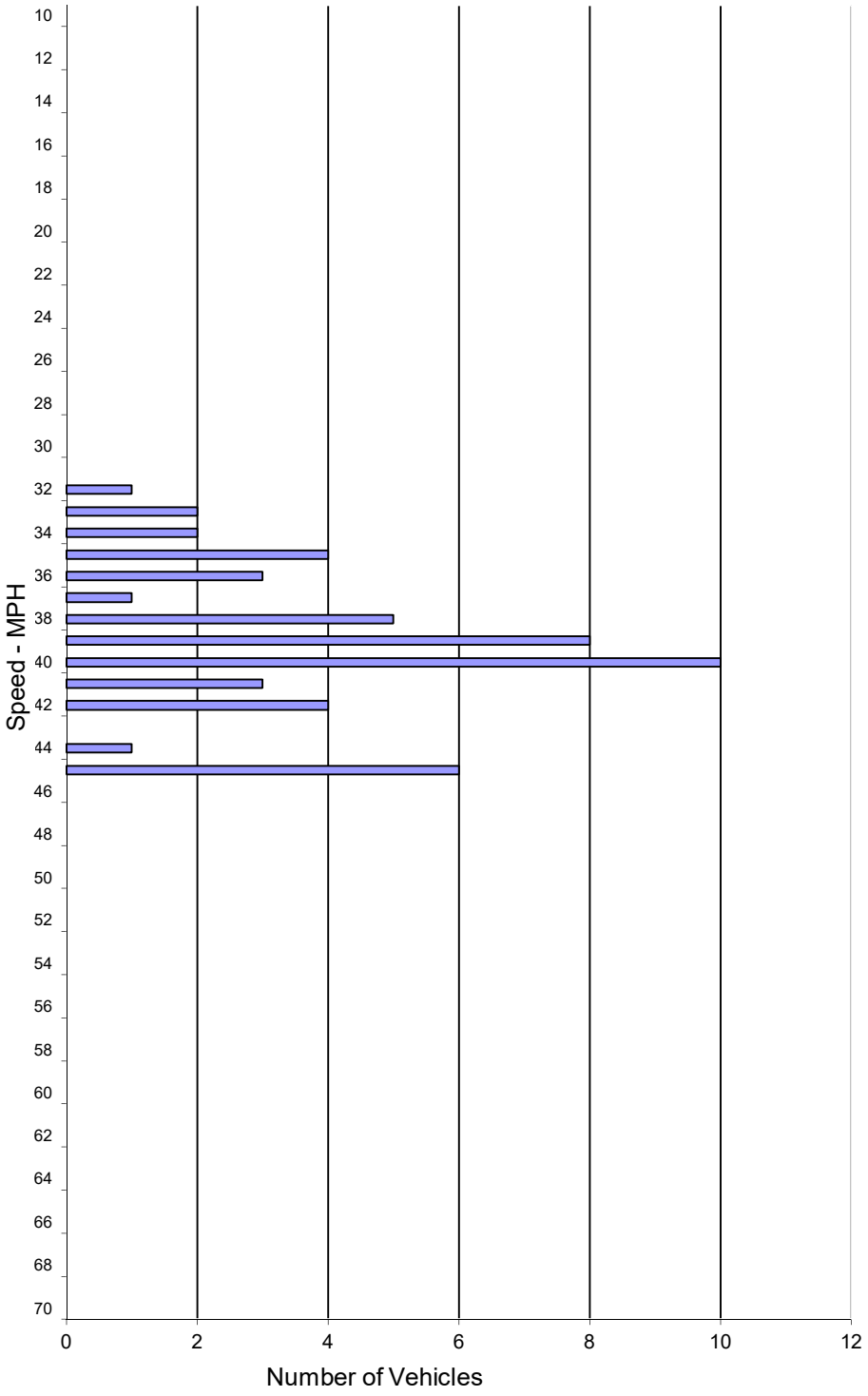
67	
68	
69	
>=70	



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
All	50	32 - 70	39 mph	42 mph	33 - 42	42	84%	2% / 1	14% / 7

Spot Speed Study

Prepared by: National Data & Surveying Services

City of Lake Elsinore

DATE: 12/1/2016 **Location:** Lakeshore Dr Bet. Riverside Dr & Grand Ave
TIME: 09:00-09:45 **Posted Speed:** 40 MPH Good **Project #:** 16-6177-001

