Appendix 1

Buildout Projection Methodology

Lakeland Village

Initial Study

Michael Baker INTERNATIONAL

We Make a Difference

Memorandum

To:	Robert Flores (Riverside County Planning Department)
From:	Peter Minegar (Project Manager)
Project:	Lakeland Village Phase II/III (GPA No. 1208)
Date:	January 8, 2019
Subject:	**Development Projections Methodology**

Michael Baker International (MBI), as directed by County Staff, has undertaken a review of the existing development in the Lakeland Village Policy Area, and developed a development projection methodology to be utilized for the Lakeland Village Policy Area CEQA analysis. This memorandum outlines the assumptions utilized to calculate future development in the Policy Area, and provides a detailed outline of the steps to project future development in the Policy Area.

1. **Existing Conditions:**

   In order to identify the number of existing units within the Lakeland Village Policy Area, MBI utilized the County Assessor's data and sorted the parcel specific data by General Plan Land Use Designation. For residential land uses, MBI then utilized the "Units" field to quantify the number of dwelling units in each land use category. For non-residential land uses, MBI used the "Area" field to quantify the existing square-footage.

2. **Proposed (20-Year Development Potential):**

   In order to project future development for the Policy Area, MBI utilized a number of methods to understand potential future development based on past growth within the Policy Area. MBI is proposing that future development be projected based on a 20-year development timeline (2019-2039).

   a. ***Review of Permit Data:*** To understand the development activity within the Policy Area, MBI reviewed the Planning Department permit data in the Policy Area for the last 10 years (2007-2017). This time period included the Great Recession, as well as the recovery period. This review found that there was a limited amount of permit activity in the policy area that resulted in the development of new dwelling units or non-residential structures. The majority of permit activity was related to modifications to existing buildings and other minor development activities (such as construction of a free-standing garage, mobile home renovations/additions, wireless facilities, and other misc. permits). While this review was not ultimately utilized to

develop the development projections, this review did provide confirmation of the limited development that has occurred within the Policy Area.

b. ***Review of Assessor's Data:*** Since the review of the permit data did not provide sufficient data to determine a historic level of growth, MBI utilized the Assessor's data to develop growth rates for each land use type. MBI reviewed the development that has occurred in the past 20 years (from 1998-2017) based on the Assessor's Parcel Data. MBI used the Assessor's data to calculate the growth rate for each land use category for the past 20 years. MBI found that a 20-year review of development includes a number of development cycles, including times of large real estate growth, economic recession, and economic recovery. As such, MBI believes that the review of 20-years of development will serve as an accurate indicator of future growth in Lakeland Village. For each land use type (Residential, Non-Residential, and Mixed Use) MBI has outlined the assumptions utilized to project development below.

   i. ***Residential Development:*** To calculate future residential development, MBI applied the 20-year growth rates from the Assessor's data to the existing development for each of the residential land uses to calculate anticipated buildout for the next 20 years. To ensure that the anticipated development calculations provide a conservative estimate of future growth, a buffer of 10% has been added to the 20-Year Development Potential calculations.

   ii. ***Non-Residential Development:*** To calculate future non-residential development, MBI took the existing non-residential square-footage for each land use and assumed that the existing development quantity will grow by 35% over the next 20 years. There was limited non-residential growth in the past 20-years, and as such MBI had a data set that was too limited to determine a growth rate. To project non-residential growth, MBI utilized a future growth rate of 35% for non-residential development which was based on the cumulative growth rate for residential land uses. This assumed growth rate is above the historic non-residential development growth rate, and as such represents a conservative growth rate for the policy area. To ensure that the anticipated calculations provide conservative projection for future development, a buffer of 10% has been added to the 20-Year Development Potential calculations.

   iii. ***Mixed Use Development:*** Since the Mixed Use Areas (MUA) are a new land use in the Policy Area, there is not a development history for these land uses. To forecast future growth for these areas, MBI utilized the highest development rate for residential and non-residential development. For residential growth, MBI assumed the level of development associated with Medium Density Residential, which is the land use generating the highest number of dwelling units and Commercial Retail, which has the largest square-footage of all non-residential land uses in the Policy Area.

3. MBI has developed a growth projection table that outlines the calculated growth projections for each of the General Plan Land Uses in the Lakeland Village Policy Area. The projection

table, which is included as Attachment 1 of this memorandum, includes existing development, growth rate, buffer, projected growth, and projected 20-year buildout. The projections were developed utilizing the methodology outlined in the sections above.

MBI will outline the above-listed methodology in detail in the CEQA Project Description, as well as how these estimates will be used to assist in evaluating whether additional CEQA analysis is required for future projects. In the event that unforeseen development or infrastructure constraints change during the 20-year projection period that exceed the CEQA assumptions, further CEQA analysis will may be required.

Attachments:

Attachment 1: Lakeland Village Growth Projections

Attachment 1
Lakeland Village Policy Area Growth Forecast

	Existing Development		Growth at Current Rate			Additional Buffer for Unforeseen Development	Projected Growth		Projected 20-Year Buildout	
Land Use	Existing Dwelling Units (Residential)	Existing Square Feet (Non-Residential)	Historic 20-Year Growth Rate (1998-2017)	Projected 20-Year Growth (Dwelling Units)	Projected 20-Year Growth (Non-Residential SF)	Buffer (10%)	Additional Dwelling Units	Additional Non-Residential SF	Anticipated 20 Year Residential Development Capacity	Anticipated 20 Year Non-Residential Development Capacity
Rural Mountainous (RM)	192		18%	34		3	38		230	
Rural Residential (RR)	7		75%	5		1	6		13	
Rural Community- Estate Density Residential (RC-EDR)	224		21%	47		5	52		276	
Rural Community- Low Density Residential (RC-LDR)	-		0%	0		-	-		-	
Rural Community- Very Low Density Residential (RC-VLDR)	-		0%	0		-	-		-	
Open Space-Conservation (OS-C)	-		0%	0		-	-		-	
Estate Density Residential (EDR)	2		0%	0		-	-		2	
Low Density Residential (LDR)	113		24%	27		3	30		143	
Medium Density Residential (MDR)	1,766		18%	320		32	352		2,118	
Medium High Density Residential (MHDR)	18		0%	0		-	-		18	
High Density Residential (HDR)	25		0%	0		-	-		25	
Very High Density Residential (VHDR)			N/A			-	-		-	
Commercial Retail (CR)*		19,818	35%		6,963	696		7,659		27,477
Light Industrial (LI)*		9,819	35%		3,450	345		3,795		9,819
Public Facilities (PF)*		2,947	35%		1,035	104		1,139		2,947
Mixed Use Area (MUA)*										
Residential Units	14						352		366	
Non-Residential SF		9,085						7,659		9,085
	2,361						829	20,251	3,190	49,328

Change in DU's	829
Change in Non-Residential SF	20,251

Notes: Column totals are rounded

Last Updated: 1/11/2019

Appendix 2

Proposed LVPA Neighborhoods Policies

Lakeland Village

Initial Study

Lakeland Village Policy Area (LVPA)
Elsinore Area Plan

(*This will replace the existing policy area section*)
(*Any existing LVPA policy that is not within this section will be deleted*)
(*Policy ELAP 7.19 – 7.27 will be renumbered to 7.1 – 7.9, respectively*)

Overlays and Policy Areas Subsection

Lakeland Village Policy Area

The Lakeland Village Policy Area ("LVPA") is located on the westerly side of the water body that is Lake Elsinore and is nestled against the easterly side of Cleveland Ridge, along the eastern flank of the Santa Ana and Elsinore Mountains. The Lakeland Village Policy Area consists of approximately 2,626 acres, which includes a large portion of the unincorporated community of Lakeland Village, generally bounded by State Route 74, or the Ortega Highway, and the City of Lake Elsinore limits on the northerly end and Corydon Road and the City of Wildomar on the southerly end. Grand Avenue runs the length of the community and is the only roadway access to the area from the north and the south. Existing uses in the community are primarily single-family residential with pockets of commercial uses scattered along Grand Avenue. Properties east of Grand Avenue generally extend to the edge of the lake, which may be part of a Special Flood Hazard Area due to the significant water level fluctuations of Lake Elsinore. Properties on the westerly side of Grand Avenue extend up to the base of the hills and may include areas with steep slopes.

LVPA Policies:

ELAP 6.1 Land within the Special Flood Hazard Areas should be developed in accordance with all applicable local, state and federal flood control ordinances and regulations, including the *Lake Village Master Drainage Plan*, and may include passive recreational uses.

ELAP 6.2 In addition to Specific Plan and Mixed-Use zoning classifications, commercial zoning classifications that implements the intent of the land use designation or provide for a community serving use(s) may be utilized for any Mixed-Use Area (MUA) General Land Use Designation within the Lakeland Village Policy Area (LVPA)..

ELAP 6.3 Encourage the design of new streets and the significant upgrading of existing streets to provide all users with safe, convenient access through the community. Emphasis should be placed on providing dedicated, protected facilities for pedestrians and bicyclists, including a continuous network of sidewalks and pedestrian pathways; bicycle routes and lanes; multi-use trails and trailhead parking; traffic calming measures; and delineated street crossings where feasible.

ELAP 6.4 Encourage the formation of a County Service Area (CSA) or Parks and Recreation District to develop adequate park services and facilities. Large-scale

development is encouraged to include parks, recreational open space, plazas and other public spaces.

ELAP 6.5 Development should provide for continuous collector roadways, especially along Union and Brightman Avenues between Blanche Drive and Turner Street, in order to provide for parallel travel with Grand Avenue and should provide for street connections to Grand via Blanche Drive and Turner Street, which should also be developed as collector roadways.

ELAP 6.6 Encourage the clustering of development and consolidation of parcels, whenever feasible. (AI 25, AI 59-61)

ELAP 6.7 Development of parcels not designated Rural Mountainous with steep slopes should cluster buildings in areas with lesser slope and should comply with hillside design policy in the Land Use Element. Residential densities of any parcel with slopes greater than 35 percent should be one (1) dwelling unit per twenty (20) acres.

ELAP 6.8 Building envelops and locations should be visually compatible with the surrounding uses.

ELAP 6.9 The community's history and character should be incorporated into all streetscapes and development.

LVPA Neighborhoods

The Lakeland Village Policy Area includes eight neighborhoods, Known as "LVPA Neighborhood," located along Grand Avenue, seven of which have been designated, partly or in whole, with the General Plan Land Use Designation of Mixed-Use Area (MUA or MUAs) and one that has an existing General Plan Land Use Designation of Light Industrial that will remain. The LVPA Neighborhoods include mixed use and other complimentary land uses that encourage a combination of business, office, retail, commercial use, community facilities and residential uses that are physically and functionally integrated. The intent of the LVPA Neighborhoods is to designate areas where a blend of uses can be developed. Mixed use development provides the following community benefits:

- Greater housing variety and density, more affordable housing, life-cycle housing (e.g. starter homes to larger family homes to senior housing), workforce housing, veterans housing, etc.;
- Reduced distances between housing, workplaces, retail businesses and other amenities and destinations;
- Better access to fresh, healthy foods (as food and retail and farmers markets can be accessed on foot or through bike or transit);
- More compact development, land use synergy (e.g. residents provide customers for retail which provide amenities for residents);
- Stronger neighborhood character and sense of place;
- Walkable, bicycle-friendly environments with increased accessibility via transit resulting in reduced transportation costs;

- Encourage the assembly of small parcels into larger project areas that can be developed for mixed residential and commercial development without the requirement for general plan amendments, helping to revitalize the area, encourage new balanced economic development, and provide for new local infrastructure improvements; and,
- Encourage commercial development to be near intersections and clustered as opposed to strip or piecemeal development spread along the Grand Avenue corridor.

In addition to the general policies provided above, specific policies that apply within the LVPA Neighborhoods are described below:

LVPA Neighborhood Policies

The following policies apply to all Neighborhoods in the Lakeland Village Policy Area, unless specified differently within any policy.

ELAP 6.10 New development in MUAs are encouraged to vary in residential densities, which may include ranges from 2 to 20 dwelling units per acre, and provide diversity in land uses.

ELAP 6.11 The density of residential development should complement the adjacent existing uses, generally transitioning from higher densities closer to Grand Avenue and commercial use development, to lower densities around the Mixed Use Area's edges that correspond with the residential densities located in the surrounding areas.

ELAP 6.12 Areas with a MUA land use designation are intended to allow a mixture of compatible land uses including residential, administrative and professional offices, retail and service uses, public and quasi-public uses, and entertainment and recreational.

ELAP 6.13 New development within Neighborhoods should promote livable neighborhoods that provide housing, goods and services, open space, and multi-model transportation options within close proximity.

ELAP 6.14 New non-residential development in the Neighborhoods 1 and 8 is encouraged to include uses that serve the needs of visitors and travelers, as well as residents of the area. Development in these neighborhoods should be designed to create a sense of arrival to Lakeland Village.

ELAP 6.15 New non-residential development in the Neighborhoods 2 through 7 is encouraged to include uses that primarily serve the needs of residents living near the site or elsewhere in the community.

ELAP 6.16 Neighborhoods are encouraged to include uses that serve the recreational needs of residents and visitors with such activities as hiking, mountain biking, boating, water sports, paragliding, skydiving, and other recreational uses due to the proximity of natural resources.

ELAP 6.17 Development may include live-work spaces within the MUAs where appropriate.

ELAP 6.18 New development within Neighborhood should be compatible with adjacent uses.

ELAP 6.19 New development within Neighborhoods are encouraged to utilize distinctive architecture, edge and entry treatment, landscape, streetscaping, signage and other elements to perpetuate or establish a unique identity of the area.

ELAP 6.20 Commercial uses, where applicable, should be oriented towards Grand Avenue and away from residential areas located outside of the Neighborhood, as feasible. Residential uses, where feasible and appropriate, should be used as a transitional buffer between the nonresidential and mixed uses within the Neighborhood and the lower density residential uses beyond.

ELAP 6.21 Multi-story buildings are encouraged within commercial and mixed use areas with transitions down to two- or one-story buildings adjacent to residential neighborhoods, as appropriate.

ELAP 6.22 Encourage the incorporation of variety of different types of wall textures and colors, architectural elements, landscaping and other features that provide for attractive and inviting facades for public view from surrounding uses and streets.

ELAP 6.23 Ground floor commercial and facades are encouraged on the first floor of buildings facing the adjoining sidewalks and pedestrian spaces.

ELAP 6.24 Encourage screening of off-street parking by locating it safely behind or within structures, or otherwise screening it from the public right-of-way, and the design of parking facilities with limited vehicle access points to optimize pedestrian safety, where feasible.

ELAP 6.25 Street trees, signage, landscaping, street furniture, public art, and other aesthetic elements should be used to enhance the appearance and identity of the Neighborhoods.

ELAP 6.26 Encourage the use or installation of underground utilities.

ELAP 6.27 Encourage coordination with local transit authorities to expand transit access along Grand Avenue and provide stops at, or close in proximity to each Neighborhood.

ELAP 6.28 At least ten percent of the gross area of each Neighborhood should be reserved for common, integrated open space that provides opportunities for passive and active recreation.

Descriptions of LVPA Neighborhoods

Below are descriptions of each of the eight LVPA Neighborhoods, which may include neighborhood-specific policies, which only applies to that neighborhood.

Neighborhood 1

Neighborhood 1 is located and adjacent to the southwest side of Grand Avenue, generally northwest of Magnolia Street and southeast of the City of Lake Elsinore boundary, and consists of approximately 74 acres, as shown on *Exhibit 3A*. This neighborhood is predominately designated Mixed-Use Areas but includes some High Density Residential (HDR) and Very High Density Residential (VHDR) land use designations.

Neighborhood 1 is largely vacant with some existing commercial establishments on the northwestern end, abutting Grand Avenue, and a community center, which may be considered the focal point of this developing neighborhood due to its prominence in the area. Additionally, the neighborhood includes two existing multi-family residential complexes, located adjacent to the community center. There are three existing bus stops along Grand Avenue adjacent or in close proximity to this neighborhood.

This neighborhood presents opportunity for visitor- or commuter-serving commercial establishments, civic and community facilities, and supporting residential components that may provide a live, work, and play space that promotes active transportation, which includes use of transit from one of the nearby bus stops.

Policy

ELAP 6.29 New development within Neighborhood 1 should cluster public, commercial, and residential uses that support this neighborhood's emerging identity as the civic center in the community.

Neighborhood 2

Neighborhood 2 abuts and is located southwest of Grand Avenue, generally northwest of Adelfa Street and southeast of Evergreen Street, and includes approximately 32 acres, as shown on *Exhibit 3B*. This neighborhood is entirely designated as Mixed-Use Area.

This neighborhood is predominantly vacant with a small existing commercial center and one existing residential home in the center and southeastern portion. Neighborhood 2 includes a vast amount of large, contiguous vacant parcels of land covering most of this neighborhood.

This neighborhood presents an attractive opportunity for new development and would be a great opportunity for a well-balanced vertical or horizontal mix use area, with a diverse blend of commercial and residential uses clustered together. Such uses should include community-serving uses that serve this neighborhood's residents, as well as the Lakeland Village community, and recreation-serving uses that meet the recreational needs of visitors that come to Lakeland Village to enjoy its natural assets. In order to balance this area, residential uses are encouraged to include higher-density residential development and "Live-Work" units, which reduces the vehicle miles travelled within the community, amongst a wide variety of residential products.

Neighborhood 3

Neighborhood 3 abuts and is located southwest of Grand Avenue, north of Blackwell Boulevard and south of Deeble Entrance Street, and includes 24 acres, as shown on *Exhibit 3B*. The neighborhood is predominantly a Mixed-Use Area land use designation, with a limited area of Commercial Retail (CR) in-between the neighborhood.

Neighborhood 3 is largely vacant, with Riverside County Fire Department Station 11 located along Grand Avenue in between Maiden Lane and Lillian Ave, as well as a residence located adjacent to the fire station. Neighborhood 3 is characterized by multiple large, vacant parcels in the northern portion of the neighborhood, with smaller parcels to the south.

Thus, this neighborhood presents an opportunity for vertical or horizontal mixed use development, particularly on the larger vacant parcels. This neighborhood should foster a diverse mix of commercial and residential uses that can serve the neighborhood as well as the community. In order to balance this area, residential uses are encouraged to include higher-density residential development and "Live-Work" units, which reduces the vehicle miles travelled within the community, amongst a wide variety of residential products.

Neighborhood 4

Neighborhood 4 is located southwest of Grand Avenue, generally north of Vail Street and south of Turner Street, and consists of approximately 23 acres, as shown on *Exhibit 3C*. This neighborhood is entirely designated as Light Industrial.

This neighborhood contains a mix of existing non-residential uses, predominantly industrial establishments with limited commercial facilities. The Neighborhood contains a number of larger lots, as well as many parcels that currently have a limited lot coverage.

This neighborhood presents a unique opportunity to allow for the continuance of existing industrial uses, while a providing long-range goal of converting into a mixed-use area that would mirror Neighborhood 5.

Policy

ELAP 6.30 Legally existing industrial uses may remain in accordance with Ordinance No. 348 and applicable approved land use permits with no further extensions to the life of the permit. Unpermitted and new industrial uses will need to go through the appropriate land use review process including placing a life on the land use permit for no longer than five (5) years or until the Neighborhood's General Plan Land Use designation is changed to MUA, whichever comes last, in order to meet the long-range mixed use intent of all LVPA Neighborhoods.

Neighborhood 5

Neighborhood 5 abuts and is located southwest of Grand Avenue, generally north of Ginger Lane and South of Kathryn Way, and includes approximately 13 acres, as shown on *Exhibit 3C*. This Neighborhood is entirely designated a Mixed-Use Area.

This neighborhood is predominantly vacant, with minimal existing residential homes, as well as a limited number of industrial and commercial facilities. Neighborhood 5 includes a large amounts of vacant land, and is dominated by large parcels with minimal existing lot coverage.

This neighborhood presents an opportunity to establish a commercial center in this part of the policy area. The surrounding residences, as well as the industrial uses to the north, present opportunities for supporting uses as well as neighborhood serving uses. The commercial center should include uses that benefit and serve this neighborhood's residents, as well as the overall Lakeland Village community.

Neighborhood 6

Neighborhood 6 abuts and is located southwest of Grand Avenue generally north of Zinck Way and south of Pamela Road, and consists of approximately 16 acres, as shown on *Exhibit 3D*. The neighborhood designated as Mixed-Use Area.

This neighborhood includes a number of existing single-family residential homes, with large parcels in the northern portion of the neighborhood. The neighborhood is generally underdeveloped, with large areas of vacant land, abutting the hillsides to the southwest. The neighborhood is across Grand Avenue from the Lakeland Village Middle School, and surrounded by other residential uses in all directions.

This neighborhood is prime for development and presents great opportunity for a well-balanced vertical or horizontal mix use area, with a diverse blend of commercial and residential uses clustered together. Such uses should include community-serving uses that serve this neighborhood's residents, students and faculty of the adjacent school, as well as the surrounding residential developments.

Neighborhood 7

Neighborhood 7 abuts and is located northeast of Grand Avenue, generally north of Stoneman Street and south of Morrison Plane, and consists of approximately 7 acres, as shown on *Exhibit 3D*. The neighborhood is designated entirely Mixed-Use Area.

This neighborhood is vacant and is made up of four larger parcels. The neighborhood is surrounded by residential development, and is in close proximity to the Lakeland Village Middle School, as well as Neighborhood 6.

This neighborhood presents an opportunity for residential development, potentially with a higher density than the surrounding uses. This neighborhood could also include a blend of commercial and residential uses clustered together that serve this neighborhood's, students and faculty of the adjacent school, as well as the surrounding residential developments.

Neighborhood 8

Neighborhood 8 abuts and is located northeast of Grand Avenue, generally north of Corydon Street and south of Gill Lane, and consists of approximately 19 acres, as shown on *Exhibit 3E*. This neighborhood is predominantly a Mixed-Use Area with a Commercial Retail (CR) area located at the intersection of Corydon Road Grand Avenue.

This neighborhood is predominantly vacant, with existing development generally confined to the southeast corner of the neighborhood. Existing development includes an existing commercial center, as

well as single family residences located in the southwest portion of the site, adjacent to the commercial center, and along Gill Lane. The neighborhood contains a number of larger parcels that are vacant.

