

APPENDIX I

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CITY OF LAKE ELSINORE

GENERAL PLAN UPDATE

Transportation Existing Conditions Report

Prepared for:
City of Lake Elsinore

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OC22-0898

FEHR  PEERS

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Appendix

Appendix A – Major Improvement Projects

Summary

The purpose of assessing existing conditions is to help the City of Lake Elsinore develop a Circulation Element Update strategy to encourage an integrated, multimodal transportation system that meets the needs of Lake Elsinore. This chapter reviews several aspects of transportation mobility, including regulatory setting, travel characteristics, streets and roadways along with their functional classifications, pedestrian facilities, bicycle facilities, transit services and facilities, goods movement, and the future trends of transportation.

Key Findings

- Current roadway classifications prioritize automobile circulation. It may be important to also prioritize walking, biking or transit because of the character of the street, adjacent land uses (i.e., parks, schools, or mixed-use developments), or to create connectivity between adjacent, complementary uses. Use of a new system such as a street typology that addresses the overall context of a roadway and the adjacent land uses is one way to provide a more balanced planning approach across travel modes. Alternatively, a layered network approach can be employed to identify those streets where active modes and/or transit should be prioritized, and other streets where vehicle capacity is more important (but where other modes could still be considered). Identifying the modal priority for regional roadway connections could also be considered in the Circulation Element update.
- Only 10% of Lake Elsinore residents work in the City. Their travel patterns indicate that the majority of residents travel west and east to jobs in other cities in Los Angeles and Riverside Counties, respectively. The City also generates Vehicle Miles of Travel per capita at higher rates than neighboring cities in Western Riverside County. There is an opportunity to address the heavy outbound commute flows by focusing on policies such as infill and redevelopment that grow the number of people who live and work in the City, and expand efforts that increase sustainable transportation options for commute trips.
- Transit service is provided by Riverside Transit Agency through fixed-route bus and dial-a-ride services. The City could review what opportunities exist to coordinate with Riverside County for regional transit connection.
- The City's Active Transportation Plan, Active LE, provides an excellent framework for enhancing bicycle and pedestrian connectivity and comfort. The City could review what opportunities exist for the General Plan update to build upon the City's existing bike and pedestrian network, and support and enhance the findings of Active LE.
- From electric vehicles and ridesharing to autonomous vehicles, innovation in the transportation sector is already changing the way we get around. The General Plan Update could examine how these changes could affect the design of streets and consider new curbside management strategies as travel behavior and vehicle ownership patterns evolve.

Introduction

This report discusses the existing transportation infrastructure in the City of Lake Elsinore and its Sphere of Influence, including roadways, bicycle and pedestrian facilities, and transit. It also describes truck routes and traffic distribution patterns throughout the City. Lake Elsinore's transportation system not only serves the everyday mobility needs of its residents, but also affects regional travel patterns associated with its growing housing development. Consequently, the Circulation Element Update will evaluate transportation conditions in Lake Elsinore at both a local and regional scale in this changing context.

This report will subsequently be used as a basis for establishing the vision for the future; preparing alternative land use and transportation planning scenarios; formulating policies and implementation actions for the General Plan; and creating the environmental setting portion of the Environmental Impact Report for the General Plan.

Transportation System and Context

The City is situated in western Riverside County and is bisected by Interstate 15 (I-15) in the north-south direction and by State Route 74 (SR-74) in the east-west direction. Lake Elsinore is bordered by the Santa Ana Mountains to the west and southwest, Canyon Lake to the east, Wildomar to the south, and unincorporated Riverside County to the north.

The remainder of this section discusses key transportation agencies and the regulations that govern the City's transportation system.

Transportation Agencies

City of Lake Elsinore

The City of Lake Elsinore is responsible for planning, constructing, and maintaining local public transportation facilities, including all City streets, City-operated traffic signals, sidewalks, and bicycle facilities. These local services are funded primarily by the Capital Improvement Program (CIP)¹. The City has jurisdiction over all City streets and traffic signals except for those operated by Caltrans or shared with adjacent jurisdictions.

Riverside County Transportation Commission (RCTC)

Riverside County Transportation Authority (RCTC) is the joint powers authority that oversees funding and coordination of all public transportation services within all the cities in Riverside County. RCTC recommends projects that will be federally funded under the Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS). RCTC identifies long range transportation improvement projects beyond those already programmed in the six-year federal funding plan. RCTC also serves as the tax authority and implementation agency for Measure A, a voter-approved half cent sales tax.

Western Riverside Council of Governments (WRCOG)

Western Riverside Council of Governments (WRCOG) is the subregional organization for western Riverside County. WRCOG includes 19 member agencies and oversees subregional planning efforts. They administer, collect, and distribute funds for the Transportation Uniform Mitigation Fee (TUMF) program and own and maintain the Riverside County Transportation Model (RIVCOM).

Southern California Association of Governments (SCAG)

The Metropolitan Planning Organization (MPO) for the Southern California region is SCAG. SCAG develops long-range Regional Transportation Plans (RTPs) including the Sustainable Communities

¹ <http://www.lake-elsinore.org/city-hall/city-departments/public-works/engineering/capital-improvement-program>

Strategy (SCS) and growth forecast components. SCAG also develops the Regional Transportation Improvement Programs (RTIP).

California Department of Transportation (Caltrans)

Caltrans has authority over the State highway system, including mainline facilities, interchanges, and arterial State routes. Caltrans approves the planning and design of improvements for all State-controlled transportation facilities. Caltrans facilities in or serving Lake Elsinore include SR-74 and I-15 and its associated interchanges.

Regulatory Setting

The regulatory framework is meant to inform decision makers about the regulatory agencies and policies that affect transportation in the City of Lake Elsinore. This enables decision makers to execute informed decisions about planning improvements to transportation systems.

State

Assembly Bill 1358 (California Complete Streets Act)

Assembly Bill 1358 (AB 1358) or the California Complete Streets Act, was signed into law on September 30, 2008. Since January 1, 2011, AB 1358 has required circulation element updates to address the transportation system from a multimodal perspective. The Act states that streets, roads, and highways must “meet the needs of all users in a manner suitable to the rural, suburban, or urban context of the General Plan.” The Act requires a circulation element to plan for all modes of transportation where appropriate, including walking, biking, car travel, and transit. In addition, the Act requires circulation elements to consider the multiple users of the transportation system, including children, adults, seniors, and the disabled.

To comply, Lake Elsinore will need to plan for active transportation modes such as walking, bicycling, and transit, and provide better service to users of these prioritized modes. The General Plan may adopt a complete streets approach, providing accessibility for users of all ages and abilities. The Active Transportation Plan (Active LE) reflects a “Complete Streets” mindset that is compatible with the State of California’s Complete Streets Act. WRCOG conducted a Complete Streets workshop for jurisdiction staff in March 2018. The Downtown Elsinore Specific Plan (2018) has elements that support a complete streets approach.