Eastbound & Westbound Spot Speeds

Speed mph	ALL Vehicles
<=10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	1
32	2
33	4
34	2
35	6
36	5
37	4
38	10
39	16
40	20
41	9
42	9
43	5
44	4
45	8
46	
47	
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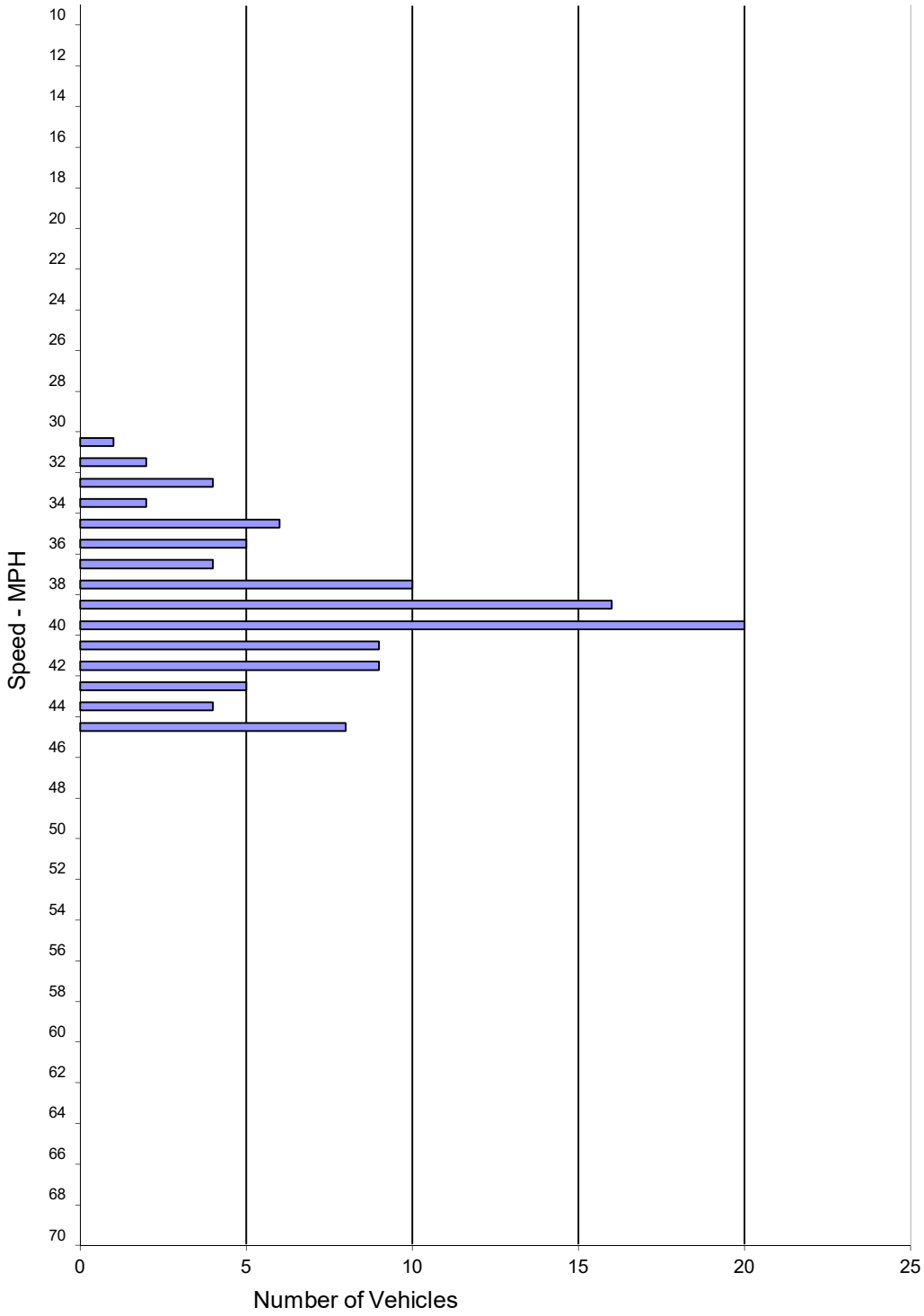
67	
68	
69	
>=70	



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
All	105	31 - 70	40 mph	43 mph	36 - 45	90	86%	14% / 15	0% / 0

Lakeshore at Gunnerson Approaches	Major St Lakeshore West of Gunnerson		Major St Lakeshore East of Gunnerson		Major St Both Approaches	Minor St Gunnerson Approach		Combined Major and Minor	Ranking for highest 8 hours	Time Period
Time Period	EB		WB			SB				
0:00	8		17			0				
0:15	10		11			2				
0:30	8		10			0				
0:45	5	31	14	52	83	0	2	85		
1:00	5		9			1				
1:15	7		3			1				
1:30	9		7			0				
1:45	5	26	6	25	51	0	2	53		
2:00	6		5			1				
2:15	6		6			2				
2:30	4		5			0				
2:45	1	17	4	20	37	2	5	42		
3:00	6		4			0				
3:15	12		6			0				
3:30	10		9			0				
3:45	18	46	10	29	75	2	2	77		
4:00	15		25			4				
4:15	18		16			3				
4:30	37		17			2				
4:45	56	126	21	79	205	1	10	215		
5:00	53		26			3				
5:15	50		30			5				
5:30	52		24			3				
5:45	41	196	25	105	301	6	17	318		
6:00	71		25			3				
6:15	60		61			9				
6:30	95		57			5				
6:45	102	328	61	204	532	10	27	559		
7:00	125		69			11				
7:15	156		137			13				
7:30	218		121			14				
7:45	174	673	108	435	1108	15	53	1161	7	7am
8:00	177		93			15				
8:15	97		90			11				
8:30	122		57			9				
8:45	97	493	65	305	798	12	47	845		
9:00	99		70			3				
9:15	101		66			4				
9:30	100		88			13				
9:45	127	427	93	317	744	6	26	770		
10:00	108		80			8				
10:15	122		85			6				
10:30	126		102			4				
10:45	113	469	86	353	822	6	24	846		
11:00	103		119			9				
11:15	124		118			10				
11:30	153		123			10				
11:45	151	531	129	489	1020	10	39	1059		
12:00	121		127			15				
12:15	148		121			9				
12:30	130		154			11				
12:45	129	528	138	540	1068	13	48	1116	8	12pm
13:00	117		159			10				
13:15	124		140			14				
13:30	140		145			14				
13:45	168	549	183	627	1176	18	56	1232	6	1pm
14:00	213		187			16				
14:15	205		160			14				
14:30	181		181			8				
14:45	195	794	180	708	1502	16	54	1556	1	2pm
15:00	155		160			14				
15:15	155		183			13				
15:30	176		187			15				
15:45	147	633	162	692	1325	12	54	1379	4	3pm
16:00	171		205			16				
16:15	166		202			10				
16:30	180		194			12				
16:45	186	703	181	782	1485	16	54	1539	2	4pm
17:00	165		219			14				
17:15	162		210			11				
17:30	150		184			15				
17:45	151	628	215	828	1456	12	52	1508	3	5pm
18:00	137		190			10				
18:15	123		178			10				
18:30	125		175			11				
18:45	99	484	171	714	1198	13	44	1242	5	6pm
19:00	122		165			9				
19:15	94		147			8				
19:30	98		147			2				
19:45	77	391	144	603	994	4	23	1017		
20:00	67		98			6				
20:15	77		98			10				
20:30	66		101			6				
20:45	73	283	73	370	653	7	29	682		
21:00	55		104			4				
21:15	45		79			5				
21:30	57		60			4				
21:45	42	199	56	299	498	3	16	514		
22:00	37		58			2				
22:15	21		43			0				
22:30	22		38			4				
22:45	18	98	40	179	277	4	10	287		
23:00	19		28			0				
23:15	14		29			2				
23:30	16		16			1				
23:45	13	62	21	94	156	2	5	161		

