Appendix J

Traffic Analysis

Bamiyan Marketplace

TRAFFIC ANALYSIS

CITY OF LAKE ELSINORE

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
CA MUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CMP	Congestion Management Program
EAP	Existing Plus Ambient Growth Plus Project
EAPC	Existing Plus Ambient Growth Plus Project Plus Cumulative
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
PHF	Peak Hour Factor
Project	Bamiyan Marketplace
RCTC	Riverside County Transportation Commission
RTA	Riverside Transport Authority
SR	State Route
TA	Traffic Impact Analysis
TIF	Transportation Impact Fee
TUMF	Transportation Uniform Mitigation Fee
v/c	Volume to Capacity
VMT	Vehicle Miles Traveled
WRCOG	Western Riverside Council of Governments

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1 INTRODUCTION

This report presents the results of the traffic analysis (TA) for the proposed Bamiyan Marketplace development ("Project"), which is located on the northwest corner of Grand Avenue and Ortega Highway (SR-74) in the City of Lake Elsinore, as shown on Exhibit 1-1. The preliminary site plan for the proposed Project is shown on Exhibit 1-2.

The purpose of this TA is to evaluate the potential traffic and circulation system deficiencies that may result from the development of the proposed Project, and to recommend improvements to resolve identified deficiencies and to achieve acceptable circulation system operational conditions in accordance with the City's General Plan. As directed by City of Lake Elsinore staff, this traffic study has been prepared in accordance with the City of Lake Elsinore Traffic Impact Analysis Preparation Guide, and consultation with City staff during the scoping process. (1) The approved Project Traffic Study Scoping agreement is provided in Appendix 1.1 of this TA. It should be noted that the scoping agreement has also been reviewed and approved by the California Department of Transportation (Caltrans) and County of Riverside.

1.1 SUMMARY OF FINDINGS

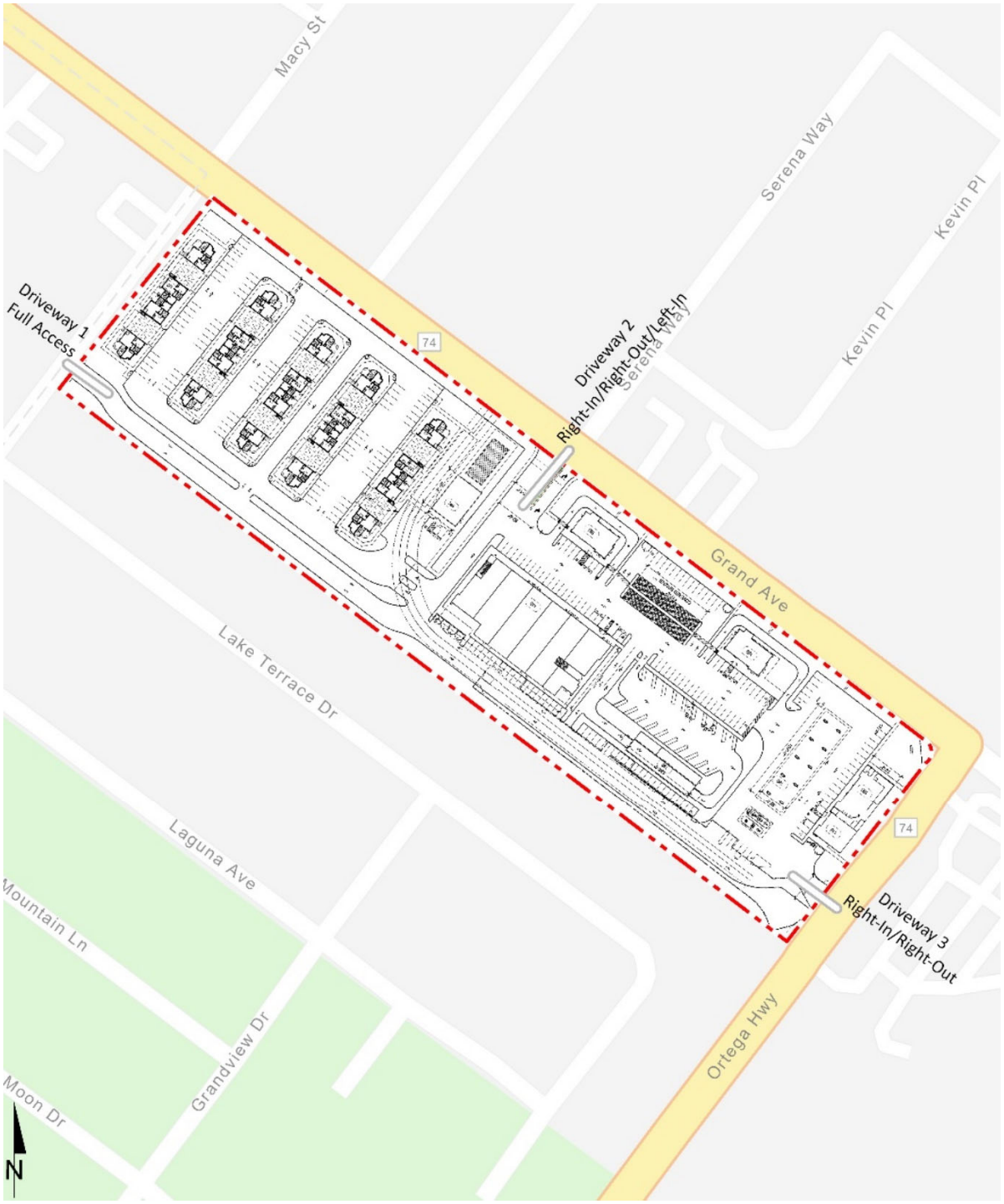
The Project is to construct the following improvements as design features in conjunction with development of the site:

- Project to construct Grand Avenue to its ultimate half-section width as an Urban Arterial (120-foot right-of-way) in compliance with Caltrans standards and the circulation recommendations found in the City of Lake Elsinore's General Plan. Project to construct a raised median along Grand Avenue.
- Project to construct Macy Street to its ultimate half-section width as a Local Street (60-foot right-of-way) in compliance with the circulation recommendations found in the City of Lake Elsinore's General Plan.
- Project to construct Ortega Highway (SR-74) to its ultimate half-section width as a Major Highway (100-foot right-of-way) in compliance with Caltrans standards and the circulation recommendations found in the City of Lake Elsinore's General Plan. Project to construct a raised median on Ortega Highway (SR-74) along the Project's frontage.
- Project to install a traffic signal at the intersection of Grand Avenue & Macy Street.

Additional details and intersection lane geometrics are provided in Section 1.6 *Recommendations* of this report.

EXHIBIT 1-1: LOCATION MAP

EXHIBIT 1-2: PRELIMINARY SITE PLAN



1.2 PROJECT OVERVIEW

The Project is to include the development of the following uses:

- 20-vehicle fueling position super convenience market and gas station
- 1 automated car wash tunnel
- 4,476 square feet of fast-food restaurant with drive-through window use
- 1,972 square feet of fast-food restaurant without drive-through window use
- 23,000 square feet of commercial retail use
- 14 multifamily (low-rise) residential dwelling units
- 60 multifamily (mid-rise) residential dwelling units

For purposes of the traffic analysis, it is anticipated that the Project will be developed in a single phase with an anticipated Opening Year of 2024. The Project is proposed to take access via the following roadways:

- Driveway 1 on Macy Street – full access
- Driveway 2 on Grand Avenue – right-in/right-out/left-in access
- Driveway 3 on SR-74 – right-in/right-out access

It should be noted, the proposed Project will modify the access at Serena Way to be right-in/right-out/left-in access. Vehicles from the existing residences along Serena Way can head south on Grand Avenue by making a U-turn at the intersection of Grand Avenue & Macy Street. Regional access to the Project site is available from Riverside Drive (SR-74)/Ortega Highway (SR-74) and the I-15 Freeway.

Trips generated by the Project's proposed land uses have been estimated based on the Institute of Transportation Engineers (ITE) Trip Generation Manual (10^{th} Edition, 2017) for the following land uses (2):

- Multifamily Housing Low-Rise (ITE Land Use Code 220)
- Multifamily Housing Mid-Rise (ITE Land Use Code 221)
- Shopping Center (ITE Land Use Code 820)
- Fast-Food Restaurant without Drive-Thru (ITE Land Use Code 933)
- Fast-Food Restaurant with Drive-Thru (ITE Land Use Code 934)
- Automate Car Wash (ITE Land Use Code 948)
- Super Convenience Market/Gas Station (ITE Land Use Code 960)

The proposed Project is anticipated to generate a total of 2,672 two-way trips per day with 275 AM peak hour trips and 300 PM peak hour trips. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

1.3 ANALYSIS SCENARIOS

For the purposes of this traffic study, potential deficiencies to traffic and circulation have been assessed for each of the following conditions:

- Existing (2021) Conditions (Baseline)
- Existing plus Ambient Growth plus Project (EAP) (2024) Conditions
- Existing plus Ambient Growth plus Project plus Cumulative (EAPC) (2024) Conditions

1.3.1 EXISTING (2021) CONDITIONS

Information for Existing (2021) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared. Traffic counts collected in November 2020 and historic traffic counts have been utilized in order to establish a pre-COVID baseline. A detailed discussion of the adjustments made to each intersection can be found in Section 3.5 *Existing Traffic Counts* of this report.

1.3.2 EXISTING PLUS AMBIENT GROWTH PLUS PROJECT (2024) CONDITIONS

The EAP (2024) conditions analysis determines the traffic deficiencies based on a comparison of the EAP (2024) traffic conditions to Existing (2021) traffic conditions. To account for background traffic growth, an ambient growth factor from Existing (2021) conditions of 6.12% is included for EAP (2024) traffic conditions. The EAP analysis is intended to identify "Opening Year" deficiencies associated with the development of the proposed Project based on the expected background growth within the study area.

1.3.3 EXISTING PLUS AMBIENT GROWTH PLUS PROJECT PLUS CUMULATIVE (2024) CONDITIONS

The EAPC (2024) traffic conditions analysis determines the potential near-term cumulative circulation system deficiencies. To account for background traffic growth, traffic associated with other known cumulative development projects in conjunction with an ambient growth factor of 6.12% from Existing conditions are included for EAPC (2024) traffic conditions.

1.4 STUDY AREA

To ensure that this TA satisfies the City of Lake Elsinore's traffic study requirements, Urban Crossroads, Inc. prepared a traffic study scoping package for review by City staff prior to the preparation of this report. The Agreement provides an outline of the Project study area, trip generation, trip distribution, and analysis methodology and is included in Appendix 1.1. The scoping agreement has also been reviewed and approved by Caltrans and the County of Riverside.

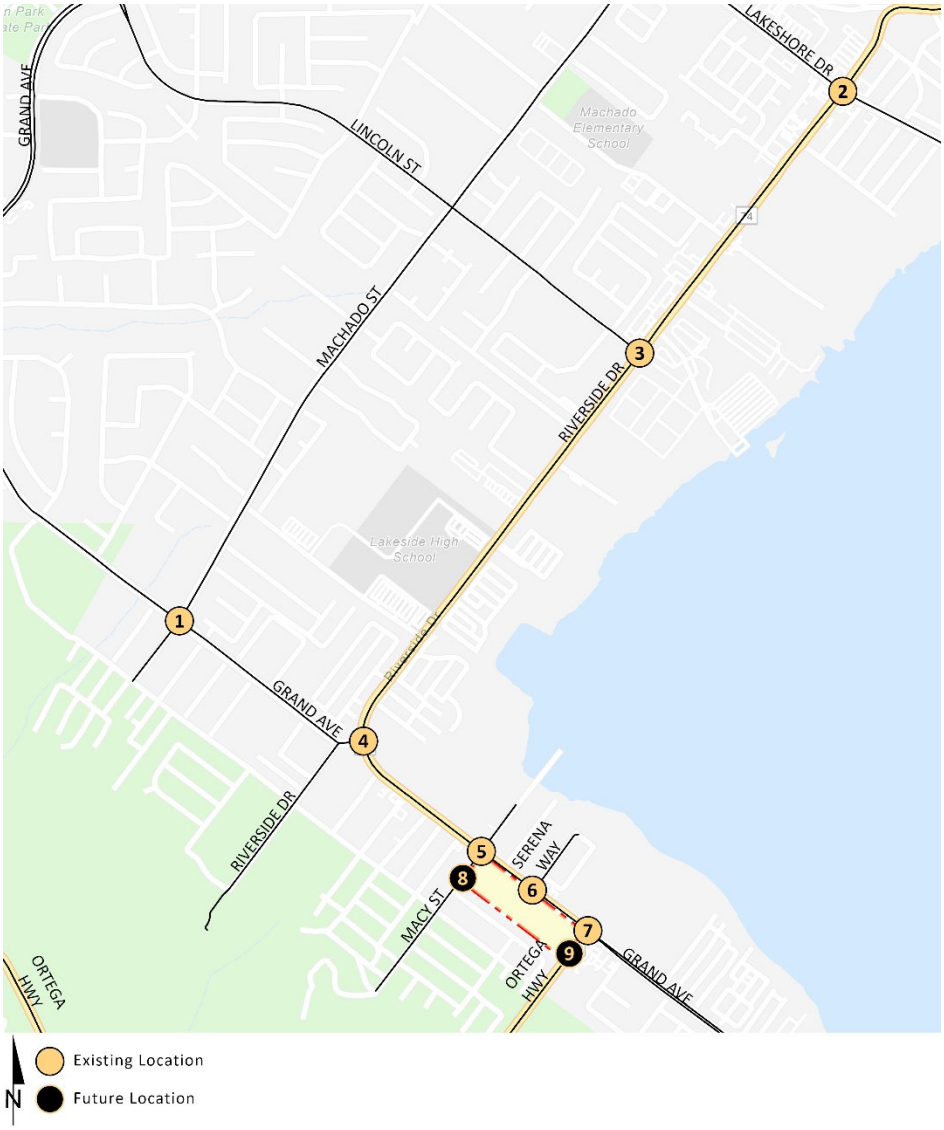
The following 9 study area intersections shown on Exhibit 1-3 and listed in Table 1-1 were selected for this TA based on consultation with City of Lake Elsinore staff and have generally been selected based on the "50 peak hour trip" criterion. The "50 peak hour trip" criterion is consistent with the methodology employed by the City of Lake Elsinore and County of Riverside, and generally represents a minimum number of trips at which a typical intersection would have the potential to be affected by a given development proposal. Although each intersection may have unique operating characteristics, this traffic engineering rule of thumb is a widely utilized tool for estimating a potential study area.