This neighborhood is a key local resource for residents who visit the existing commercial use. This neighborhood presents opportunity for visitor- or commuter-serving commercial establishments, and supporting residential components that may provide a live, work, and play space. Some of the community services that would benefit the neighborhood include additional retail, eating establishments, professional offices, dry cleaners, and a beauty salon that would meet the need of various residents in this neighborhood.

Appendix 3

Traffic Impact Analysis

Lakeland Village

Initial Study

Lakeland Village Community Plan (GPA No. 1208)

TRAFFIC IMPACT ANALYSIS

COUNTY OF RIVERSIDE

PREPARED BY:

Aric Evatt, PTP
aevatt@urbanxroads.com
(949) 336-5978

Pranesh Tarikere, PE
ptarikere@urbanxroads.com
(949) 336-5992

Robert Vu, PE
rvu@urbanxroads.com
(949) 336-5980

JUNE 3, 2019

TABLE OF CONTENTS

APPENDICES

APPENDIX 1.1: APPROVED TRAFFIC STUDY SCOPING AGREEMENT
APPENDIX 3.1: EXISTING TRAFFIC COUNTS – APRIL 2019
APPENDIX 3.2: EXISTING (2019) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS
APPENDIX 3.3: EXISTING (2019) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS
APPENDIX 4.1: POST PROCESSING WORKSHEETS
APPENDIX 5.1: E+P CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS
APPENDIX 5.2: E+P CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS
APPENDIX 6.1: HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS
APPENDIX 6.2: HORIZON YEAR (2040) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS
APPENDIX 6.3: HORIZON YEAR (2040) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

This Page Intentionally Left Blank

LIST OF EXHIBITS

This Page Intentionally Left Blank

LIST OF TABLES

This Page Intentionally Left Blank

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
DIF	Development Impact Fee
E+P	Existing Plus Project
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
NCHRP	National Cooperative Highway Research Program
PCE	Passenger Car Equivalents
PHF	Peak Hour Factor
Project	Lakeland Village Community Plan (GPA No. 1208)
RivTAM	Riverside County Transportation Analysis Model
RTP	Regional Transportation Plan
SCAG	Southern California Association of Governments
SCS	Sustainable Communities Strategy
SHS	State Highway System
TIA	Traffic Impact Analysis
TIF	Traffic Infrastructure Fee
TUMF	Transportation Uniform Mitigation Fee
WRCOG	Western Riverside Council of Governments

This Page Intentionally Left Blank

1 INTRODUCTION

This report presents the results of the traffic impact analysis (TIA) for the proposed Lakeland Village Community Plan (GPA No. 1208) development ("Project"), which is located along Grand Avenue in the County of Riverside as shown on Exhibit 1-1.

The purpose of this TIA is to evaluate the potential circulation system deficiencies that may result from the development of the proposed Project and recommend improvements to achieve acceptable circulation system operational conditions. This TIA has been prepared in accordance with the *County of Riverside Transportation Department Traffic Impact Analysis Preparation Guide* (April 2008), the California Department of Transportation (Caltrans) *Guide for the Preparation of Traffic Impact Studies* (December 2002), and consultation with County of Riverside staff during the scoping process. (1) (2) The approved Project Traffic Study Scoping agreement is provided in Appendix 1.1 of this TIA.

1.1 PROJECT OVERVIEW

The Project is proposed to consist of the land use designations and acreage included in GPA No. 960 and GPA No. 1156, with an additional 829 dwelling units, 7,659 square feet (sf) of commercial retail, 3,795 sf of light industrial use, 7,659 sf of non-residential use, and 1,139 square feet of public facilities. The Project is proposed to have access onto Grand Avenue. Regional access to the Project site will be provided by the SR-74 Highway and the I-15 Freeway.

Trips generated by the Project's proposed land uses have been estimated based on trip generation rates collected by the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, 2017. (3) The proposed Project is estimated to generate a net total of 7,594 PCE trip-ends per day with 599 PCE AM peak hour trips and 817 PCE 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.

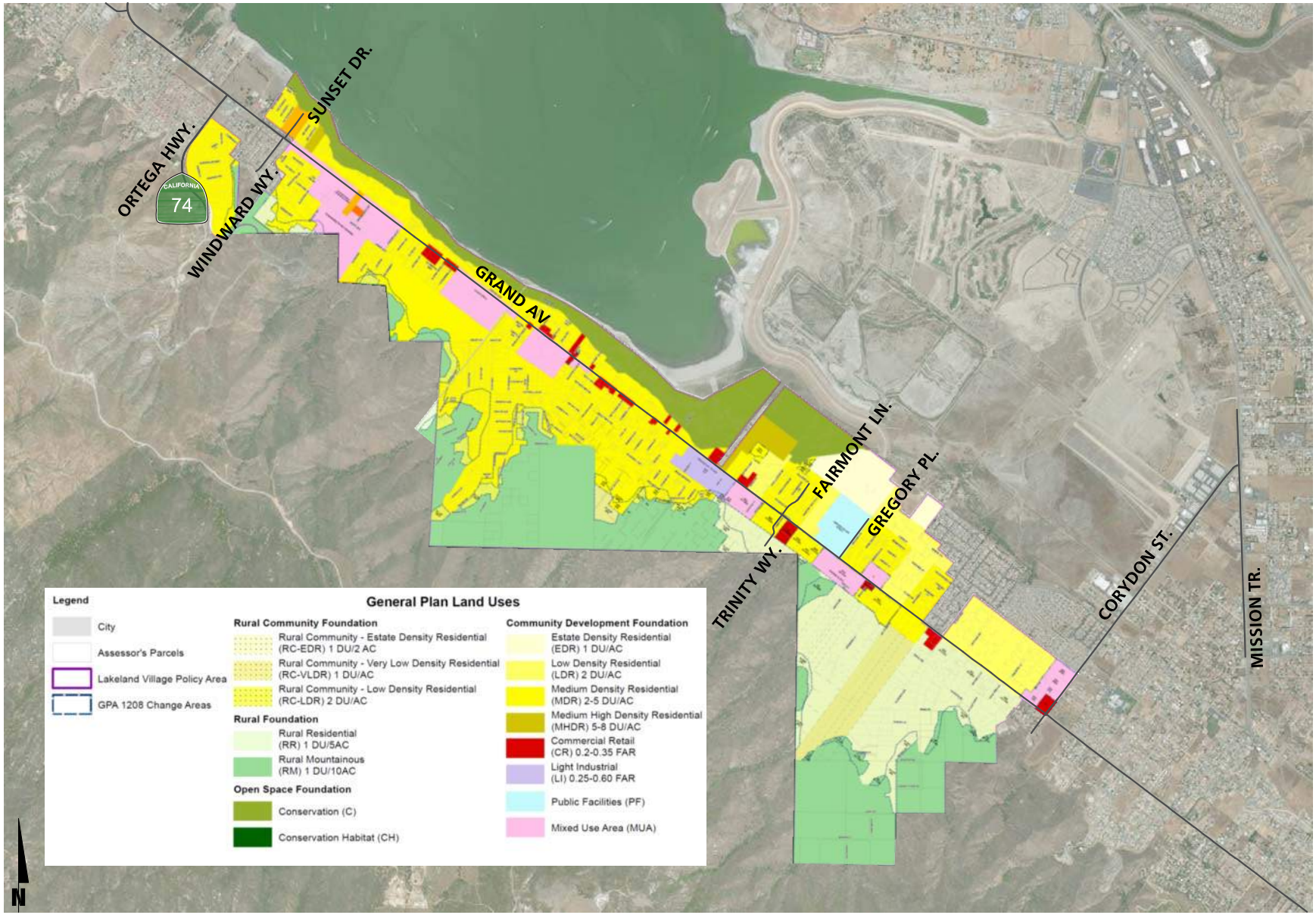
1.2 ANALYSIS SCENARIOS

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

- Existing (2019) Conditions
- Existing plus Project (E+P) Conditions
- Horizon Year (2040) Without Project
- Horizon Year (2040) With Project

All study area intersections will be evaluated using the Highway Capacity Manual (HCM) 6th Edition analysis methodology.

EXHIBIT 1-1: PRELIMINARY LAND USE PLAN



11436 - land use.dwg

URBAN CROSSROADS

1.2.1 EXISTING CONDITIONS

Existing physical conditions have been disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared.

1.2.2 E+P CONDITIONS

The E+P analysis determines circulation system deficiencies that would occur on the existing roadway system in the scenario of the Project being placed upon Existing conditions.

1.2.3 HORIZON YEAR (2040) CONDITIONS

Traffic projections for Horizon Year with Project conditions were derived from the Riverside County Transportation Analysis Model (RivTAM) using accepted procedures for model forecast refinement and smoothing. The Horizon Year conditions analysis will be utilized to determine if improvements funded through regional transportation mitigation fee programs, such as the Transportation Uniform Mitigation Fee (TUMF), County of Riverside Development Impact Fee (DIF) programs, or other approved funding mechanism (e.g., City of Lake Elsinore TIF, City of Wildomar DIF, etc.) can accommodate the long-range cumulative traffic at the target Level of Service (LOS) identified in the County of Riverside (lead agency) General Plan. (4) Other improvements needed beyond the "funded" improvements (such as localized improvements to non-TUMF, non-TIF, or non-DIF facilities) are identified as such. Each of these regional transportation fee programs are discussed in more detail in Section 7 *Local and Regional Funding Mechanisms*.

1.3 STUDY AREA

1.3.1 INTERSECTIONS

The Project study area was defined in coordination with the County of Riverside. The study area represents key intersections determined through consultation with the County of Riverside staff. Exhibit 1-2 and Table 1-1 presents the study area and intersection analysis locations.

In consultation with County Planning Department staff, the land use plan is envisioned to enhance mixed use area resulting in trips generated to remain local to the area.

To ensure that this TIA satisfies the needs of the County of Riverside, Urban Crossroads, Inc. prepared a Project specific traffic study scoping agreement for review by County staff prior to the preparation of this TIA. The agreement provides an outline of the study area, trip generation, trip distribution, and analysis methodology. The agreement approved by the County of Riverside is included in Appendix 1.1.

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

ID	Intersection Location	Jurisdiction
1	Riverside Dr. (SR-74) & Collier Av. (SR-74)	Caltrans, City of Lake Elsinore
2	Riverside Dr. (SR-74) & Lakeshore Dr.	Caltrans, City of Lake Elsinore
3	Riverside Dr. (SR-74) & Lincoln St.	Caltrans, City of Lake Elsinore
4	Riverside Dr. (SR-74) & Grand Av.	Caltrans, City of Lake Elsinore
5	Central St. (SR-74) & I-15 NB Ramps	Caltrans, Riverside County, City of Lake Elsinore
6	Central St. (SR-74) & I-15 SB Ramps	Caltrans, City of Lake Elsinore
7	Central St. (SR-74) & Collier Av. (SR-74)	Caltrans, City of Lake Elsinore
8	Ortega Hwy. (SR-74) & Grand Av.	Caltrans, City of Lake Elsinore
9	Corydon St. & Mission Tr.	City of Lake Elsinore, City of Wildomar
10	Corydon St. & Grand Av.	Riverside County, City of Lake Elsinore, City of Wildomar
11	Central St. & Palomar St.	City of Wildomar
12	Central St. & Grand Av.	City of Wildomar

1.4 ANALYSIS FINDINGS

This section provides a summary of the analysis results for Existing (2019), E+P, and Horizon Year (2040) Without Project and Horizon Year (2040) With Project.

Existing (2019) Conditions

Intersection Operations Analysis

The summary of LOS results for Existing (2019) traffic conditions are presented in Exhibit 1-3. As shown, the following study area intersection is currently operating at an unacceptable LOS during the one or more peak hours:

- Riverside Dr. (SR-74) & Grand Av. (#4) – LOS F AM peak hour; LOS E PM peak hour

Existing Plus Project (E+P) Conditions

Intersection Operations Analysis

As shown on Exhibit 1-3 and consistent with Existing (2019) traffic conditions, there are no additional study area intersections anticipated to operate at unacceptable LOS under E+P traffic conditions.

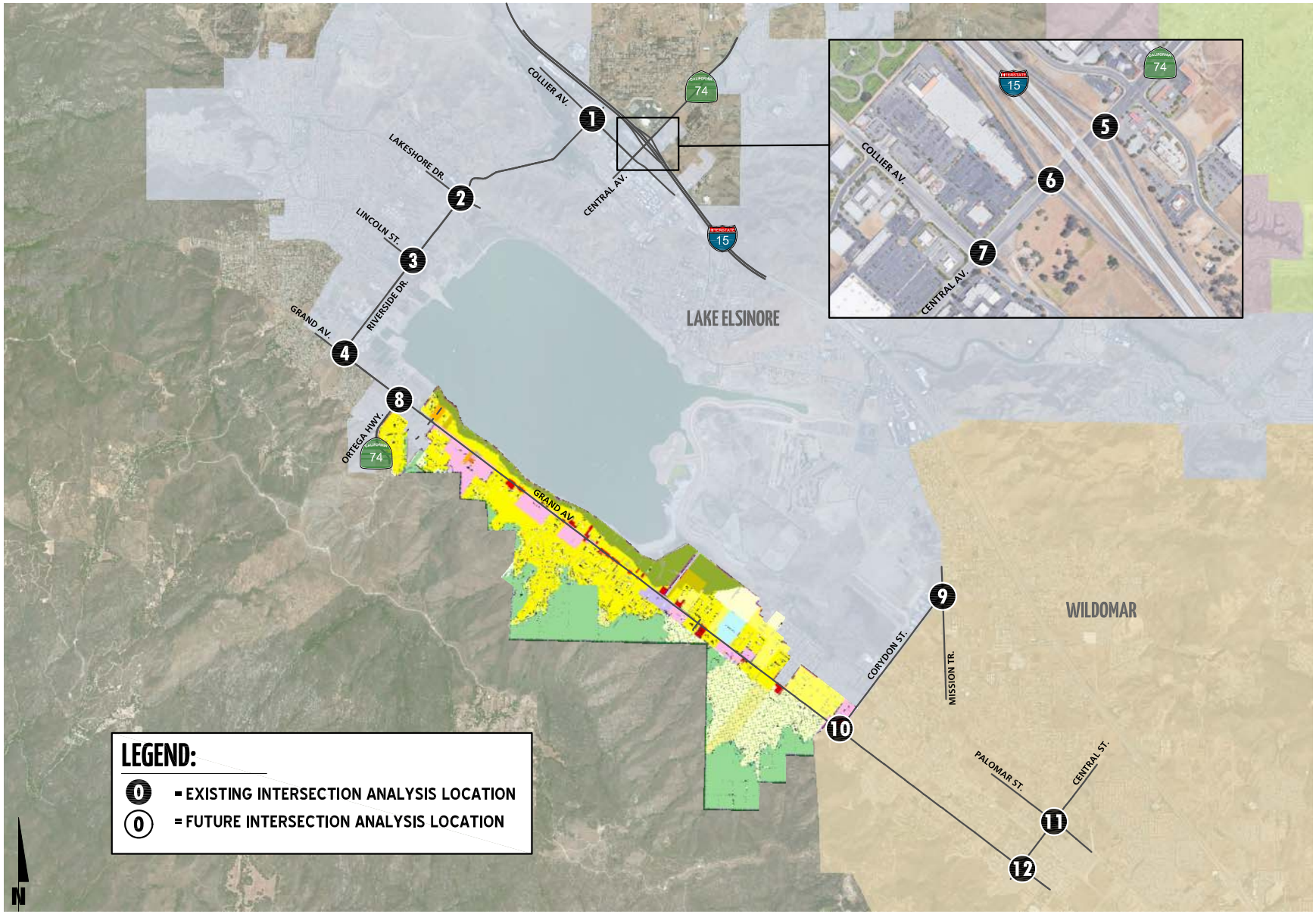
Mitigation Measures

The following additional improvements are recommended to improve each impacted intersection's LOS back to acceptable LOS, where the Project is recommended to contribute a fair share in order to reduce the cumulative impacts to less than significant levels:

Mitigation Measure 1.1 – Riverside Dr. (SR-74) & Grand Av. (#4)

- Contribute fair share towards installing a traffic signal.

EXHIBIT 1-2: LOCATION MAP



URBAN CROSSROADS

EXHIBIT 1-3: SUMMARY OF DEFICIENT INTERSECTIONS BY ANALYSIS SCENARIO

#	Intersection	Existing (2019)	E+P	Horizon Year (2040) Without Project	Horizon Year (2040) With Project
1	Riverside Dr. (SR-74) & Collier Av. (SR-74)				
2	Riverside Dr. (SR-74) & Lakeshore Dr.				
3	Riverside Dr. (SR-74) & Lincoln St.				
4	Riverside Dr. (SR-74) & Grand Av.				
5	Central St. (SR-74) & I-15 NB Ramps				
6	Central St. (SR-74) & I-15 SB Ramps				
7	Central St. (SR-74) & Collier Av. (SR-74)				
8	Ortega Hwy. (SR-74) & Grand Av.				
9	Corydon St. & Mission Tr.				
10	Corydon St. & Grand Av.				
11	Central St. & Palomar St.				
12	Central St. & Grand Av.				

LEGEND:

- = AM PEAK HOUR
- = PM PEAK HOUR
- = LOS A-D
- = LOS E
- = LOS F

Horizon Year (2040) Conditions

Intersection Operations Analysis

As shown on Exhibit 1-3, there are seven study area intersection that are anticipated to operate at an unacceptable LOS during one or both peak hours for Horizon Year (2040) traffic conditions.

Mitigation Measures

The following additional improvements are recommended to improve each impacted intersection's LOS back to acceptable LOS, where the Project is recommended to contribute a fair share in order to reduce the cumulative impacts to less than significant levels:

Mitigation Measure 2.1 – Riverside Dr. (SR-74) & Collier Av. (SR-74) (#1)

- Contribute fair share towards the addition of a northbound left turn lane, a 2nd northbound through lane, a 2nd southbound through lane, a 2nd westbound left turn lane, and a westbound right turn lane.

Mitigation Measure 3.1 – Riverside Dr. (SR-74) & Lakeshore Dr. (#2)

- Contribute fair share towards modifying the traffic signal to implement overlap phasing on the northbound and southbound right turn lane, and the addition of a 2nd southbound through lane and a 2nd eastbound left turn lane.

Mitigation Measure 4.1 – Riverside Dr. (SR-74) & Lincoln St. (#3)

- Contribute fair share towards the addition of a 2nd northbound through lane, a 2nd southbound through lane, and a southbound right turn lane.

Mitigation Measure 1.2 – Riverside Dr. (SR-74) & Grand Av. (#4)

- Same improvement identified previously by Mitigation Measure 1.1; and
- Contribute fair share towards the addition of a 2nd northbound through lane, a 2nd southbound through lane, and a southbound right turn lane.

Mitigation Measure 5.1 – Central St. (SR-74) & I-15 SB Ramps (#6)

- Contribute fair share towards the addition of a 3rd northbound through lane and a 3rd southbound through lane.

Mitigation Measure 6.1 – Ortega Hwy. (SR-74) & Grand Av. (#8)

- Contribute fair share towards the addition of a 2nd eastbound through lane and a 2nd westbound through lane.

Mitigation Measure 7.1 – Corydon St. & Grand Av. (#10)

- Contribute fair share towards modifying the traffic signal to implement overlap phasing on the southbound right turn lane and the addition of a 2nd eastbound left turn lane.

1.5 CIRCULATION SYSTEM DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

1.5.1 RECOMMENDED IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

A summary of the operationally deficient study area intersections and recommended improvements required to achieve acceptable circulation system performance are described in detail within Section 3 *Existing Conditions*, Section 5 *E+P Traffic Analysis*, and Section 6 *Horizon Year (2040) Traffic Analysis* of this report.

A summary of off-site improvements needed to address intersection operational deficiencies for each analysis scenario is included in Table 1-2 and Exhibit 1-4. These recommended improvements are consistent with or less than the geometrics assumed in the County of Riverside, City of Lake Elsinore, and City of Wildomar General Plan Circulation Elements. For improvements that do not appear to be in the TUMF, TIF, or DIF, a fair share financial contribution based on the Project's fair share impact may be imposed in order to mitigate the Project's share of impacts in lieu of construction. These fees (both to the County of Riverside, TUMF, and as determined, to surrounding agencies as fair-share contributions) 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. Additional information related to these various fee programs are contained in Section 7 *Local and Regional Funding Mechanisms* of this report.

Table 1-2

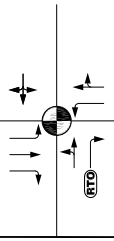
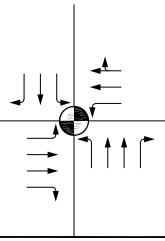
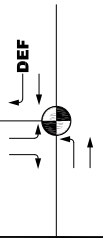
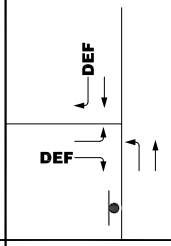
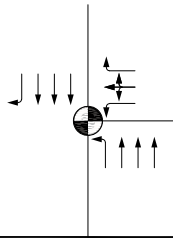
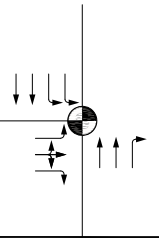
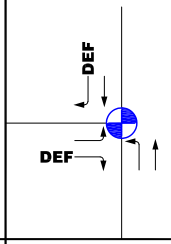
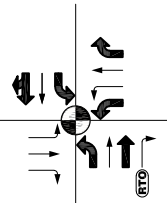
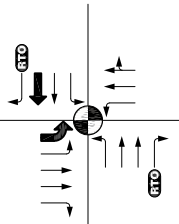
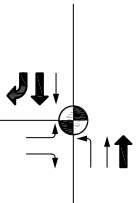
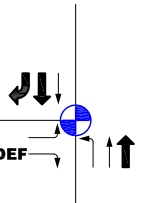
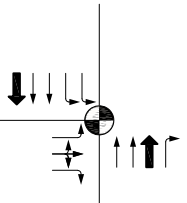
Summary of Improvements by Analysis Scenario

#	Intersection Location	Jurisdiction	E+P	2040 With Project	Improvements in TUMF/TIF/DIF?[1]	Fair Share %[2]
1	Riverside Dr. (SR-74) & Collier Av. (SR-74)	Caltrans, City of Lake Elsinore	- None	- NB left turn lane - 2nd NB through lane - SB left turn lane - 2nd SB through lane - 2nd WB left turn lane - WB right turn lane	Yes Yes Yes Yes No No	30.85%
2	Riverside Dr. (SR-74) & Lakeshore Dr.	Caltrans, City of Lake Elsinore	- None	- 2nd EB left turn lane - Right turn overlap for the north and south legs	No No	21.75%
3	Riverside Dr. (SR-74) & Lincoln St.	Caltrans, City of Lake Elsinore	- None	- 2nd NB through lane - 2nd SB through lane - SB right turn lane	Yes Yes Yes	40.09%
4	Riverside Dr. (SR-74) & Grand Av.	Caltrans, City of Lake Elsinore	- Install a traffic signal	- Same - 2nd NB through lane - 2nd SB through lane - SB right turn lane	Yes Yes Yes Yes	45.97%
6	Central St. (SR-74) & I-15 SB Ramps	Caltrans, City of Lake Elsinore	- None	- 3rd NB through lane - 3rd SB through lane	Yes Yes	18.40%
8	Ortega Hwy. (SR-74) & Grand Av.	Caltrans, City of Lake Elsinore	- None	- 2nd EB through lane - 2nd WB through lane	Yes Yes	40.66%
10	Corydon St. & Grand Av.	Riverside County, City of Lake Elsinore, City of Wildomar	- None	- 2nd EB left turn lane - Right turn overlap for the north leg	No No	23.44%

[1] Improvements included in WRCOG TUMF, County DIF, City of Lake Elsinore TIF, or City of Wildomar DIF.