analyzed for each of three office land uses vations for average weekday data, 36 site hours. The sizes of traditional residential uses

Table 2: Residential Uses Combined – Excluding Senior-Oriented Facilities

Time	Average Weekday		Average Saturday		Average Sunday	
	Percent of 24-Hour Entering Traffic	Percent of 24-Hour Exiting Traffic	Percent of 24-Hour Entering Traffic	Percent of 24-Hour Exiting Traffic	Percent of 24-Hour Entering Traffic	Percent of 24-Hour Exiting Traffic
6–7 a.m.	1.6	5.7	1.1	2.1	0.9	1.9
7–8 a.m.	2.5	9.0	1.8	3.6	1.6	3.3
8–9 a.m.	3.7	9.1	2.8	5.6	2.6	4.7
9–10 a.m.	3.7	6.5	4.4	7.3	3.5	6.8
10–11 a.m.	4.1	5.5	5.6	7.7	6.3	7.5
11–12 p.m.	4.5	5.7	6.9	7.5	6.4	9.5
12–1 p.m.	5.3	5.3	6.6	7.8	6.9	7.6
1–2 p.m.	5.4	5.7	7.1	6.9	7.2	7.4
2–3 p.m.	6.5	5.9	7.1	6.7	7.2	6.6
3–4 p.m.	8.1	6.3	7.4	6.1	7.3	6.6
4–5 p.m.	9.8	6.3	8.5	5.9	8.0	6.7
5–6 p.m.	10.8	6.5	8.6	6.3	7.3	6.9
6–7 p.m.	8.5	5.1	6.4	6.0	5.8	5.1
7–8 p.m.	5.9	4.9	5.2	4.9	5.5	4.1
8–9 p.m.	5.1	3.4	4.2	3.6	4.6	3.3
9–10 p.m.	4.2	2.3	3.8	2.6	4.3	2.7
10 p.m.–6 a.m.	10.3	5.6	12.4	9.3	14.6	9.4

Eight (8) Hour Major and Minor Approach Volumes (Lakeshore/Gunnerson)

The Major St hourly approach volumes for the project traffic were calculated using ITE average weekday entering percentage over a 24 hour period. The daily inbound volume of 343 (half of 685 project ADT) is multipled by the ITE entering hourly percentage to represent the Major Street combined approach volumes becuase 100% of the project distribution is along Lakeshore Dr (Major St). As shown below for 7am, the ITE percentage is 2.5% which is multiplied by 343 inbound ADT to equal 9 inbound trips. However, this 9 pk hr vol is compared against the ITE TG of 10 pk hr vol for AM inbound and the higher between the two is used. The same is applied to the PM pk hr and the remaining off pk hrs are carried over from the ITE percentages. The table below shows the calculated project Major St combined approach volumes for Project, Existing, Ambeint, Cumulative, and E+A+C+P by the highest 8 hours of existing backgound traffic.

Major St: Project, Ambient, & Cumulative Volume Calculations for Highest 8 Hour Volumes

Time	ITE Residential Entering %	Project Major St Entry ADT 343*ITE %	ITE Pk Hr Inbound Vol from TG	Project Major St Approach Volume Both Approaches	Existing Vol Major St Both Approaches	Ambient Growth E x 0.04 (2% / yr)	Existing + Ambient + Project Major St	Cumul-ative * on Major St	Existing + A + P + C on Major St
7 AM	2.5%	9	10	10	1,108	44	1,162	238	1,400
12 PM	5.3%	18	0	18	1,068	43	1,129	190	1,319
1 PM	5.4%	19	0	19	1,176	47	1,242	199	1,440
2 PM	6.5%	22	0	22	1,502	60	1,584	222	1,807
3 PM	8.1%	28	0	28	1,325	53	1,406	258	1,664
4 PM	9.8%	34	0	34	1,485	59	1,578	288	1,866
5 PM	10.8%	37	39	39	1,456	58	1,553	278	1,831
6 PM	8.5%	29	0	29	1,198	48	1,275	244	1,519

The hourly approach volumes for the Minor St project traffic were calculated using ITE average weekday exiting percentage over a 24 hour period. The daily outbound volume of 343 (half of 685 project ADT) is multipled by the ITE exiting hourly percentage to represent the second Minor Street approach (project driveway). As shown below for 7am, the ITE percentage of 9.0% is multiplied by 343 outbound ADT to equal 31 outbound trips. However, this 31 pk hr vol is compared against the ITE TG of 38 pk hr vol for AM outbound and the higher between the two is used. The same is applied to the PM pk hr and the remaining off pk hrs are carried over from the ITE percentages. The signal warrant uses the higher vol. between the two minor approaches (MUTCD states "the higher volume shall not be required to be on the same approach during each of the 8 hours"), thus the higher Gunnerson St volumes are used.