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

ID	Intersection Location	Jurisdiction	CMP?
1	Grand Av. & Machado St.	Lake Elsinore	No
2	Riverside Dr. (SR-74) & Lakeshore Dr.	Lake Elsinore, Caltrans	No
3	Riverside Dr. (SR-74) & Lincoln St.	Lake Elsinore, Caltrans	No
4	Riverside Dr. (SR-74) & Grand Av.	Lake Elsinore, Caltrans	No
5	Grand Av. (SR-74) & Macy St.	Lake Elsinore, Caltrans	No
6	Grand Av. (SR-74) and Serena Way/Driveway 2	Lake Elsinore, Caltrans	No
7	Grand Av. & SR-74	Lake Elsinore, Caltrans	No
8	Driveway 1 & Macy St. – Future Intersection	Lake Elsinore	No
9	Driveway 3 & SR-74 – Future Intersection	Lake Elsinore, Caltrans	No

The intent of a Congestion Management Program (CMP) is to more directly link land use, transportation, and air quality, thereby prompting reasonable growth management programs that will effectively utilize new transportation funds, alleviate traffic congestion and related deficiencies, and improve air quality. The County of Riverside CMP became effective with the passage of Proposition 111 in 1990 and updated most recently updated in 2011. The Riverside County Transportation Commission (RCTC) adopted the 2011 CMP for the County of Riverside in December 2011. (3) None of the study area intersections are identified as CMP facilities in the Riverside County CMP.

EXHIBIT 1-3: STUDY AREA



1.5 ANALYSIS FINDINGS

This section provides a summary of analysis results for Existing, EAP (2024), and EAPC (2024) traffic conditions. A summary of level of service (LOS) results for all analysis scenarios is presented in Table 1-3.

1.5.1 EXISTING (2021) CONDITIONS

The following study area intersections are currently operating at an unacceptable LOS during the peak hours under Existing (2021) traffic conditions:

- Grand Avenue (SR-74) & Macy Street (#5) – LOS F AM and PM peak hours
- Grand Avenue (SR-74) & Serena Way/Driveway 2 (#6) – LOS E AM peak hour; LOS F PM peak hour

1.5.2 EAP (2024) CONDITIONS

There are no additional study area intersections that are anticipated to operate at an unacceptable LOS during the peak hours under EAP (2024) traffic conditions, in addition to those intersections previously identified under Existing (2021) traffic conditions. It should be noted the intersections of Grand Avenue (SR-74) & Macy Street (#5) and Grand Avenue (SR-74) & Serena Way/Driveway 2 (#6) are anticipated to improve operations to acceptable LOS during the peak hours with implementation of the site adjacent roadway and site access improvements (to be constructed by the Project).

1.5.3 EAPC (2024) CONDITIONS

The following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under EAPC (2024) traffic conditions:

- Riverside Drive (SR-74) & Lincoln Street (#3) – LOS F AM and PM peak hours

TABLE 1-2: SUMMARY OF DEFICIENT INTERSECTIONS BY ANALYSIS SCENARIO

Intersection	Existing AM	Existing PM	EAP (2024) AM	EAP (2024) PM	EAPC (2024) AM	EAPC (2024) PM
1 Grand Av. & Machado St.	A - D	A - D	A - D	A - D	A - D	A - D
2 Riverside Dr. (SR-74) & Lakeshore Dr.	A - D	A - D	A - D	A - D	A - D	A - D
3 Riverside Dr. (SR-74) & Lincoln St.	A - D	A - D	A - D	A - D	F	F
4 Riverside Dr. (SR-74) & Grand Av.	A - D	A - D	A - D	A - D	A - D	A - D
5 Grand Av. (SR-74) & Macy St.	F	F	A - D	A - D	A - D	A - D
6 Grand Av. (SR-74) & Serena Wy./Driveway 2	E	F	A - D	A - D	A - D	A - D
7 Grand Av. & SR-74	A - D	A - D	A - D	A - D	A - D	A - D
8 Driveway 1 & Macy St.	N/A	N/A	A - D	A - D	A - D	A - D
9 Driveway 3 & SR-74	N/A	N/A	A - D	A - D	A - D	A - D

Legend

A - D =

E =

F =

1.6 RECOMMENDATIONS

1.6.1 SITE ADJACENT AND SITE ACCESS RECOMMENDATIONS

The following recommendations are based on the improvements needed to accommodate site access. The site adjacent recommendations and concept striping plan are shown on Exhibit 1-4.

Recommendation 1 – ***Grand Avenue (SR-74) & Macy Street (#5)*** – The following improvements are necessary to accommodate site access:

- Project to install a traffic signal.
- Project to construct a northbound left turn lane with a minimum of 150-feet of storage.
- Project to construct a southbound left turn lane with a minimum of 50-feet of storage and restripe the southbound right turn lane to a shared through-right turn lane.
- Project to construct an eastbound left turn lane with a minimum of 200-feet of storage.

Recommendation 2 – ***Grand Avenue (SR-74) & Serena Way/Driveway 2 (#6)*** – The following improvements are necessary to accommodate site access:

- Project to construct a northbound left turn lane with a minimum of 200-feet of storage and a 2nd through lane.
- Project to construct a southbound left turn lane with a minimum of 150-feet of storage, a 2nd through lane, and a right turn lane.
- Project to construct an eastbound right turn lane. The intersection should be constructed with a pork chop island to restrict left turns out of Driveway 2 and Serena Way.

Recommendation 3 – ***Grand Avenue & SR-74 (#7)*** – The following improvement is necessary to accommodate site access:

- Project to construct the southbound approach to provide one through lane and one right turn lane.

Recommendation 4 – ***Driveway 1 & Macy Street (#8)*** – The following improvement is necessary to accommodate site access:

- Project to install a stop control on the northbound approach and construct a shared left-right turn lane (Project Driveway).

Recommendation 5 – ***Driveway 3 & SR-74 (#9)*** – The following improvement is necessary to accommodate site access:

- Project to install a stop control on the southbound approach and construct a right turn lane (Project Driveway).

Recommendation 6 **– Grand Avenue** ***(SR-74)*** is a north-south oriented roadway located on the Project's eastern boundary. Project to construct Grand Avenue (SR-74) to its ultimate half-section width as an Urban Arterial (120-foot right-of-way) in compliance with Caltrans standards and the circulation recommendations found in the City of Lake Elsinore's General Plan. Project to construct a raised median along Grand Avenue (SR-74). Since Grand Avenue will be widened

along the Project's frontage, U-turn movements can be accommodated for the northbound left turn movement.

Recommendation 7 **– Macy Street** is an east-west oriented roadway located on the Project's northern boundary. Project to construct Macy Street to its ultimate half-section width as a Local Street (60-foot right-of-way) in compliance with the circulation recommendations found in the City of Lake Elsinore's General Plan.

Recommendation 8 **– Ortega Highway (SR-74)** is an east-west oriented roadway located on the Project's southern boundary. Project to construct Ortega Highway (SR-74) to its ultimate half-section width as a Major Highway (100-foot right-of-way) in compliance with Caltrans standards and the circulation recommendations found in the City of Lake Elsinore's General Plan. Project to construct a raised median on Ortega Highway (SR-74) along the Project's frontage.

On-site traffic signing and striping should be implemented agreeable with the provisions of the California Manual on Uniform Traffic Control Devices (CA MUTCD) and in conjunction with detailed construction plans for the Project site.

Sight distance at each project access point should be reviewed with respect to standard Caltrans and City of Lake Elsinore sight distance standards at the time of preparation of final grading, landscape and street improvement plans.

1.6.2 OFF-SITE RECOMMENDATIONS

The recommended improvements needed to address the cumulative deficiencies identified under Existing (2021), EAP (2024), and EAPC (2024) traffic conditions are summarized in Table 1-3. For those improvements listed in Table 1-3 and not constructed as part of the Project, the Project Applicant's responsibility for the Project's contributions towards deficient intersections is fulfilled through payment of fees or fair share that would be assigned to construction of the identified recommended improvement.

1.6.3 SITE ADJACENT QUEUES

A queuing analysis has been performed for the site adjacent study area intersections. The traffic modeling and signal timing optimization software package SimTraffic has been utilized to assess the queues. SimTraffic is designed to model networks of signalized and unsignalized intersections, with the primary purpose of checking and fine-tuning signal operations. SimTraffic uses the input parameters from Synchro to generate random simulations. These random simulations generated by SimTraffic have been utilized to determine the 95th percentile queue lengths observed for each applicable turn lane. A SimTraffic simulation has been recorded up to 5 times, during the weekday AM and weekday PM peak hours, and has been seeded for 30-minute periods with 60-minute recording intervals. Queuing analysis worksheets for the weekday AM and PM peak hours are provided in Appendix 1.2 of this report. The results of the queuing analysis are shown in Table 1-4 for EAPC (2024) traffic conditions.

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EXHIBIT 1-4: SITE ADJACENT ROADWAY AND SITE ACCESS RECOMMENDATIONS

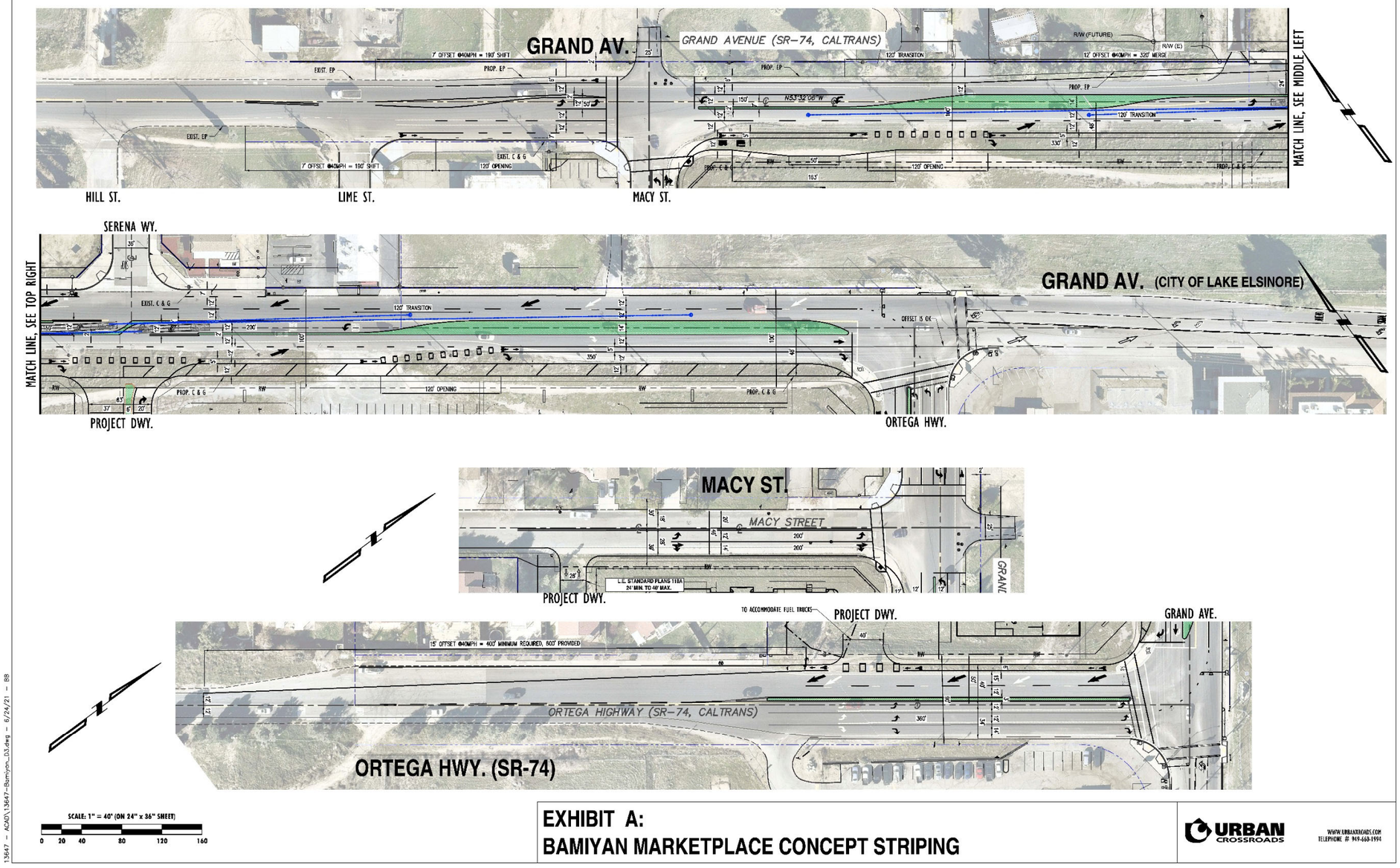

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TABLE 1-3: SUMMARY OF IMPROVEMENTS BY ANALYSIS SCENARIO

#	Intersection Location	Jurisdiction	Recommended Improvements[1]			Improvements in Fee Program?[1]	Project Responsibility[2]	Fair Share %[3]
			Existing (2021)	EAP (2024)	EAPC (2024)			
3	Riverside Dr. (SR-74) & Lincoln St.	Lake Elsinore, Caltrans	None	None	Add 2nd WB through lane	Yes (TUMF)	Fees	--
5	Grand Av. (SR-74) & Macy St.	Lake Elsinore, Caltrans	Install a Traffic Signal	Same	Same	No	Construct	--
			Add NB left turn lane	Same	Same	No	Construct	
			Add SB left turn lane	Same	Same	No	Construct	
			Add 2nd SB through lane	Same	Same	Yes (TUMF)	Construct	
			Add EB left turn lane	Same	Same	No	Construct	
6	Grand Av. (SR-74) & Serena Wy./Driveway 2	Lake Elsinore, Caltrans	Add 2nd NB through lane	Same	Same	Yes (TUMF)	Construct	--
			Add 2nd SB through lane	Same	Same	Yes (TUMF)	Construct	
				Add NB left turn lane	Same	No	Construct	
				Add EB right turn lane	Same	No	Construct	
				Modify the intersection to restrict left-out turns for the EB and WB approaches	Same	No	Construct	

[1] Program improvements constructed by project may be eligible for fee credit. In lieu fee payment is at discretion of City.

[2] Identifies the Project's responsibility to construct an improvement or contribute a fee payment or fair share towards the implementation of the improvements shown.

[3] Represents the fair share percentage for the Project during the most impacted peak hour.