[2] Program improvements constructed by the Project may be eligible for fee credit, at discretion of County. See Table 7-1 for Fair Share Calculations.

EXHIBIT 1-4 (1OF2): SUMMARY OF INTERSECTION LANE CONFIGURATION BY ANALYSIS SCENARIO

	Riverside Dr. (SR-74) & Collier Av. (SR74)	Riverside Dr. (SR-74) & Lakeshore Dr.	Riverside Dr. (SR-74) & Lincoln St.	Riverside Dr. (SR-74) & Grand Av.	Central St. (SR-74) & I-15 NB Ramps	Central St. (SR-74) & I-15 SB Ramps
	1	2	3	4	5	6
Existing						
E+P With Improvements	No Improvement Required	No Improvement Required	No Improvement Required		No Improvement Required	No Improvement Required
Horizon Year (2040) With Project With Improvements					No Improvement Required	

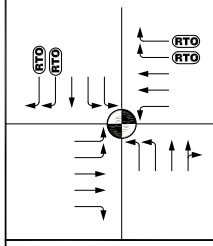
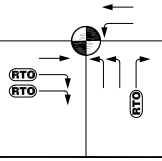
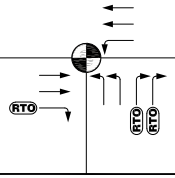
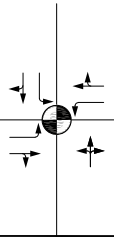
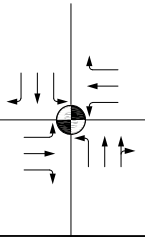
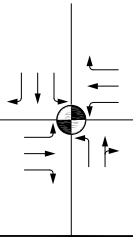
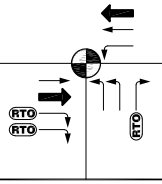
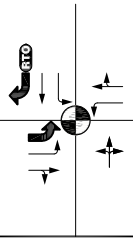
LEGEND:

- = TRAFFIC SIGNAL
- = NEW TRAFFIC SIGNAL
- = EXISTING LANE
- = LANE IMPROVEMENT
- DEF = DEFACTO RIGHT TURN
- RTO = RIGHT TURN OVERLAP EXISTING
- RTO = RIGHT TURN OVERLAP IMPROVEMENT

N

URBAN CROSSROADS

EXHIBIT 1-4 (2OF2): SUMMARY OF INTERSECTION LANE CONFIGURATION BY ANALYSIS SCENARIO

	Central St. (SR-74) & Collier Av. (SR74)	Ortega Hwy. (SR-74) & Grand Av.	Corydon St. & Mission Tr.	Corydon St. & Grand Av.	Central St. & Palomar St.	Central St. & Grand Av.
Existing	7 	8 	9 	10 	11 	12 
E+P With Improvements	No Improvement Required	No Improvement Required	No Improvement Required	No Improvement Required	No Improvement Required	No Improvement Required
Horizon Year (2040) With Project With Improvements	No Improvement Required		No Improvement Required		No Improvement Required	No Improvement Required

LEGEND:

- = TRAFFIC SIGNAL
- = EXISTING LANE
- = LANE IMPROVEMENT
- RTO = RIGHT TURN OVERLAP EXISTING
- RTO = RIGHT TURN OVERLAP IMPROVEMENT

N

This Page Intentionally Left Blank

2 METHODOLOGIES

This section documents the methodologies and assumptions used to perform this traffic assessment.

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) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (7) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

County of Riverside, City of Lake Elsinore, and City of Wildomar

The County of Riverside, City of Lake Elsinore, and City of Wildomar require signalized intersection operations analysis based on the methodology described in the HCM 6th Edition. (7) 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.

California Department of Transportation (Caltrans)

Per the Caltrans Guide for the Preparation of Traffic Impact Studies, the traffic modeling and signal timing optimization software package Synchro (Version 10) has been utilized to analyze signalized intersections under Caltrans' jurisdiction, which include interchange to arterial ramps (i.e. I-15 Freeway ramps at Central Avenue). (2) 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.

TABLE 2-1: SIGNALIZED INTERSECTION DESCRIPTION OF LOS

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

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. Signal timing for the freeway arterial-to-ramp intersections have been obtained from Caltrans District 8 and were utilized for the purposes of this analysis. All signalized study area intersections with the County of Riverside, City of Lake Elsinore, and City of Wildomar have also utilized the Synchro software.

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 analysis scenarios. Per Chapter 4 of the HCM 6th Edition, 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. (7)

2.2.2 UNSIGNALIZED INTERSECTIONS

The County of Riverside, City of Lake Elsinore, and City of Wildomar require the operations of unsignalized intersections be evaluated using the methodology described in the HCM 6th Edition. (7) 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 DESCRIPTION OF LOS

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. For all-way stop controlled intersections, LOS is computed for the intersection as a whole.

2.4 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by the California Department of Transportation (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 TIA uses the signal warrant criteria presented in the latest edition of the Caltrans California Manual on Uniform Traffic Control Devices (CA MUTCD). (8)

The signal warrant criteria for Existing study area intersections are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (8) Specifically, this TIA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing traffic conditions. Warrant 3 is appropriate to use for this TIA 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.

Future unsignalized intersections, that currently do not exist, have been assessed regarding the potential need for new traffic signals based on future average daily traffic (ADT) volumes, using the Caltrans planning level ADT-based signal warrant analysis worksheets.

Traffic signal warrant analyses were performed for all unsignalized study area intersections as shown on Table 2-3:

TABLE 2-3: UNSIGNALIZED INTERSECTION LOCATIONS

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

The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 3 *Existing Conditions* of this report. The traffic signal warrant analysis for future conditions is presented in Section 5 *E+P Traffic Analysis* and Section 6 *Horizon Year (2040) Traffic Analysis* 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 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.

2.5 MINIMUM LEVEL OF SERVICE (LOS)

The definition of an intersection deficiency has been obtained from each of the applicable surrounding jurisdictions.

2.5.1 COUNTY OF RIVERSIDE, CITY OF LAKE ELSINORE, AND CITY OF WILDOMAR

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.*

Notwithstanding the forgoing minimum LOS targets, the Board of Supervisors may, on occasion by virtue of their discretionary powers, approve a project that fails to meet these LOS targets in order to balance congestion management considerations in relation to benefits, environmental impacts and costs, provided an Environmental Impact Report, or equivalent, has been completed to fully evaluate the impacts of such approval. Any such approval must incorporate all feasible mitigation measures, make specific findings to support the decision, and adopt a statement of overriding considerations.

For the purposes of this analysis, LOS D has been assumed at all of the study area intersections.

2.5.2 CALTRANS

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on SHS facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. Consistent with the County of Riverside minimum LOS of LOS D, LOS D will be used as the target LOS for both arterial-to-freeway ramps.

2.6 DEFICIENCY CRITERIA

This section outlines the methodology used in this analysis related to identifying circulation system deficiencies.

2.6.1 INTERSECTIONS

County of Riverside, City of Lake Elsinore, and City of Wildomar

To determine whether the addition of project traffic at a study intersection would result in a deficiency, the following will be utilized:

- A deficiency occurs at study area intersections if the pre-Project condition is at or better than LOS D (i.e., acceptable LOS), and the addition of project trips causes the peak hour LOS of the study area intersection to operate at unacceptable LOS (i.e., LOS E or F).
- Per the County of Riverside traffic study guidelines, for intersections currently operating at unacceptable LOS (LOS E or F), a deficiency would occur if the Project contributes 50 or more peak hour trips to pre-project traffic conditions.

2.6.2 CALTRANS FACILITIES

To determine whether the addition of project traffic to the SHS freeway segments would result in a deficiency, the following will be utilized:

- The traffic study finds that the LOS of a segment will degrade from D or better to E or F.

- The traffic study finds that the project will exacerbate an already deficient condition (i.e., contributing 50 or more peak hour trips). A segment that is operating at or near capacity is deemed to be deficient.

2.7 PROJECT FAIR SHARE CALCULATION METHODOLOGY

In cases where this TIA identifies that the Project would contribute additional traffic volumes to cumulative traffic deficiencies, Project fair share costs of improvements necessary to address deficiencies have been identified. The Project's fair share cost of improvements is determined based on the following equation, which is the ratio of Project traffic to new traffic, and new traffic is total future traffic less existing baseline traffic:

Project Fair Share % = Project Traffic / (2040 With Project Total Traffic – Existing Traffic)

The Project fair share contribution calculations are presented in Section 7 *Local and Regional Funding Mechanisms* of this TIA.

3 EXISTING CONDITIONS

This section provides a summary of the existing circulation network, the County of Riverside General Plan Circulation Network, the City of Lake Elsinore General Plan Circulation Network, City of Wildomar 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 County of Riverside staff (Appendix 1.1), the study area includes a total of 12 existing intersections as shown previously on Exhibit 1-2. 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 GENERAL PLAN CIRCULATION ELEMENT

3.2.1 COUNTY OF RIVERSIDE

Exhibit 3-2 shows the adopted County of Riverside General Plan Circulation Element, and Exhibit 3-3 illustrates the adopted County of Riverside General Plan roadway cross-sections.

3.2.2 CITY OF LAKE ELSINORE

Exhibit 3-4 shows the City of Lake Elsinore General Plan Circulation Element, and Exhibit 3-5 illustrates the City of Lake Elsinore General Plan roadway cross-sections.

3.2.3 CITY OF WILDOMAR

Exhibit 3-6 shows the City of Wildomar General Plan Circulation Element, and Exhibit 3-7 illustrates the City of Wildomar General Plan roadway cross-sections.

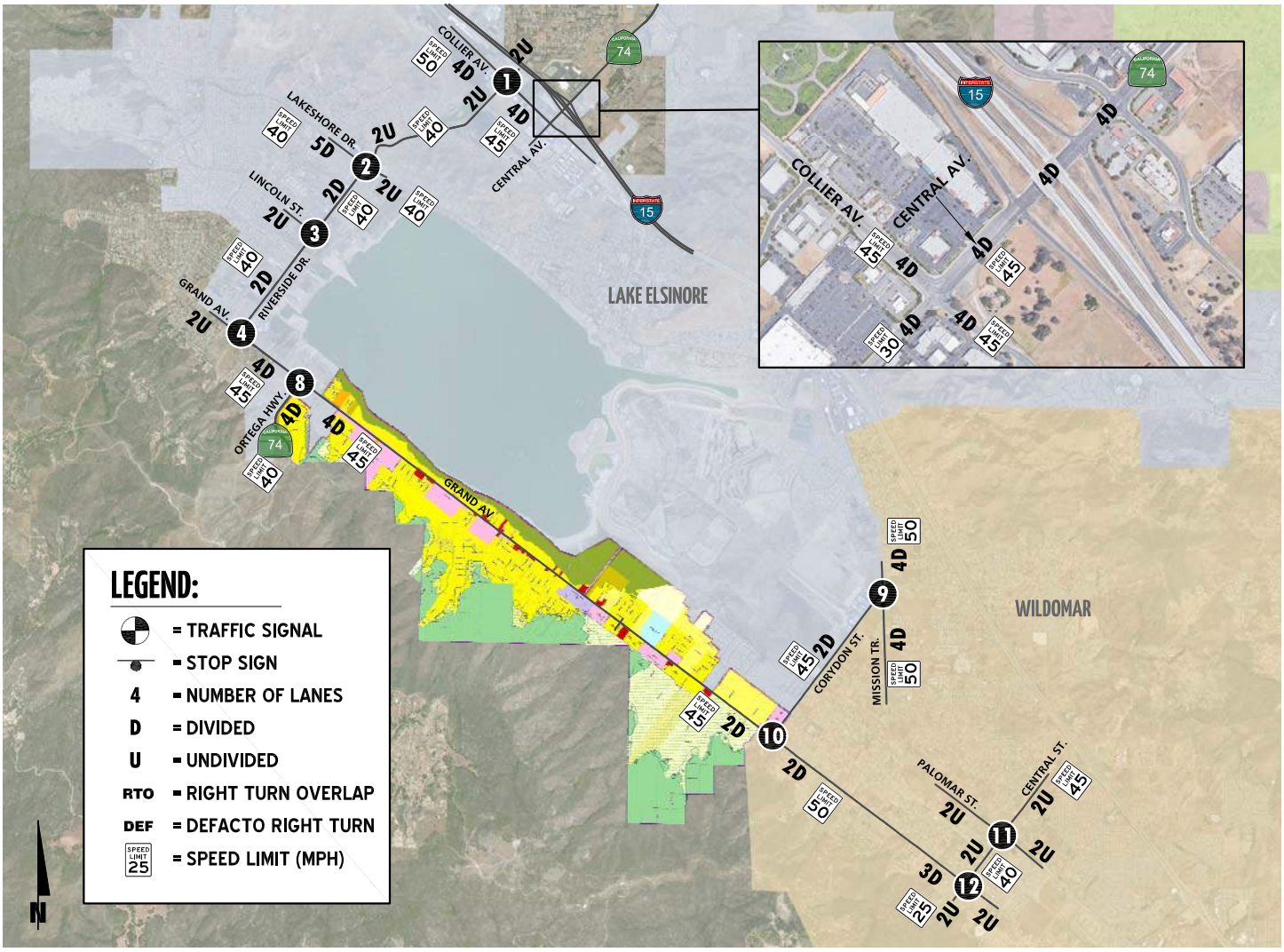
3.3 EXISTING TRAFFIC COUNTS

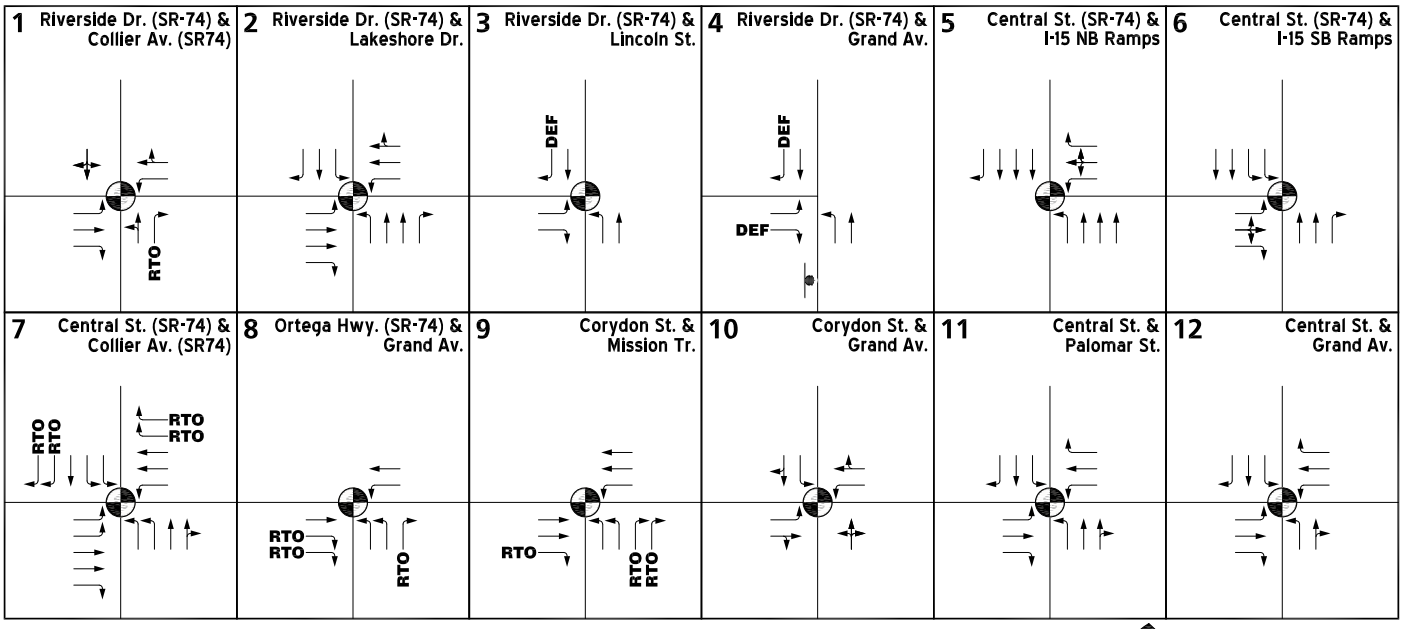
The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in April 2019. The following peak hours were selected for analysis:

- 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)

The weekday AM and weekday PM peak hour count data is 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. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1.