Minor St: Project, Ambient, & Cumulative Volume Calculations for Highest 8 Hour Volumes

Time	ITE Residential Exiting %	Project Minor St Exit ADT of 343*ITE %	ITE Pk Hr Outbound Vol from TG	Gunnerson Minor St Approach Volume	Minor St Higher Vol btw Dwy & Gunnerson	Ambient Growth on Minor St x 0.04	Existing + Ambient + Project Minor St	Cumul-ative on Minor St	Existing + A + P + C on Minor St
7 AM	9.0%	31	38	53	53	2	55	0 **	55
12 PM	5.3%	18	0	48	48	2	50	0	50
1 PM	5.7%	20	0	56	56	2	58	0	58
2 PM	5.9%	20	0	54	54	2	56	0	56
3 PM	6.3%	22	0	54	54	2	56	0	56
4 PM	6.3%	22	0	54	54	2	56	0	56
5 PM	6.5%	22	21	52	52	2	54	0	54
6 PM	5.1%	17	0	44	44	2	46	0	46

* Cumulative AM & PM pk hrs from report while off peak taken as porportion shown below

AM	11.5%		12pm	1pm	2pm	3pm	4pm	6pm
PM	17.3%	AM & PM %	10.6%	11.1%	12.4%	14.4%	16.1%	13.6%
Avg	14.4%	Proportion to AM & PM	73.6%	77.1%	86.1%	100.0%	111.8%	94.4%
	AM & PM Avg 258 x proportion %		190	199	222	258	288	244

** No Cumulative volumes identified on Minor St

EXISTING

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 12/1/2016
CALC _____ DATE _____
CHK _____ DATE _____

DIST ____ CO ____ RTE ____ PM ____

Major St: LAKESHORE DR — Critical Approach Speed 43 mph (85th PERCENTILE)
Minor St: GUNNERSON ST — Critical Approach Speed NA. mph

Speed limit or critical speed on major street traffic > 40 mph ..... ☒ or
In built up area of isolated community of < 10,000 population ..... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				7 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1108	1068	1176	1502	1325	1485	1456	1198
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	53	48	56	54	54	54	52	44

Hour

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☒ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				7 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1108	1068	1176	1502	1325	1485	1456	1198
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	53	48	56	54	54	54	52	44

Hour

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME	NO	Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC	✓	
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐ NA

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

EXISTING

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ■**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	1PM	2PM	3PM	4PM (Hour)
Both Approaches - Major Street	✓		1176	1502	1325	1485
Higher Approach - Minor Street	✓		56	54	54	54

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐	NA
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ■	

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) **SATISFIED YES ☐ NO ■**

PART A **SATISFIED YES ☐ NO ■**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☐	NA BECAUSE
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ■	#2 NOT SATISFIED
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ■ No ☐	

PART B **SATISFIED YES ☐ NO ■**

APPROACH LANES	One	2 or More	1PM (Hour)
Both Approaches - Major Street	✓		1176
Higher Approach - Minor Street	✓		56

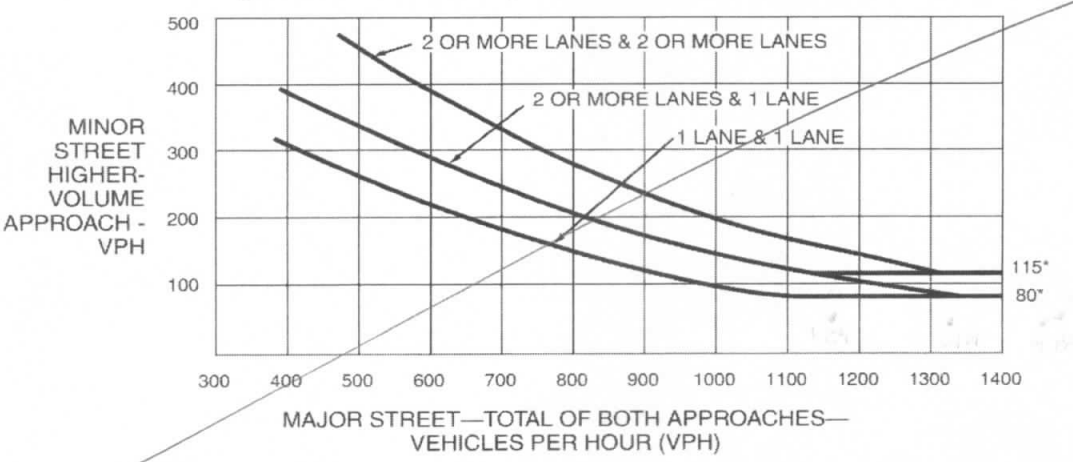
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐	NA
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ■	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

EXISTING.

NA.