Assembly Bill 32 (Global Warming Solutions Act)

Assembly Bill 32 (AB 32), or the Global Warming Solutions Act, was signed into law on September 27, 2006. AB 32 established a comprehensive program to reduce greenhouse gas emissions to combat climate change. This bill requires the California Air Resources Board (CARB) to develop regulations that reduce greenhouse gas emissions to 80% below 1990 levels by 2050. In 2016, the Legislature passed SB 32, which codified a 2030 GHG emissions reduction target of 40% below 1990 levels.

CARB recognizes cities as “essential partners” in reducing greenhouse gas emissions. The Air Resources Board has developed a Local Government Toolkit with guidance for GHG reduction strategies such as improving transit, developing bicycle/pedestrian infrastructure, increasing city fleet vehicle efficiency, and other strategies.

The City of Lake Elsinore can follow the example of other cities that voluntarily strive to comply with AB 32 and implement greenhouse gas reduction strategies into the City’s General Plan. WRCOG has recently completed an update to the Climate Action Plan (CAP), Captivate 2.0, which intends to comply with the statewide reduction targets. Lake Elsinore should continue to review how they can implement this plan and enhance their investments in strategies that reduce GHGs. RCTC is also undertaking several initiatives including transit investments, technology-enabled multimodal action plan, Transit-Oriented Development (TOD) planning, countywide active transportation investment, etc. which intends to comply with the statewide reduction targets.

Senate Bill 375 (Sustainable Communities and Climate Protection Act)

Senate Bill 375 (SB 375) or the Sustainable Communities and Climate Protection Act, provides incentives for cities and developers to bring housing and jobs closer together and to improve public transit. The goal is to reduce the number and length of automobile commuting trips, helping to meet the statewide targets for reducing greenhouse gas emissions set by AB 32.

SB 375 requires each MPO to add a broader vision for growth to its transportation plan - called a Sustainable Communities Strategy (SCS). The SCAG RTP and SCS were adopted in 2020.

For consistency with the regional planning objectives of the SCS, consideration of ways to achieve the following should be considered as part of the General Plan Update process:

- Support transit-oriented development.
- Support mixed-use development, which improves community walkability.
- Improve jobs-to-housing ratio.
- Promote land use patterns that encourage the use of alternatives to single-occupant automobile use.
- Apply Transportation System Management (TSM) and Complete Streets practices to arterials to maximize efficiency.
- Improve modes through enhanced service, frequency, convenience, and choices; and
- Enhance Transportation Demand Management (TDM) practices to reduce barriers to alternative travel modes and attract commuters away from single-occupant vehicle travel.

Senate Bill 743 (SB 743)

Senate Bill 743 (SB 743) requires all lead agencies to use Vehicle Miles Traveled (VMT) to comply with California Environmental Quality Act (CEQA) required assessments of transportation impacts.

The purpose of SB 743 is to balance the needs of congestion management, infill development, public health through active transportation, and greenhouse gas reductions. The Office of Planning and Research released the *Technical Advisory on Evaluating Transportation Impacts in CEQA*² in December 2018. In March 2019 WRCOG released the *WRCOG SB 743 Implementation Pathway*³, which acts as a guiding document for VMT analysis methodology, thresholds, and mitigation strategies for transportation impact evaluation for WRCOG agencies and jurisdictions such as Lake Elsinore.

On June 23, 2020, the City of Lake Elsinore City Council adopted a new transportation policy to meet the State requirements. The City of Lake Elsinore identified that Level of Service (LOS) remained a metric of concern to their community to determine consistency with the General Plan and to evaluate the need for intersection and roadway improvements. The City's baseline VMT per service population was adopted as the threshold for VMT impacts.

Caltrans Traffic Study Guidance

Caltrans has produced three guidance documents for evaluating traffic on state right-of-way. This includes the VMT-Focused Transportation Impact Study Guide (TISG), the Transportation Analysis Framework (TAF) and Transportation Analysis Under CEQA (TAC). These documents provide Caltrans policy and guidance that would affect Caltrans facilities in Lake Elsinore.

Regional

Riverside County Congestion Management Program (CMP)

The passage of Proposition 111 in June 1990 established a process for each metropolitan county in California, including Riverside, to prepare a Congestion Management Plan (CMP).

The focus of the CMP is the development of an Enhanced Traffic Monitoring System in which real-time traffic count data may be accessed by RCTC to evaluate the condition of the Congestion Management System (CMS), as well as to meet other monitoring requirements at the State and Federal levels.

Per the Level of Service target of "E" adopted by RCTC, when a CMP segment falls to "F," a deficiency plan must be prepared. Other agencies identified as contributors to the deficiency will also be required to coordinate with the development of the plan. It is the responsibility of local agencies to consider the traffic deficiencies on CMP facilities when reviewing and approving development proposals.

Though with the implementation of SB 743 agencies are allowed to opt out of CMPs, Lake Elsinore continues to adhere to the CMP.

² *Technical Advisory on Evaluating Transportation Impacts in CEQA*, 2018, http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

³ <https://www.fehrandpeers.com/wp-content/uploads/2019/12/WRCOG-SB743-Document-Package.pdf>

Human Services Transportation Plan for Riverside County

The Public Transit-Human Services Transportation Coordination Plan for Riverside County, 2021-2025 (also named as “Coordinated Plan 2021 Update” or “Coordinated Plan”)⁴ serves to document mobility needs and gaps of seniors, persons with disabilities, persons of low income, veterans and tribal members living and traveling within Riverside County. This Coordinated Plan has goals to enhance mobility, strategies, and potential projects, provides direction to Riverside County stakeholders including RCTC, the County’s public transit providers and human service agencies, as well as sovereign Tribes, municipalities, and the County.

Western Riverside Active Transportation Plan (ATP)

The Western Riverside County Active Transportation Plan (ATP)⁵ aims to improve transportation choices within the subregion for the benefit of all residents, employees, and visitors by identifying regional facilities to provide more transportation options including active travel modes. The WRCOG ATP identifies facilities to enhance and increase active transportation options for all member jurisdictions, including Lake Elsinore, in the subregion.

Connect SoCal 2020

The RTP is prepared by SCAG for the six-county SCAG region. This long-range transportation plan projects population and employment growth and defines the vision and overall goals for the regional multimodal transportation system. The RTP identifies future transportation infrastructure needs and defines planned multimodal transportation improvements, including freeways, high-occupancy vehicle facilities, bus and rail transit, freight movement, and aviation. This plan therefore sets the framework for the regional transportation infrastructure system that serves Lake Elsinore.