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



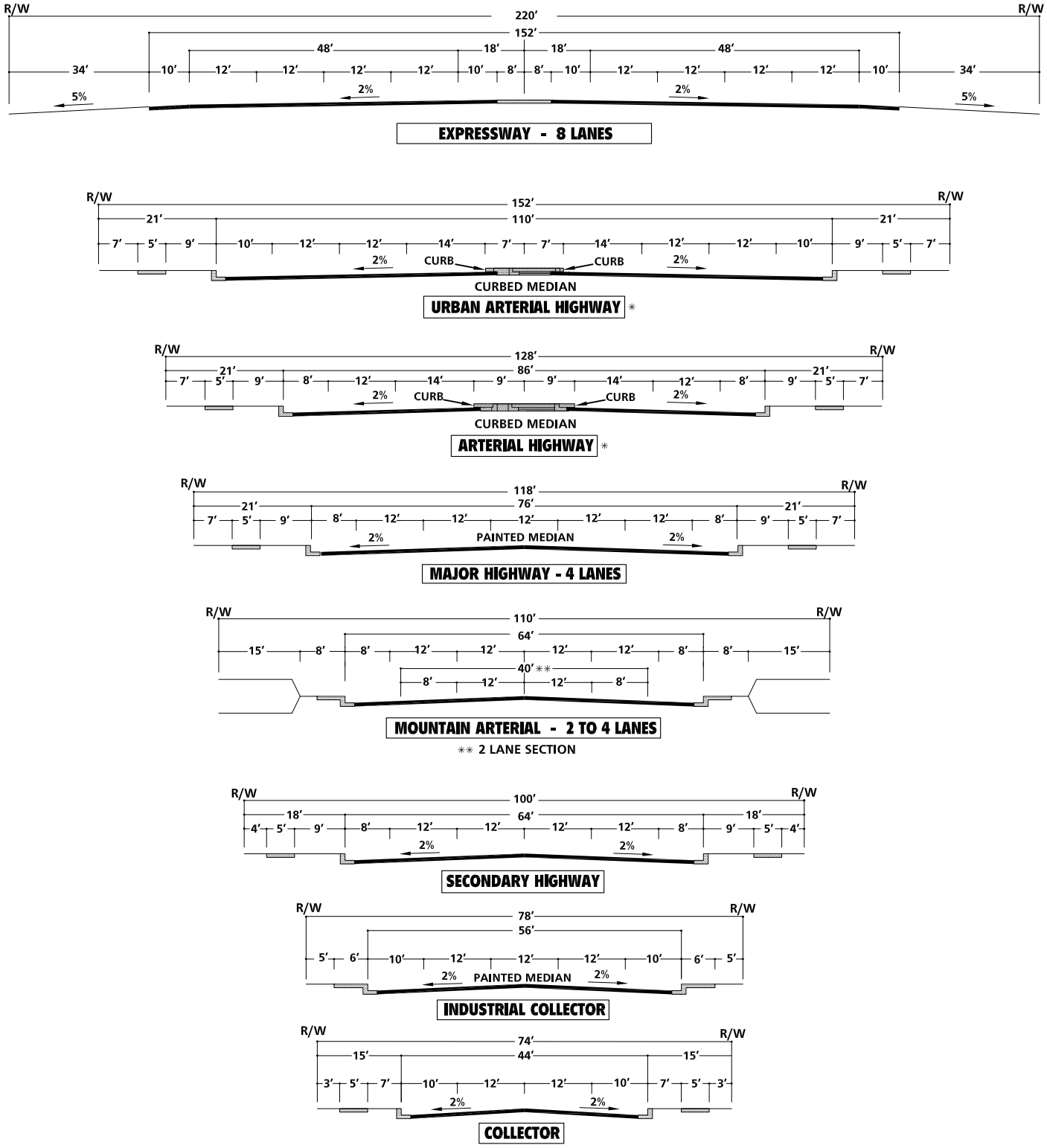


11436 - icon.dwg

URBAN CROSSROADS

EXHIBIT 3-2: COUNTY OF RIVERSIDE GENERAL PLAN CIRCULATION ELEMENT

EXHIBIT 3-3: COUNTY OF RIVERSIDE GENERAL PLAN ROADWAY CROSS-SECTIONS

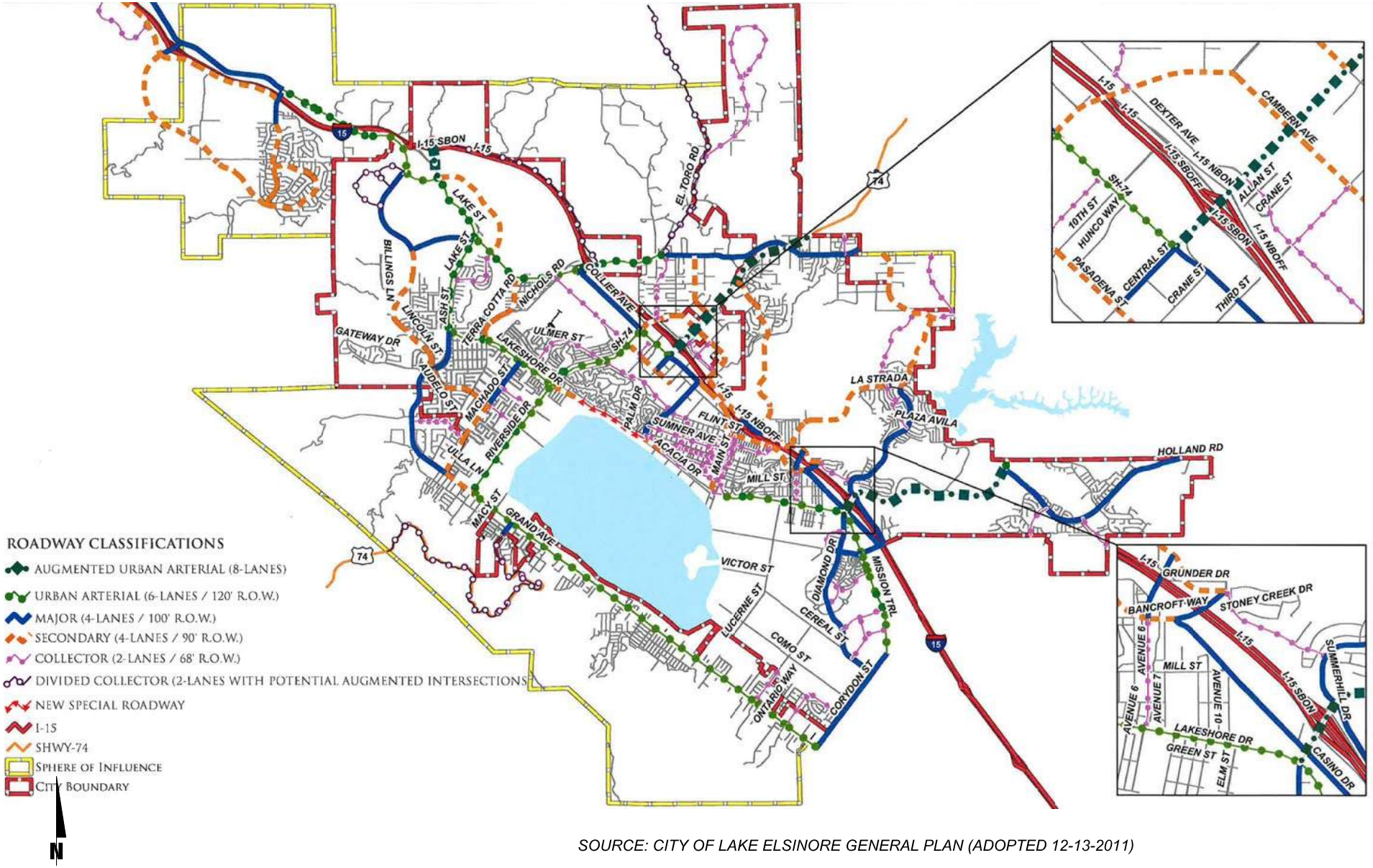


✳ *IMPROVEMENTS MAY BE RECONFIGURED TO ACCOMMODATE EXCLUSIVE TRANSIT LANES OR ALTERNATIVE LANE ARRANGEMENTS ADDITIONAL RIGHT OF WAY MAY BE REQUIRED AT INTERSECTIONS TO ACCOMMODATE ULTIMATE IMPROVEMENTS FOR STATE HIGHWAYS SHALL CONFORM TO CALTRANS DESIGN STANDARDS.*

NOT TO SCALE

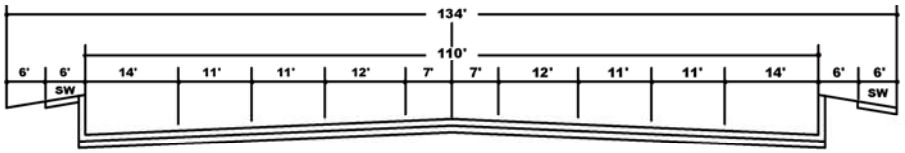
SOURCE: COUNTY OF RIVERSIDE

EXHIBIT 3-4: CITY OF LAKE ELSINORE GENERAL PLAN CIRCULATION ELEMENT

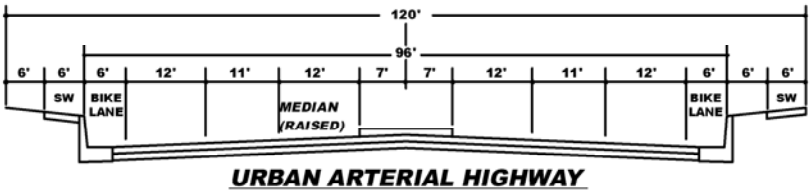


SOURCE: CITY OF LAKE ELSINORE GENERAL PLAN (ADOPTED 12-13-2011)

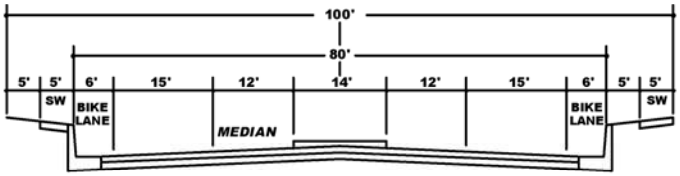
EXHIBIT 3-5: CITY OF LAKE ELSINORE GENERAL PLAN ROADWAY CROSS-SECTIONS



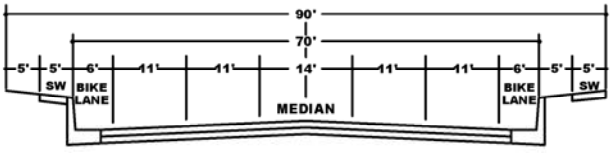
AUGMENTED URBAN ARTERIAL - STATE HIGHWAY
(8-LANE)



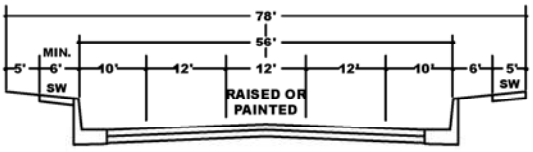
URBAN ARTERIAL HIGHWAY
(6-LANE)



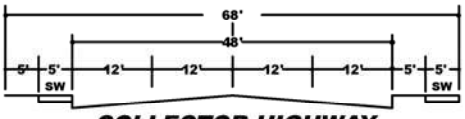
MAJOR HIGHWAY
(4-LANE)



SECONDARY HIGHWAY
(4-LANE)

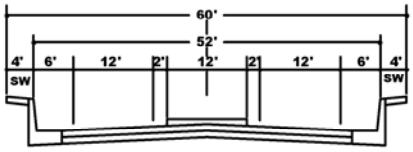


DIVIDED COLLECTOR
BIKES USE SHOULDER
(2-LANE)



COLLECTOR HIGHWAY
(4-LANE)

COLLECTOR HIGHWAY
(2-LANE)

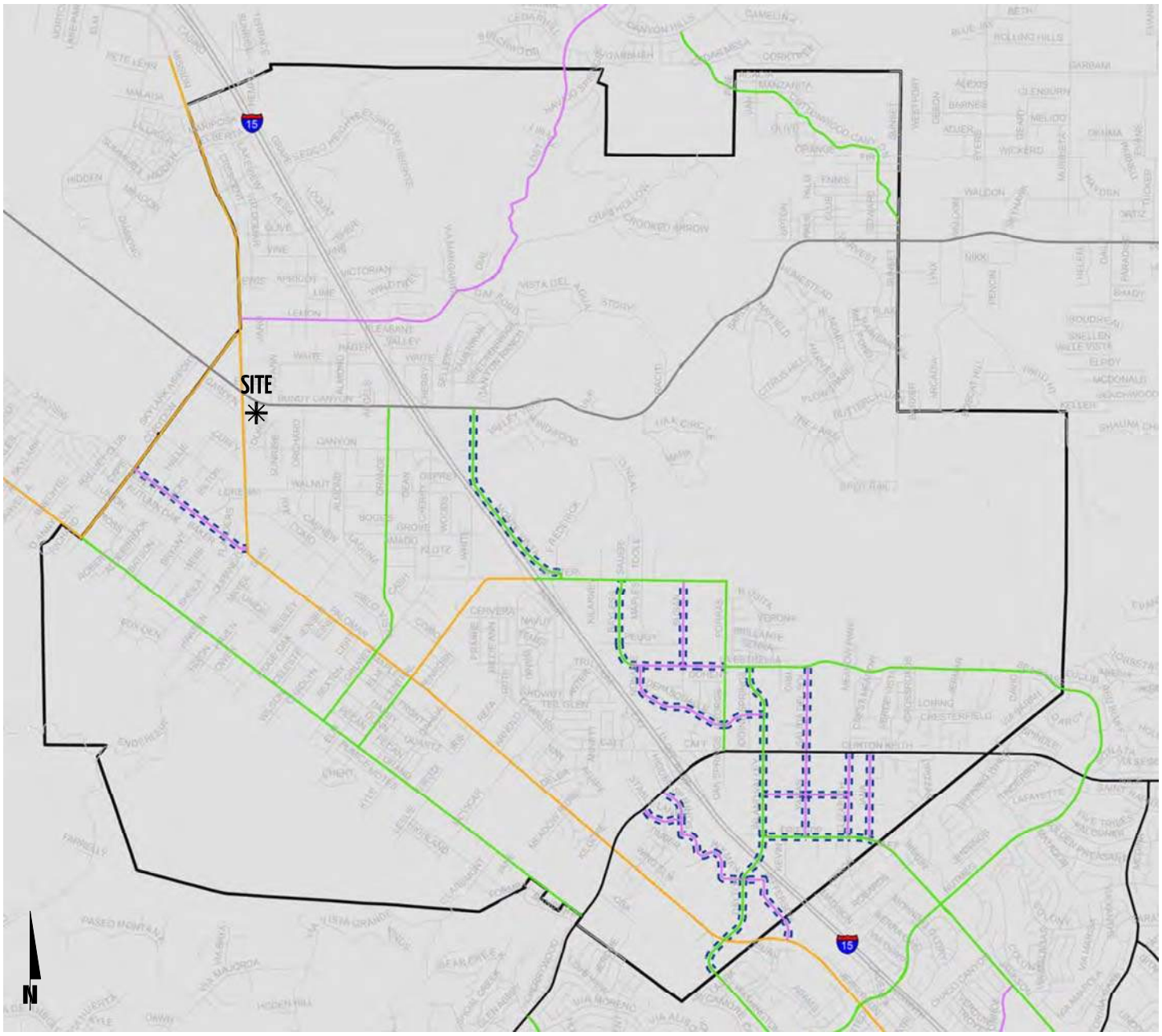


NEW SPECIAL ROADWAY
SHOULDER/BIKE LANE
(2-LANE)
(PROPOSED FOR LAKESHORE DRIVE IN THE COUNTRY CLUB HEIGHT DISTRICT)

* 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 3-6: CITY OF WILDOMAR GENERAL PLAN CIRCULATION AND INFRASTRUCTURE ELEMENT

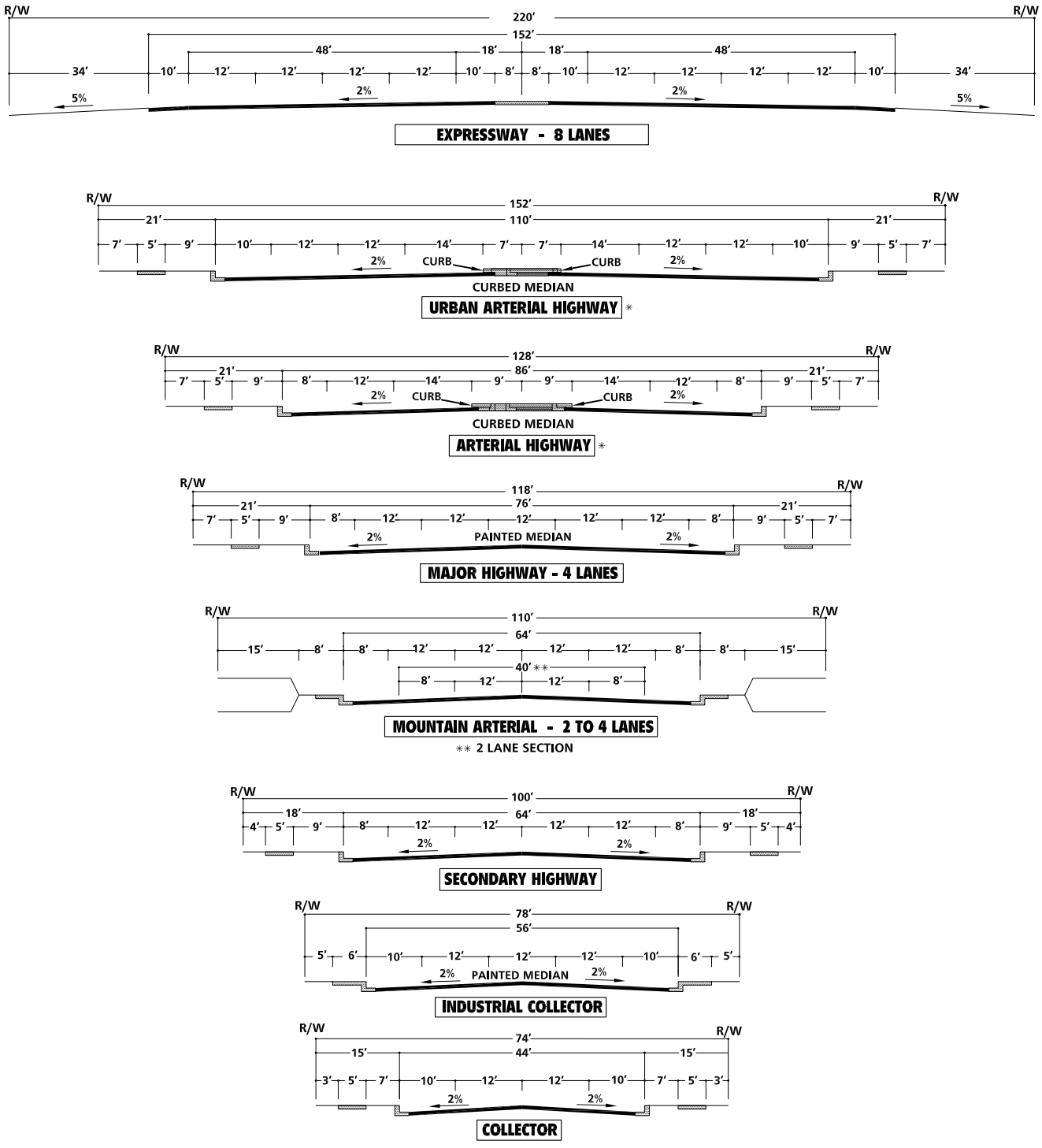


LEGEND:

- URBAN ARTERIAL
- ARTERIAL
- MAJOR
- SECONDARY
- COLLECTOR
- WILDOMAR CITY BOUNDARIES

NOTE: CITY OF WILDOMAR DRAFT GENERAL PLAN UPDATE JANUARY 2015

EXHIBIT 3-7: CITY OF WILDOMAR GENERAL PLAN ROADWAY CROSS-SECTIONS



* *IMPROVEMENTS MAY BE RECONFIGURED TO ACCOMMODATE EXCLUSIVE TRANSIT LANES OR ALTERNATIVE LANE ARRANGEMENTS ADDITIONAL RIGHT OF WAY MAY BE REQUIRED AT INTERSECTIONS TO ACCOMMODATE ULTIMATE IMPROVEMENTS FOR STATE HIGHWAYS SHALL CONFORM TO CALTRANS DESIGN STANDARDS.*

NOTE: THE CITY OF WILDOMAR HAS ADOPTED THE COUNTY OF RIVERSIDE'S GENERAL PLAN AND STANDARDS

These raw turning volumes have been flow conserved between intersections with limited access, no access and where there are currently no uses generating traffic (e.g., between ramp-to-arterial intersections, etc.). The traffic counts collected in April 2019 include the vehicle classifications as shown below:

- Passenger Cars
- 2-Axle Trucks
- 3-Axle Trucks
- 4 or More Axle Trucks

To represent the impact large trucks, buses and recreational vehicles have on traffic flow; all trucks were converted into PCEs. By their size alone, these vehicles occupy the same space as two or more passenger cars. In addition, the time it takes for them to accelerate and slow-down is also much longer than for passenger cars, and varies depending on the type of vehicle and number of axles. For the purpose of this analysis, a PCE factor of 1.5 has been applied to 2-axle trucks, 2.0 for 3-axle trucks and 3.0 for 4+-axle trucks to estimate each turning movement. These factors are consistent with the values recommended for use in the San Bernardino County CMP and are in excess of the factor recommended for use in the County of Riverside traffic study guidelines. (9) Although the County of Riverside has a recommended PCE factor of 2.0, the San Bernardino County CMP PCE factors have been utilized in an effort to conduct a more conservative analysis.

Existing weekday ADT volumes on arterial highways throughout the study area are shown on Exhibit 3-8. Existing ADT volumes are 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 11.1524 = Leg Volume

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 8.97 percent. As such, the above equation utilizing a factor of 11.1524 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 8.97 percent (i.e., 1/0.0897 = 11.1524) and was assumed to sufficiently estimate average daily traffic (ADT) volumes for planning-level analyses. Existing weekday AM and weekday PM peak hour intersection volumes (in PCE) are also shown on Exhibit 3-8.

3.4 EXISTING CONDITIONS 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 intersection is currently operating at an unacceptable LOS during the one or more peak hours:

- Riverside Dr. (SR-74) & Grand Av. (#4) – LOS F AM peak hour; LOS E PM peak hour

Table 3-1

Intersection Analysis for Existing (2019) Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay (secs.)[1]		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Riverside Dr. (SR-74) & Collier Av. (SR-74)	TS	0	1	1>	0	1	0	1	1	1	1	1	0	17.9	23.7	B	C
2	Riverside Dr. (SR-74) & Lakeshore Dr.	TS	1	2	1	1	1	1	1	2	1	1	2	0	31.3	34.1	C	C
3	Riverside Dr. (SR-74) & Lincoln St.	TS	1	1	0	0	1	d	1	0	1	0	0	0	32.1	12.9	C	B
4	Riverside Dr. (SR-74) & Grand Av.	CSS	1	1	0	0	1	d	1	0	d	0	0	0	**62.2**	**47.4**	**F**	**E**
5	Central St. (SR-74) & I-15 NB Ramps	TS	1	3	0	0	3	1	0	0	0	1	1	1	14.6	13.5	B	B
6	Central St. (SR-74) & I-15 SB Ramps	TS	0	2	1	2	2	0	1	1	1	0	0	0	15.4	20.9	B	C
7	Central St. (SR-74) & Collier Av. (SR-74)	TS	2	2	0	2	1	2>	2	2	1	1	2	2>	25.6	26.3	C	C
8	Ortega Hwy. (SR-74) & Grand Av.	TS	2	0	1>	0	0	0	0	1	2>	1	1	0	14.5	19.6	B	B
9	Corydon St. & Mission Tr.	TS	2	0	2>	0	0	0	0	2	1>	1	2	0	12.5	12.0	B	B
10	Corydon St. & Grand Av.	TS	0	1	0	1	1	0	1	1	0	1	1	0	16.2	18.4	B	B
11	Central St. & Palomar St.	TS	1	2	0	1	1	1	1	1	1	1	1	1	23.3	18.4	C	B
12	Central St. & Grand Av.	TS	1	1	0	1	1	1	1	1	1	1	1	1	20.4	13.5	C	B

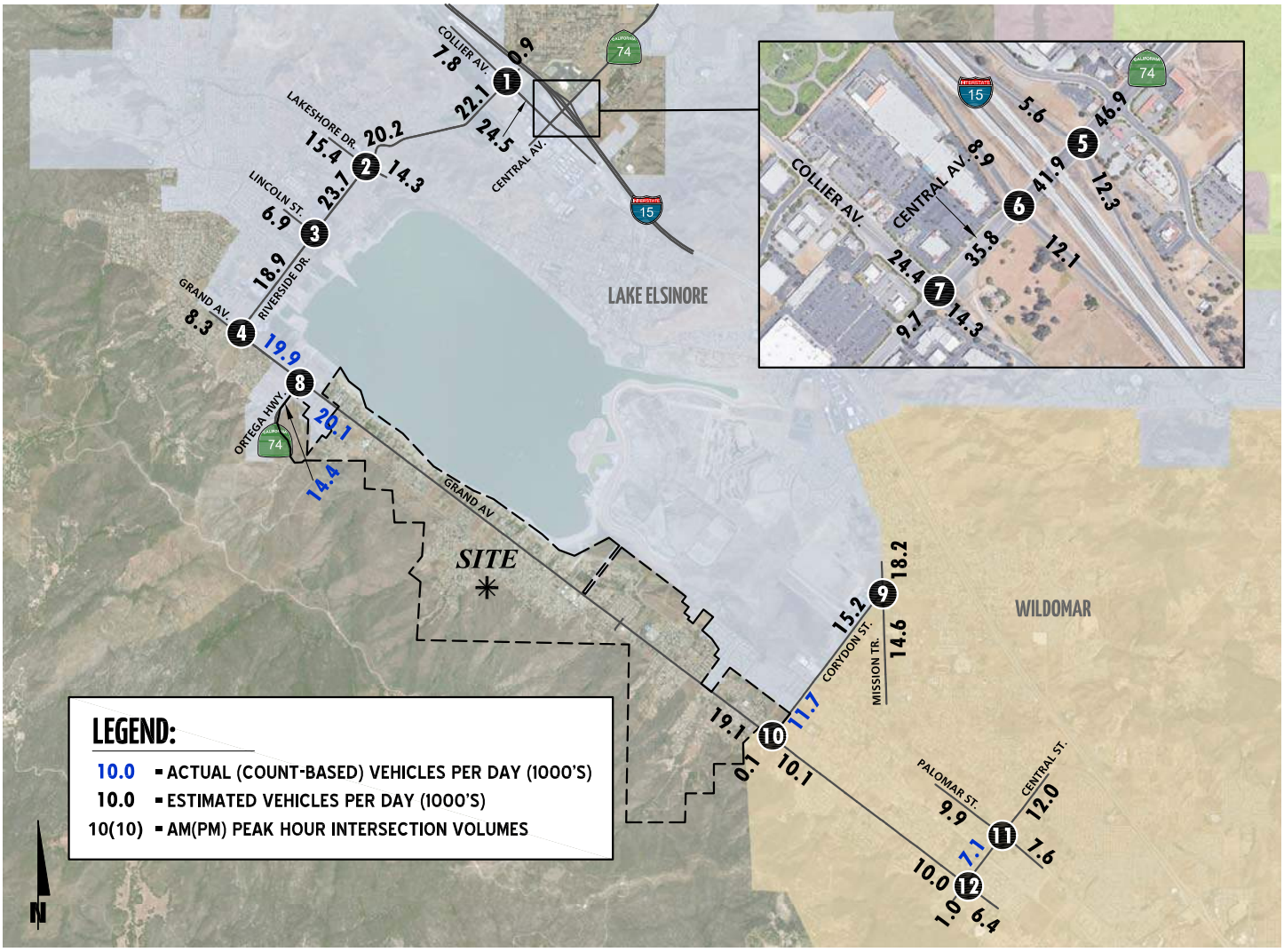
[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto Right Turn Lane; > = Right Turn Overlap

[2] Per the Highway Capacity Manual (HCM) 6th Edition, overall average intersection delay and level of service are shown for intersections with a traffic signal. 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. LOS calculated using Synchro (Version 10).