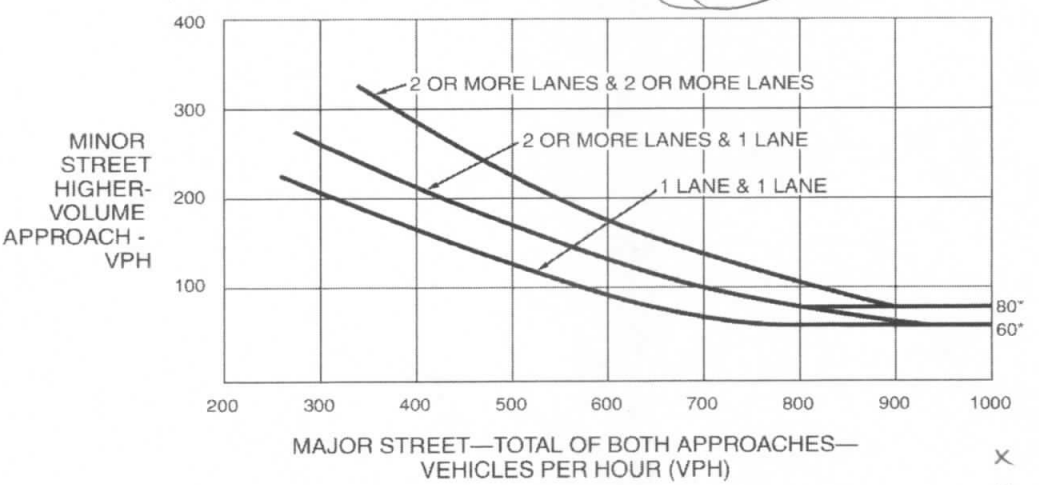
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

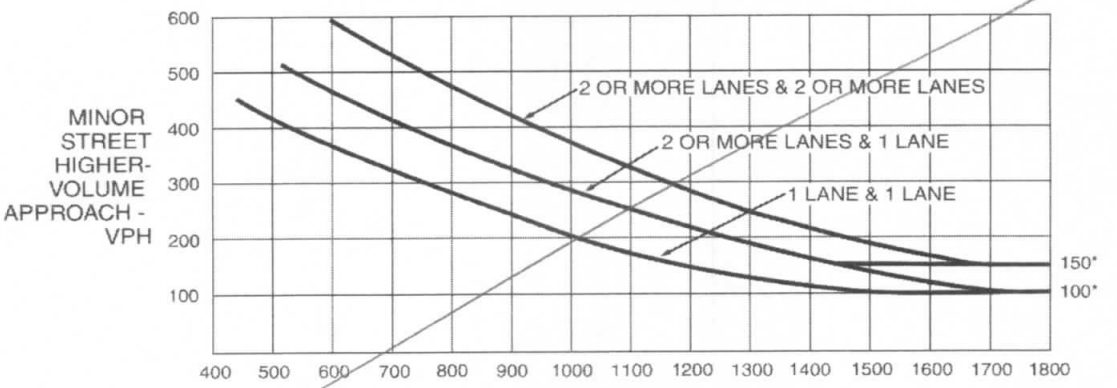
ALL POINTS BELOW 60

	1PM	2PM	3PM	4PM
X	1176	1502	1325	1485
Y	56	54	54	54

EXISTING

NA

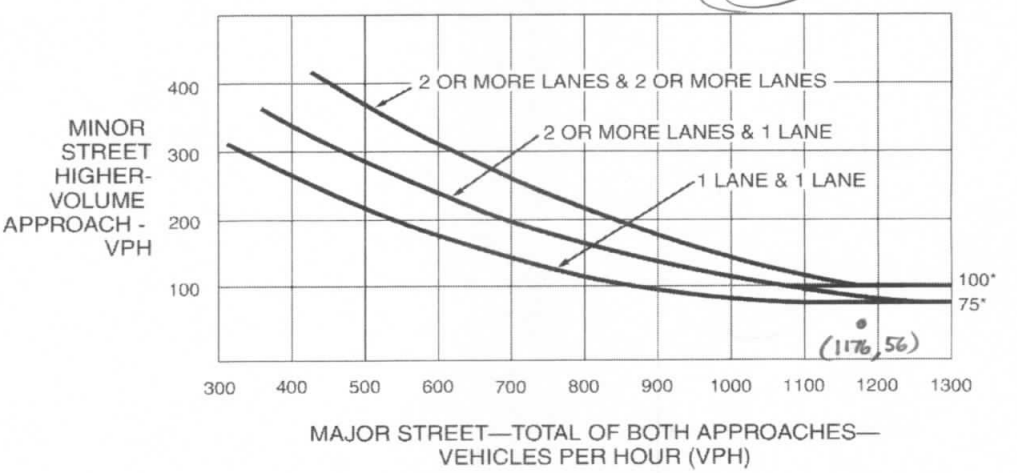
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

EXISTING + AMBIENT + PROJECT

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 12/1/2016
CALC _____ DATE _____
CHK _____ DATE _____

DIST ____ CO ____ RTE ____ PM ____

Major St: LAKESHORE DR — Critical Approach Speed 43 mph (85th PERCENTILE)
Minor St: GUNNERSON ST / PROJECT DWY — Critical Approach Speed _____ mph

Speed limit or critical speed on major street traffic > 40 mph..... ■ or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ■
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ■
80% SATISFIED YES ☐ NO ■

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				7AM	12PM	1PM	2PM	3PM	4PM	5PM	6PM
	U	R	U	R								
APPROACH LANES	(1)		2 or More									
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1162	1129	1242	1584	1406	1578	1553	1275
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	55	50	58	56	56	56	54	46

Hour

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ■
80% SATISFIED YES ■ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				7AM	12PM	1PM	2PM	3PM	4PM	5PM	6PM
	U	R	U	R								
APPROACH LANES	(1)		2 or More									
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1162	1129	1242	1584	1406	1578	1553	1275
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	55	50	58	56	56	56	54	46
						× ✓						

Hour

Combination of Conditions A & B SATISFIED YES ☐ NO ■

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME	NO	Yes ☐ No ■
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC	✓	
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐ NA.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