TABLE 1-4: SITE ADJACENT QUEUING SUMMARY

Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet)		Acceptable? [1]	
			AM Peak	PM Peak	AM	PM
Grand Av. (SR-74) & Macy St.	NBL	150	71	101	Yes	Yes
	SBL	50	45	39	Yes	Yes
	EBL	200	168	190	Yes	Yes
Grand Av. (SR-74) & Serena Wy./Driveway 2	NBL	200	139	165	Yes	Yes
	SBL	150	50	124	Yes	Yes
Grand Av. & SR-74	NBL	425	291	203	Yes	Yes
	EBL	360	122	389 [3]	Yes	Yes
	EBR	360	52	402 [3]	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, there is additional storage along SR-74 that can accommodate the queue length.

1.7 VEHICLE MILES TRAVELED (VMT)

Changes to California Environmental Quality Act (CEQA) Guidelines were adopted in December 2018, which require all lead agencies to adopt Vehicle Miles Traveled (VMT) as a replacement for automobile delay-based LOS as the new measure for identifying transportation impacts for land use projects. The City of Lake Elsinore has adopted VMT guidelines on June 23, 2020. The approved VMT analysis for the proposed Project Bamiyan Market Place VMT Analysis, prepared by Darnell & Associates, June 29, 2020, has been provided in Appendix 1.3 of this report.

2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with City of Lake Elsinore traffic study guidelines.

2.1 LEVEL OF SERVICE

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

2.2 INTERSECTION CAPACITY ANALYSIS

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The Highway Capacity Manual (HCM), 6th Edition, methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (4) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

The City of Lake Elsinore requires signalized intersection operations analysis based on the methodology described in the HCM. (4) Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections LOS is directly related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 2-1. Study area intersections have been evaluated using the Synchro (Version 10) analysis software package.

Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A	F
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B	F
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C	F
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D	F
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E	F
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F	F

Source: HCM (6th Edition)

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Common practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., PHF = [Hourly Volume] / [4 x Peak 15-minute Flow Rate]). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all near-term analysis scenarios. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. (4)

California Department of Transportation (Caltrans)

The traffic modeling and signal timing optimization software package Synchro (Version 10) has also been utilized to analyze signalized intersections under Caltrans' jurisdiction, which include intersections along Grand Avenue (SR-74).

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Lake Elsinore requires the operations of unsignalized intersections be evaluated using the methodology described in the HCM. (4) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2).

TABLE 2-2: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay Per Vehicle (Seconds)	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Little or no delays.	0 to 10.00	A	F
Short traffic delays.	10.01 to 15.00	B	F
Average traffic delays.	15.01 to 25.00	C	F
Long traffic delays.	25.01 to 35.00	D	F
Very long traffic delays.	35.01 to 50.00	E	F
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F	F

Source: HCM (6th Edition)

At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. Per the HCM, the highest delay for any individual movement on the minor street is reported for side-street stop-controlled intersections. For all-way stop controlled intersections, LOS is computed for the intersection as a whole and the average intersection delay is reported (similar to signalized intersections).

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by the Caltrans and other public agencies to quantitatively justify or ascertain the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TA uses the signal warrant criteria presented in the latest edition of the Caltrans California Manual on Uniform Traffic Control Devices *(CA MUTCD)*. (5)

The signal warrant criteria for Existing conditions are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The Caltrans CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (5) Specifically, this TA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing study area intersections for all analysis scenarios. Warrant 3 is appropriate to use for this TA because it provides specialized warrant criteria for intersections with rural characteristics (e.g., located in communities with populations of less than 10,000 persons or with adjacent major streets operating above 40 miles per hour). For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection.

Traffic signal warrant analyses were performed for the following unsignalized study area intersection shown in Table 2-3:

TABLE 2-3: TRAFFIC SIGNAL WARRANT ANALYSIS LOCATIONS

ID	Intersection Location	Jurisdiction
1	Grand Av. & Machado St.	Lake Elsinore
4	Riverside Dr. (SR-74) & Grand Av. (SR-74)	Lake Elsinore, Caltrans
5	Grand Av (SR-74) & Macy St.	Lake Elsinore, Caltrans
8	Driveway 1 & Macy St. – Future Intersection	Lake Elsinore

Although unsignalized, traffic signal warrants have not been evaluated for Driveway 2 along Grand Avenue since the driveway are proposed for restricted access. The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 3 *Area Conditions* of this report. The traffic signal warrant analyses for future conditions are presented in Section 5 *EAP (2024) Traffic Conditions* and Section 6 *EAPC (2024) Traffic Conditions* of this report.

It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

2.4 MINIMUM ACCEPTABLE LOS

2.4.2 CITY OF LAKE ELSINORE

The City of Lake Elsinore has established LOS D as the minimum level of service for its intersections. Therefore, any intersection operating at LOS E or F will be considered deficient for the purposes of this analysis.

2.4.2 COUNTY OF RIVERSIDE

The definition of an intersection deficiency has been obtained from the City of Lake Elsinore General Plan. Riverside County General Plan Policy C 2.1 states that the County will maintain the following County-wide target LOS:

The following minimum target levels of service have been designated for the review of development proposals in the unincorporated areas of Riverside County with respect to transportation impacts on roadways designated in the Riverside County Circulation Plan which are currently County maintained, or are intended to be accepted into the County maintained roadway system:

- *LOS C shall apply to all development proposals in any area of the Riverside County not located within the boundaries of an Area Plan, as well as those areas located within the following Area Plans: REMAP, Eastern Coachella Valley, Desert Center, Palo Verde Valley, and those non-*

Community Development areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.

- *LOS D shall apply to all development proposals located within any of the following Area Plans: Eastvale, Jurupa, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Menifee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, Western Coachella Valley and those Community Development Areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.*
- *LOS E may be allowed by the Board of Supervisors within designated areas where transit-oriented development and walkable communities are proposed.*

The applicable minimum LOS utilized for the purposes of this analysis is LOS D per the County-wide target LOS for projects located within a Community Development Area of the Elsinore Area Plan.

2.5 DEFICIENCY CRITERIA

Below are the traffic deficiency criteria:

- When existing traffic conditions exceed the General Plan target LOS (e.g., LOS D or better).
- When project traffic, added to existing traffic, will deteriorate the LOS to below the target LOS, and deficiencies cannot be improved through project conditions of approval.
- When cumulative traffic exceeds the target LOS, and deficiencies cannot be improved through the Western Riverside Council of Government (WRCOG) Transportation Uniform Mitigation Fee (TUMF) network (or other funding mechanism), project conditions of approval, or other implementation mechanism.

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3 AREA CONDITIONS

This section provides a summary of the existing circulation network, the City of Lake Elsinore General Plan Circulation Network, and a review of existing peak hour intersection operations and traffic signal warrant analyses.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the agreement with City of Lake Elsinore staff (Appendix 1.1), the study area includes a total of 9 intersections as shown previously on Exhibit 1-3. Exhibit 3-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 CITY OF LAKE ELSINORE GENERAL PLAN CIRCULATION ELEMENT

As noted previously, the Project site is located within the City of Lake Elsinore. The roadway classifications and planned (ultimate) roadway cross-sections of the major roadways within the study area, as identified in the City of Lake Elsinore General Plan Circulation Element, are described subsequently. Exhibit 3-2 shows the City of Lake Elsinore General Plan Circulation Element and Exhibit 3-3 illustrates the City of Lake Elsinore General Plan roadway cross-sections.

Study area roadways that are classified as an Urban Arterial are identified as having six lanes of travel. The following study area roadways within the City of Lake Elsinore are classified as an Urban Arterial:

- Grand Avenue (SR-74)
- Riverside Drive (SR-74)

Study area roadways that are classified as a Major Highway are identified as having four lanes of travel. The following study area roadway within the City of Lake Elsinore are classified as a Major Highway:

- Lincoln Street

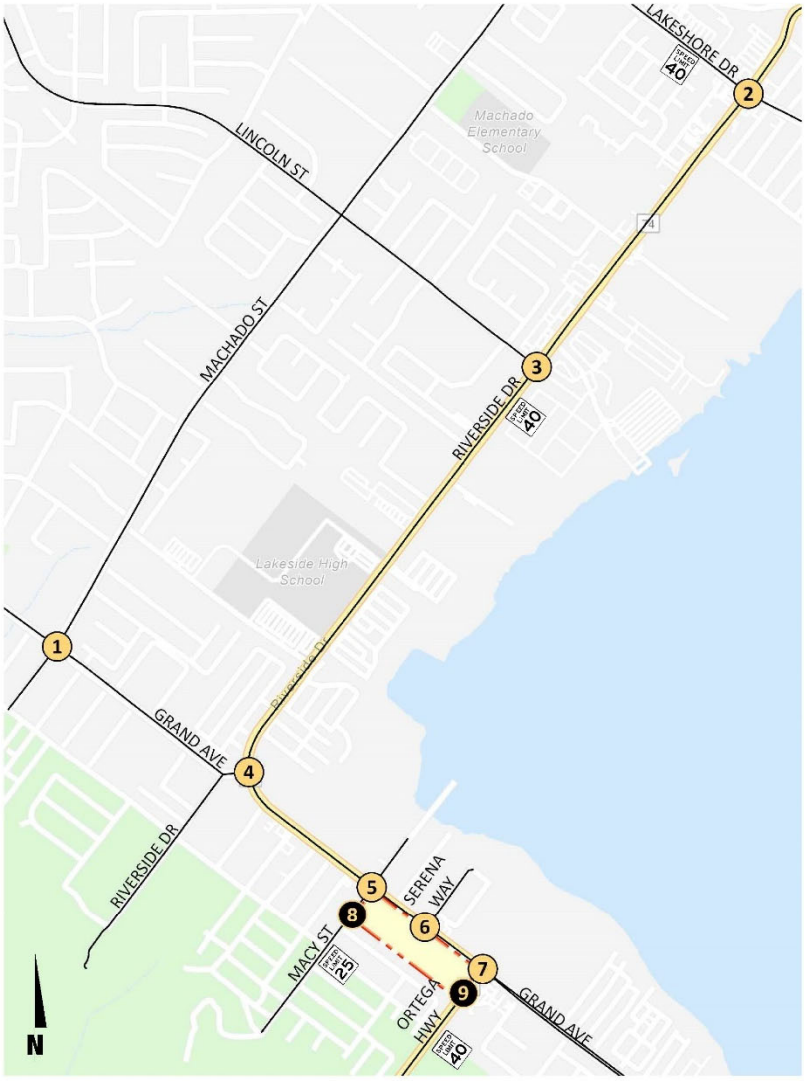
Study area roadways that are classified as a Secondary are identified as having four lanes of travel. The following study area roadway within the City of Lake Elsinore are classified as a Secondary:

- Machado Street

3.3 BICYCLE AND PEDESTRIAN FACILITIES

The City of Lake Elsinore Area Trails System is shown on Exhibit 3-4 while the City of Lake Elsinore Bikeway Plan is shown on Exhibit 3-5. There is an existing Regional Trail that runs parallel to Grand Avenue in the vicinity of the study area. There is a proposed Class II bike path along Grand Avenue (SR-74). Existing pedestrian facilities within the study area are shown on Exhibit 3-6.

EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS



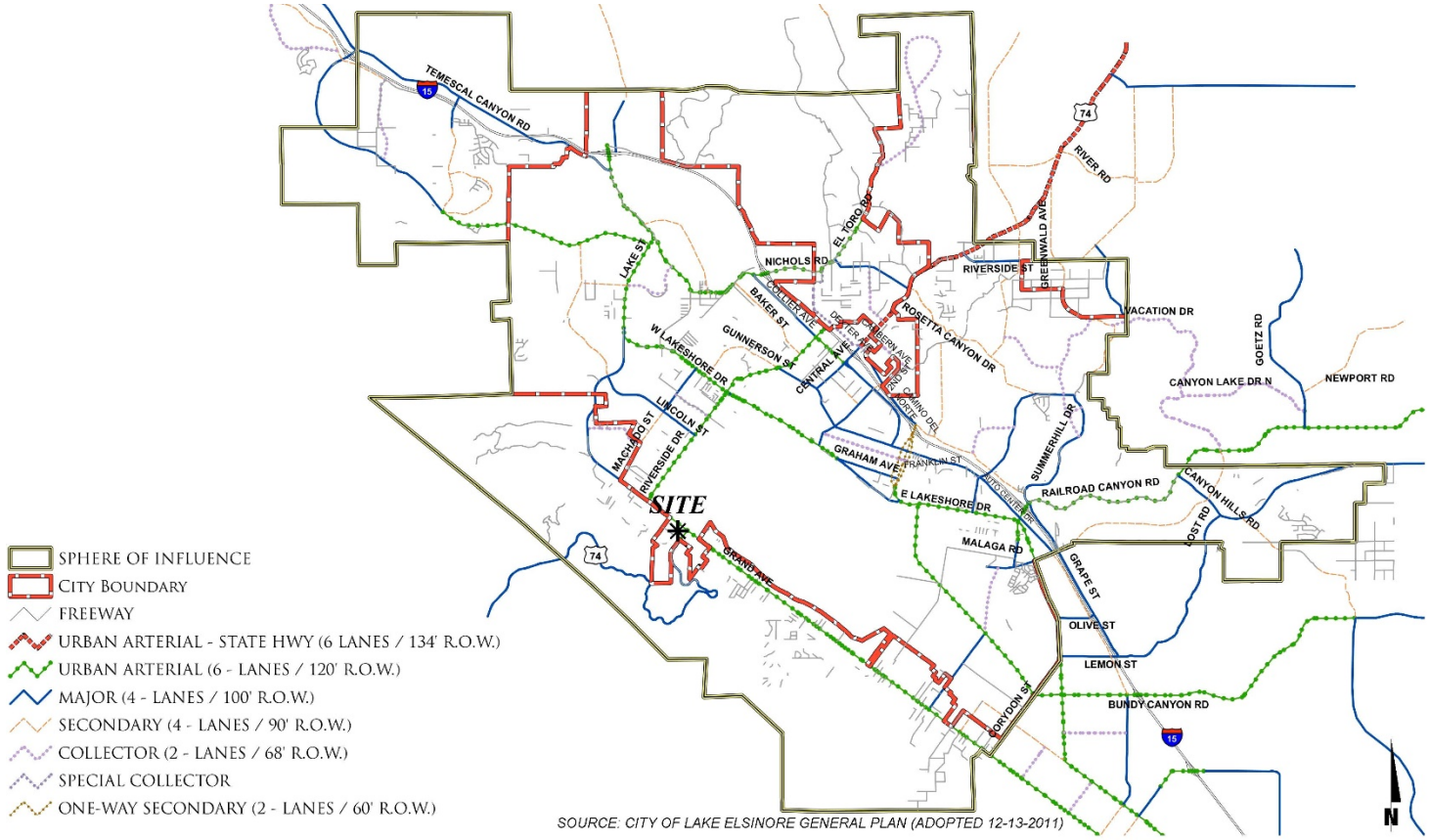
1 Machado St. & Grand Av.	2 Riverside Dr. (SR-74) & Lakeshore Dr.
3 Riverside Dr. (SR-74) & Lincoln St.	4 Riverside Dr. (SR-74) & Grand Av.
5 Macy St. & Grand Av.	6 Serena Wy./ Dwy .2 & Grand Av.
7 Ortega Hwy. (SR-74) & Grand Av.	8 Macy St. & Dwy. 1
	9 Dwy. 3 & Ortega Hwy. (SR-74)