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

EXHIBIT 3-8: EXISTING (2019) TRAFFIC VOLUMES (IN PCE)



1 Riverside Dr. (SR-74) & Collier Av. (SR74) 6(10) 1(22) 8(16) ← 16(25) 60(251) 614(859) 6(9) 72(190) 57(140) → 97(99) 9(4) 872(856)	**2** Riverside Dr. (SR-74) & Lakeshore Dr. 139(280) 488(561) 26(36) ← 20(33) 171(321) 208(287) 290(218) 299(289) 141(149) → 129(125) 566(682) 328(319)	**3** Riverside Dr. (SR-74) & Lincoln St. 64(212) 648(688) 408(257) 297(90) → 158(59) 686(855)	**4** Riverside Dr. (SR-74) & Grand Av. 162(126) 632(583) 72(63) 360(195) → 202(358) 609(841)	**5** Central St. (SR-74) & I-15 NB Ramps 548(391) 1597(1425) ← 475(636) 3(1) 486(465) 82(114) 982(1757)	**6** Central St. (SR-74) & I-15 SB Ramps 1411(1314) 673(576) 355(636) 1(4) 195(156) → 709(1236) 545(508)
7 Central St. (SR-74) & Collier Av. (SR74) 642(736) 290(184) 513(306) ← 342(496) 53(146) 28(75) 845(903) 73(196) 18(52) → 31(155) 125(336) 37(68)	**8** Ortega Hwy. (SR-74) & Grand Av. ← 621(465) 305(65) 590(598) 471(105) → 109(751) 63(549)	**9** Corydon St. & Mission Tr. ← 371(417) 250(243) 320(367) 364(398) → 458(452) 263(271)	**10** Corydon St. & Grand Av. 368(388) 0(1) 67(44) ← 55(28) 335(331) 1(2) 350(496) 506(496) 0(0) → 0(1) 2(0) 3(1)	**11** Central St. & Palomar St. 149(213) 259(307) 63(73) ← 83(61) 278(266) 66(64) 204(126) 274(182) 167(66) → 113(41) 357(300) 56(32)	**12** Central St. & Grand Av. 140(193) 21(38) 217(56) ← 200(47) 303(185) 14(16) 243(251) 328(259) 10(3) → 9(4) 50(24) 22(8)

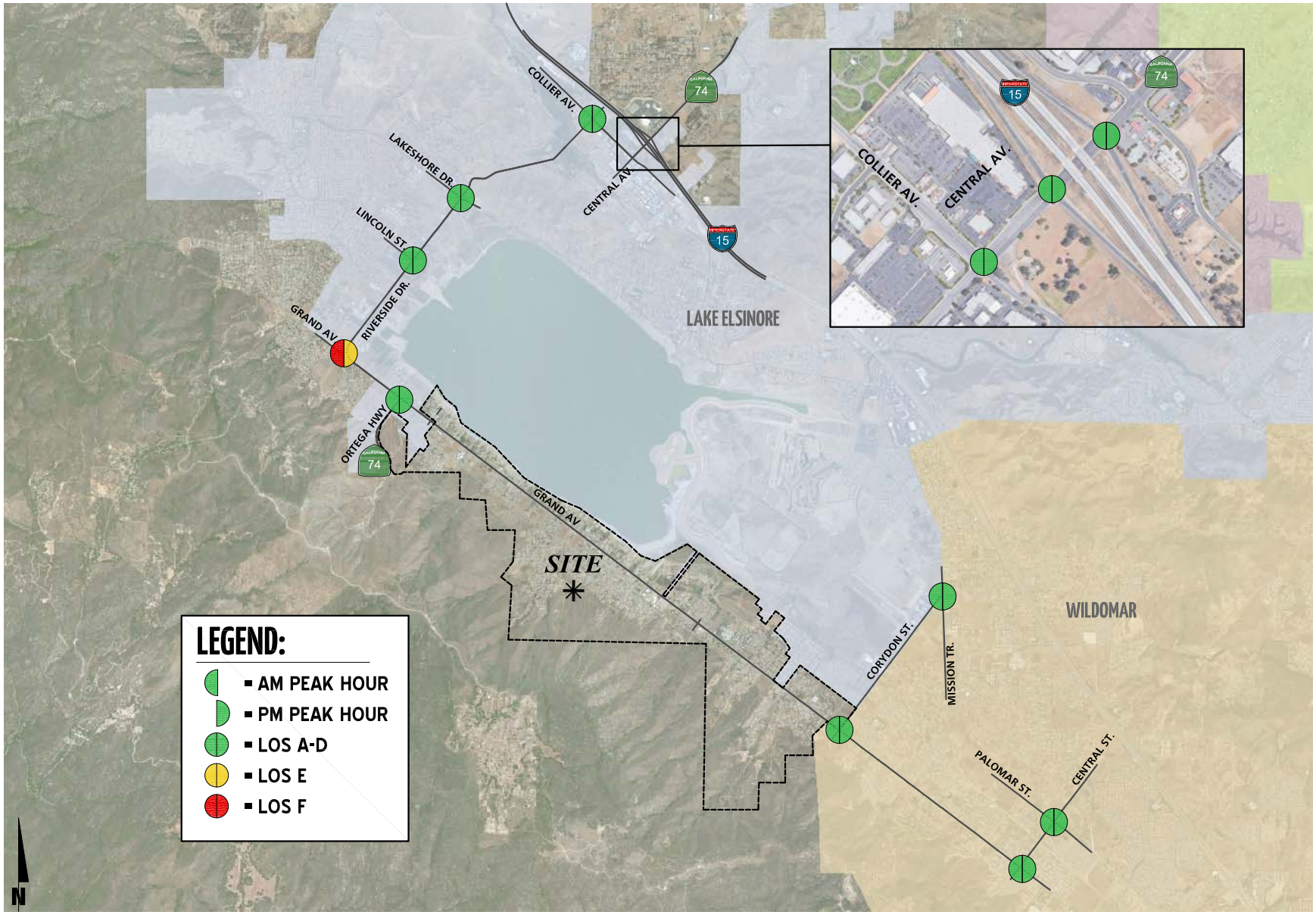
Consistent with Table 3-1, a summary of the peak hour intersection LOS for Existing conditions are shown on Exhibit 3-9. The intersection operations analysis worksheets are included in Appendix 3.2 of this TIA.

It is important to recognize that the intersection operations analysis reflects the existing constrained traffic count conditions. These constraints in the form of vehicle queues at closely spaced intersections significantly limit the number of vehicles that can physically be accommodated during peak hour conditions. While the traffic counts identify all the vehicles using an intersection during peak hours, they may not fully account for the unconstrained demand at a particular location. Field observations indicate that the intersection of Riverside Drive & Collier Avenue experiences vehicle delays that are not reflected in the intersection LOS analysis. Field observations also show that this intersection experiences peak hour queues that periodically affect intersection operations. As such, based on the constrained traffic count data the intersections appear to operate at acceptable LOS or at LOS better than field observations would suggest.

3.5 EXISTING CONDITIONS TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. For Existing traffic conditions, the intersection of Riverside Drive (SR-74) & Grand Avenue appear to currently be warranted for a traffic signal (see Appendix 3.3).

EXHIBIT 3-9: EXISTING (2019) SUMMARY OF LOS



URBAN CROSSROADS

This Page Intentionally Left Blank

4 PROJECTED FUTURE TRAFFIC

This section presents the traffic volumes estimated to be generated by the Project, as well as the Project's trip assignment onto the study area roadway network. The Project is proposed to consist of the land use designations and acreage included in GPA No. 960 and GPA No. 1156, with an additional 829 dwelling units, 7,659 square feet (sf) of commercial retail, 3,795 sf of light industrial use, 7,659 sf of non-residential use, and 1,139 square feet of public facilities. The Project is proposed to have access onto Grand Avenue. Regional access to the Project site will be provided by the SR-74 Highway 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 (in PCE) used to estimate Project traffic and a summary of the Project's trip generation (in PCE) are shown in Table 4-1. Trip generation rates (in actual vehicles) used to estimate Project traffic and a summary of the Project's trip generation (in actual vehicles) are shown in Table 4-2. The trip generation rates are based upon data collected by the Institute of Transportation Engineers (ITE) in their published Trip Generation Manual, 10th Edition, 2017. (3) The following land uses were utilized for the purposes of this analysis:

- General Light Industrial (ITE LU Code 110)
- Single Family Detached Residential (ITE LU Code 210)
- Shopping Center (ITE LU Code 820)

The proposed Project is estimated to generate a net total of 7,594 PCE trip-ends per day with 599 PCE AM peak hour trips and 817 PCE PM peak hour trips. In comparison, the proposed Project is estimated to generate a net total of 7,584 actual vehicle trip-ends per day with 599 actual vehicle AM peak hour trips and 815 actual vehicle PM peak hour trips.

4.2 PROJECT TRIP DISTRIBUTION

Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute.

The Project trip distribution was developed based on anticipated travel patterns to and from the Project site. The Project trip distribution pattern was developed based on an understanding of existing travel patterns in the area, the geographical location of the site, and the site's proximity to the regional arterial and state highway system. The Project passenger car trip distribution patterns are graphically depicted on Exhibit 4-1.

Table 4-1

Project Trip Generation Summary (PCE)

Project Trip Generation Rates									
Land Use[1]	ITE LU Code	Units[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
General Light Industrial[3,4]	110	TSF	0.616	0.084	0.700	0.082	0.548	0.630	4.960
Passenger Cars (61.2%)			0.377	0.051	0.428	0.050	0.336	0.386	3.038
2-Axle Trucks (6.1%) (PCE = 1.5)			0.057	0.008	0.065	0.008	0.051	0.059	0.458
3-Axle Trucks (12.7%) (PCE = 2.0)			0.156	0.022	0.178	0.020	0.140	0.160	1.262
4-Axle+ Trucks (19.9%) (PCE = 3.0)			0.369	0.051	0.420	0.048	0.327	0.375	2.961
Single Family Detached Residential	210	DU	0.185	0.555	0.740	0.624	0.366	0.990	9.440
Shopping Center	820	TSF	0.583	0.357	0.940	1.829	1.981	3.810	37.750

Project Trip Generation									
Project	Quantity	Units[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
General Light Industrial	3.795	TSF							
Passenger Cars:			1	0	1	0	1	1	12
Truck Trips:									
2-axle:			0	0	0	0	0	0	2
3-axle:			1	0	1	0	1	1	6
4+-axle:			1	0	1	0	1	1	12
- Net Truck Trips			*2*	*0*	*2*	*0*	*2*	*2*	*20*
Single Family Detached Residential	829	DU	154	461	615	518	304	822	7,826
Commercial Retail/Non-Residential	15.318	TSF	9	6	15	29	31	60	580
Subtotal			*166*	*467*	*633*	*547*	*338*	*885*	*8,438*
Internal Capture (10%)			*-17*	*-17*	*-34*	*-34*	*-34*	*-68*	*-844*
TOTAL NET TRIPS			***149***	***450***	***599***	***513***	***304***	***817***	***7,594***

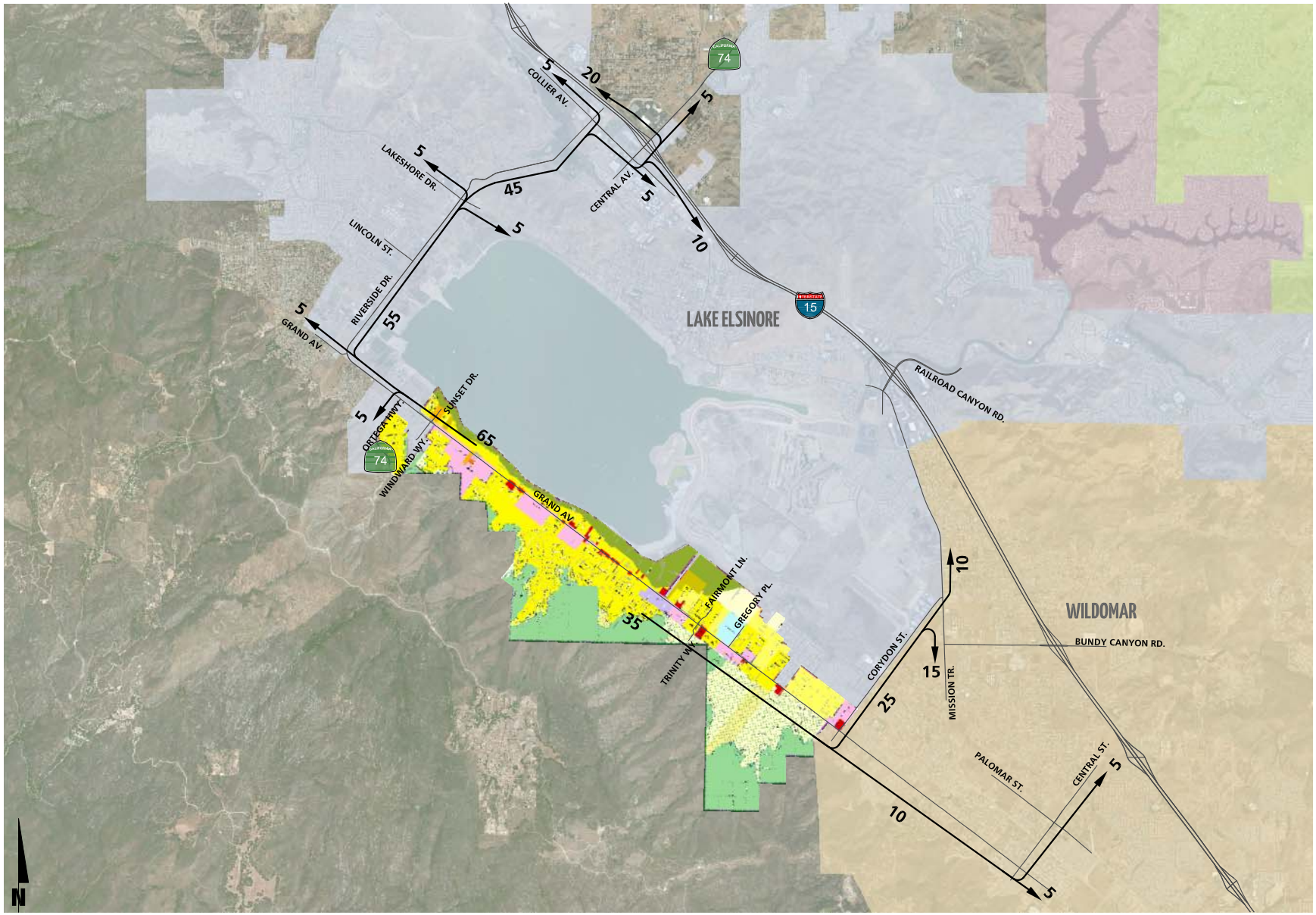
[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

[2] TSF = thousand square feet; DU = Dwelling Units

[3] Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Handbook, Third Edition (September 2017).

[4] Truck mix per City of Fontana Truck Trip Generation Study for LU 110, August 2003. PCE rates are per SBCTA.

EXHIBIT 4-1: PROJECT TRIP DISTRIBUTION



URBAN CROSSROADS

4.3 MODAL SPLIT

Although the use of public transit, walking, and/or bicycling have the potential to reduce Project-related traffic, such reductions have not been taken into consideration in this traffic study in order to provide a conservative analysis of the Project's potential to contribute to circulation system deficiencies.

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 ADT and peak hour intersection turning movement volumes are shown on Exhibits 4-2.

4.5 BACKGROUND TRAFFIC

The adopted Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan (RTP) /Sustainable Communities Strategy (SCS) (April 2016) growth forecasts for Riverside County identifies projected growth in population of 359,000 in 2012 to 499,200 in 2040, or a 39.05% increase over the 28-year period. The change in population equates to roughly a 1.18 percent growth rate, compounded annually. Similarly, growth over the same 28-year period in households is projected to increase by 45.06 percent, or 1.34 percent growth rate, compounded annually. Finally, growth in employment over the same 28-year period is projected to increase by 122.13 percent, or a 2.89 percent growth rate, compounded annually. (10) Therefore, the annual growth rate of 2.0% in conjunction with cumulative project traffic would appear to be conservative and tend to overstate as opposed to understate future traffic growth.

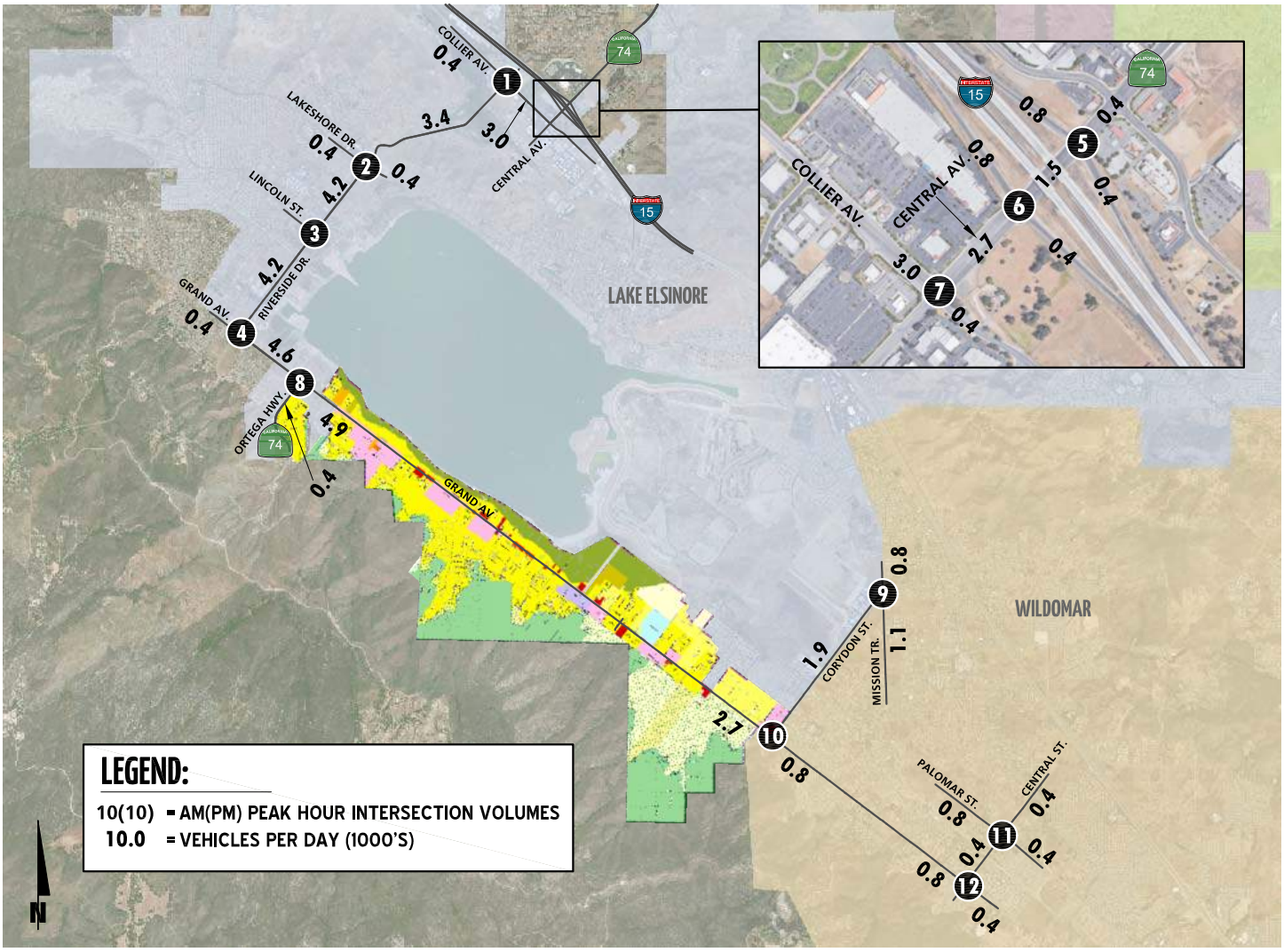
4.6 TRAFFIC FORECASTS

To provide a comprehensive assessment of the deficiencies, a "buildout" analysis was performed in support of this work effort. The "buildout" approach is used to forecast the Horizon Year Without and With Project conditions of the study area based on planned land uses within the Project vicinity.

4.7 HORIZON YEAR (2040) CONDITIONS

"Buildout" traffic projections for Horizon Year With Project conditions are based on traffic model forecasts and were derived from the Riverside County Transportation Analysis Model (RivTAM) using accepted procedures for model forecast refinement and smoothing. The Horizon Year traffic conditions analyses will be utilized to determine if improvements funded through regional transportation mitigation fee programs, such as the TUMF, County of Riverside DIF programs, or other approved funding mechanism can accommodate the long-range cumulative traffic at the target LOS identified in the County of Riverside General Plan. Other improvements needed beyond the "funded" improvements (such as localized improvements to non-TUMF, non-TIF, or non-DIF facilities) are identified as such.