EXISTING + AMBIENT + PROJECT

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ■**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7 AM	1 PM	2 PM	3 PM
Both Approaches - Major Street	✓		1162	1242	1584	1406
Higher Approach - Minor Street	✓		55	58	56	56

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ■

NA

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ■**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ■**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐	No ■
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ■	No ☐

NA BECAUSE #2 NOT SATISFIED

PART B **SATISFIED YES ☐ NO ■**

APPROACH LANES	One	2 or More	1 PM
Both Approaches - Major Street	✓		1242
Higher Approach - Minor Street	✓		58

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ■

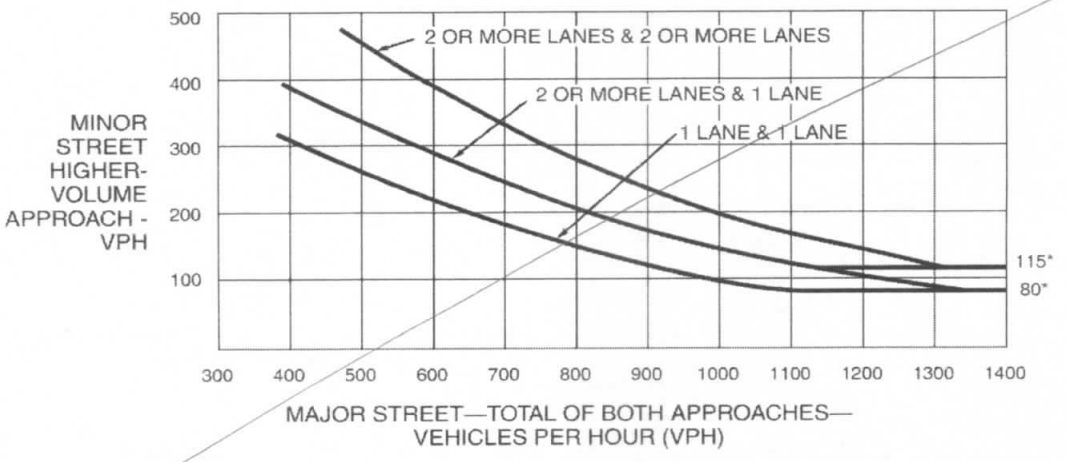
NA

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

EXISTING + AMBIENT + PROJECT

NA.

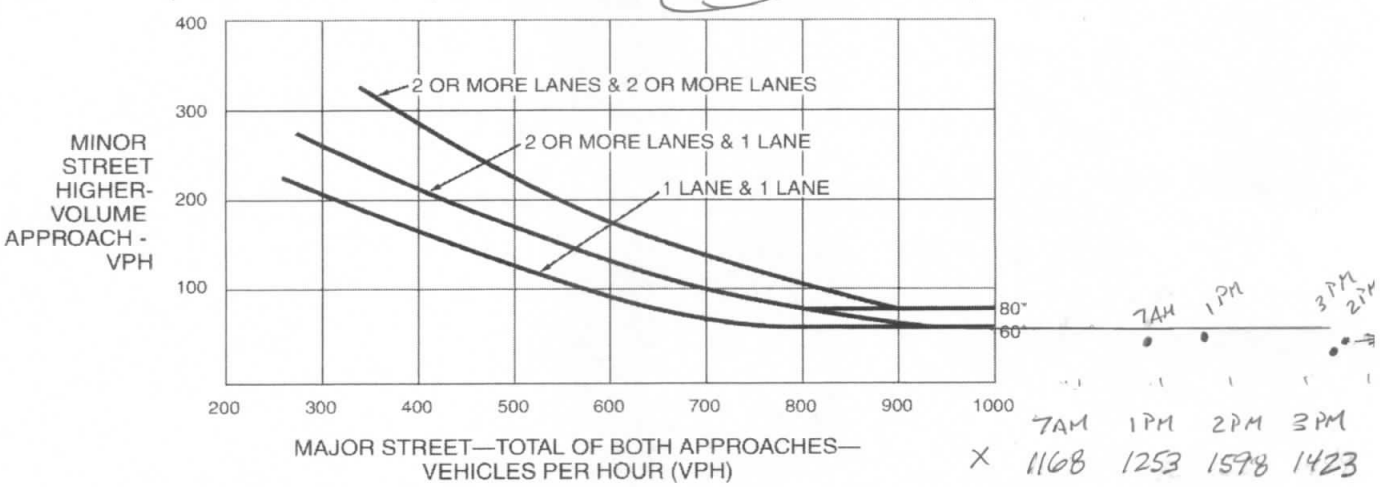
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



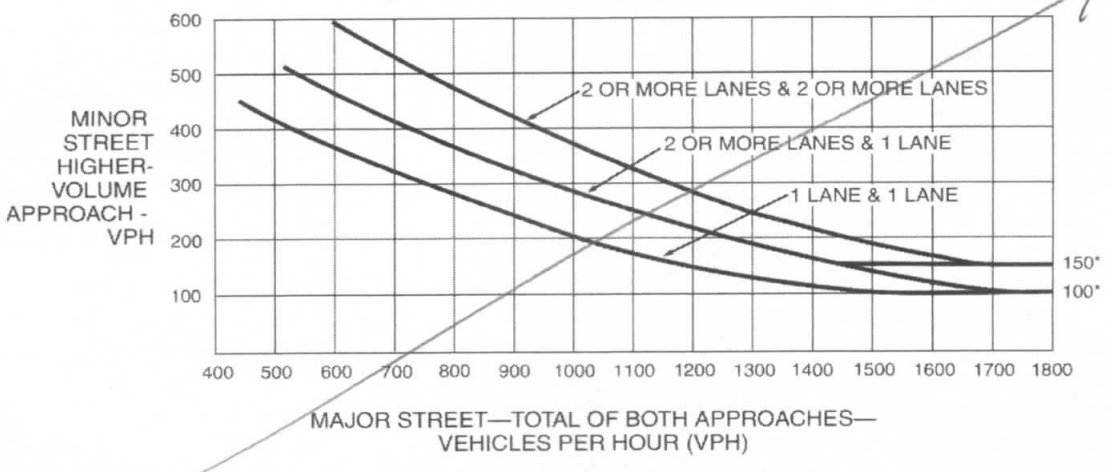
	7AM	1PM	2PM	3PM
X	1168	1253	1598	1423
Y	61	58	56	56