Future Intersection

Future Intersection

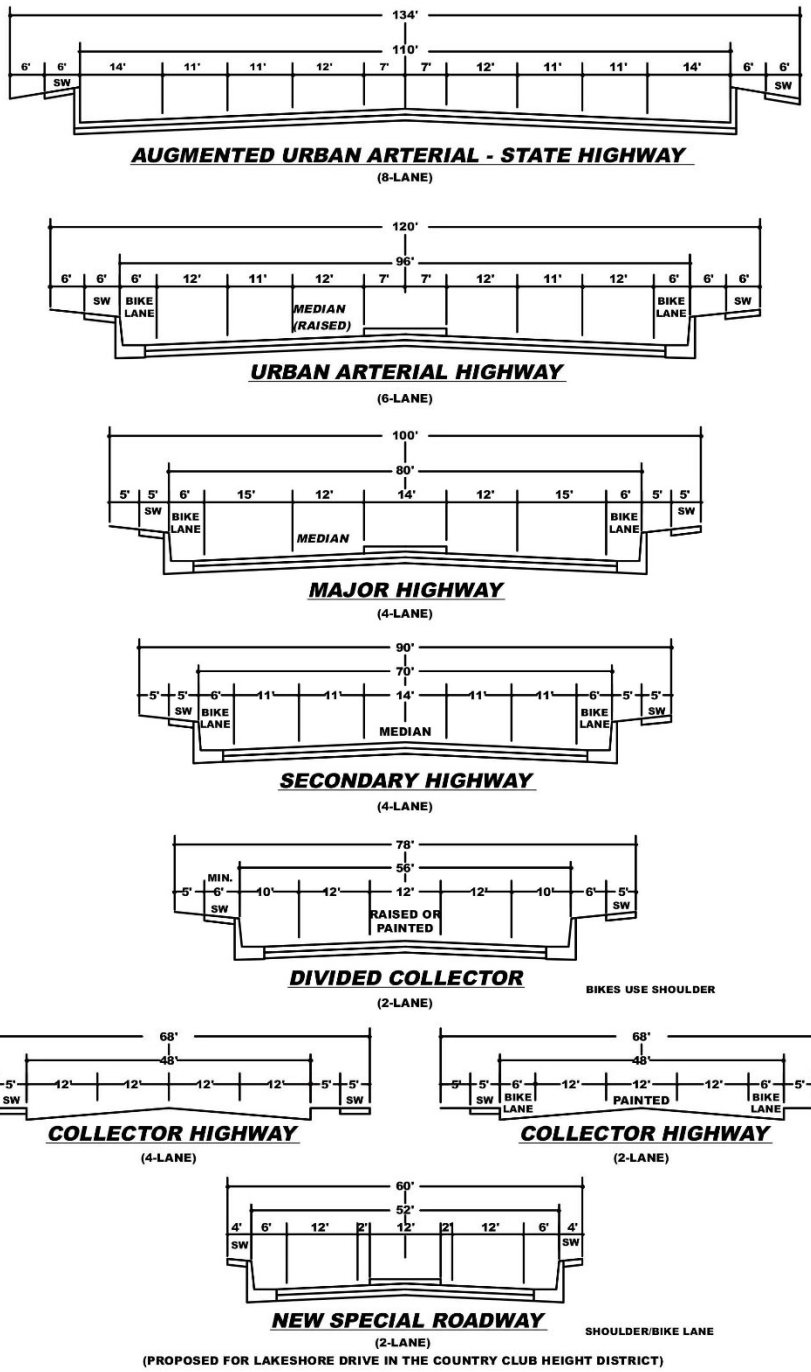
= Traffic Signal
= All Way Stop
= Stop Sign
4 = Number of Lanes
D = Divided
U = Undivided
DEF = Defacto Right Turn
= Speed Limit (MPH)

EXHIBIT 3-2: CITY OF LAKE ELSINORE GENERAL PLAN CIRCULATION ELEMENT



SOURCE: CITY OF LAKE ELSINORE GENERAL PLAN (ADOPTED 12-13-2011)

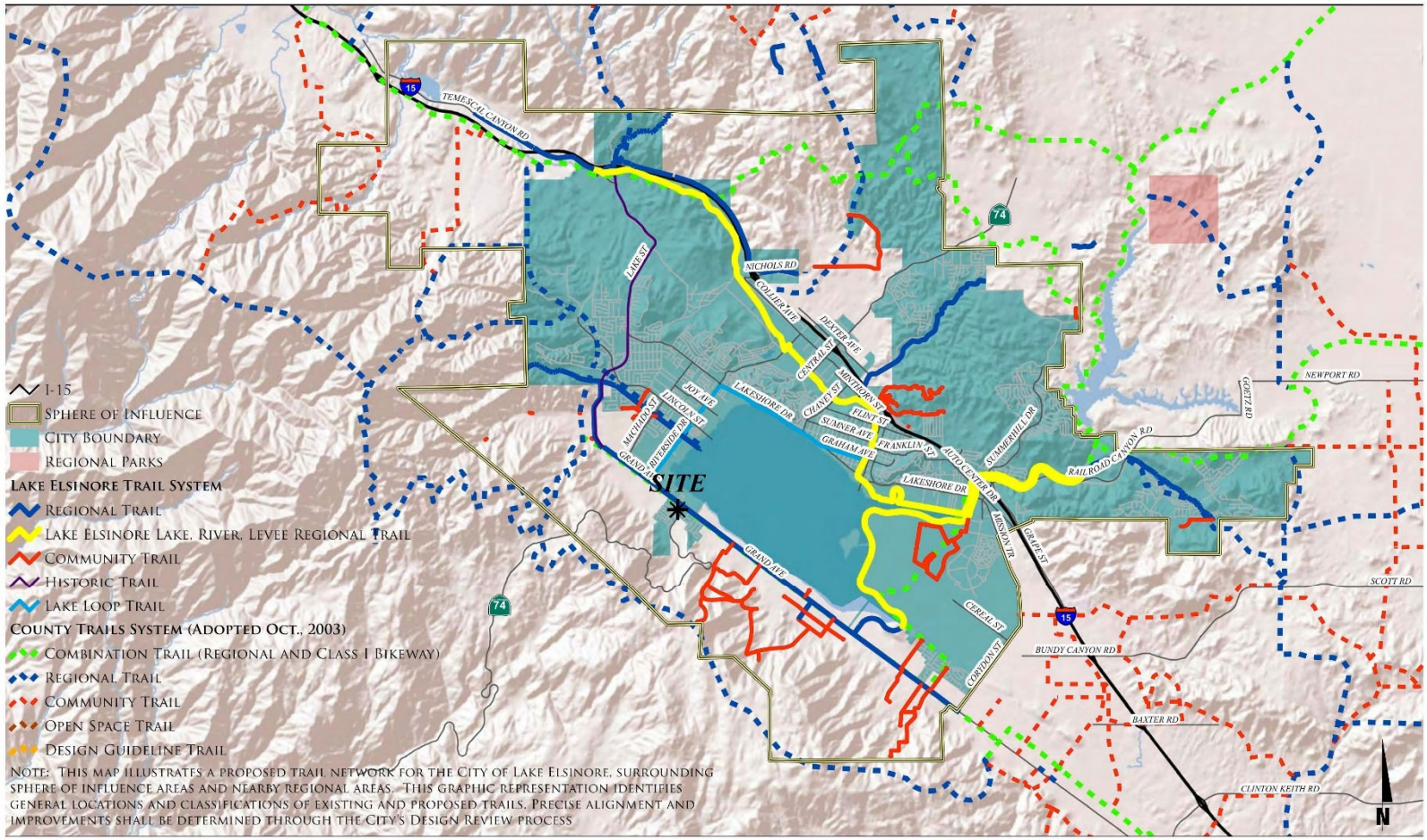
EXHIBIT 3-3: CITY OF LAKE ELSINORE GENERAL PLAN ROADWAY CROSS-SECTIONS



* BIKE LANES ARE NOT MANDATORY UNLESS SHOWN ON THE BIKEWAY CIRCULATION ELEMENT PLAN
PRECISE SIDEWALK LOCATION SUBJECT TO CITY ENGINEER APPROVAL
NOTE: CHECK THE DISTRICT PLAN OF YOUR AREA FOR ANY REQUIRED SPECIAL ROADWAY CROSS-SECTION, ESPECIALLY THE LAKE EDGE AND COUNTRY CLUB HEIGHTS DISTRICT PLANS.
STRIPPING OF COLLECTOR HIGHWAY AS DIRECTED BY CITY ENGINEER.

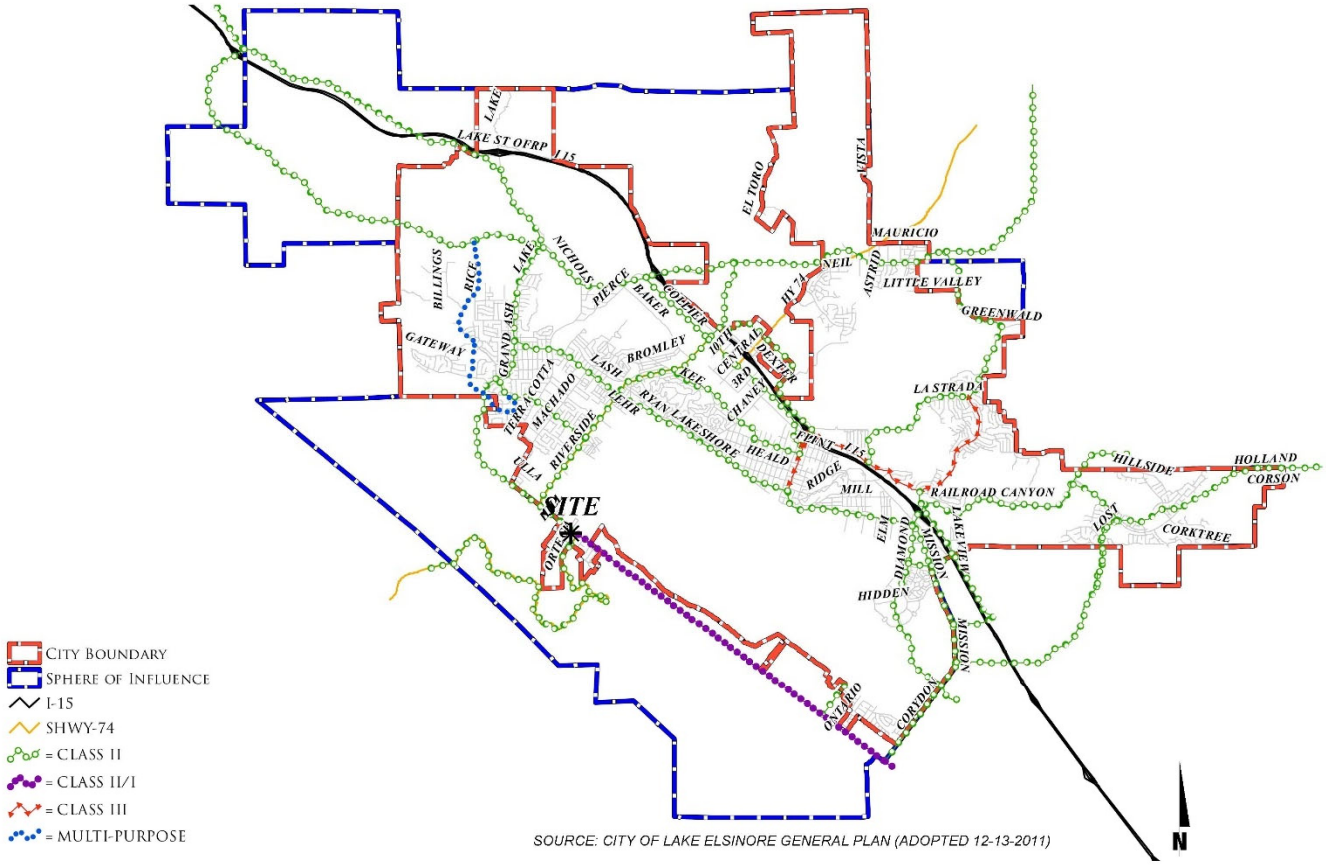
SOURCE: CITY OF LAKE ELSINORE GENERAL PLAN (ADOPTED 12-13-2011)