⁴ <https://www.rctc.org/wp-content/uploads/2021/08/ED.A1.Final-2021-Public-Transit---Human-Services-Transportation-Coordination-Plan-for-Riverside-County.pdf>

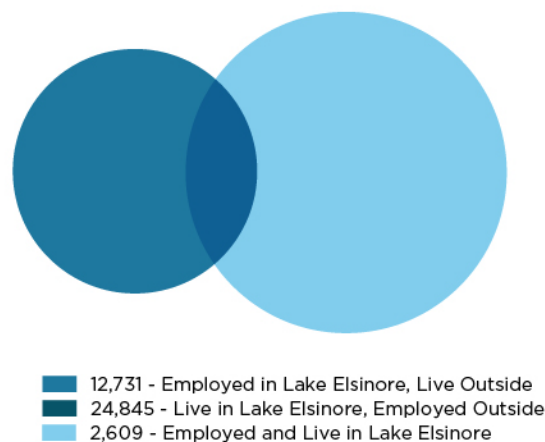
⁵ <https://www.wrcog.us/DocumentCenter/View/3366/Final-WRCOG-ATP>

Travel Characteristics

Housing-Employment Dynamics

About 10% of Lake Elsinore residents live and work in the City, while the majority of the residents are employed outside the City, as shown in *Figure 1*. As such, there is an opportunity to address the heavy outbound commute flows by focusing on policies that grow the number of people who live and work in the City, and expand efforts that increase sustainable transportation options for commute trips.

Figure 1: Inflow and Outflow Job Counts for Lake Elsinore (2019)



Source: Longitudinal Employer-Household Dynamics (LEHD), 2019.

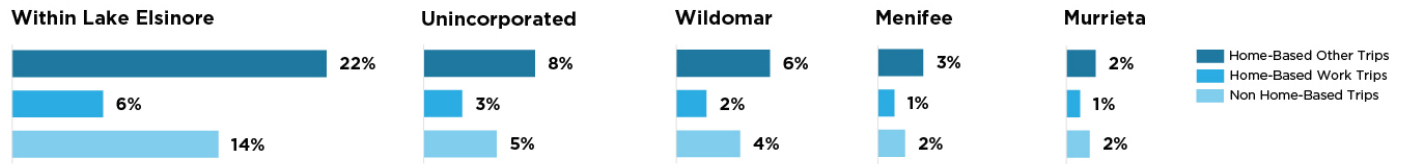
Travel Patterns

Based on anonymized cellphone data, the following key takeaways were observed regarding the travel patterns to and from Lake Elsinore:

- 90% trips to and from Lake Elsinore stay in the WRCOG subregion.
- Home-Based Other trips, or trips with one end at home not destined for a workplace, make up most of the recorded trips (49%). Home-Based Work Trips, or trips from home to workplace or vice versa, make up 18% of all trips. Non Home-Based Trips, or trips that don't either come from or go to a home, make up 33% of all trips.
- 42% of recorded trips occur within the City of Lake Elsinore, 16% to/from the Unincorporated Area, 12% to/from Wildomar, 6% to/from Menifee, and 5% to/from Murrieta.
- 34% of recorded trips occur within the TUMF Southwest Zone.
- Outside WRCOG region, Orange County is the largest attractor of trips (3%).

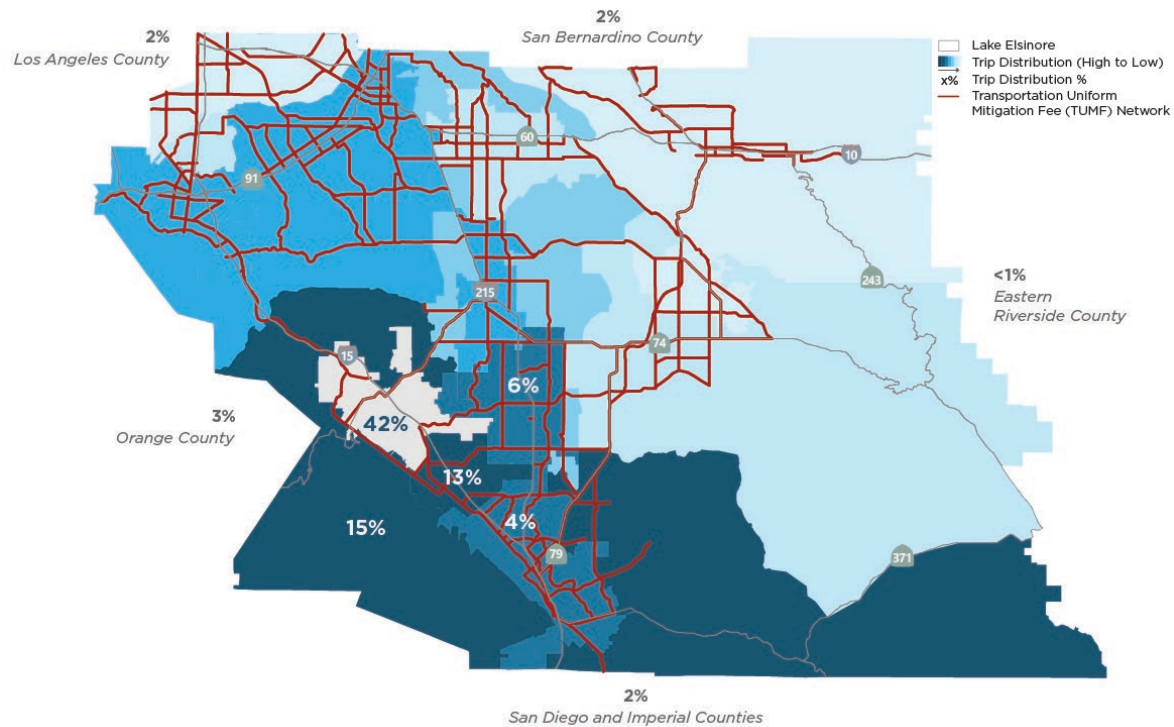
Figure 2 shows the top places Lake Elsinore population travel to and from based on their trip purpose. Figure 3 shows the travel activity by trip distribution to and from Lake Elsinore.

Figure 2: Top Places Lake Elsinore Population Travel to and From (2019)



Source: Streetlight, October 2019.

Figure 3: All Day Trip Distribution to and from Lake Elsinore (2019)



Source: Streetlight, October 2019.