*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

EXISTING + AMBIENT + PROJECT

Figure 4C-3. Warrant 3, Peak Hour

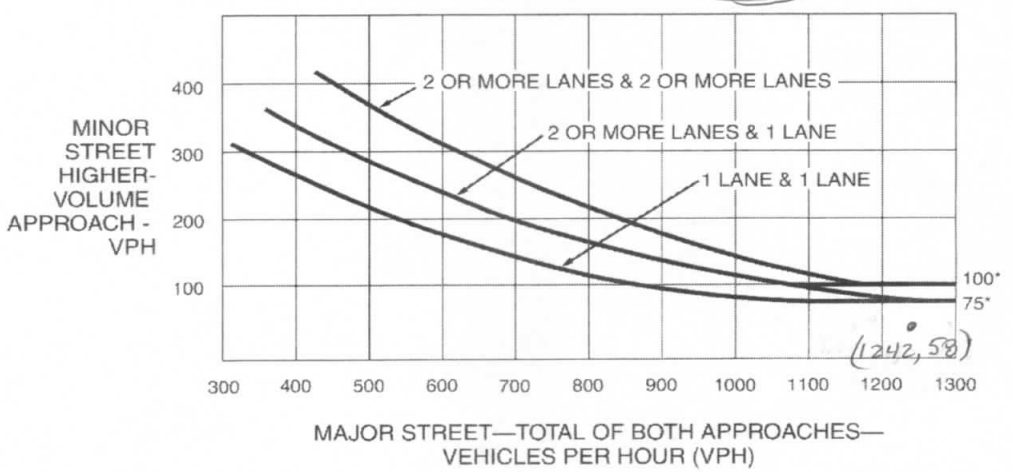
NA.



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

EXISTING + AMBIENT + PROJECT + CUMULATIVE

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 12/1/2016
CALC _____ DATE _____
CHK _____ DATE _____

DIST ____ CO ____ RTE ____ PM ____

Major St: LAKESHORE DR — Critical Approach Speed 43 mph (85TH PERCENTILE)
Minor St: GUNNERSON ST / PROJECT DWY — Critical Approach Speed _____ mph

Speed limit or critical speed on major street traffic > 40 mph ..... ■ or
In built up area of isolated community of < 10,000 population ..... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume — SATISFIED YES ☐ NO ■
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume — 100% SATISFIED YES ☐ NO ■
80% SATISFIED YES ☐ NO ■

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				7 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1400	1319	1440	1807	1664	1866	1831	1519
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	55	50	58	56	56	56	54	46

Hour

Condition B - Interruption of Continuous Traffic — 100% SATISFIED YES ☐ NO ■
80% SATISFIED YES ■ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				7 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1400	1319	1440	1807	1664	1866	1831	1519
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	55	50	58	56	56	56	54	46

Hour

x ✓

Combination of Conditions A & B — SATISFIED YES ☐ NO ■

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME	NO	Yes ☐ No ■
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC	✓	
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐ NA

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

EXISTING + AMBIENT + PROJECT + CUMULATIVE

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ■**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	1PM	2PM	3PM	4PM	Hour
Both Approaches - Major Street	✓		1440	1807	1664	1866	
Higher Approach - Minor Street	✓		58	56	56	56	

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐	NA
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ■	

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ■**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ■**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☐	NA BECAUSE #2 NOT SATISFIED
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐	No ■	
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ■	No ☐	

PART B **SATISFIED YES ☐ NO ■**

APPROACH LANES	One	2 or More	1PM	Hour
Both Approaches - Major Street	✓		1440	
Higher Approach - Minor Street	✓		58	

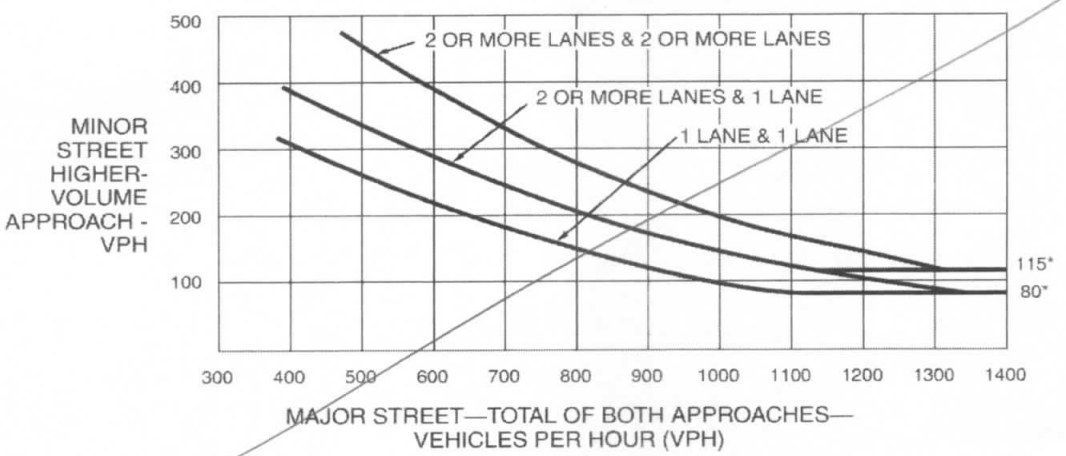
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐	NA
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ■	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