EXHIBIT 4-2: PROJECT ONLY TRAFFIC VOLUMES (IN PCE)



1 Riverside Dr. (SR-74) & Collier Av. (SR74) 0(0) 0(0) 0(0) ← 0(0) ← 0(0) ← 61(205) 0(0) → 0(0) → 8(26) ← 22(15) 0(0) 178(122)	2 Riverside Dr. (SR-74) & Lakeshore Dr. 0(0) 69(231) 0(0) ← 0(0) ← 0(0) ← 8(26) 0(0) → 0(0) → 8(26) ← 22(15) 200(137) 22(15)	3 Riverside Dr. (SR-74) & Lincoln St. 0(0) ← 84(282) 0(0) → 0(0) ← 245(167)	4 Riverside Dr. (SR-74) & Grand Av. 0(0) ← 84(282) 0(0) → 8(26) ← 22(15) 245(167)	5 Central St. (SR-74) & I-15 NB Ramps 0(0) 8(26) ← 0(0) ← 0(0) ← 15(51) 89(61) 22(15)	6 Central St. (SR-74) & I-15 SB Ramps 23(77) 0(0) 0(0) → 0(0) → 31(103) ← 111(76) 45(30)
7 Central St. (SR-74) & Collier Av. (SR74) 54(180) 0(0) 0(0) ← 0(0) ← 8(26) ← 0(0) 156(106) → 22(15) → 0(0) ← 0(0) 0(0) 0(0)	8 Ortega Hwy. (SR-74) & Grand Av. ← 267(182) ← 22(15) 92(308) → 0(0) ← 0(0) 8(26)	9 Corydon St. & Mission Tr. ← 0(0) ← 23(77) 0(0) → 15(51) ← 45(30) 67(46)	10 Corydon St. & Grand Av. 38(128) 0(0) 0(0) ← 0(0) ← 15(51) ← 0(0) 111(76) → 45(30) → 0(0) ← 0(0) 0(0) 0(0)	11 Central St. & Palomar St. 0(0) 8(26) 0(0) ← 0(0) ← 0(0) ← 0(0) 0(0) → 0(0) → 0(0) ← 0(0) 22(15) 0(0)	12 Central St. & Grand Av. 8(26) 0(0) 0(0) ← 0(0) ← 8(26) ← 0(0) 22(15) → 22(15) → 0(0) ← 0(0) 0(0) 0(0)

In most instances the traffic model zone structure is not designed to provide accurate turning movements along arterial roadways unless refinement and reasonableness checking is performed. Therefore, the Horizon Year peak hour forecasts were refined using the model derived long-range forecasts, base (validation) year model forecasts, along with existing peak hour traffic count data collected at each analysis location.

The refined future peak hour approach and departure volumes obtained from these calculations are then entered into a spreadsheet program consistent with the National Cooperative Highway Research Program (NCHRP Report 255), along with initial estimates of turning movement proportions. A linear programming algorithm is used to calculate individual turning movements which match the known directional roadway segment forecast volumes computed in the previous step. This program computes a likely set of intersection turning movements from intersection approach counts and the initial turning proportions from each approach leg.

In some instances, the traffic model zone structure is not designed to provide accurate turning movements along arterial roadways unless refinement and reasonableness checking is performed. Horizon Year turning volumes were compared to existing volumes in order to ensure a minimum growth as a part of the refinement process, where applicable. The minimum growth includes any additional growth between existing and Horizon Year With Project traffic conditions that is not accounted for by the traffic generated by cumulative development projects and the ambient growth between Existing and Horizon Year traffic conditions. The initial estimate of the future Horizon Year with Project peak hour turning movements was then reviewed by Urban Crossroads for reasonableness at intersections where model results showed unreasonable turning movements. The initial raw model estimates were adjusted to achieve flow conservation (where applicable), reasonable growth, and reasonable diversion between parallel routes.

Post-processing worksheets for Horizon Year with Project traffic conditions are provided in Appendix 4.1.

5 E+P TRAFFIC CONDITIONS

In an effort to satisfy the CEQA Guideline Section 15125(a), an analysis of existing traffic volumes plus traffic generated by the proposed Project (E+P) has been included in this report. This section discusses the traffic forecasts for Existing plus Project (E+P) conditions 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 E+P conditions consist 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 E+P conditions only (e.g., intersection and roadway improvements at the Project's frontage and driveways). These include the Project site adjacent roadway.

5.2 E+P TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus Project traffic. Exhibit 5-1 shows the ADT volumes which can be expected for E+P traffic conditions. E+P weekday AM and weekday PM peak hour intersection turning movement volumes are also shown on Exhibit 5-1.

5.3 INTERSECTION OPERATIONS ANALYSIS

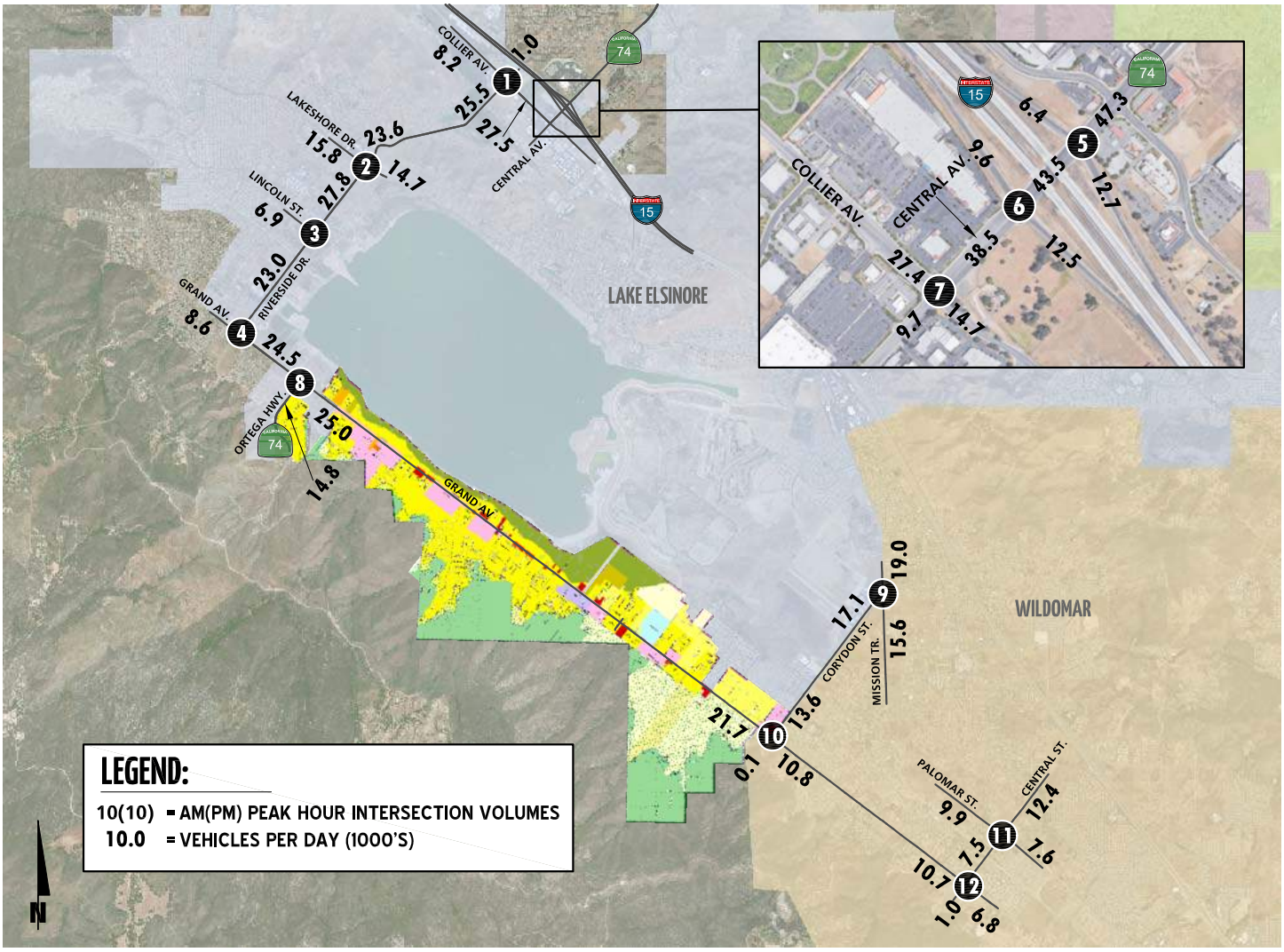
E+P peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TIA. The intersection analysis results are summarized in Table 5-1, which indicates that there are no additional study area intersections anticipated to operate at unacceptable LOS under E+P traffic conditions, consistent with Existing traffic conditions.

Exhibit 5-2 summarizes the weekday AM and PM peak hour study area intersection LOS under E+P traffic conditions, consistent with the summary provided in Table 5-1. The intersection operations analysis worksheets are included in Appendix 5.1 of this TIA. Measures to address deficiencies for Horizon Year traffic conditions are discussed in Section 5.5 *E+P Deficiencies and Recommended Improvements*.

5.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

For E+P conditions, all intersections are signalized or were anticipated to warrant a traffic signal in previous traffic conditions based on either peak hour or planning-level volume-based warrants.

EXHIBIT 5-1: E+P TRAFFIC VOLUMES (IN PCE)



1 Riverside Dr. (SR-74) & Collier Av. (SR74)	2 Riverside Dr. (SR-74) & Lakeshore Dr.	3 Riverside Dr. (SR-74) & Lincoln St.	4 Riverside Dr. (SR-74) & Grand Av.	5 Central St. (SR-74) & I-15 NB Ramps	6 Central St. (SR-74) & I-15 SB Ramps
6(10) → 1(22) ↓ 8(16) ←	139(280) → 557(792) ↓ 26(36) ←	64(212) → 732(970) ↓	162(126) → 716(865) ↓	548(391) → 1605(1451) ↓	1434(1391) → 673(576) ↓
↓ 16(25) ← 60(251) ← 675(1064)	↓ 20(33) ← 171(321) ← 216(313)			↓ 475(636) ← 3(1) ← 501(516)	
6(9) → 72(190) → 65(166) ↓	290(218) → 299(289) → 149(175) ↓	408(257) → 297(90) ↓	72(63) → 368(221) ↓		355(636) → 1(4) → 226(259) ↓
↑ 119(114) ↑ 9(4) ↑ 1050(978)	↑ 151(140) ↑ 766(819) ↑ 350(334)	↑ 158(59) ↑ 931(1022)	↑ 224(373) ↑ 854(1008)	↑ 171(175) ↑ 1004(1772)	↑ 820(1312) ↑ 590(538)

7 Central St. (SR-74) & Collier Av. (SR74)	8 Ortega Hwy. (SR-74) & Grand Av.	9 Corydon St. & Mission Tr.	10 Corydon St. & Grand Av.	11 Central St. & Palomar St.	12 Central St. & Grand Av.
696(916) → 290(184) ↓ 513(306) ←	← 888(647) ↓ 327(80)	← 371(417) ↓ 273(320)	406(516) → 0(1) ↓ 67(44) ←	149(213) → 267(333) ↓ 63(73) ←	148(219) → 21(38) ↓ 217(56) ←
↓ 342(496) ← 61(172) ← 28(75)			↓ 55(28) ← 350(382) ← 1(2)	↓ 83(61) ← 278(266) ← 66(64)	↓ 200(47) ← 311(211) ← 14(16)
1001(1009) → 95(211) → 18(52) ↓	682(906) → 471(105) ↓	320(367) → 379(449) ↓	461(572) → 551(526) → 0(0) ↓	204(126) → 274(182) → 167(66) ↓	265(266) → 350(274) → 10(3) ↓
↑ 31(155) ↑ 125(336) ↑ 37(68)	↑ 109(751) ↑ 71(575)	↑ 503(482) ↑ 330(317)	↑ 0(1) ↑ 2(0) ↑ 3(1)	↑ 113(41) ↑ 379(315) ↑ 56(32)	↑ 9(4) ↑ 50(24) ↑ 22(8)

EXHIBIT 5-2: E+P SUMMARY OF LOS

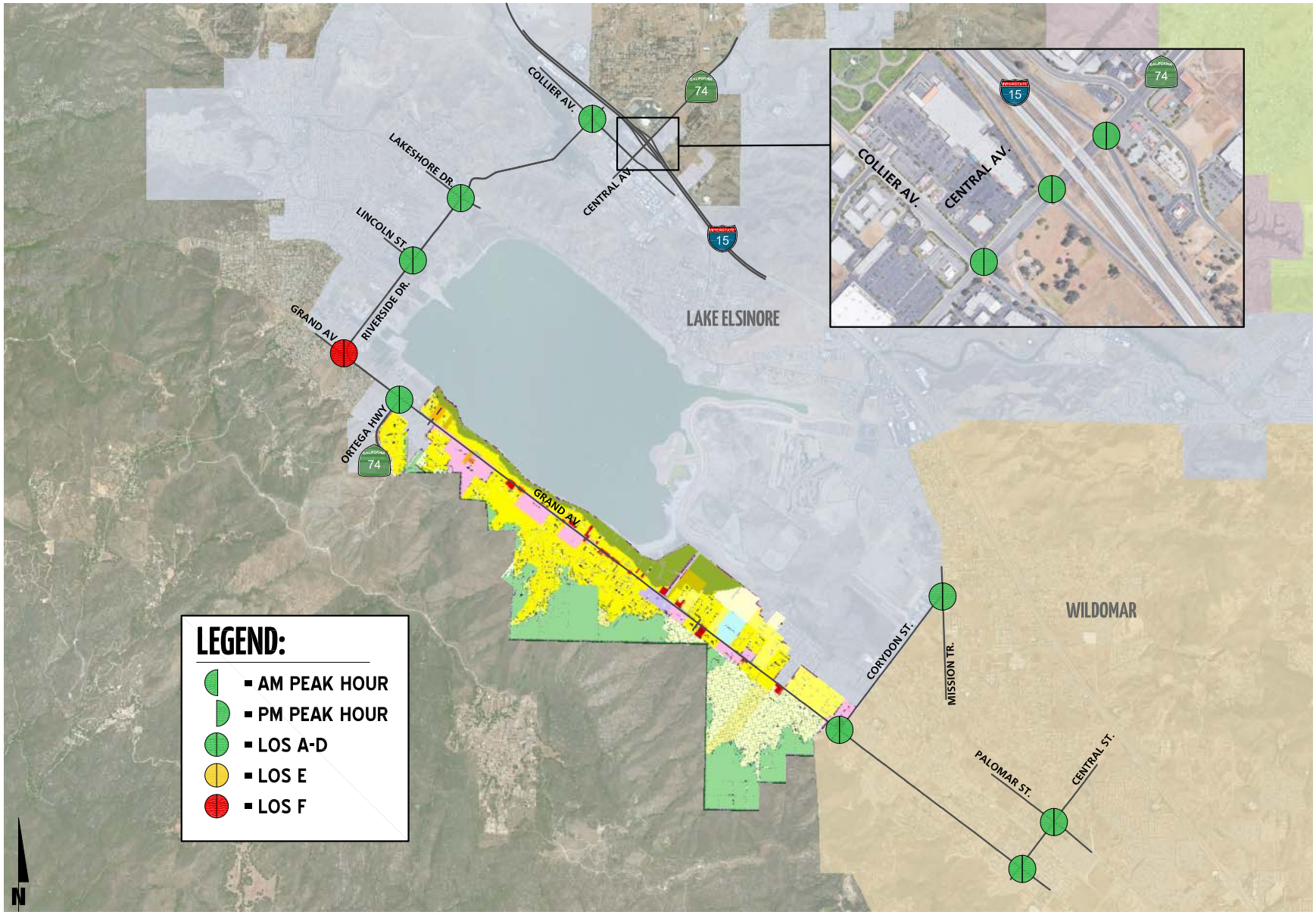


Table 5-1

Intersection Analysis for E+P Conditions

#	Intersection	Traffic Control[2]	Existing (2019)				E+P			
			Delay (secs.)[1]		Level of Service		Delay (secs.)[1]		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Riverside Dr. (SR-74) & Collier Av. (SR-74)	TS	17.9	23.7	B	C	18.3	51.9	B	D
2	Riverside Dr. (SR-74) & Lakeshore Dr.	TS	31.3	34.1	C	C	35.9	54.7	D	D
3	Riverside Dr. (SR-74) & Lincoln St.	TS	32.1	12.9	C	B	43.2	17.7	D	B
4	Riverside Dr. (SR-74) & Grand Av.	CSS	**62.2**	**47.4**	**F**	**E**	**>100.0**	**90.8**	**F**	**F**
5	Central St. (SR-74) & I-15 NB Ramps	TS	14.6	13.5	B	B	17.4	15.0	B	B
6	Central St. (SR-74) & I-15 SB Ramps	TS	15.4	20.9	B	C	15.6	22.9	B	C
7	Central St. (SR-74) & Collier Av. (SR-74)	TS	25.6	26.3	C	C	28.1	28.0	C	C
8	Ortega Hwy. (SR-74) & Grand Av.	TS	14.5	19.6	B	B	16.1	43.7	B	D
9	Corydon St. & Mission Tr.	TS	12.5	12.0	B	B	13.2	13.8	B	B
10	Corydon St. & Grand Av.	TS	16.2	18.4	B	B	22.1	42.0	C	D
11	Central St. & Palomar St.	TS	23.3	18.4	C	B	23.5	18.7	C	B
12	Central St. & Grand Av.	TS	20.4	13.5	C	B	21.5	13.9	C	B

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

[1] Per the Highway Capacity Manual (HCM) 6th Edition, overall average intersection delay and level of service are shown for intersections with a traffic signal. 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. LOS calculated using Synchro (Version 10).

[2] CSS = Cross-street Stop; TS = Traffic Signal

5.5 E+P DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

5.5.1 RECOMMENDED IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

Improvement strategies have been recommended to address intersection LOS deficiencies identified in this analysis. The effectiveness of the recommended improvement strategies is presented on Table 5-2. Worksheets for E+P conditions, with improvements, HCM calculation worksheets are provided in Appendix 5.2.

The following additional improvements are recommended to improve each impacted intersection's LOS back to acceptable LOS:

Mitigation Measure 1.1 – Riverside Dr. (SR-74) & Grand Av. (#4)

- Contribute fair share towards installing a traffic signal.

Table 5-2

Intersection Analysis for E+P Conditions With Improvements

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
4	Riverside Dr. (SR-74) & Grand Av.																	
	- Without Improvements	CSS	1	1	0	0	1	d	1	0	d	0	0	0	**>100.0**	**90.8**	**F**	**F**
	- With Improvements	**TS**	1	1	0	0	1	d	1	0	d	0	0	0	45.0	39.3	D	D

* **BOLD** = Level of Service (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 (HCM) 6th Edition, overall average intersection delay and level of service are shown for intersections with a traffic signal. 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. LOS calculated using Synchro (Version 10).

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

6 HORIZON YEAR (2040) TRAFFIC CONDITIONS

This section discusses the methods used to develop Horizon Year (2040) Without and With Project 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 Horizon Year conditions are consistent with the following improvement discussed below:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Horizon Year conditions (e.g., intersection and roadway improvements at the Project's frontage and driveways). These include the Project site adjacent roadway of McAllister Parkway.
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Horizon Year conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages and driveways).

6.2 HORIZON YEAR (2040) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-processed volumes obtained from the RivTAM. The weekday ADT, weekday AM and PM peak hour volumes which can be expected for Horizon Year Without Project traffic conditions are shown on Exhibit 6-1.

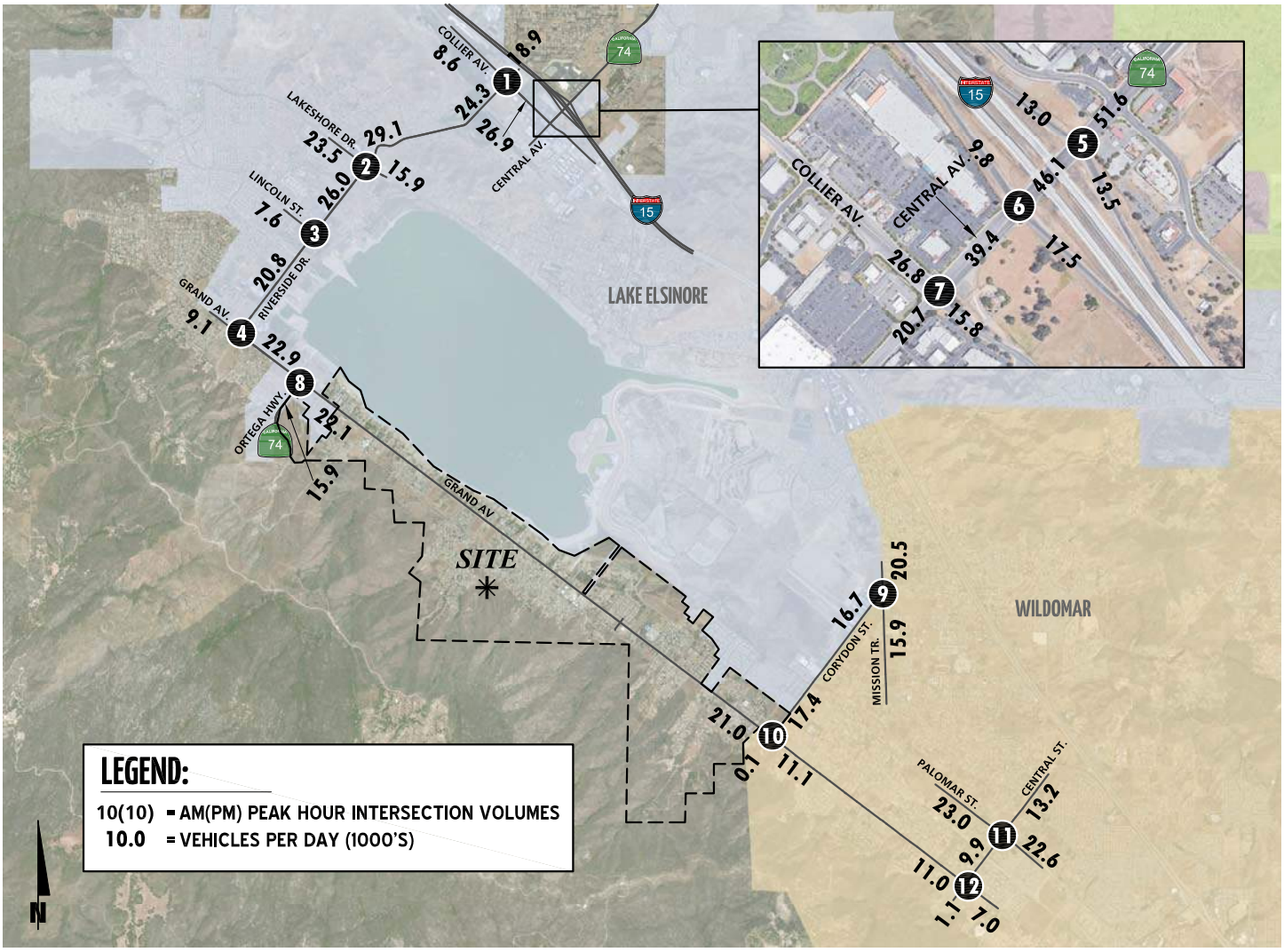
6.3 HORIZON YEAR (2040) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-processed volumes obtained from the RivTAM plus the addition of Project volumes. The weekday ADT, weekday AM and PM peak hour volumes which can be expected for Horizon Year With Project traffic conditions are shown on Exhibit 6-2.