EXHIBIT 3-4: CITY OF LAKE ELSINORE AREA TRAILS SYSTEM



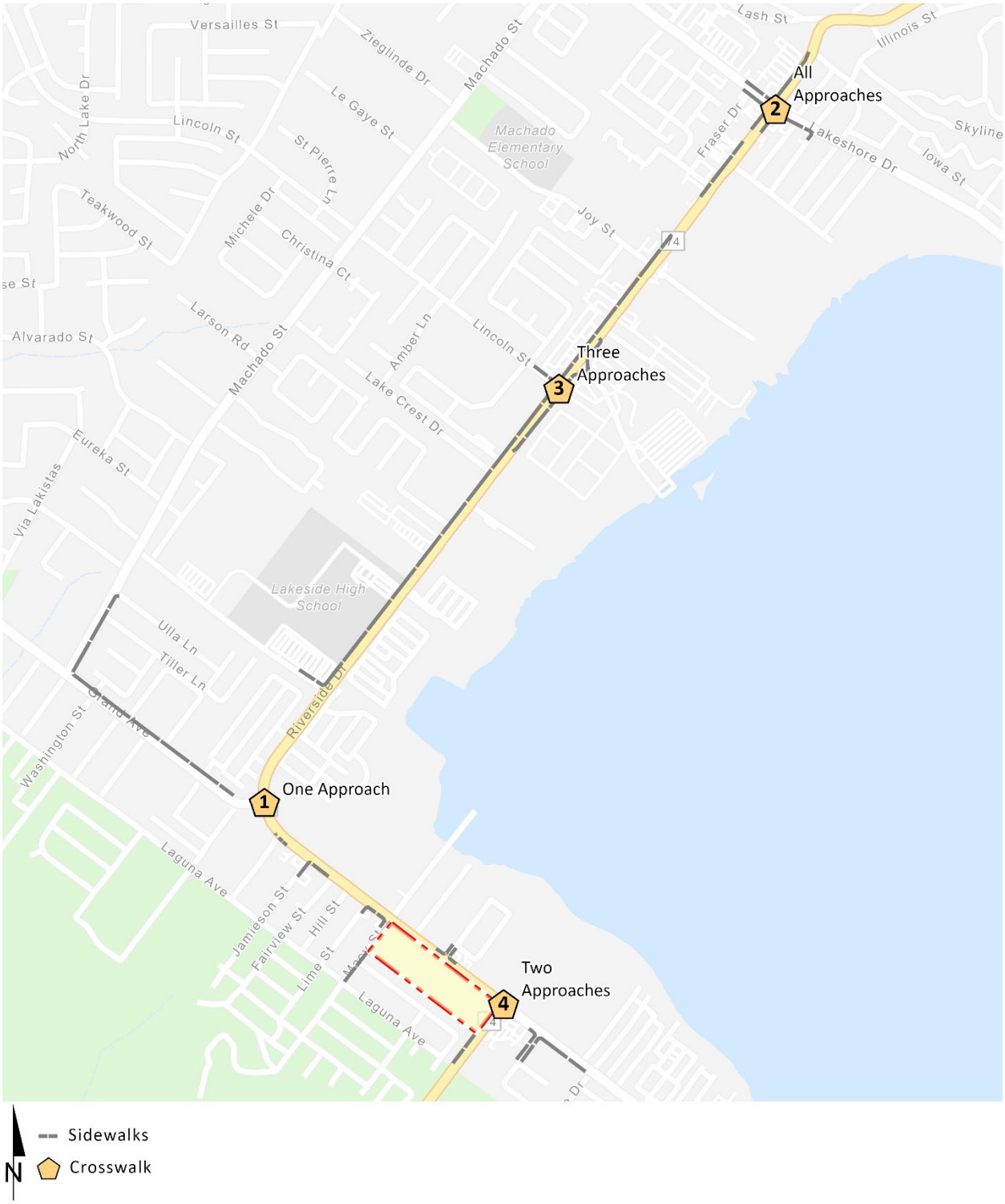
SOURCE: CITY OF LAKE ELSINORE GENERAL PLAN (ADOPTED 12-13-2011)

EXHIBIT 3-5: CITY OF LAKE ELSINORE BIKEWAY PLAN



SOURCE: CITY OF LAKE ELSINORE GENERAL PLAN (ADOPTED 12-13-2011)

EXHIBIT 3-6: EXISTING PEDESTRIAN AND BICYCLE FACILITIES



3.4 TRANSIT SERVICE

The Riverside Transit Authority (RTA) currently serves the City of Lake Elsinore. Transit service is reviewed and updated by RTA periodically to address ridership, budget, and community demand needs. RTA Route 8 runs along Riverside Drive (SR-74) and Grand Avenue (SR-79). This route would likely serve the Project in the future. Existing transit routes in the vicinity of the study area are illustrated on Exhibit 3-7. As shown on Exhibit 3-7, there are existing bus stops along the Project's frontage on Grand Avenue. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate. As such, it is recommended that the applicant work in conjunction with RTA to potentially provide additional bus service to the site.

3.5 EXISTING TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in 2018, 2019, and 2020. The following peak hours were selected for analysis:

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

Due to the currently ongoing COVID-19 pandemic, schools and businesses within the study area were closed or operating at less than full capacity at the time this study was prepared. As such, historic (2018 and 2019) traffic counts were utilized in conjunction with a 2.0% per year growth rate (compounded annually) to reflect adjusted 2021 conditions. The 2018 and 2019 weekday AM and weekday PM peak hour count data are representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes and near-by schools were in session and operating on normal schedules.

Historic traffic count data was not readily available for the intersections of Grand Avenue at Machado Street and Grand Avenue (SR-74) at Serena Way. As such, 2021 traffic counts have been collected at these locations. 2021 traffic counts have also been collected at the adjacent intersection of Grand Avenue (SR-74) and Ortega Highway (SR-74) in order to compare and develop an adjustment factor based on a comparison of the adjusted historic traffic count data to the recently collected 2021 traffic count data. This adjustment factor has been applied to the traffic count data collected at the intersections of Grand Avenue at Machado Street and Grand Avenue (SR-74) at Serena Way to reflect non-COVID traffic conditions. Where applicable, traffic volumes have been flow conserved in order to not have any loss of vehicles. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1.

Existing weekday Average Daily Traffic (ADT) volumes are shown on Exhibit 3-8. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

Weekday PM Peak Hour (Approach Volume + Exit Volume) x 13.72 = Leg Volume

EXHIBIT 3-7: EXISTING TRANSIT ROUTES

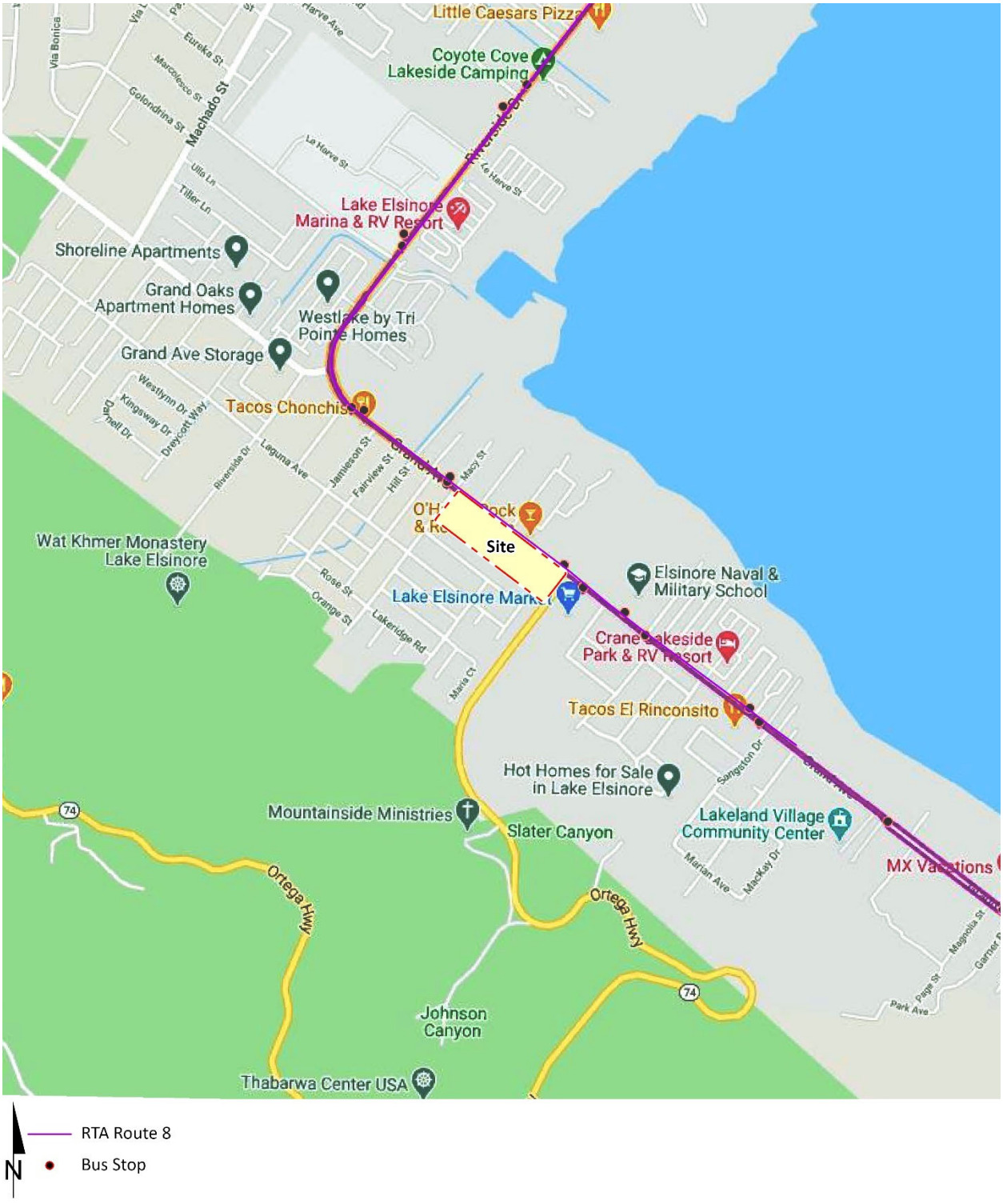
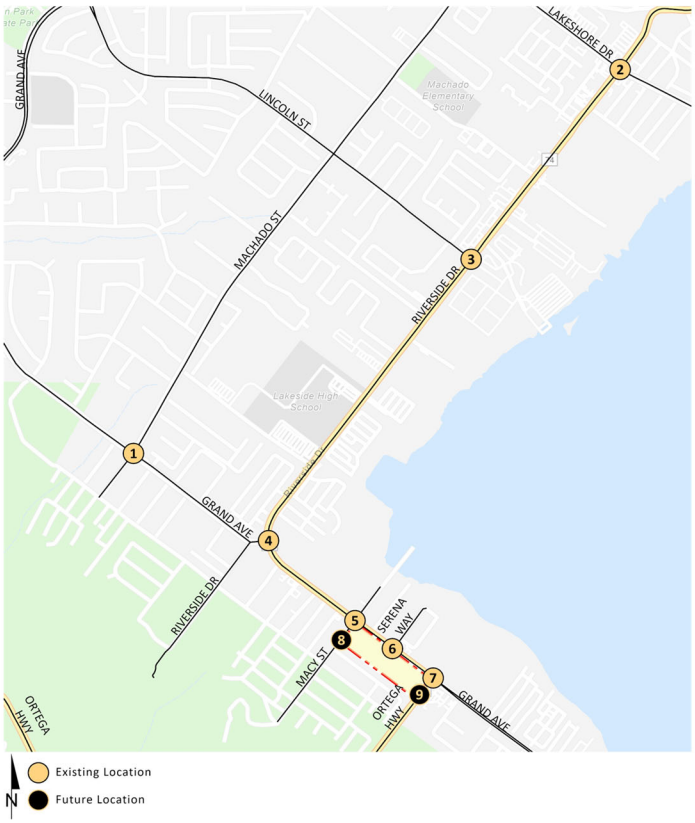


EXHIBIT 3-8: EXISTING (2021) TRAFFIC VOLUMES



1 Grand Av. & Machado St.

	6,600		3,600
	0(2)		13(19)
	195(195)		0(1)
	23(19)		82(99)
2(1)		4(2)	
0(2)		315(244)	
4(1)		55(122)	
150			9,100

2 Riverside Dr. (SR-74) & Lakeshore Dr.

	20,400		23,300
	102(177)		147(304)
	315(284)		455(521)
	279(243)		18(34)
144(138)		202(268)	
541(574)		159(340)	
302(289)		11(22)	
27,000			16,950

3 Riverside Dr. (SR-74) & Lincoln St.

	8,700		28,200
	305(92)		65(218)
	419(264)		647(705)
162(60)			
688(868)			
23,650			

4 Riverside Dr. (SR-74) & Grand Av.

	22,650		
	168(130)		
	632(595)		
75(62)		208(368)	
368(201)		608(864)	
10,450			27,800

5 Grand Av. (SR-74) & Macy St.

	27,400		4(0)
	14(48)		
	1004(713)		
	2(1)		
46(22)		14(41)	
66(22)		724(1214)	
1,800			27,300

6 Grand Av. (SR-74) & Serena Wy./Driveway 2

	27,300		450
	1069(721)		5(7)
	2(14)		
			4(6)
		733(1248)	4(8)
			27,200

7 Grand Av. & SR-74

	27,200		
	470(109)		
	601(617)		
95(773)		314(67)	
66(567)		642(483)	
20,800			23,800

8 Driveway 1 & Macy St.

			1,800
			29(89)
113(43)			
1,800			

9 Driveway 3 & SR-74

			20,800
			784(176)
160(1340)			
20,800			

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

A comparison of the PM peak hour and daily traffic volumes of various roadway segments within the study area indicated that the peak-to-daily relationship is approximately 7.29 percent. As

such, the above equation utilizing a factor of 13.72 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 7.29 percent (i.e., 1/0.0729 = 13.72) and was assumed to sufficiently estimate ADT volumes for planning-level analyses. Existing weekday AM and weekday PM peak hour intersection volumes are also shown on Exhibit 3-8.

3.6 INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized in Table 3-1, which indicates that the following study area intersections are currently operating at an unacceptable LOS during the peak hours under Existing (2021) traffic conditions:

- Grand Avenue (SR-74) & Macy Street (#5) – LOS F AM and PM peak hours
- Grand Avenue (SR-74) & Serena Way/Driveway 2 (#6) – LOS E AM peak hour; LOS F PM peak hour

The intersection operations analysis worksheets are included in Appendix 3.2 of this TA.

TABLE 3-1: INTERSECTION ANALYSIS FOR EXISTING (2021) CONDITIONS

#	Intersection	Traffic Control[3]	Delay[2] (secs.)		Level of Service	
			AM	PM	AM	PM
1	Grand Av. & Machado St.	AWS	11.9	10.2	B	B
2	Riverside Dr. (SR-74) & Lakeshore Dr.	TS	30.8	31.3	C	C
3	Riverside Dr. (SR-74) & Lincoln St.	TS	47.7	32.3	D	C
4	Riverside Dr. (SR-74) & Grand Av.	TS	19.8	16.7	B	B
5	Grand Av. (SR-74) & Macy St.	CSS	**>100.0**	**>100.0**	**F**	**F**
6	Grand Av. (SR-74) & Serena Wy./Driveway 2	CSS	**44.3**	**87.8**	**E**	**F**
7	Grand Av. & SR-74	TS	15.2	28.5	B	C
8	Driveway 1 & Macy St.		Future Intersection			
9	Driveway 3 & SR-74		Future Intersection			

* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

2 Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement

3 AWS = All-way Stop; CSS = Cross-street Stop; TS = Traffic Signal

3.7 EXISTING (2021) TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. The following existing unsignalized study area intersections currently meet a traffic signal warrant for Existing conditions (see Appendix 3.3):

- Riverside Drive (SR-74) & Grand Avenue (#4)
- Grand Avenue (SR-74) & Macy Street (#5)

3.8 DEFICIENCIES AND IMPROVEMENTS

Improvements have been identified for each of the study area intersections that are currently operating at an unacceptable LOS during the peak hours. The effectiveness of the recommended improvement strategies to address Existing (2021) traffic deficiencies are presented on Table 3-2. Worksheets for Existing (2021) Conditions, with improvements, HCM calculation worksheets are provided in Appendix 3.4.