EXISTING + AMBIENT + PROJECT + CUMULATIVE

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

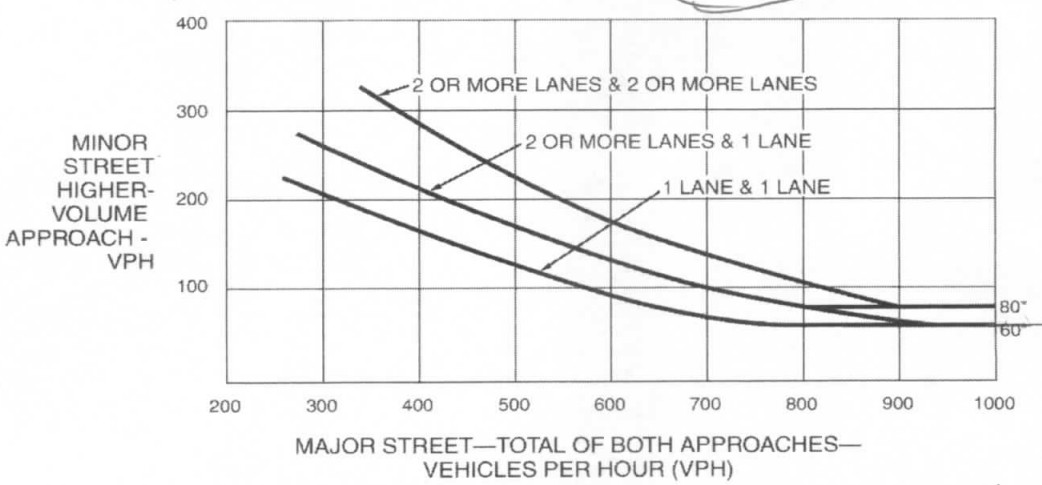
NA



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

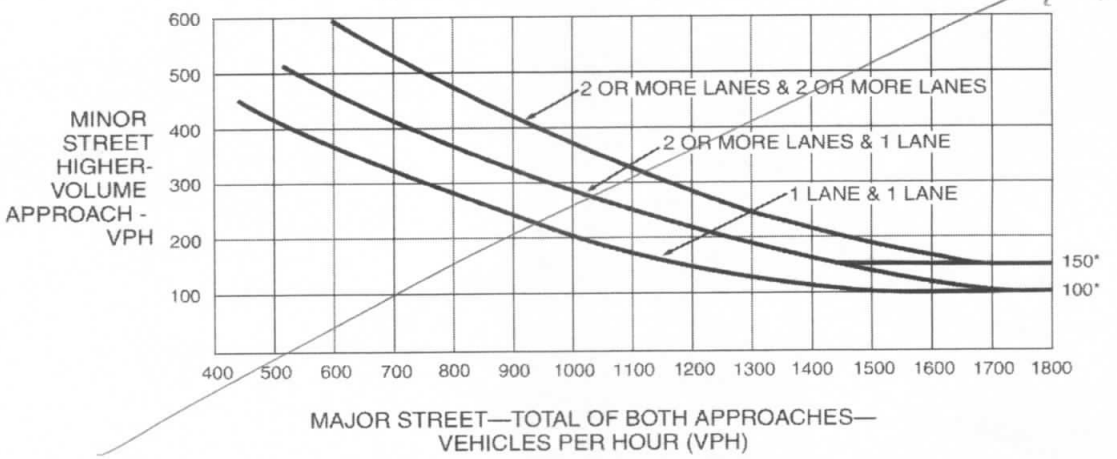
1PM

	1PM	2PM	3PM	4PM
X	1440	1807	1664	1866
Y	58	56	56	56

EXISTING + AMBIENT + PROJECT + CUMULATIVE

NA

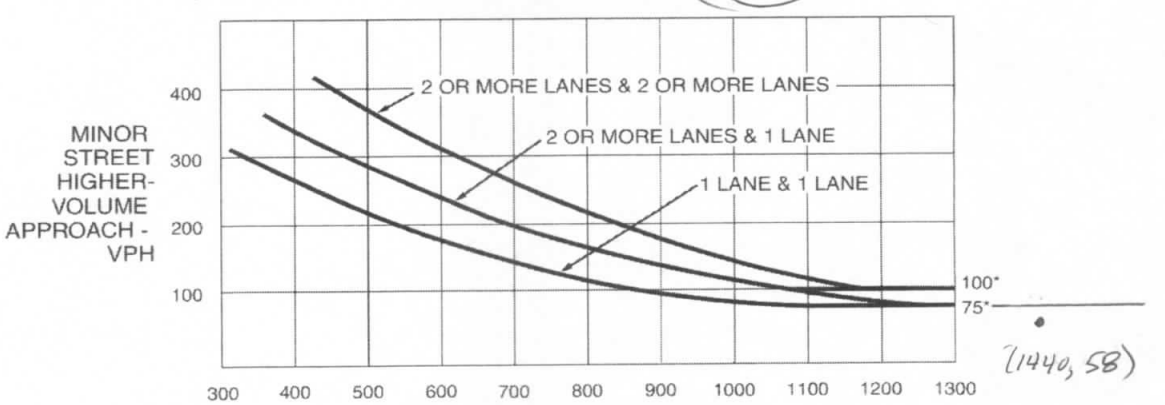
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.