Commute Trips

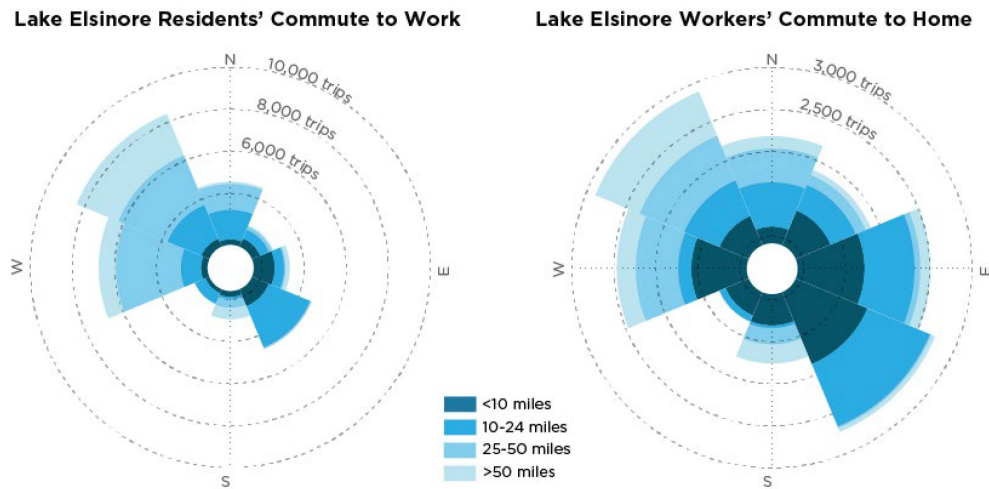
Distance and Direction

Commute patterns for employed residents are as follows:

- 16% of residents travel less than 10 miles to reach their employment.
- 33% of residents travel between 10 and 24 miles to reach their employment.
- 51% of residents travel 25 miles or more to reach their employment.

As displayed in Figure 4, around half of the Lake Elsinore residents travel more than 25 miles to reach their places of employment, mostly to the northwest and west direction. Most workers living outside the city travel primarily from the northwest, west, north, southeast, and east directions to work in Lake Elsinore.

Figure 4: Commute Distance and Direction (2019)

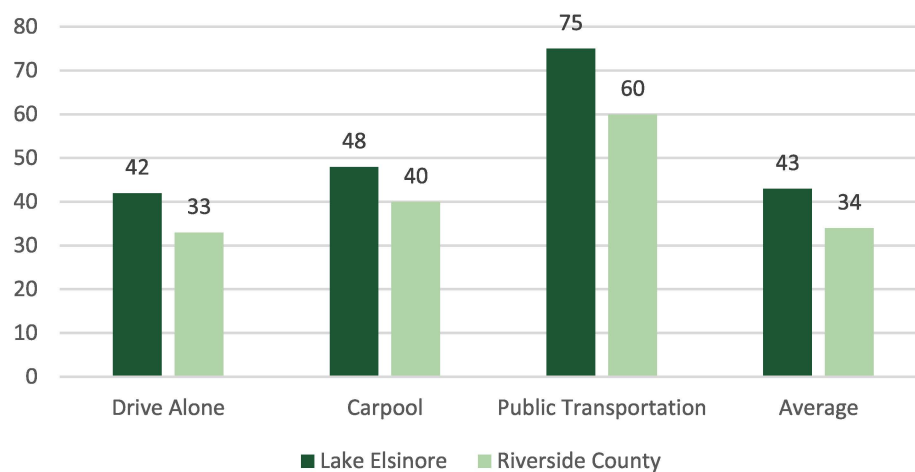


Source: U.S. Census Bureau. 2019. OnTheMap Application. <http://onthemap.ces.census.gov/>

Travel Time to Work

Lake Elsinore residents spend more time on the road traveling to work compared to Riverside County residents. Figure 5 displays the distribution of travel time to work in City of Lake Elsinore and Riverside County by mode share.

Figure 5: Mean Commute Time to Work (Minutes) by Travel Modes in Lake Elsinore and Riverside County (2016-2020)



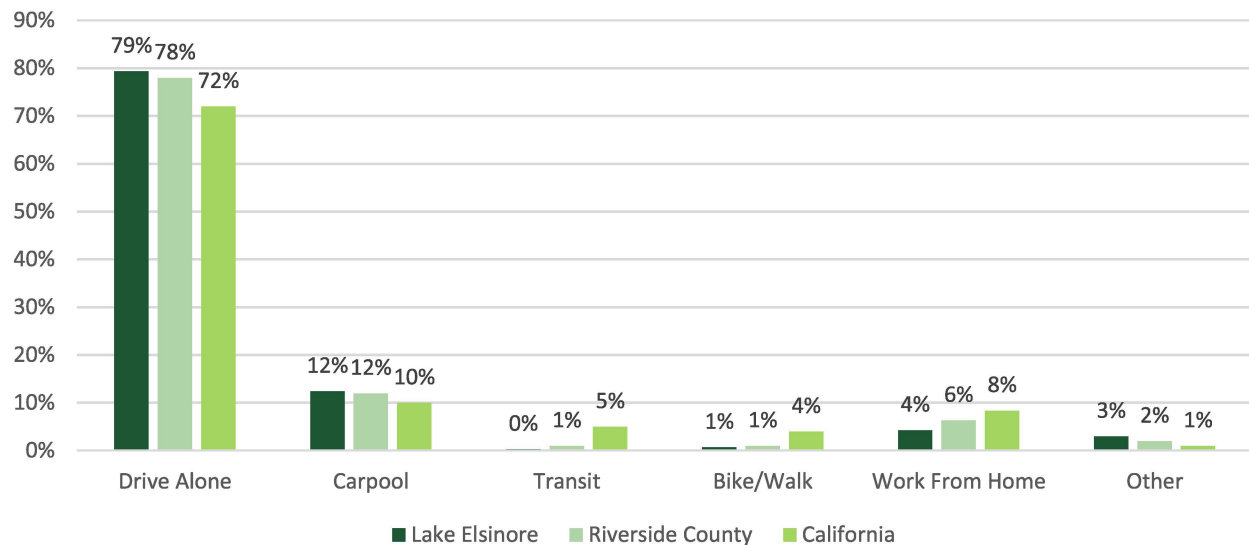
Source: American Community Survey 5-Year Estimates; 2020. Table S0802.

Commuter Modal Split

Transportation modes for commute for the City of Lake Elsinore are presented in Figure 6. The primary mode of travel is the automobile, which includes solo drivers and carpools. Automobile trips (both single occupancy vehicle and carpool) make up about 91% of total commute trips for Lake Elsinore, which is higher than the California average of 82%.

Walking/bicycling and transit mode share are negligible in Lake Elsinore (almost near to 0% of the total) when compared to the statewide mode share for walking/biking (4%) and public transit (5%).