6.4 INTERSECTION OPERATIONS ANALYSIS

LOS calculations were conducted for the study intersections to evaluate their operations under Horizon Year without and with Project conditions with Existing roadway and intersection geometrics consistent with Section 6.1 *Roadway Improvements*.

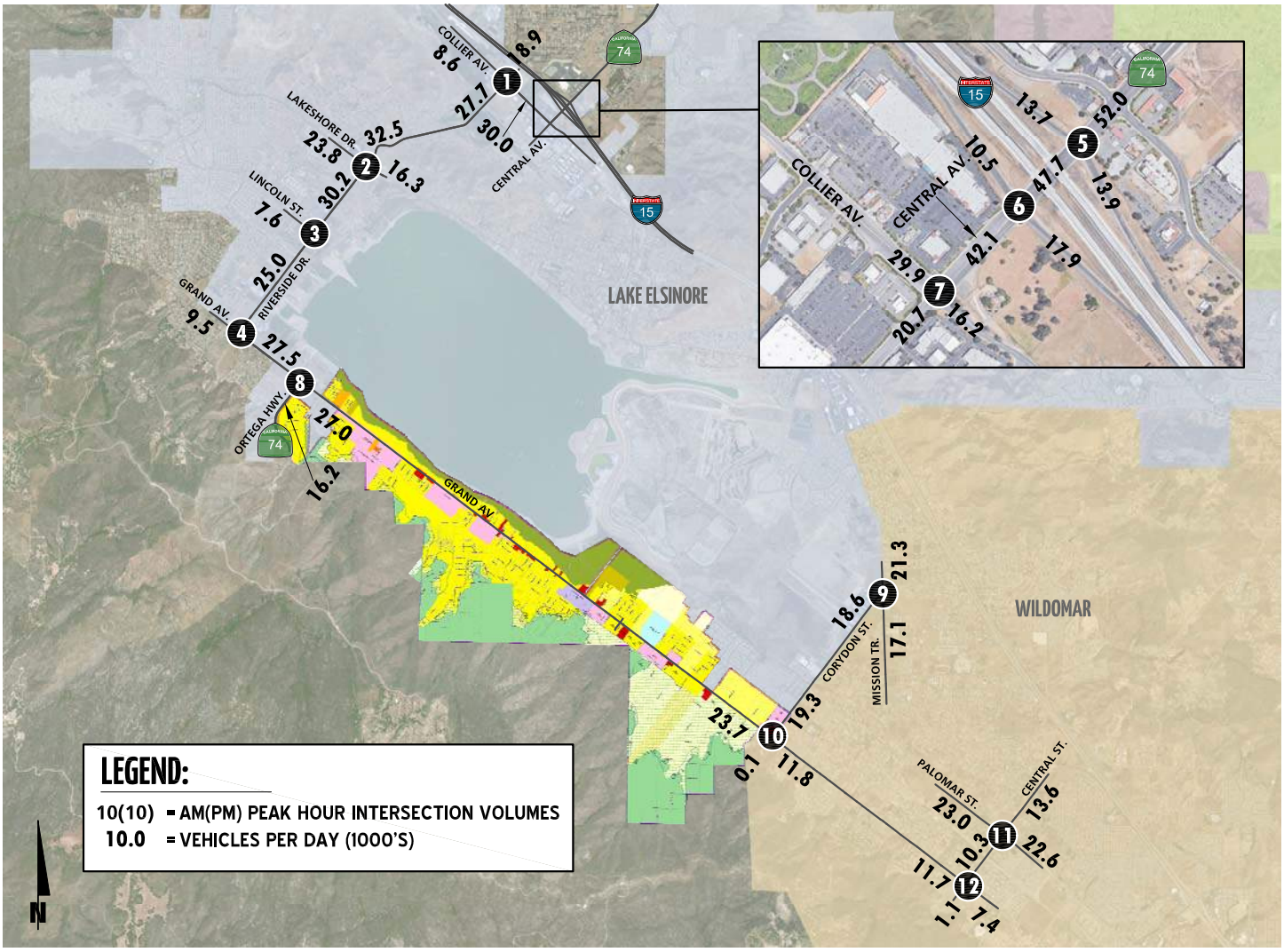
EXHIBIT 6-1: HORIZON YEAR (2040) WITHOUT PROJECT TRAFFIC VOLUMES (IN PCE)



1 Riverside Dr. (SR-74) & Collier Av. (SR74)	2 Riverside Dr. (SR-74) & Lakeshore Dr.	3 Riverside Dr. (SR-74) & Lincoln St.	4 Riverside Dr. (SR-74) & Grand Av.	5 Central St. (SR-74) & I-15 NB Ramps	6 Central St. (SR-74) & I-15 SB Ramps
84(97) 302(627) 67(52)	309(608) 626(855) 43(64)	88(304) 759(970)	177(138) 668(835)	808(413) 1711(1547)	1794(1655) 714(623)
35(222) 59(272) 411(622)	32(55) 260(506) 226(318)			514(712) 8(1) 797(730)	
34(111) 76(205) 106(149)	600(449) 455(467) 162(206)	496(345) 322(134)	79(70) 389(335)		337(1220) 1(10) 205(615)
93(226) 614(335) 538(656)	191(154) 868(885) 371(349)	213(78) 990(999)	345(412) 904(950)	256(178) 1075(2372)	994(1330) 773(622)

7 Central St. (SR-74) & Collier Av. (SR74)	8 Ortega Hwy. (SR-74) & Grand Av.	9 Corydon St. & Mission Tr.	10 Corydon St. & Grand Av.	11 Central St. & Palomar St.	12 Central St. & Grand Av.
422(628) 555(664) 576(736)			617(798) 0(1) 109(44)	193(307) 284(337) 125(157)	152(212) 23(42) 234(62)
539(609) 55(156) 42(172)	926(689) 332(70)	395(586) 266(263)	59(29) 363(360) 1(2)	143(173) 653(667) 84(70)	218(73) 328(204) 14(24)
646(610) 77(210) 17(66)	774(1016) 497(116)	466(535) 391(431)	779(943) 550(539) 0(0)	222(207) 610(393) 183(72)	265(276) 354(285) 11(3)
51(171) 634(556) 103(141)	224(817) 69(600)	495(494) 278(293)	0(1) 1(0) 3(1)	123(44) 389(330) 73(35)	10(4) 55(35) 29(9)

EXHIBIT 6-2: HORIZON YEAR (2040) WITH PROJECT TRAFFIC VOLUMES (IN PCE)



1 Riverside Dr. (SR-74) & Collier Av. (SR74) 84(97) 302(627) 67(52) — 35(222) 59(272) 472(827) 34(111) 76(205) 114(175) — 115(241) 614(335) 716(778)	**2** Riverside Dr. (SR-74) & Lakeshore Dr. 309(608) 695(1086) 43(64) — 32(55) 260(506) 234(344) 600(449) 455(467) 170(232) — 213(169) 1068(1022) 393(364)	**3** Riverside Dr. (SR-74) & Lincoln St. 88(304) 843(1252) — 496(345) 322(134) — 213(78) 1235(1166)	**4** Riverside Dr. (SR-74) & Grand Av. 177(138) 752(1117) — 79(70) 397(361) — 367(427) 1149(1117)	**5** Central St. (SR-74) & I-15 NB Ramps 808(413) 1719(1573) — 514(712) 8(1) 812(781) — 345(239) 1097(2387)	**6** Central St. (SR-74) & I-15 SB Ramps 1817(1732) 714(623) — 337(1220) 1(10) 236(718) — 1105(1406) 818(652)
7 Central St. (SR-74) & Collier Av. (SR74) 476(808) 555(664) 576(736) — 539(609) 63(182) 42(172) 802(716) 99(225) 17(66) — 51(171) 634(556) 103(141)	**8** Ortega Hwy. (SR-74) & Grand Av. — 1193(871) 354(85) 866(1324) 497(116) — 224(817) 77(626)	**9** Corydon St. & Mission Tr. — 395(586) 289(340) 466(535) 406(482) — 540(524) 345(339)	**10** Corydon St. & Grand Av. 655(926) 0(1) 109(44) — 59(29) 378(411) 1(2) 890(1019) 595(569) 0(0) — 0(1) 1(0) 3(1)	**11** Central St. & Palomar St. 193(307) 292(363) 125(157) — 143(173) 653(667) 84(70) 222(207) 610(393) 183(72) — 123(44) 411(345) 73(35)	**12** Central St. & Grand Av. 160(238) 23(42) 234(62) — 218(73) 336(230) 14(24) 287(291) 376(300) 11(3) — 10(4) 55(35) 29(9)

6.4.1 HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS

The intersection analysis results are summarized in Table 6-1 and illustrated on Exhibit 6-3 which indicates that the following study area intersections are anticipated to experience unacceptable LOS during one or more peak hours for Horizon Year Without Project traffic conditions:

- Riverside Dr. (SR-74) & Collier Av. (SR-74) – LOS F AM and PM peak hours
- Riverside Dr. (SR-74) & Lakeshore Dr. – LOS F AM and PM peak hours
- Riverside Dr. (SR-74) & Lincoln St. – LOS E AM peak hour only
- Riverside Dr. (SR-74) & Grand Av. – LOS F AM and PM peak hours
- Central St. (SR-74) & I-15 SB Ramps – LOS E PM peak hour only
- Ortega Hwy. (SR-74) & Grand Av. – LOS E PM peak hour only
- Corydon St. & Grand Av. – LOS F AM and PM peak hours

The intersection operations analysis worksheets for Horizon Year Without Project conditions are included in Appendix 6.1 of this TIA.

6.4.2 HORIZON YEAR (2040) WITH PROJECT CONDITIONS

As shown on Table 6-1 and illustrated on Exhibit 6-4, the addition of Project traffic is not anticipated to cause any additional study area intersection to operate at unacceptable LOS (i.e., LOS E or worse) in addition to those previously identified under Horizon Year Without Project conditions.

The intersection operations analysis worksheets for Horizon Year With Project conditions are included in Appendix 6.2 of this TIA. Measures to address deficiencies for Horizon Year traffic conditions are discussed in Section 6.6 *Horizon Year Deficiencies and Recommended Improvements*.

6.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

For Horizon Year (2040) conditions, all intersections are signalized or were anticipated to warrant a traffic signal in previous traffic conditions based on either peak hour or planning-level volume-based warrants.

Table 6-1

Intersection Analysis for Horizon Year (2040) Conditions

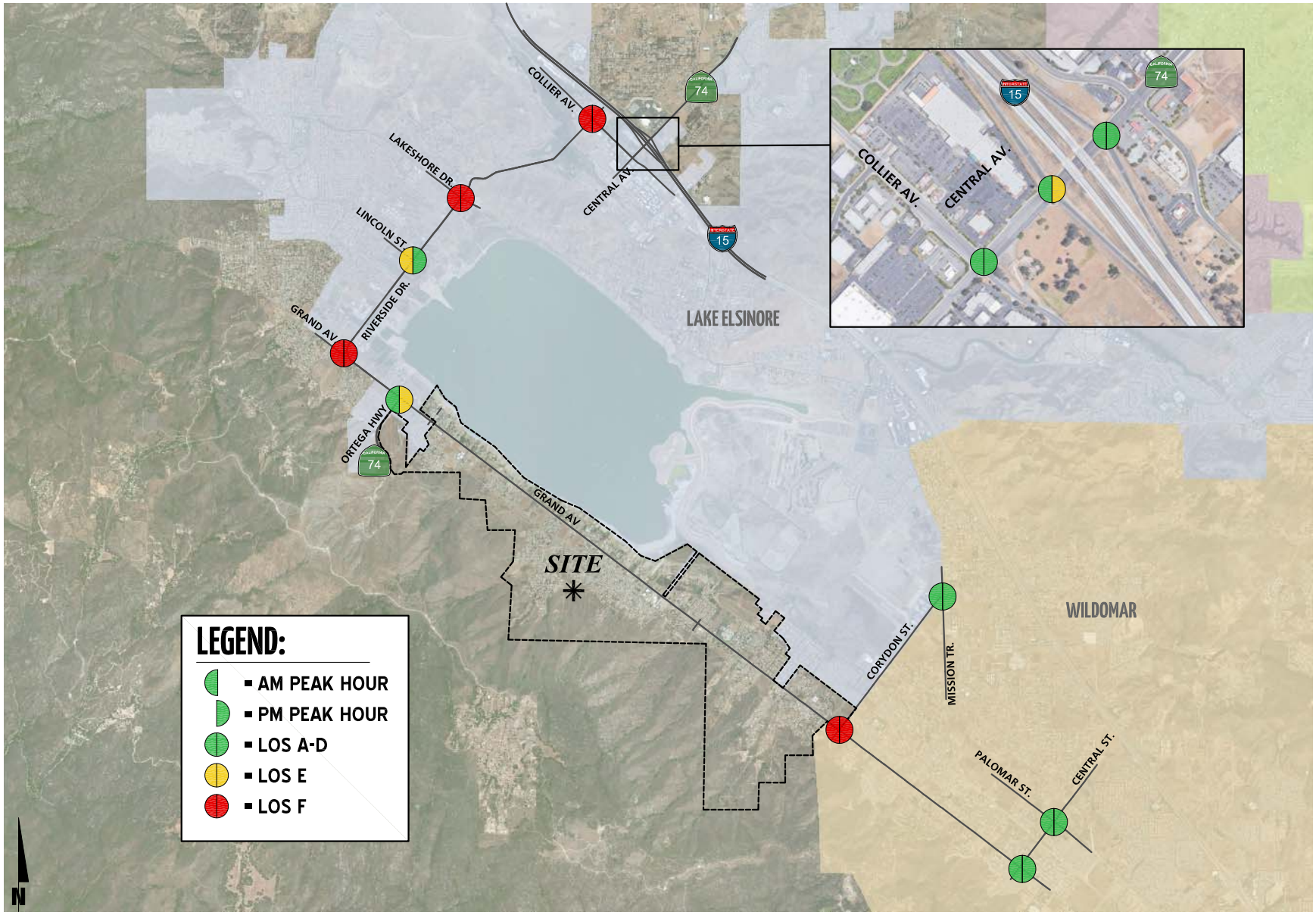
#	Intersection	Traffic Control[2]	2040 Without Project				2040 With Project			
			Delay (secs.)[1]		Level of Service		Delay (secs.)[1]		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Riverside Dr. (SR-74) & Collier Av. (SR-74)	TS	**129.9**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
2	Riverside Dr. (SR-74) & Lakeshore Dr.	TS	**94.9**	**100.3**	**F**	**F**	**99.2**	**135.4**	**F**	**F**
3	Riverside Dr. (SR-74) & Lincoln St.	TS	**68.9**	26.1	**E**	C	**114.0**	**58.7**	**F**	**E**
4	Riverside Dr. (SR-74) & Grand Av.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
5	Central St. (SR-74) & I-15 NB Ramps	TS	50.0	16.7	D	B	52.9	19.1	D	B
6	Central St. (SR-74) & I-15 SB Ramps	TS	16.5	**74.8**	B	**E**	17.4	**84.6**	B	**F**
7	Central St. (SR-74) & Collier Av. (SR-74)	TS	48.0	41.5	D	D	52.6	45.8	D	D
8	Ortega Hwy. (SR-74) & Grand Av.	TS	20.7	**63.1**	C	**E**	27.9	**135.1**	C	**F**
9	Corydon St. & Mission Tr.	TS	13.8	12.9	B	B	14.7	15.0	B	B
10	Corydon St. & Grand Av.	TS	**131.2**	**199.8**	**F**	**F**	**180.6**	**>200.0**	**F**	**F**
11	Central St. & Palomar St.	TS	49.2	36.8	D	D	50.1	38.8	D	D
12	Central St. & Grand Av.	TS	24.0	14.2	C	B	26.3	14.5	C	B

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

[1] Per the Highway Capacity Manual (HCM) 6th Edition, overall average intersection delay and level of service are shown for intersections with a traffic signal. 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. LOS calculated using Synchro (Version 10).

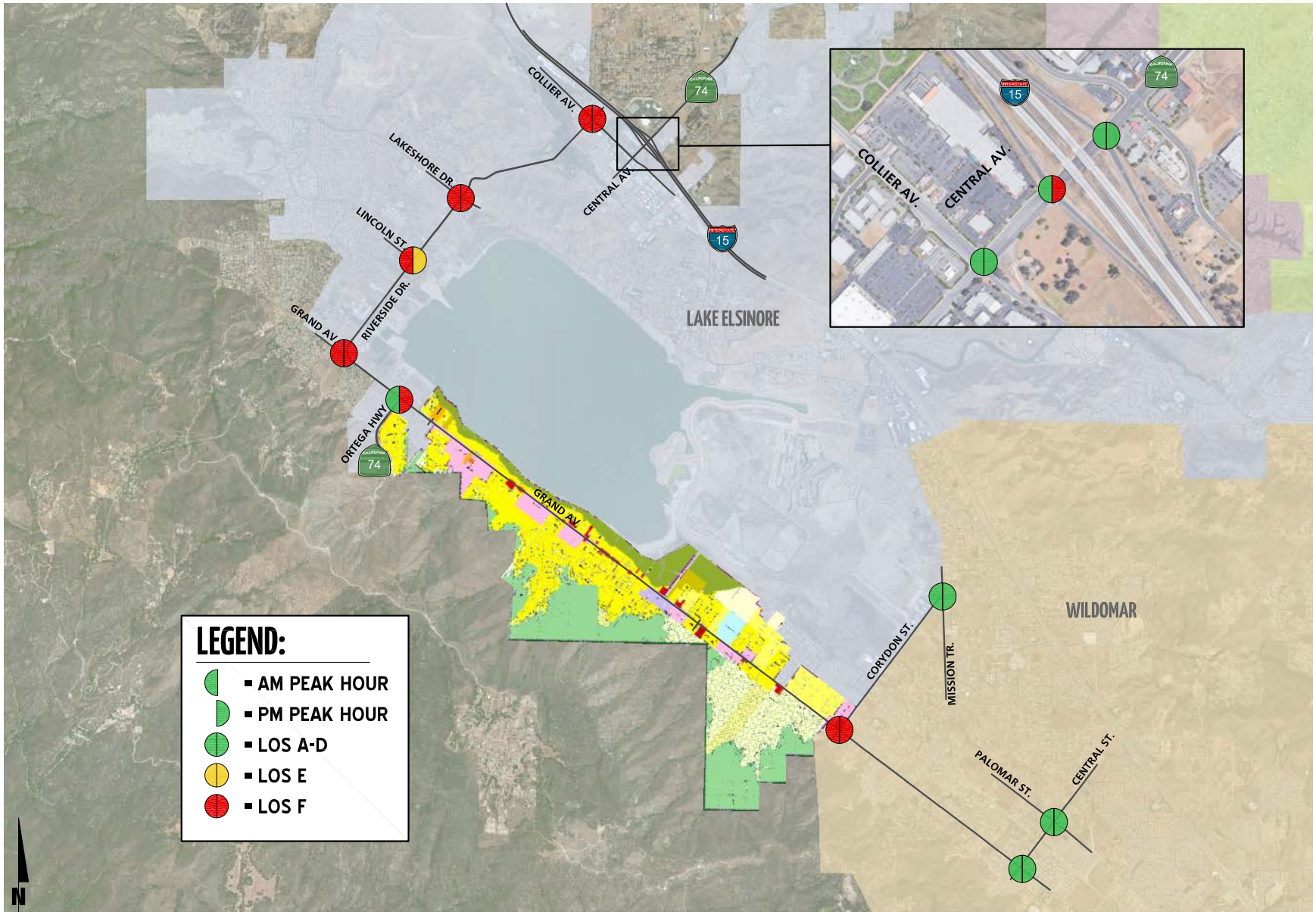
[2] CSS = Cross-street Stop; TS = Traffic Signal

EXHIBIT 6-3: HORIZON YEAR (2040) WITHOUT PROJECT SUMMARY OF LOS



URBAN CROSSROADS

EXHIBIT 6-4: HORIZON YEAR (2040) WITH PROJECT SUMMARY OF LOS



URBAN CROSSROADS

6.6 HORIZON YEAR DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

6.6.1 RECOMMENDED IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

Improvement strategies have been recommended at intersections that have been identified as deficient in an effort to reduce each location's peak hour delay and improve the associated LOS grade to an acceptable LOS (LOS D or better). The effectiveness of the recommended improvement strategies necessary to address Horizon Year traffic deficiencies are presented in Table 6-2.

The following additional improvements are recommended to improve each impacted intersection's LOS back to acceptable LOS, where the Project is recommended to contribute a fair share in order to reduce the cumulative impacts to less than significant levels:

Mitigation Measure 2.1 – Riverside Dr. (SR-74) & Collier Av. (SR-74) (#1)

- Contribute fair share towards the addition of a northbound left turn lane, a 2nd northbound through lane, a 2nd southbound through lane, a 2nd westbound left turn lane, and a westbound right turn lane.