TABLE 3-2: INTERSECTION ANALYSIS FOR EXISTING (2021) CONDITIONS WITH IMPROVEMENTS

			Intersection Approach Lanes[1]											Delay[1] (secs.)		Level of Service	
		Traffic	Northbound			Southbound			Eastbound			Westbound					
#	Intersection	Control[3]	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
5	Grand Av. (SR-74) & Macy St.																	
	- Without Project	CSS	0	1	0	0	1	1	0	1	0	0	1	0	**>100.0**	**>100.0**	**F**	**F**
	- With Project	**TS**	**1**	1	0	**1**	**2**	0	**1**	1	0	0	1	0	10.8	13.0	B	B
6	Grand Av. (SR-74) & Serena Wy./Driveway 2																	
	- Without Project	CSS	0	1	0	1	1	0	0	0	0	0	1	0	**44.3**	**87.8**	**E**	**F**
	- With Project	CSS	0	**2**	0	0	**2**	0	0	0	0	0	1	0	20.0	21.2	C	C

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; **1** = Improvement

[2] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single

[3] CSS = Cross-street Stop; TS = Traffic Signal; **TS** = Improvement

4 PROJECTED FUTURE TRAFFIC

The Project is to include the development of the following uses:

- 20-vehicle fueling position super convenience market and gas station
- 1 automated car wash tunnel
- 4,476 square feet of fast-food restaurant with drive-through window use
- 1,972 square feet of fast-food restaurant without drive-through window use
- 23,000 square feet of commercial retail use
- 14 multifamily (low-rise) residential dwelling units
- 60 multifamily (mid-rise) residential dwelling units

For purposes of the traffic analysis, it is anticipated that the Project will be developed in a single phase with an anticipated Opening Year of 2024. The Project is proposed to take access via the following roadways:

- Driveway 1 on Macy Street – full access
- Driveway 2 on Grand Avenue – right-in/right-out/left-in access
- Driveway 3 on SR-74 – right-in/right-out access

It should be noted, the proposed Project will modify the access at Serena Way to be right-in/right-out/left-in access. Vehicles from the existing residences along Serena Way can head south on Grand Avenue by making a U-turn at the intersection of Grand Avenue & Macy Street. Regional access to the Project site is available from Riverside Drive (SR-74)/Ortega Highway (SR-74) and the I-15 Freeway.

4.1 PROJECT TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development.

Trip generation rates used to estimate Project traffic are shown in Table 4-1. The trip generation rates used for this analysis are based upon information collected by the ITE as provided in their Trip Generation Manual, 10th Edition, 2017. (2) As the project is proposed to include shopping center, gas station, and other complementary uses, pass-by percentages have been obtained from the ITE Trip Generation Handbook (3rd Edition, 2017). (6) Patrons of the gas station may also visit other uses on-site, including the restaurants, residential, and retail uses, without leaving the site. The ITE Trip Generation Handbook has been utilized to determine the internal capture for the applicable mix of uses.

TABLE 4-1: PROJECT TRIP GENERATION SUMMARY

Land Use[1]	ITE Code	Units[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Weekday Daily
Multifamily Housing Low-Rise (1-2 Floors)	220	DU	0.11	0.35	0.46	0.35	0.21	0.56	7.32
Multifamily Housing Mid-Rise (3-10 Floors)	221	DU	0.09	0.27	0.36	0.27	0.17	0.44	5.44
Shopping Center	820	TSF	0.58	0.36	0.94	1.83	1.98	3.81	37.75
Fast-Food Restaurant without Drive-Thru	933	TSF	15.06	10.04	25.10	14.17	14.17	28.34	346.23
Fast-Food Restaurant with Drive-Thru	934	TSF	20.50	19.69	40.19	16.99	15.68	32.67	470.95
Automated Car Wash[3]	948	TUN	N/A	N/A	N/A	38.75	38.75	77.50	775.00
Super Convenience Market/Gas Station	960	VFP	14.04	14.04	28.08	11.48	11.48	22.96	230.52

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Fast-Food Restaurant with Drive-Thru	4.476	TSF	92	88	180	76	70	146	2,108
Internal Capture[5]:			-32	-11	-43	-25	-32	-57	-828
Pass-By (49% AM; 50% PM/Daily)[4]:			-29	-29	-58	-19	-19	-38	-640
Fast-Food Restaurant without Drive-Thru	1.972	TSF	30	20	49	28	28	56	684
Internal Capture[5]:			-10	-4	-14	-8	-11	-19	-228
Pass-By (49% AM; 50% PM/Daily)[4]:			-8	-8	-16	-9	-9	-18	-228
Restaurant Subtotal:			*42*	*56*	*98*	*43*	*27*	*70*	*868*
Commercial Retail	23.000	TSF	13	8	22	42	46	88	870
Internal Capture[5]:			-2	-5	-7	-6	-6	-12	-118
Pass-By (34% PM/Daily)[4]:			0	0	0	-12	-12	-24	-256
Super Convenience Market/Gas Station	20	VFP	281	281	562	230	230	459	4,612
Internal Capture[5]:			-13	-33	-46	-33	-29	-63	-630
Pass-By (76% AM/PM/Daily)[4]:			-189	-189	-378	-149	-149	-298	-3,506
Automated Car Wash	1	TUN	0	0	0	39	39	78	776
Internal Capture[5]:			0	0	0	-6	-5	-11	-106
Retail Subtotal:			*90*	*62*	*152*	*104*	*113*	*217*	*1,642*
Multifamily Housing (Low-Rise)	14	DU	1	5	6	5	3	8	102
Internal Capture[5]:			0	-1	-1	-3	-2	-5	-64
Multifamily Housing (Mid-Rise)	60	DU	6	16	22	16	10	26	326
Internal Capture[5]:			0	-3	-3	-10	-6	-16	-202
Residential Subtotal:			*7*	*17*	*24*	*8*	*5*	*13*	*162*
Project Buildout Total:			**140**	**135**	**275**	**155**	**145**	**300**	**2,672**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

[2] TSF = thousand square feet; VFP = Vehicle Fueling Position; TUN = Tunnel; DU = Dwelling Units

[3] Daily trip generation rate is not readily available in the ITE Trip Generation Manual, Tenth Edition (2017). As such, the daily trip generation rate is estimated at 10 times the PM peak hour trip generation rate.

[4] Pass-by reduction percentages are from the ITE Trip Generation Handbook (3rd Edition, 2014).

[5] Internal capture calculated from NCHRP 684 Internal Trip Capture Estimation Tool.

As shown in Table 4-1, the proposed Project is anticipated to generate a total of 2,672 trip-ends per day, with 275 AM peak hour trips and 300 PM peak hour trips.

4.2 PROJECT TRIP DISTRIBUTION

The Project trip distribution and assignment process represents the directional orientation of traffic to and from the Project site. The trip distribution pattern is heavily influenced by the geographical location of the site, the location of surrounding land uses, and the proximity to the regional freeway system. Separate trip distributions were generated for the residential and retail/restaurant uses. Exhibit 4-1 illustrates the residential trip distribution patterns while Exhibits 4-2 illustrates the retail/restaurant trip distribution patterns. The Project trip distribution patterns were reviewed by the City of Lake Elsinore as part of the traffic study scoping process (see Appendix 1.1).

4.3 MODAL SPLIT

The potential for Project trips to be reduced by the use of public transit, walking or bicycling have not been included as part of the Project's estimated trip generation. Essentially, the Project's traffic projections are "conservative" in that these alternative travel modes would reduce the forecasted traffic volumes.

4.4 PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, Project only ADT and peak hour intersection turning movement volumes are shown on Exhibit 4-3.

EXHIBIT 4-1: PROJECT (RESIDENTIAL) TRIP DISTRIBUTION

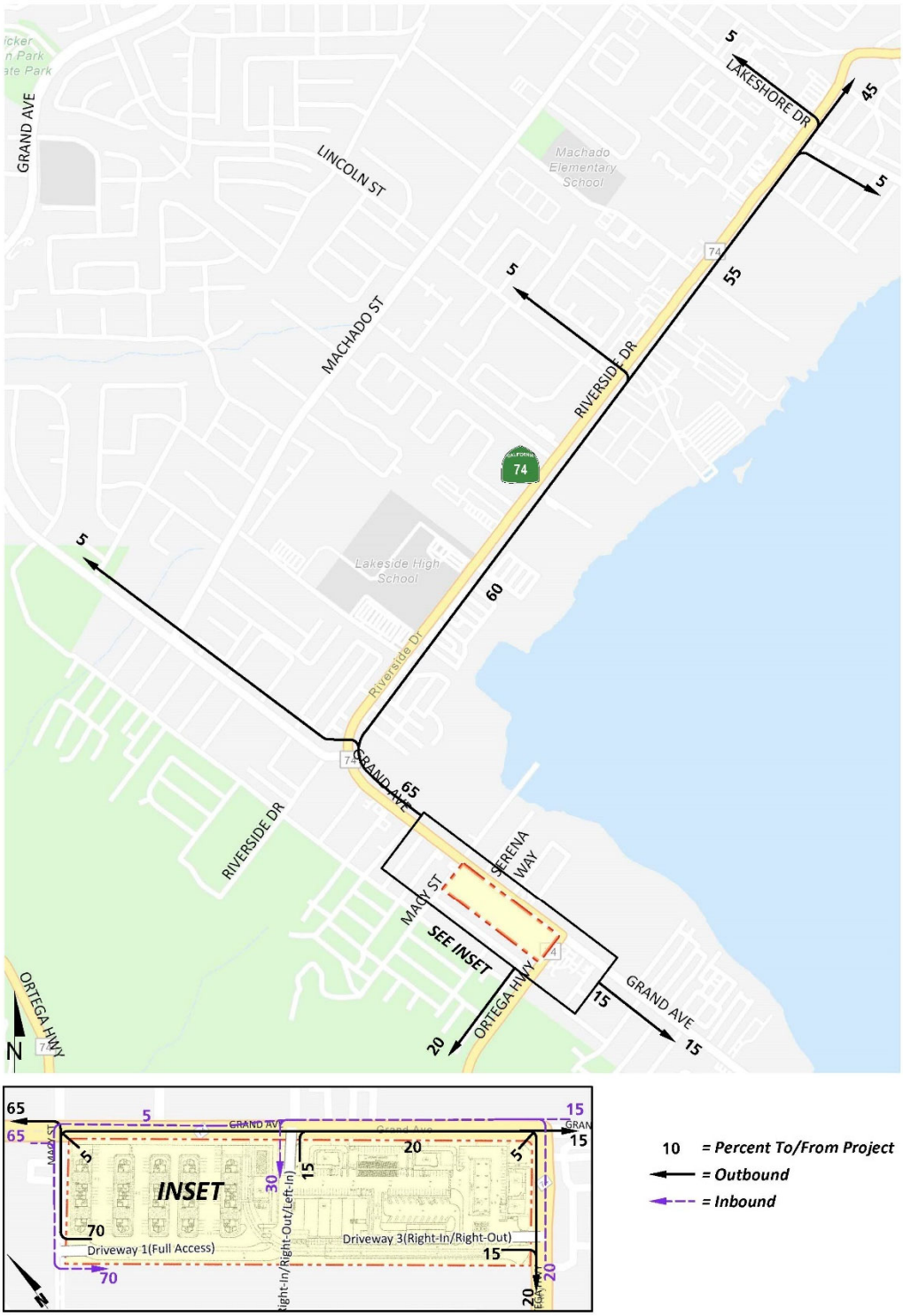
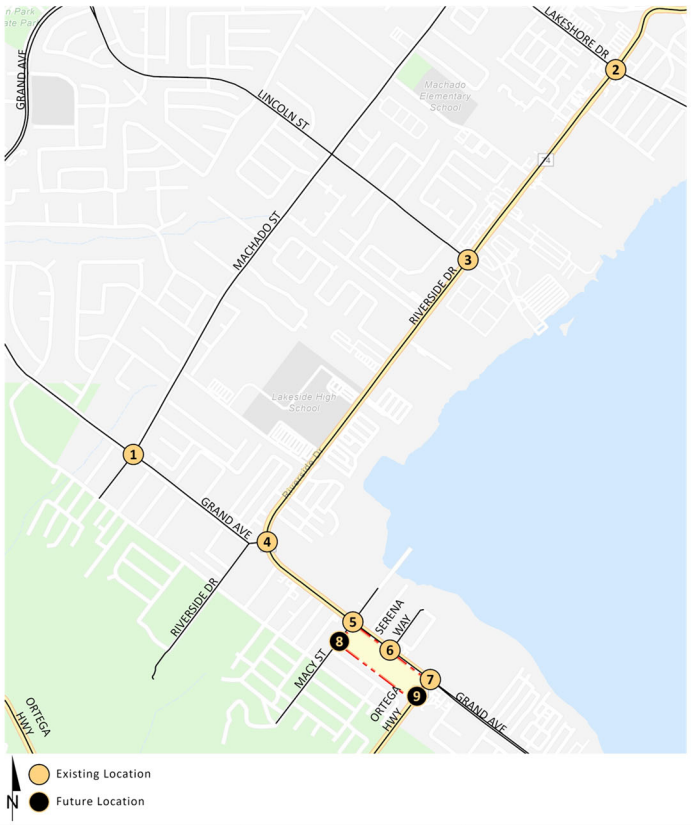


EXHIBIT 4-2: PROJECT (RETAIL) TRIP DISTRIBUTION

EXHIBIT 4-3: PROJECT ONLY TRAFFIC VOLUMES



1 Grand Av. & Machado St.

200 | 14(15) ← | ↰ 13(15) | 900
13(14) → | ↱ 12(14)
850 | 1,950

2 Riverside Dr. (SR-74) & Lakeshore Dr.

1,050 | 14(15) ↲ | ← 10(11) | 450
13(14) ↳ | ↱ 7(8)
14(9) → |
7(7) ↴ |
450 | 2,000

3 Riverside Dr. (SR-74) & Lincoln St.

14(15) ↲ | ← 30(34) | 1,600
13(14) ↳ |
33(31) → |
4,000 | 600

4 Riverside Dr. (SR-74) & Grand Av.

44(49) ← | 1,000
24(28) ↳ | 46(45) →
27(30) ↲ |
1,600 | 2,350

5 Grand Av. (SR-74) & Macy St.

5(5) ↲ | 67(74) ← | 900
182(168) ↳ |
1(0) ↴ | -112(-95) →
1,000 | 100

6 Grand Av. (SR-74) & Serena Wy./Driveway 2

200 | 85(94) ↲ | -17(-20) ← | 700
68(77) ↴ | 167(156) ↳ | -112(-95) →
900

7 Grand Av. & SR-74

14(15) ↲ | 50(57) ← |
15(16) ↳ | 54(60) →

8 Driveway 1 & Macy St.

↰ 5(6) |
183(169) ↱

9 Driveway 3 & SR-74

109(90) ↲ | (-75) ← | ↰ 108(90) ← -94()
15(16) →

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

4.5 BACKGROUND TRAFFIC

Future year traffic forecasts have been based upon background (ambient) growth of 6.12% (2% per year compounded annually for 3 years) for 2024 traffic conditions. This ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies. EAP (2024) and EAPC (2024) traffic volumes are provided in Section 5 and Section 6 of this report, respectively.