Figure 6: Mode Share (Percent) for Commute Trips (2016-2020)



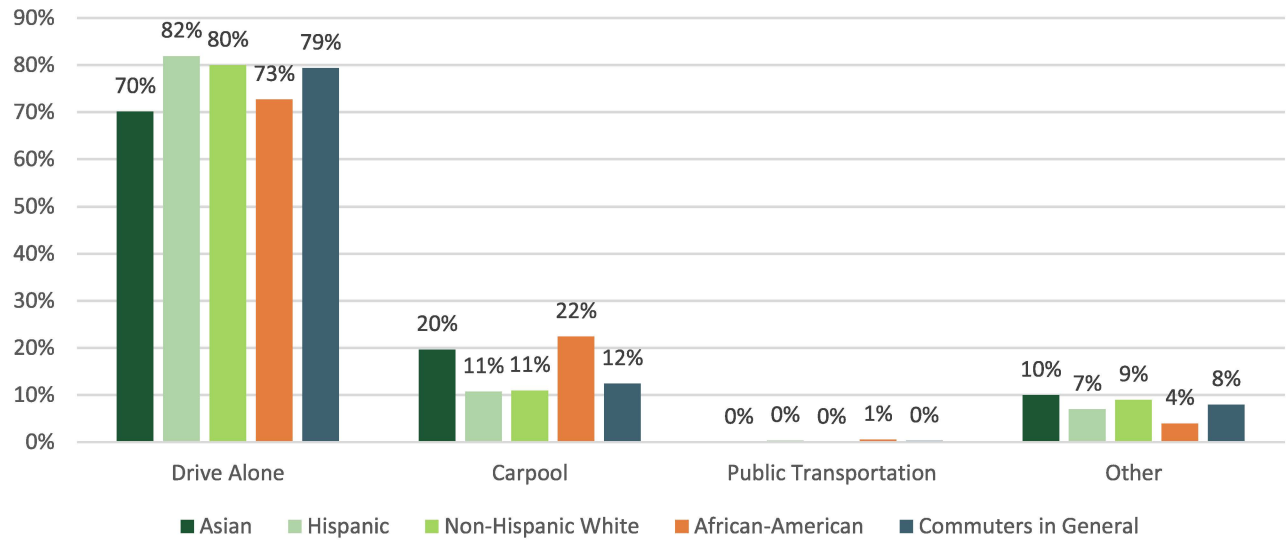
Source: American Community Survey 5-Year Estimates; 2020. Table B08301.

Socioeconomic Factors

Journey to Work Mode by Race and Income

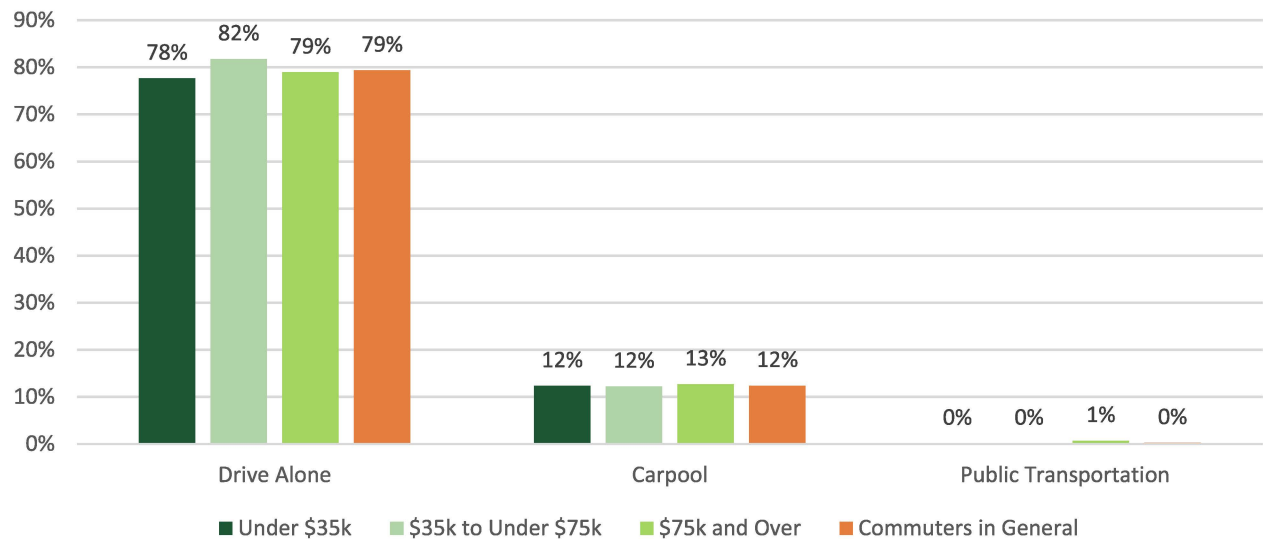
Commute patterns tend to be similar between White and Hispanic residents of Lake Elsinore, as shown in Figure 7. Residents across different races do not have the similar percentage of driving alone, but a higher percentage of Asian and African American residents carpool or ride transit and they also have lower percentage of driving alone compared to the White and Hispanic residents. Asians have the highest work from home percentage. Commuting patterns are relatively comparable across incomes, as shown in Figure 8.

Figure 7: Journey to Work Mode Percent by Races/Ethnicities (2016-2020)



Source: American Community Survey 5-Year Estimates; 2020. Only Asian, Hispanic, Non-Hispanic White and African-American groups are included because of the low margins of error for other groups. Table S0802.

Figure 8: Journey to Work Mode Percent by Income Level (2016-2020)



Source: American Community Survey 5-Year Estimates; 2020. Table S0802.

Vehicle Miles Traveled (VMT)

Vehicle Miles Traveled (VMT) measures the number of miles traveled within a specific region. Cities with more accessibility to key destinations and job centers in a region tend to generate less VMT on a per service population (service population is residents plus employees) or per household basis.

The latest version of the Riverside County Transportation Analysis Model (RIVCOM) was used to estimate the existing VMT per Service Population for the City of Lake Elsinore and neighboring jurisdictions. The model has a base year of 2018 but is the most recent version and most appropriate tool available to estimate VMT in the City.

Existing VMT for the City was estimated using two methods which will be referenced in the Environmental Impact Report for the General Plan. These methods measure VMT differently and capture different aspects of potential transportation impacts.

VMT was estimated using the Origin/Destination (OD) method. This was completed by multiplying the OD trip tables and the final assignment skim matrices. The OD tables provided the number of trips between each Traffic Analysis Zone (TAZ), and the skim matrices provided the distance on the roadway network, or trip length, between each TAZ. The full length of all trips with an origin or destination in the TAZ representing the City of Lake Elsinore were used to estimate the existing City VMT. This represents the VMT from all trips that start or end in Lake Elsinore.

VMT was also estimated using the boundary method. This was completed by selecting all roadway segments in the RIVCOM model within the City boundary and multiplying the number of trips on each roadway segment by the length of that roadway segment. This represents the VMT from all vehicles that travel on roadways in Lake Elsinore, regardless of where they start or end their trip.

The results of both methodologies are presented in Table 1.