Mitigation Measure 3.1 – Riverside Dr. (SR-74) & Lakeshore Dr. (#2)

- Contribute fair share towards modifying the traffic signal to implement overlap phasing on the northbound and southbound right turn lane, and the addition of a 2nd southbound through lane and a 2nd eastbound left turn lane.

Mitigation Measure 4.1 – Riverside Dr. (SR-74) & Lincoln St. (#3)

- Contribute fair share towards the addition of a 2nd northbound through lane, a 2nd southbound through lane, and a southbound right turn lane.

Mitigation Measure 1.2 – Riverside Dr. (SR-74) & Grand Av. (#4)

- Same improvement identified previously by Mitigation Measure 1.1; and
- Contribute fair share towards the addition of a 2nd northbound through lane, a 2nd southbound through lane, and a southbound right turn lane.

Mitigation Measure 5.1 – Central St. (SR-74) & I-15 SB Ramps (#6)

- Contribute fair share towards the addition of a 3rd northbound through lane and a 3rd southbound through lane.

Mitigation Measure 6.1 – Ortega Hwy. (SR-74) & Grand Av. (#8)

- Contribute fair share towards the addition of a 2nd eastbound through lane and a 2nd westbound through lane.

Mitigation Measure 7.1 – Corydon St. & Grand Av. (#10)

- Contribute fair share towards modifying the traffic signal to implement overlap phasing on the southbound right turn lane and the addition of a 2nd eastbound left turn lane.

Table 6-2

Intersection Analysis for Horizon Year (2040) Conditions With Improvements

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Riverside Dr. (SR-74) & Collier Av. (SR-74)																	
	- Without Improvements	TS	0	1	1>	0	1	0	1	1	1	1	1	0	**>200.0**	**>200.0**	**F**	**F**
	- With Improvements	TS	**1**	**2**	1>	**1**	**2**	0	1	1	1	**2**	1	**1**	24.4	46.3	C	D
2	Riverside Dr. (SR-74) & Lakeshore Dr.																	
	- Without Improvements	TS	1	2	1	1	1	1	1	2	1	1	2	0	**99.2**	**135.4**	**F**	**F**
	- With Improvements	TS	1	2	**1>**	1	**2**	**1>**	**2**	2	1	1	2	0	34.0	43.7	C	D
3	Riverside Dr. (SR-74) & Lincoln St.																	
	- Without Improvements	TS	1	1	0	0	1	d	1	0	1	0	0	0	**114.0**	**58.7**	**F**	**E**
	- With Improvements	TS	1	**2**	0	0	**2**	**1**	1	0	1	0	0	0	29.7	14.6	C	B
4	Riverside Dr. (SR-74) & Grand Av.																	
	- Without Improvements	CSS	1	1	0	0	1	d	1	0	d	0	0	0	**>100.0**	**>100.0**	**F**	**F**
	- With Improvements	**TS**	1	**2**	0	0	**2**	**1**	1	0	d	0	0	0	29.4	37.8	C	D
6	Central St. (SR-74) & I-15 SB Ramps																	
	- Without Improvements	TS	0	2	1	2	2	0	1	1	1	0	0	0	17.4	**84.6**	B	**F**
	- With Improvements	TS	0	**3**	1	2	**3**	0	1	1	1	0	0	0	23.5	50.7	C	D
8	Ortega Hwy. (SR-74) & Grand Av.																	
	- Without Improvements	TS	2	0	1>	0	0	0	0	1	2>	1	1	0	27.9	**135.1**	C	**F**
	- With Improvements	TS	2	0	1>	0	0	0	0	**2**	2>	1	**2**	0	13.6	28.7	B	C
10	Corydon St. & Grand Av.																	
	- Without Improvements	TS	0	1	0	1	1	0	1	1	0	1	1	0	**180.6**	**>200.0**	**F**	**F**
	- With Improvements	TS	0	1	0	1	1	**1>**	**2**	1	0	1	1	0	18.1	38.2	B	D

* **BOLD** = Level of Service (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; > = Right-Turn Overlap Phasing; **1** = Improvement

[2] Per the Highway Capacity Manual (HCM) 6th Edition, overall average intersection delay and level of service are shown for intersections with a traffic signal. 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. LOS calculated using Synchro (Version 10).

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

The Project Applicant shall participate in the funding of off-site improvements, including traffic signals that are needed to serve cumulative traffic conditions through the payment of Western Riverside County TUMF or a fair share contribution as directed by the County. These fees are collected as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases. Each of the improvements discussed above have been identified as being included as part of TUMF fee program, TIF fee program, DIF fee program, or fair share contribution in Section 7.1 *Local and Regional Funding Mechanisms* of this TIA.

Worksheets for Horizon Year With Project conditions, with improvements, HCM calculations are provided in Appendix 6.2.

7 LOCAL AND REGIONAL FUNDING MECHANISMS

7.1 TRANSPORTATION UNIFORM MITIGATION FEE (TUMF) PROGRAM

Transportation improvements within the County of Riverside are funded through a combination of direct project mitigation and fee programs, such as the TUMF. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors.

The TUMF program is administered by the Western Riverside Council of Governments (WRCOG) based upon a regional Nexus Study, most recently updated in 2017, to address major changes in right of way acquisition and improvement cost factors. 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 fees are imposed on new residential, industrial, and commercial development through application of the TUMF fee ordinance and fees are collected at the building or occupancy permit stage. In addition, an annual inflation adjustment is considered each year in February. In this way, TUMF fees are adjusted upwards on a regular basis to ensure that the development impact fees collected keep pace with construction and labor costs, etc.

7.2 COUNTY OF RIVERSIDE DEVELOPMENT IMPACT FEE (DIF) PROGRAM

The Project is located within the County's Elsinore Area Plan and therefore will be subject to County of Riverside DIF in an effort by the County to address development throughout its unincorporated area. The DIF program consists of two separate transportation components: Roads, Bridges and Major Improvements component and the Traffic Signals component. Eligible facilities for funding by the County DIF program are identified on the County's Public Needs List, which currently extends through the year 2010. (6) A comprehensive review of the DIF program is now planned in order to update the nexus study. This will result in development of a revised "needs list" extending the program time horizon from 2010 to 2030.

The cost of signalizing DIF network intersections is identified under the Traffic Signals component of the DIF program. County staff generally defines DIF eligible intersections as those consisting of two intersecting general plan roadways. If the intersection meets this requirement, it is potentially eligible for up to $250,000 of credit, which is subject to negotiations with the County.

7.3 FAIR SHARE CONTRIBUTION

Project mitigation may include a combination of fee payments to established programs (e.g., TUMF and/or DIF), 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 County of Riverside'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. Detailed fair share calculations, for each peak hour, has been provided on Table 7-1 for the applicable deficient intersections.

Table 7-1

Project Fair Share Calculations

#	Intersection		Existing	Project	2040 With Project Volume	Total New Traffic	Project % of New Traffic
1	Riverside Dr. (SR-74) & Collier Av. (SR-74)						
		AM:	1,816	269	2,688	872	**30.85%**
		PM:	2,479	368	3,941	1,462	25.17%
2	Riverside Dr. (SR-74) & Lakeshore Dr.						
		AM:	2,802	329	4,472	1,670	19.70%
		PM:	3,297	450	5,366	2,069	**21.75%**
3	Riverside Dr. (SR-74) & Lincoln St.						
		AM:	2,260	329	3,197	937	35.11%
		PM:	2,159	449	3,279	1,120	**40.09%**
4	Riverside Dr. (SR-74) & Grand Av.						
		AM:	2,035	359	2,921	886	40.52%
		PM:	2,164	490	3,230	1,066	**45.97%**
6	Central St. (SR-74) & I-15 SB Ramps						
		AM:	3,887	210	5,028	1,141	**18.40%**
		PM:	4,428	286	6,361	1,933	14.80%
8	Ortega Hwy. (SR-74) & Grand Av.						
		AM:	2,158	389	3,212	1,054	36.91%
		PM:	2,533	531	3,839	1,306	**40.66%**
10	Corydon St. & Grand Av.						
		AM:	1,685	209	2,692	1,007	20.75%
		PM:	1,787	285	3,003	1,216	**23.44%**

BOLD = Denotes highest fair share percentage.

This Page Intentionally Left Blank

8 REFERENCES

1. **Riverside County Transportation Department.** *Traffic Impact Analysis Preparation Guide.* County of Riverside : s.n., Updated April 2008.
2. **California Department of Transportation.** *Guide for the Preparation of Traffic Impact Studies.* December 2002.
3. **Institute of Transportation Engineers.** *Trip Generation.* 10th Edition. 2017.
4. **Western Riverside Council of Governments.** *TUMF Nexus Study, 2016 Program Update.* July 2017.
5. **Transportation Research Board.** *Highway Capacity Manual (HCM).* 6th Edition. s.l. : National Academy of Sciences, 2016.
6. **California Department of Transportation.** California Manual on Uniform Traffic Control Devices (CA MUTCD). [book auth.] California Department of Transportation. *California Manual on Uniform Traffic Control Devices (CA MUTCD).* 2014.
7. **San Bernardino Associated Governments.** *Congestion Management Program for County of San Bernardino.* County of San Bernardino : s.n., Updated December 2007.
8. **Southern California Association of Governments.** *2016 Regional Transportation Plan / Sustainable Communities Strategy.* April 2016.
9. **David Taussig & Associates, Inc.** *County of Riverside DIF Update - Updated Public Facilities Needs List through the year 2010.* County of Riverside : s.n., 2006.

This Page Intentionally Left Blank

Appendix 4

Noise Data

Lakeland Village

Initial Study

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 155334
Project Name: Lakeland Village

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Michael Baker International (2018)
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance in Feet from Centerline of Roadway to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Collier Avenue												
West of Riverside Drive	4	12	7,800	40	0	4.1%	10.9%	66.2	-	132	417	1,319
Riverside Drive to Central Avenue	4	8	24,500	40	0	4.1%	10.9%	71.2	130	412	1,304	4,124
East of Central Avenue	2	0	14,300	40	0	4.1%	10.9%	68.7	74	235	744	2,352
Central Avenue												
South of Collier Avenue	4	0	9,700	30	0	4.1%	10.9%	66.8	47	150	473	1,497
Collier Avenue to I-15 SB Ramp	8	0	35,800	30	0	4.1%	10.9%	72.8	189	599	1,894	5,990
I-15 SB Ramp to I-15 NB Ramp	7	0	41,900	30	0	4.1%	10.9%	73.3	216	682	2,156	6,819
North of I-15 NB Ramp	9	0	46,900	30	0	4.1%	10.9%	74.1	257	812	2,567	8,118
Riverside Drive												
East of Collier Avenue	2	0	900	40	0	4.1%	10.9%	56.7	-	-	47	148
Collier Avenue to Baker Street	4	0	22,100	40	0	4.1%	10.9%	70.7	117	369	1,167	3,689
Baker Street to Lakeshore Drive	4	0	20,200	40	0	4.1%	10.9%	70.3	107	337	1,066	3,372
Lakeshore Drive to Lincoln Street	2	15	23,700	40	0	4.1%	10.9%	70.9	124	393	1,242	3,928
Lincoln Street to Grand Avenue	4	0	18,900	40	0	4.1%	10.9%	70.0	100	316	998	3,155
Lakeshore Drive												
East of Riverside Drive	4	0	14,300	40	0	4.1%	10.9%	68.8	75	239	755	2,387
West of Riverside Drive	6	0	15,400	40	0	4.1%	10.9%	69.2	84	265	838	2,651
Lincoln Street												
West of Riverside Drive	2	0	6,900	40	0	4.1%	10.9%	65.6	36	114	359	1,135

Existing Conditions

Grand Avenue												
West of Riverside Drive	2	0	8,300	40	0	4.1%	10.9%	66.4	43	137	432	1,365
Riverside Drive to Ortega Highway (SR-74)	4	0	19,900	40	0	4.1%	10.9%	70.2	105	332	1,051	3,322
East of Ortega Highway (SR-74)	4	0	20,100	40	0	4.1%	10.9%	70.3	106	336	1,061	3,355
West of Corydon Street	2	0	19,100	40	0	4.1%	10.9%	70.0	99	314	994	3,142
East of Corydon Street	2	0	10,100	40	0	4.1%	10.9%	67.2	53	166	525	1,661
West of Central Street	2	0	10,000	40	0	4.1%	10.9%	67.2	52	165	520	1,645
East of Central Street	2	0	6,400	40	0	4.1%	10.9%	65.2	33	105	333	1,053
Ortega Highway (SR-74)												
South of Grand Avenue	2	0	14,400	45	0	4.1%	10.9%	69.4	88	279	881	2,785
Corydon Street												
South of Grand Avenue	2	0	100	45	0	4.1%	10.9%	47.9	-	-	-	-
North of Grand Avenue	2	0	11,700	45	0	4.1%	10.9%	68.5	72	226	716	2,263
West of Mission Trail	2	0	15,200	45	0	4.1%	10.9%	69.7	93	294	930	2,940
Mission Trail												
South of Corydon Streeet	4	0	14,600	40	0	4.1%	10.9%	68.9	77	244	771	2,437
North of Corydon Street	4	0	18,200	40	0	4.1%	10.9%	69.8	96	304	961	3,038
Central Street												
South of Grand Avenue	2	0	1,000	40	0	4.1%	10.9%	57.2	-	-	52	165
Grand Avenue to Palomar Street	2	0	7,100	40	0	4.1%	10.9%	65.7	37	117	369	1,168
North of Palomar Street	2	0	12,000	40	0	4.1%	10.9%	68.0	62	197	624	1,974
Palomar Street												
East of Central Street	2	0	7,600	25	0	4.1%	10.9%	64.8	-	95	299	945
West of Central Street	2	0	9,900	40	0	4.1%	10.9%	67.1	51	163	515	1,629

[1] Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.

2040 Without Project Conditions

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 155334
Project Name: Lakeland Village

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Michael Baker International (2018)
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance in Feet from Centerline of Roadway to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Collier Avenue												
West of Riverside Drive	4	12	8,600	40	0	4.1%	10.9%	66.6	-	145	460	1,455
Riverside Drive to Central Avenue	4	8	26,900	40	0	4.1%	10.9%	71.6	143	453	1,432	4,528
East of Central Avenue	2	0	15,800	40	0	4.1%	10.9%	69.1	82	260	822	2,599
Central Avenue												
South of Collier Avenue	4	0	20,700	30	0	4.1%	10.9%	70.0	101	319	1,010	3,195
Collier Avenue to I-15 SB Ramp	8	0	39,400	30	0	4.1%	10.9%	73.2	208	659	2,085	6,592
I-15 SB Ramp to I-15 NB Ramp	7	0	46,100	30	0	4.1%	10.9%	73.8	237	750	2,373	7,503
North of I-15 NB Ramp	9	0	51,600	30	0	4.1%	10.9%	74.5	282	893	2,824	8,932
Riverside Drive												
East of Collier Avenue	2	0	18,900	40	0	4.1%	10.9%	69.9	98	311	983	3,109
Collier Avenue to Baker Street	4	0	24,300	40	0	4.1%	10.9%	71.1	128	406	1,283	4,057
Baker Street to Lakeshore Drive	4	0	29,100	40	0	4.1%	10.9%	71.9	154	486	1,536	4,858
Lakeshore Drive to Lincoln Street	2	15	26,000	40	0	4.1%	10.9%	71.3	136	431	1,363	4,309
Lincoln Street to Grand Avenue	4	0	20,800	40	0	4.1%	10.9%	70.4	110	347	1,098	3,472
Lakeshore Drive												
East of Riverside Drive	4	0	15,900	40	0	4.1%	10.9%	69.2	84	265	839	2,654
West of Riverside Drive	6	0	23,500	40	0	4.1%	10.9%	71.1	128	405	1,279	4,045
Lincoln Street												
West of Riverside Drive	2	0	7,600	40	0	4.1%	10.9%	66.0	40	125	395	1,250

2040 Without Project Conditions

Grand Avenue												
West of Riverside Drive	2	0	9,100	40	0	4.1%	10.9%	66.8	47	150	473	1,497
Riverside Drive to Ortega Highway (SR-74)	4	0	22,900	40	0	4.1%	10.9%	70.8	121	382	1,209	3,823
East of Ortega Highway (SR-74)	4	0	22,100	40	0	4.1%	10.9%	70.7	117	369	1,167	3,689
West of Corydon Street	2	0	21,000	40	0	4.1%	10.9%	70.4	109	345	1,092	3,455
East of Corydon Street	2	0	11,100	40	0	4.1%	10.9%	67.6	58	183	577	1,826
West of Central Street	2	0	11,000	40	0	4.1%	10.9%	67.6	57	181	572	1,810
East of Central Street	2	0	7,000	40	0	4.1%	10.9%	65.6	36	115	364	1,152
Ortega Highway (SR-74)												
South of Grand Avenue	2	0	15,900	45	0	4.1%	10.9%	69.9	97	308	973	3,075
Corydon Street												
South of Grand Avenue	2	0	100	45	0	4.1%	10.9%	47.9	-	-	-	-
North of Grand Avenue	2	0	17,400	45	0	4.1%	10.9%	70.3	106	337	1,064	3,366
West of Mission Trail	2	0	16,700	45	0	4.1%	10.9%	70.1	102	323	1,021	3,230
Mission Trail												
South of Corydon Streeet	4	0	15,900	40	0	4.1%	10.9%	69.2	84	265	839	2,654
North of Corydon Street	4	0	20,500	40	0	4.1%	10.9%	70.3	108	342	1,082	3,422
Central Street												
South of Grand Avenue	2	0	1,100	40	0	4.1%	10.9%	57.6	-	-	57	181
Grand Avenue to Palomar Street	2	0	9,900	40	0	4.1%	10.9%	67.1	51	163	515	1,629
North of Palomar Street	2	0	13,200	40	0	4.1%	10.9%	68.4	69	217	687	2,171
Palomar Street												
East of Central Street	2	0	22,600	25	0	4.1%	10.9%	69.5	89	281	889	2,811
West of Central Street	2	0	23,000	40	0	4.1%	10.9%	70.8	120	378	1,196	3,784

[1] Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.

2040 With Project Conditions

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 155334
Project Name: Lakeland Village

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Michael Baker International (2018)
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance in Feet from Centerline of Roadway to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Collier Avenue												
West of Riverside Drive	4	12	8,600	40	0	4.1%	10.9%	66.6	-	145	460	1,455
Riverside Drive to Central Avenue	4	8	30,000	40	0	4.1%	10.9%	72.0	160	505	1,597	5,050
East of Central Avenue	2	0	16,200	40	0	4.1%	10.9%	69.3	84	266	843	2,665
Central Avenue												
South of Collier Avenue	4	0	20,700	30	0	4.1%	10.9%	70.0	101	319	1,010	3,195
Collier Avenue to I-15 SB Ramp	8	0	42,100	30	0	4.1%	10.9%	73.5	223	704	2,228	7,044
I-15 SB Ramp to I-15 NB Ramp	7	0	47,700	30	0	4.1%	10.9%	73.9	245	776	2,455	7,763
North of I-15 NB Ramp	9	0	52,000	30	0	4.1%	10.9%	74.5	285	900	2,846	9,001
Riverside Drive												
East of Collier Avenue	2	0	18,900	40	0	4.1%	10.9%	69.9	98	311	983	3,109
Collier Avenue to Baker Street	4	0	27,700	40	0	4.1%	10.9%	71.7	146	462	1,462	4,624
Baker Street to Lakeshore Drive	4	0	32,500	40	0	4.1%	10.9%	72.3	172	543	1,716	5,425
Lakeshore Drive to Lincoln Street	2	15	30,200	40	0	4.1%	10.9%	72.0	158	500	1,583	5,005
Lincoln Street to Grand Avenue	4	0	25,000	40	0	4.1%	10.9%	71.2	132	417	1,320	4,173
Lakeshore Drive												
East of Riverside Drive	4	0	16,300	40	0	4.1%	10.9%	69.3	86	272	860	2,721
West of Riverside Drive	6	0	23,800	40	0	4.1%	10.9%	71.1	130	410	1,296	4,097
Lincoln Street												
West of Riverside Drive	2	0	7,600	40	0	4.1%	10.9%	66.0	40	125	395	1,250

2040 With Project Conditions

Grand Avenue												
West of Riverside Drive	2	0	9,500	40	0	4.1%	10.9%	66.9	49	156	494	1,563
Riverside Drive to Ortega Highway (SR-74)	4	0	27,500	40	0	4.1%	10.9%	71.6	145	459	1,452	4,591
East of Ortega Highway (SR-74)	4	0	27,000	40	0	4.1%	10.9%	71.5	143	451	1,425	4,507
West of Corydon Street	2	0	23,700	40	0	4.1%	10.9%	70.9	123	390	1,233	3,899
East of Corydon Street	2	0	11,800	40	0	4.1%	10.9%	67.9	61	194	614	1,941
West of Central Street	2	0	11,700	40	0	4.1%	10.9%	67.8	61	192	609	1,925
East of Central Street	2	0	7,400	40	0	4.1%	10.9%	65.9	38	122	385	1,217
Ortega Highway (SR-74)												
South of Grand Avenue	2	0	16,200	45	0	4.1%	10.9%	70.0	99	313	991	3,133
Corydon Street												
South of Grand Avenue	2	0	100	45	0	4.1%	10.9%	47.9	-	-	-	-
North of Grand Avenue	2	0	19,300	45	0	4.1%	10.9%	70.7	118	373	1,181	3,733
West of Mission Trail	2	0	18,600	45	0	4.1%	10.9%	70.6	114	360	1,138	3,598
Mission Trail												
South of Corydon Streeet	4	0	17,100	40	0	4.1%	10.9%	69.6	90	285	903	2,855
North of Corydon Street	4	0	21,300	40	0	4.1%	10.9%	70.5	112	356	1,124	3,556
Central Street												
South of Grand Avenue	2	0	1,100	40	0	4.1%	10.9%	57.6	-	-	57	181
Grand Avenue to Palomar Street	2	0	10,300	40	0	4.1%	10.9%	67.3	54	169	536	1,694
North of Palomar Street	2	0	13,600	40	0	4.1%	10.9%	68.5	71	224	707	2,237
Palomar Street												
East of Central Street	2	0	22,600	25	0	4.1%	10.9%	69.5	89	281	889	2,811
West of Central Street	2	0	23,000	40	0	4.1%	10.9%	70.8	120	378	1,196	3,784

[1] Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.