4.6 CUMULATIVE DEVELOPMENT TRAFFIC

A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the City of Lake Elsinore. Exhibit 4-4 illustrates the cumulative development location map. A summary of cumulative development projects and their proposed land uses are shown in Table 4-2. If applicable, the traffic generated by individual cumulative projects was manually added to the EAP (2024) forecasts to ensure that traffic generated by the listed cumulative development projects in Table 4-2 are reflected as part of the background traffic to calculate EAPC (2024) traffic forecasts. Cumulative ADT and peak hour intersection turning movement volumes are shown on Exhibit 4-5.

EXHIBIT 4-4: CUMULATIVE DEVELOPMENT LOCATION MAP

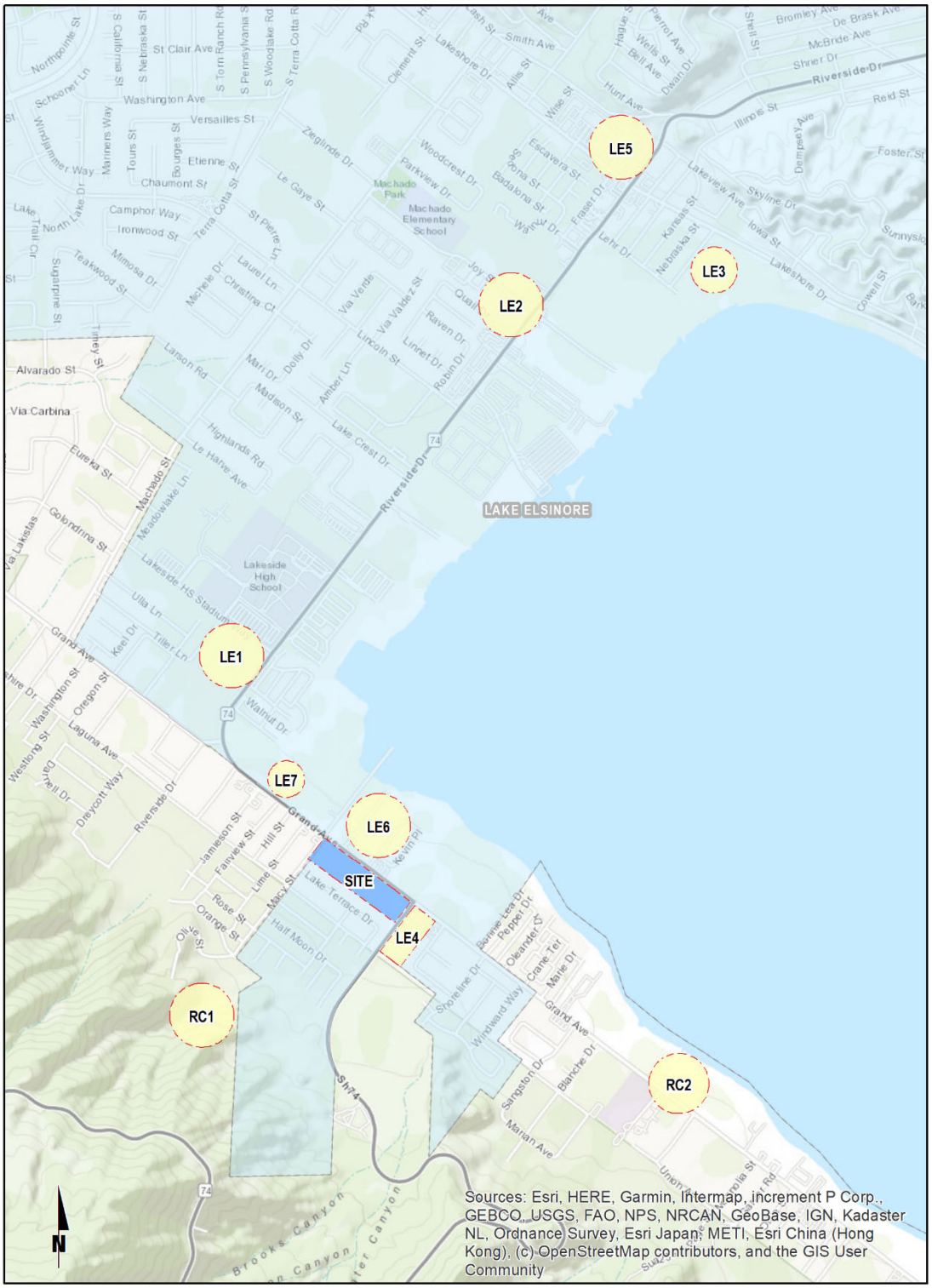
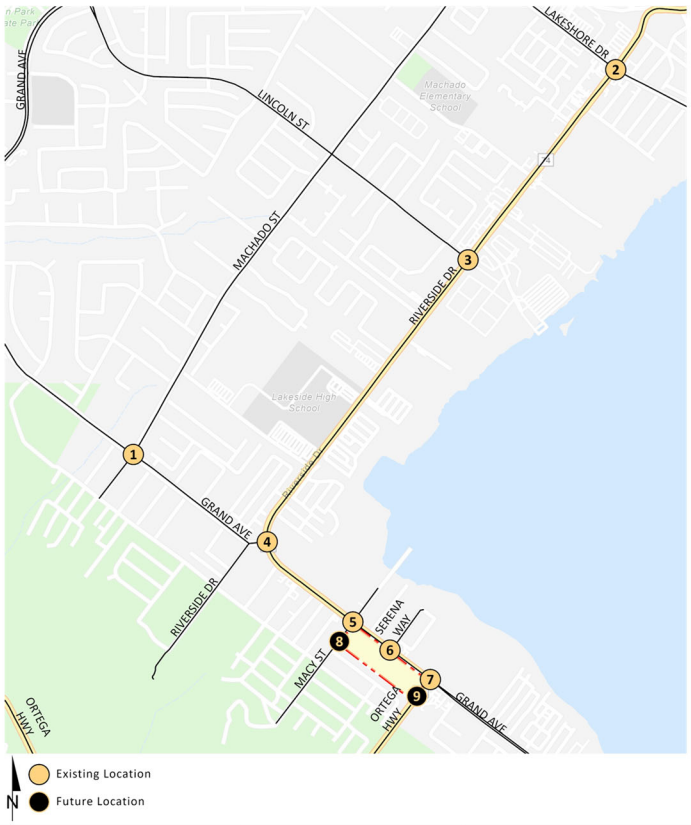


EXHIBIT 4-5: CUMULATIVE ONLY TRAFFIC VOLUMES



1 Grand Av. & Machado St.

250 / *250*

38(44) ↓ | ↰ 4(5) | *450*

4(6) ↲ | 3(6) ↰ 38(40) ↑ 3(4) ↱

2 Riverside Dr. (SR-74) & Lakeshore Dr.

350 / *650*

600 20(19) ↲ 10(12) ↓ 6(4) ↳ | ↱ 11(6) ← 31(43) ↰ 39(48) | *200*

22(20) ↰ 36(34) ↑ 18(31) ↱ | 13(35) ↰ 11(16) ↑ 2(9) ↱

3 Riverside Dr. (SR-74) & Lincoln St.

950

9(13) ↲ 14(17) ↳ | ↱ 12(16) ← 72(123) | *650*

10(10) ↰ 104(97) ↑

4 Riverside Dr. (SR-74) & Grand Av.

950

13(20) ↲ 79(90) ↓ | *650*

13(20) ↰ 32(34) ↲ | 31(31) ↰ 69(83) ↑

5 Grand Av. (SR-74) & Macy St.

950

76(91) ↓ 70(65) ↳ | *650*

64(82) ↑

6 Grand Av. (SR-74) & Serena Wy./Driveway 2

300

700 91(99) ↓ | *550*

93(107) ↑

7 Grand Av. & SR-74

65(73) ↲ 26(26) ↓

71(73) ↰ 14(12) ↲ | 11(14) ↰ 22(33) ↑

8 Driveway 1 & Macy St.

9 Driveway 3 & SR-74

↱ ← 31(45)

40(44) ↑

##(##) AM(PM) Peak Hour Intersection Volumes

***Average Daily Trips***

TABLE 4-2: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

No.	Project Name	Land Use	Quantity[1]
City of Lake Elsinore:			
LE1	Village at Lakeshore (TR 33267)	Condo/Townhomes	163 DU
LE2	Circle K	Gas Station	4.500 TSF
LE3	Lakeview Plaza	Shopping Center	43.000 TSF
LE4	Ortega Plaza	Fast Food w/ Drive Thru	1.400 TSF
		Super Convenience Mkt./Gas Station	16 VFP
LE5	Chevron Gas Station	Super Convenience Mkt./Gas Station	12 VFP
LE6	Wake Rider Beach Resort	General Office	1.785 TSF
		Fast Food w/ Drive Thru	2.315 TSF
		Resort Hotel	50 RM
		Quality Restaurant	7.395 TSF
		Marina	15 Berths
LE7	CUP190013	Cannabis Retail	4.467 TSF
County of Riverside:			
RC1	TTM37531	Single Family Residential	48 DU
RC2	PPT180004	Auto Repair Facility	2.400 TSF

[1] TSF = Thousand Square Feet; DU = Dwelling Unit; VFP = Vehicle Fueling Position

5 EAP (2024) TRAFFIC CONDITIONS

This section discusses the methods used to develop EAP (2024) traffic forecasts, and the resulting intersection operations and traffic signal warrant analyses.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for EAP (2024) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for EAP (2024) conditions only (e.g., intersection and roadway improvements along the Project's frontage and driveways).

5.2 EAP (2024) TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus an ambient growth factor of 6.12% plus the addition of Project traffic. The weekday ADT and weekday AM and PM peak hour volumes which can be expected for EAP (2024) traffic conditions are shown on Exhibit 5-1.

5.3 INTERSECTION OPERATIONS ANALYSIS

LOS calculations were conducted for the study intersections to evaluate their operations under EAP (2024) traffic conditions with the roadway and intersection geometrics consistent with Section 5.1 *Roadway Improvements*. As shown in Table 5-1, there are no additional study area intersections that are anticipated to operate at an unacceptable LOS during the peak hours under EAP (2024) traffic conditions, in addition to those intersections previously identified under Existing (2021) traffic conditions. It should be noted the intersections of Grand Avenue (SR-74) & Macy Street (#5) and Grand Avenue (SR-74) & Serena Way/Driveway 2 (#6) are anticipated to improve operations to acceptable LOS during the peak hours with implementation of the site adjacent roadway and site access improvements. The intersection operations analysis worksheets for EAP (2024) traffic conditions are included in Appendix 5.1.

TABLE 5-1: INTERSECTION ANALYSIS FOR EAP (2024) CONDITIONS

#	Intersection	Traffic Control[2]	Existing (2021) Delay[1] (secs.) AM	Existing (2021) Delay[1] (secs.) PM	Existing (2021) Level of Service AM	Existing (2021) Level of Service PM	EAP (2024) Delay[1] (secs.) AM	EAP (2024) Delay[1] (secs.) PM	EAP (2024) Level of Service AM	EAP (2024) Level of Service PM
1	Grand Av. & Machado St.	AWS	11.9	10.2	B	B	13.2	11.1	B	B
2	Riverside Dr. (SR-74) & Lakeshore Dr.	TS	30.8	31.3	C	C	36.8	38.1	D	D
3	Riverside Dr. (SR-74) & Lincoln St.	TS	47.7	32.3	D	C	53.3	53.7	D	D
4	Riverside Dr. (SR-74) & Grand Av.	TS	19.8	16.7	B	B	32.8	18.9	C	B
5	Grand Av. (SR-74) & Macy St.	CSS/**TS**[3]	**>100.0**	**>100.0**	**F**	**F**	13.3	20.4	B	C
6	Grand Av. (SR-74) & Serena Wy./Driveway 2	CSS	**44.3**	**87.8**	**E**	**F**	14.8	14.4	B	B
7	Grand Av. & SR-74	TS	15.2	28.5	B	C	19.2	37.4	B	D
8	Driveway 1 & Macy St.	**CSS**	Future Intersection				10.0	9.3	B	A
9	Driveway 3 & SR-74	**CSS**	Future Intersection				13.4	9.7	B	A

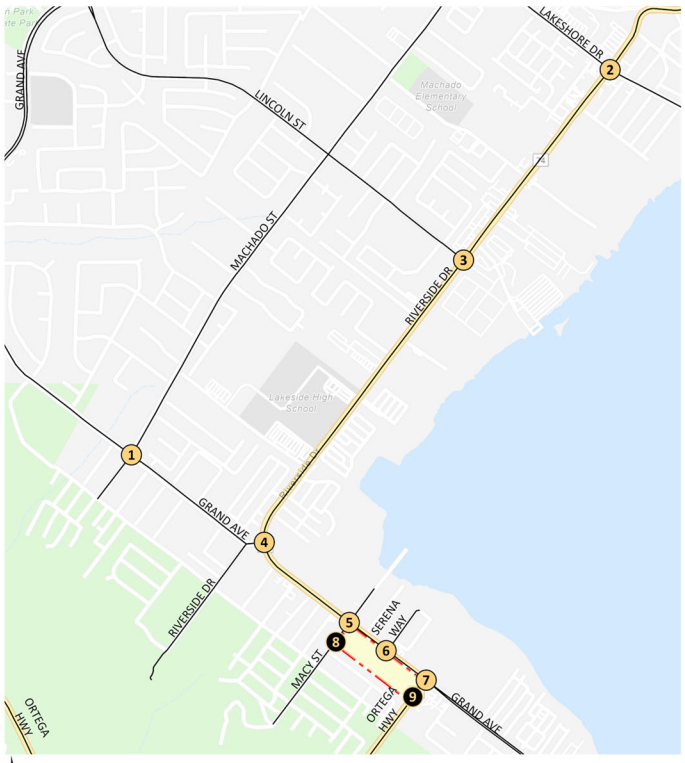
* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[2] AWS = All-way Stop; CSS = Cross-street Stop; TS = Traffic Signal; **CSS** = Improvement

[3] The Project will construct a traffic signal as part of the Project design features.