Table 1: Existing Vehicle Miles Traveled

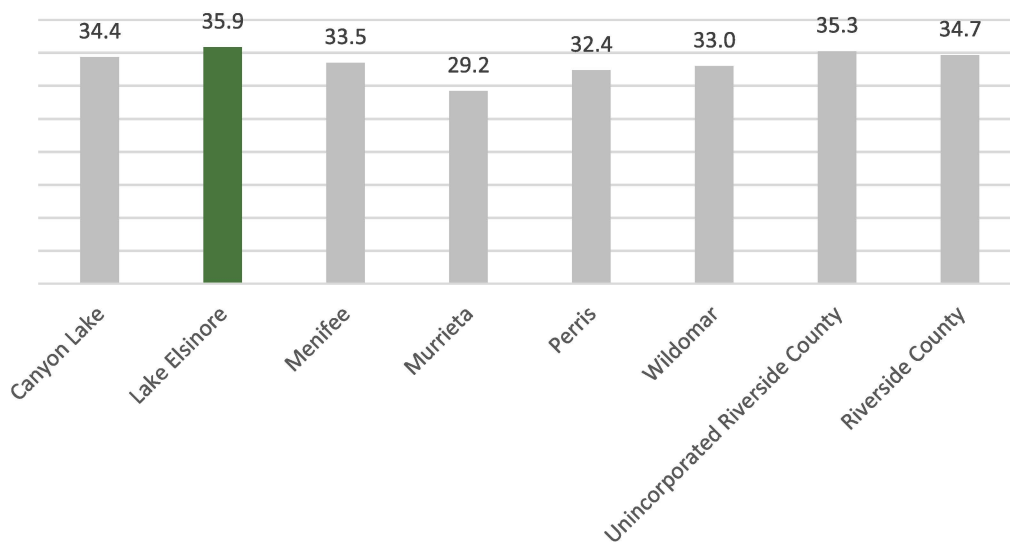
City of Lake Elsinore Existing VMT Metric	VMT
OD VMT (Daily total)	2,610,708
OD VMT per Service Population	35.9
Boundary VMT (Daily total)	1,337,079
Boundary VMT per Service Population	18.4

Note: Service population includes residents and employees.

Source: Fehr & Peers, 2022

Lake Elsinore VMT per service population (resident population plus employees in the City) is higher than the average of the County and is the highest among the neighboring cities in Western Riverside County, as shown in Figure 9. This indicates that there are opportunities for Lake Elsinore to improve its travel efficiency.

Figure 9: VMT Per Service Population Comparison in the Neighboring Cities (2018)



Source: Origin-Destination (OD) VMT per Service Population Base Year (2018) RIVCOM Model

Existing Street System

This section discusses the existing street system, including discussion of roadway classifications and pavement conditions. Networks for pedestrians, bicycles, and transit are discussed that will inform Circulation Element Update discussions concerning traffic and circulation.

Regional Highways

Interstate 15 (I-15)

I-15 connects to SR 91 in the North and SR 215 in the South. It provides north-south connectivity from Lake Elsinore to areas such as San Diego and San Bernardino counties. In Lake Elsinore, I-15 is a six-lane divided freeway, with three lanes in each direction.

State Route 74 (SR-74)

SR-74 provides east-west connectivity throughout Riverside County and connects Lake Elsinore to Orange County to the west. In Lake Elsinore SR-74 is a two-lane roadway.

Arterials

Diamond Drive

Diamond Drive is a six-lane divided roadway between Railroad Canyon Road and Mission Trail. It is a four-lane divided roadway south of Mission Trail. Diamond Drive provides access to residential neighborhoods, a major commercial center, and the southernmost I-15 interchange in the City.

Collier Avenue

Collier Avenue is a north-south roadway that is parallel to I-15. Between Riverside Drive and Central Avenue, Collier Avenue is SR-74. Collier Avenue is a four-lane divided roadway from Nichols Road to 3rd Street. It is a two-lane undivided roadway from 3rd Street to its terminus. Collier Avenue provides a north-south connection to the Outlets and other commercial centers and includes bus stops for RTA Routes 8 and 9.

Lake Street

Lake Street is a two-lane undivided roadway. South of Lakeshore Drive, it becomes Grand Avenue. Lake Street provides access to residential neighborhoods and the northernmost I-15 interchange in the City.

Lakeshore Drive

Lakeshore Drive, a two-lane to four-lane roadway, is a major north/south route along the east side of the lake. Lakeshore Drive varies throughout Lake Elsinore between a divided and undivided roadway.

Riverside Drive

Riverside Drive is a two-lane to four-lane undivided roadway and is SR 74 from Grand Avenue to Collier Avenue. A portion of Riverside Drive south of Lincoln Street is a four-lane roadway with a center left turn lane.

Railroad Canyon Road

Railroad Canyon Road is a six-lane divided roadway. This east/west route connects Diamond Drive and the I-15 to communities east of the I-15 and Canyon Lake.

Main Street

Main Street is a two-lane roadway. Portions of Main Street include a strip center left turn lane. Main Street provides an east-west connection between I-15 and Lakeshore Drive.

Mission Trail

Mission Trail is a four-lane divided roadway from Diamond Drive to Olive Street, four-lane undivided from Olive Street to Lemon Street, and four-lane divided from Lemon Street to Palomar Street. The roadway provides a connection to commercial centers and includes bus stops for RTA Route 8.

Grand Avenue

Grand Avenue is a four-lane divided roadway from Lakeshore Drive to SR-74 and a two-lane divided roadway south of SR 74. This north/south route is parallel to the lake. Grand Avenue included bus stops for RTA Route 8.

Roadway Classifications

The classification of roadways in the City is generally based on their functionality, number of lanes, and available right-of-way.

Urban Arterials

Urban arterials are six-lane roadways with a median divider and 120 feet of right-of-way. Augmented urban arterials have up to 8 lanes and 134 feet of right-of-way. The ultimate cross section buildout includes bike lanes and sidewalks.

Major Arterials

Major arterials have four vehicle lanes and a median divider within 100 feet of right-of-way. The ultimate cross section buildout includes bike lanes and sidewalks.

Secondary Roadways

Secondary highways have four vehicle lanes and a median divider within 90 feet of right-of-way. The ultimate cross section buildout includes bike lanes and sidewalks.

Collectors

Collector roadways are two-lane or four-lane roadways with 68 feet to 78 feet of right-of-way. They can include a raised median divider, a painted divider, or be undivided. Two-lane cross sections could include a bike lane or shoulder, while a four-lane cross section typically would not accommodate an on-street bike facility.

Special Collectors

Special collector roadways are two-lane roadways with a raised median divider within 60 feet of right-of-way. The buildout of the cross section includes bike lanes and sidewalks.

Daily Level of Service (LOS) criteria is presented in Table 2. Daily traffic volume capacity values based on roadway classification are presented in Table 3.