EXHIBIT 5-1: EAP (2024) TRAFFIC VOLUMES



1 Grand Av. & Machado St.

7,000 | 0(2) ↲ | 221(222) ↓ | 25(21) ↳ | *3,850*
13(21) ↱
0(1) ←
100(120) ↰
2(1) ↴
0(2) →
4(1) ↵
4(2) ↰ | 347(273) → | 71(143) ↱ | *9,700*
150

2 Riverside Dr. (SR-74) & Lakeshore Dr.

21,650 | 122(203) ↲ | 334(301) ↓ | 297(258) ↳ | *24,800*
156(323) ↱
493(564) ←
19(36) ↰
166(160) ↴
588(618) →
327(313) ↵
221(293) ↰ | 169(360) → | 12(24) ↱ | *18,000*
28,750

3 Riverside Dr. (SR-74) & Lincoln St.

9,250 | 337(112) ↲ | 445(280) ↳ | *30,050*
68(232) ↱
717(783) ←
185(78) ↴
763(952) →
25,250

4 Riverside Dr. (SR-74) & Grand Av.

24,200 | 178(138) ↲ | 714(681) ↓ | *29,700*
79(66) ↴
418(243) ↵
245(419) ↰ | 691(961) →
11,150

5 Grand Av. (SR-74) & Macy St.

29,250 | 20(56) ↲ | 1133(830) ↓ | 2(1) ↳ | *29,000*
4(0) ↱
231(191) ↴
71(23) ↵
19(50) ↰ | 656(1194) →
2,100

6 Grand Av. (SR-74) & Serena Wy./Driveway 2

29,000 | 85(94) ↲ | 1121(751) ↓ | 2(15) ↳ | *500*
10(13) ↱
68(77) ↴
167(156) ↰ | 666(1229) → | 4(8) ↱ | *28,950*
100

7 Grand Av. & SR-74

28,950 | 513(131) ↲ | 688(712) ↓ | *25,300*
115(836) ↴
70(602) ↵
333(71) ↰ | 735(572) →
22,100

8 Driveway 1 & Macy St.

2,100
30(94) ←
5(6) ↰
120(46) →
183(169) ↱ | *150*
1,900

9 Driveway 3 & SR-74

Nominal | 109(90) ↲ | 0(-75) ↓ | *22,100*
108(90) ↱
738(187) ←
185(1438) →
22,100

##(##) AM(PM) Peak Hour Intersection Volumes

***Average Daily Trips***

5.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants have been performed (based on CA MUTCD) for EAP (2024) traffic conditions based on peak hour intersection turning movements volumes and daily planning level volumes. There are no additional unsignalized intersections that are anticipated to meet a traffic signal warrant for EAP (2024) conditions, in addition to the unsignalized intersections previously identified under Existing (2021) conditions (see Appendix 5.2).

5.5 DEFICIENCIES AND IMPROVEMENTS

As shown in Table 5-1, with the implementation of the Project design features, there are no study area intersections that are anticipated to operate at an unacceptable LOS during the peak hours. As such, no improvements have been identified for EAP (2024) traffic conditions.

6 EAPC (2024) TRAFFIC CONDITIONS

This section discusses the methods used to develop EAPC (2024) traffic forecasts, and the resulting intersection operations and traffic signal warrant analyses.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for EAPC (2024) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for EAPC (2024) conditions only (e.g., intersection and roadway improvements along the Project's frontage and driveways).
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for EAPC (2024) conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages and driveways).

6.2 EAPC (2024) TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus an ambient growth factor of 6.12% plus traffic from pending and approved but not yet constructed known development projects in the area, in conjunction with Project traffic. The weekday ADT and weekday AM and PM peak hour volumes which can be expected for EAPC (2024) traffic conditions are shown on Exhibit 6-1.

6.3 INTERSECTION OPERATIONS ANALYSIS

LOS calculations were conducted for the study intersections to evaluate their operations under EAPC (2024) traffic conditions with the roadway and intersection geometrics consistent with Section 6.1 *Roadway Improvements*. As shown in Table 6-1, the following study area intersection is anticipated to continue to operate at an unacceptable LOS during the peak hours under EAPC (2024) traffic conditions:

- Riverside Drive (SR-74) & Lincoln Street (#3) – LOS F AM and PM peak hours

The intersection operations analysis worksheets for EAPC (2024) traffic conditions are included in Appendix 6.1.

TABLE 6-1: INTERSECTION ANALYSIS FOR EAPC (2024) CONDITIONS

#	Intersection	Traffic Control[2]	EAPC (2024) Delay[1] (secs.) AM	PM	Level of Service AM	PM
1	Grand Av. & Machado St.	AWS	15.5	12.3	C	B
2	Riverside Dr. (SR-74) & Lakeshore Dr.	TS	43.0	48.9	D	D
3	Riverside Dr. (SR-74) & Lincoln St.	TS	**95.9**	**89.4**	**F**	**F**
4	Riverside Dr. (SR-74) & Grand Av.	TS	42.1	29.7	D	C
5	Grand Av. (SR-74) & Macy St.	**TS**[3]	15.6	37.5	B	D
6	Grand Av. (SR-74) & Serena Wy./Driveway 2	CSS	16.1	15.3	C	C
7	Grand Av. & SR-74	TS	21.4	40.5	C	D
8	Driveway 1 & Macy St.	**CSS**	10.0	9.3	B	A
9	Driveway 3 & SR-74	**CSS**	13.7	9.9	B	A

* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or

[2] AWS = All-way Stop; CSS = Cross-street Stop; TS = Traffic Signal; **CSS** = Improvement

[3] The Project will construct a traffic signal as part of the Project design features.

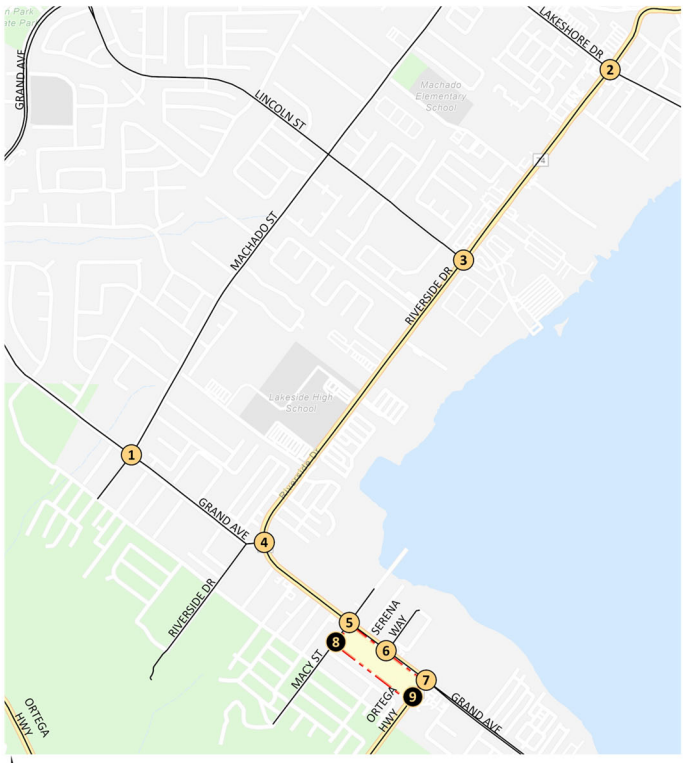
6.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants have been performed (based on CA MUTCD) for EAPC (2024) traffic conditions based on peak hour intersection turning movements volumes and daily planning level volumes. There are no additional unsignalized intersections that are anticipated to meet a traffic signal warrant for EAPC (2024) conditions, in addition to the unsignalized intersections previously identified under Existing (2021) conditions (see Appendix 6.2).

6.5 DEFICIENCIES AND IMPROVEMENTS

The effectiveness of the recommended improvement strategies to address EAPC (2024) traffic deficiencies are presented on Table 6-2. If not constructed by the Project, the Project Applicant shall contribute to these improvements through payment of City TIF fees or fair share contribution as identified on Table 1-3. Worksheets for EAPC (2024) conditions, with improvements, HCM calculation worksheets are provided in Appendix 6.3.

EXHIBIT 6-1: EAPC (2024) TRAFFIC VOLUMES



1 Grand Av. & Machado St.

	0(2) ↲	13(21) ↰
7,950	259(266) ↓	0(1) ←
	25(21) ↳	104(125) ↖
	2(1) ↳	3,950
	0(2) →	7(8) ↱ 385(313) → 74(147) ↱
	8(7) ↴	
250		10,850

2 Riverside Dr. (SR-74) & Lakeshore Dr.

	142(222) ↲	167(329) ↱
22,500	344(313) ↓	524(607) ←
	303(262) ↳	58(84) ↖
	188(180) ↳	26,400
	624(652) →	234(328) ↰ 180(376) → 14(33) ↱
	345(344) ↴	
31,450		19,150

3 Riverside Dr. (SR-74) & Lincoln St.

	346(125) ↲	80(248) ↱
9,900	459(297) ↓	789(906) ←
	195(88) ↳	33,000
	867(1049) →	
28,150		

4 Riverside Dr. (SR-74) & Grand Av.

	191(158) ↲	
26,700	793(771) ↓	
	92(86) ↳	
	450(277) ↴	276(450) ↰ 760(1044) →
12,300		32,550

5 Grand Av. (SR-74) & Macy St.

	20(56) ↲	4(0) ↱
32,150	1209(921) ↓	
	72(66) ↳	
	231(191) ↳	
	71(23) ↴	19(50) ↰ 720(1276) →
2,100		31,900

6 Grand Av. (SR-74) & Serena Wy./Driveway 2

	85(94) ↲	10(13) ↱
31,450	1212(850) ↓	500
	2(15) ↳	
		167(156) ↰ 759(1336) → 4(8) ↱
	68(77) ↴	
100		31,350

7 Grand Av. & SR-74

	578(204) ↲	
31,400	714(738) ↓	
	186(909) ↳	
	84(614) ↴	344(85) ↰ 757(605) →
24,050		26,350

8 Driveway 1 & Macy St.

		30(94) ←
		2,100
		5(6) ↰
	120(46) →	183(169) ↱
1,950		150

9 Driveway 3 & SR-74

	109(90) ↲	108(90) ↱
Nominal	0(-75) ↓	23,150
		769(232) ←
	225(1482) →	
23,150		

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

TABLE 6-2: INTERSECTION ANALYSIS FOR EAPC (2024) CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[1] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
3	Riverside Dr. (SR-74) & Lincoln St.																	
	- Without Project	TS	0	0	0	1	0	1	1	1	0	0	1	0	**95.9**	**89.4**	**F**	**F**
	- With Project	TS	0	0	0	1	0	1	1	1	0	0	**2**	0	35.6	17.5	D	B

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; **1** = Improvement

[2] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or

[3] TS = Traffic Signal

7 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements within the City of Lake Elsinore are funded through a combination of improvements constructed by the Project, development impact fee programs or fair share contributions. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors.

7.1 CITY OF LAKE ELSINORE TRANSPORTATION IMPACT FEE (TIF) PROGRAM

Transportation improvements throughout the City of Lake Elsinore are funded through a combination of project improvements, fair share contributions or development impact fee programs, such as the Western Riverside Council of Governments (WRCOG) Transportation Uniform Mitigation Fee (TUMF) program or the City's Transportation Impact Fee (TIF) program. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors. These fees are collected as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected vehicle trip increases.

Fees from new residential, commercial and industrial development are collected to fund local facilities. Under the City's TIF program, the City may grant to developers a credit against specific components of fees when those developers construct certain facilities and landscaped medians identified in the list of improvements funded by the TIF program.

The timing to use the TIF fees is established through periodic capital improvement programs which are overseen by the City's Engineering Department. Periodic traffic counts, review of traffic accidents, and a review of traffic trends throughout the City are also periodically performed by City staff and consultants. The City uses this data to determine the timing of the improvements listed in its facilities list. The City also uses this data to ensure that the improvements listed on the facilities list are constructed before the LOS falls below the LOS performance standards adopted by the City. In this way, the improvements are constructed before the LOS falls below the City's LOS performance thresholds. The City's TIF program establishes a timeline to fund, design, and build the improvements.

7.2 TRANSPORTATION UNIFORM MITIGATION FEE (TUMF) PROGRAM

The TUMF program is administered by the WRCOG based upon a regional Nexus Study most recently updated in 2016 to address major changes in right of way acquisition and improvement cost factors. (7) This regional program was put into place to ensure that development pays its fair share and that funding is in place for construction of facilities needed to maintain the requisite level of service and critical to mobility in the region. TUMF is a truly regional mitigation fee program and is imposed and implemented in every jurisdiction in Western Riverside County.

TUMF guidelines empower a local zone committee to prioritize and arbitrate certain projects. The Project is located in the Southwest Zone. The zone has developed a 5-year capital improvement program to prioritize public construction of certain roads. TUMF is focused on improvements necessitated by regional growth.

7.3 FAIR SHARE CONTRIBUTION

Project improvement may include a combination of fee payments to established programs, construction of specific improvements, payment of a fair share contribution toward future improvements or a combination of these approaches. Improvements constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate (to be determined at the City's discretion).

When off-site improvements are identified with a minor share of responsibility assigned to proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. These fees are collected with the proceeds solely used as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases.

8 REFERENCES

1. **City of Lake Elsinore.** *Traffic Impact Analysis Preparation Guide.* Lake Elsinore : s.n., June 23, 2020.

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4. **Transportation Research Board.** *Highway Capacity Manual (HCM).* 6th Edition. s.l. : National Academy of Sciences, 2016.

5. **California Department of Transportation.** California Manual on Uniform Traffic Control Devices (MUTCD). [book auth.] California Department of Transportation. *California Manual on Uniform Traffic Control Devices (CAMUTCD).* 2017.

6. **Insttitue of Transportation Engineers.** *Trip Generation Handbook.* 3rd Edition. 2017.

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