Table 2: Level of Service Criteria

Level of Service	V/C Ratio Criteria	Traffic Level Condition
A	<0.60	Free flow
B	0.61 to 0.70	Stable flow with unaffected speed
C	0.71 to 0.80	Stable flow but speed is affected
D	0.81 to 0.90	High-density but stable flow
E	>0.91	Traffic volume near or at capacity level with low speed

Source: Fehr & Peers, 2022

Table 3: Daily Traffic Volume Capacity Values

Functional Class	Number of Lanes	Maximum Two-Way Traffic Volume (ADT)
		Service Level E
Collector	2U	13,000
Divided Collector	2D	18,000
Secondary	4U	25,900
Major Arterial	4D	34,100
Urban Arterial	6	53,900
Augmented Urban Arterial	8	71,800

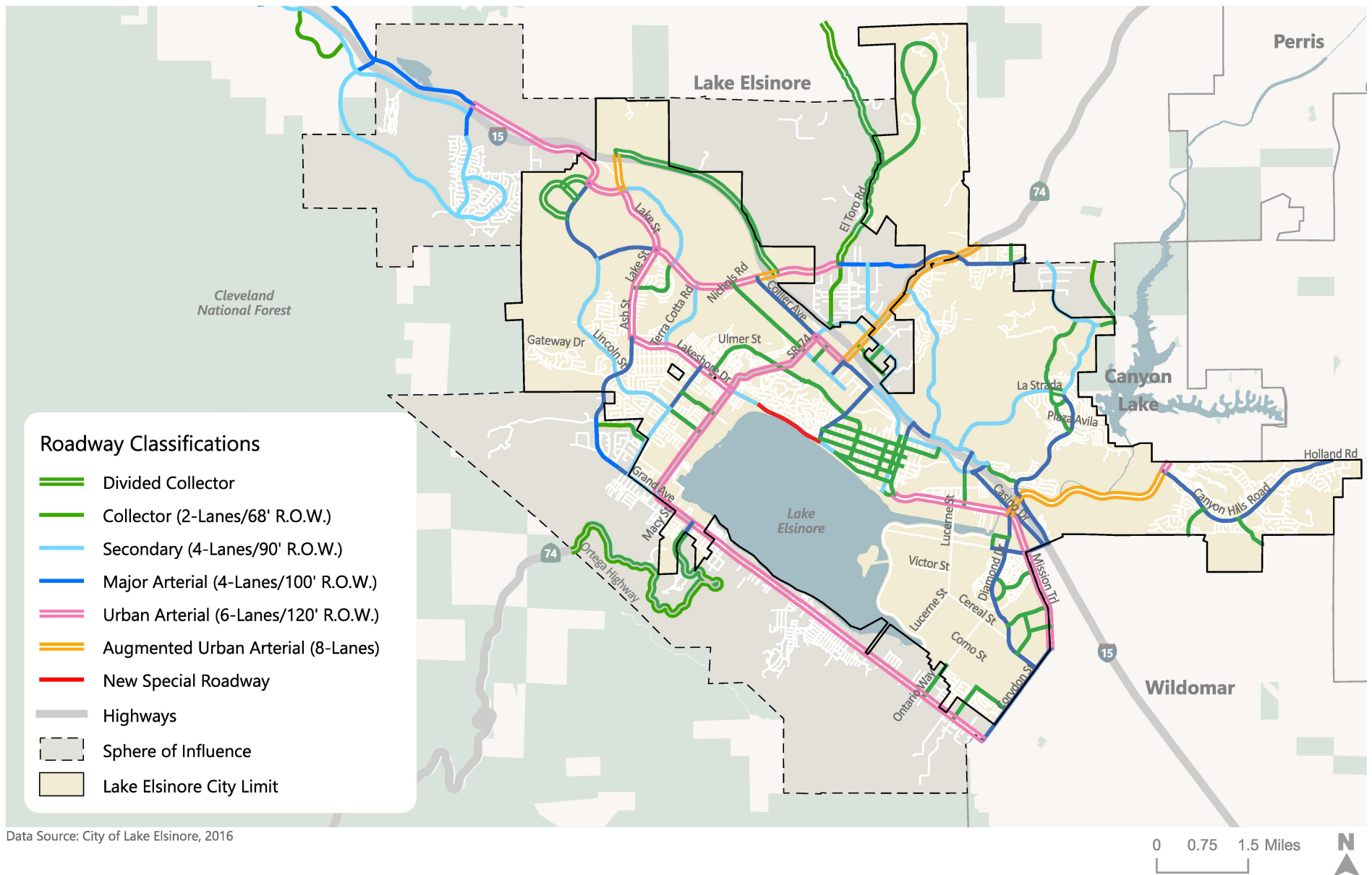
Source: City of Lake Elsinore General Plan, 2011

Note: 1. All capacity figures are based on optimum conditions and are intended as guidelines for planning purposes only.

2. Maximum two-way ADT values are based on the 1999 Modified Highway Capacity Manual Level of Service Tables as defined in the Riverside County Congestion Management Program. Divided Collector interpolated.

3. Two-lane roadways designated as future arterials that conform to arterial design standards for vertical and horizontal alignments are analyzed as arterials.

4. Ramp capacity is given as a one-way traffic volume.



Pavement Conditions

The City of Lake Elsinore Pavement Management Program (PMP) measures the pavement conditions of roadways in the City and was last updated in February 2022. The condition of the roadway pavement is important to consider for safety and positive driver experience. By tracking the pavement conditions, resources for maintenance funding for existing infrastructure can be allocated based on need. Pavement Condition Index (PCI) is the standard of practice measure of effectiveness used to assess pavement where 100 is the best score and 0 is the worst:

- **Very Good** (86-100 PCI) Pavements with little or no distress.
- **Good** (70-85 PCI) Pavements with some distresses that are predominantly non-load related. The pavement structure is sound and minor oxidation may occur.
- **Fair** (50-69 PCI) Pavements with a significant level of distress, which may be predominantly load-related. The pavement structure is becoming deficient.
- **Poor** (30-49 PCI) Pavements with moderate to severe surface distresses. Extensive weathering, block cracking, and load-related distresses such as alligator cracking and rutting may occur.
- **Very Poor** (0-29 PCI) Pavements with severe weather-related distresses as well as large quantities of load-related distresses. The pavement is nearing the end of its service life.

Table 2 summarizes the specific pavement conditions throughout Lake Elsinore arterials, collectors and local residential streets.

Local roads make up the largest rank class in terms of number of segments, centerline and lane miles, and surface area. Thus, they should be maintained regularly to ensure efficient movement of goods and people.

Table 4: Pavement Network Summary (2022)

Functional Class	Lane Miles	Pavement Area (SF)	% Pavement Area	Weighted Average PCI
Arterial/Collector	59.5	13,937,799	32.7%	81.2
Local	161.4	28,554,418	67.0%	88.6
Alley	0.7	70,919	0.3%	72.3

Source: City of Lake Elsinore, 2022

Major Roadway Improvement Projects

Roadway improvements planned in the City of Lake Elsinore from the SCAG 2020 RTP/SCS approved project list of Federal Transportation Improvement Program (FTIP) are shown in Appendix A.

Average Daily Traffic (ADT)

Traffic volumes for City streets were collected using Streetlight data. Streetlight is a big data vendor that uses anonymized information (ex. GPS data and location services enabled mobile devices) with advanced modeling to develop representative estimates of traffic volumes. The ADT data was collected for a typical weekday (Tuesday–Thursday) in March 2019. Existing ADT is presented in Table 5 .

Table 5: Existing Average Daily Traffic Volumes

#	Roadway	Roadway Classification	ADT	LOS
1	Temescal Canyon Rd between I-15	Urban Arterial	9,700	A
2	Lake St between Walker Canyon Rd	Augmented Urban Arterial	22,200	A
3	Lake St between Temescal Canyon Rd and Nichols Rd	Urban Arterial	20,200	A
4	Lake St between Nichols Rd and Alberhill Ranch Rd	Urban Arterial	22,600	A
5	Lake St between Alberhill Ranch Rd and Lakeshore Dr	Urban Arterial	23,600	A
6	Lakeshore Dr between Grand Ave and Terra Cotta Rd	Urban Arterial	13,300	A
7	Terra Cotta Rd between Lake Shore Dr and Grey Ave	Secondary	1,900	A
8	Nichols Rd between Terra Cotta Rd and Collier Ave	Urban Arterial	8,700	A
9	Nichols Rd between Collier Ave and I-15 WB Ramp	Augmented Urban Arterial	9,800	A
10	Nichols Rd between Bedrock Rd and El Toro Road	Urban Arterial	5,800	A
11	Baker St between Pierce St and Riverside Dr	Collector	300	A
12	Machado St between Lincoln St and Lakeshore Dr	Major Arterial	7,800	A
13	Lakeshore Dr between Machado St and SR 74/Riverside Dr	Urban Arterial	16,900	A
14	Riverside Dr between Grand Ave and Lincoln St	Urban Arterial	22,000	A
15	Riverside Dr between Schrier Dr and Richard St	Urban Arterial	29,300	A
16	Riverside Dr between Baker St and Collier Ave	Urban Arterial	29,900	A
17	Collier Ave between Central Ave and Riverside Dr	Urban Arterial	30,500	A
18	Central Ave between Collier Ave and I-15 EB Ramps	Augmented Urban Arterial	40,700	A
19	Central Ave between I-15 EB and WB Ramps	Augmented Urban Arterial	49,900	B
20	Central Ave between I-15 WB Ramps and Cambern Ave	Augmented Urban Arterial	24,800	A
21	Central Ave between Cambern Ave to Rosetta Canyon Dr	Augmented Urban Arterial	42,500	A
22	Rosetta Canyon Dr between Central Ave and Elsinore Hills Rd	Secondary	4,100	A
23	Collier Ave between Central Ave and Chaney St	Major Arterial	10,500	A

#	Roadway	Roadway Classification	ADT	LOS
24	Lakeshore Dr between Riverside Dr and Manning St	Secondary	13,800	A
25	SR 74/Ortega Highway West of Grand Ave	Major Arterial	14,200	A
26	Grand Ave between Magnolia St and Blanche Dr	Urban Arterial	18,200	A
27	Chaney St between Lakeshore Dr and W Pottery St	Major Arterial	4,400	A
28	Chaney St between W Pottery St and Temescal Wash	Major Arterial	8,100	A
29	Chaney St between Temescal Wash and Collier Ave	Major Arterial	9,300	A
30	Lakeshore Dr between Chanet St and Graham Ave	Secondary	12,900	A
31	Graham Ave between Lakeshore Dr and Temescal Wash	Divided Collector	12,300	B
32	Graham Ave between Lindsay St and Langstaff St	Divided Collector	12,300	B
33	Main St between Graham Ave and Heald St	Divided Collector	8,500	A
34	Main St between Heald St and Sumner St	Divided Collector	14,800	D
35	Main St between Sumner Ave and Flint St	Divided Collector	14,800	D
36	Main St between Flint St and Minthorn St	Major Arterial	11,200	A
37	E Franklin St East of Main St	Collector	8,000	B
38	E Lakeshore Dr between Country Club Blvd and Lucerne St	Urban Arterial	12,700	A
39	Auto Center Dr between between Mill St and Diamond Dr	Major Arterial	6,300	A
40	Diamond Dr between Lakeshore Dr and Casino Dr	Augmented Urban Arterial	26,300	A
41	Diamond Dr between Casino Dr and I-15 EB Ramps	Augmented Urban Arterial	32,000	A
42	Diamond Dr between I-15 EB and WB Ramps	Augmented Urban Arterial	48,300	B
43	Summerhill Rd between Canyon Ridge Dr and Bella Lucia	Major Arterial	9,700	A
44	Railroad Canyon Rd between I-15 NB Ramps and City Limits	Augmented Urban Arterial	50,200	B
45	Canyon Hills Rd between Lost Rd and Whispering Willow Rd	Major Arterial	7,600	A
46	Mission Trail between Diamond Dr and Malaga Rd	Urban Arterial	17,300	A
47	Diamond Dr between Summerly Pl and Malaga Rd	Major Arterial	3,100	A
48	Hidden Trail between Mission Trail and Summerly Pl	Divided Collector	2,600	A
49	Mission Trail between Elberta Rd and Olive St	Urban Arterial	20,300	A
50	Grand Ave between Ginger Ln and Stoneman St	Urban Arterial	17,400	A
51	Corydon Rd between Palomar St and Cereal St	Major Arterial	15,000	A

Source: Streetlight, 2019

Transit

Transit expands mobility options to citizens who may not be able to afford or physically operate other means of travel, while some choose not to drive. As is the case in many jurisdictions, it is important that Lake Elsinore continue to invest in and improve local transit service, since the most frequent users include some of the most vulnerable City residents and workers such as older adults, persons with disabilities, and students. Lake Elsinore currently does not have any regional rail service such as AMTRAK, Coaster, or Metrolink within the city area.

Riverside Transit Agency

Riverside Transit Agency (RTA) operates bus service in Lake Elsinore. Fixed route service, commuter bus routes, select long-distance service, and dial-a ride service are offered by RTA within the City. RTA offers a combination of local and regional connectivity, as well as transfers to Metrolink, Coaster, and Sprinter regional rail service in neighboring metropolitan areas north and south of the City.

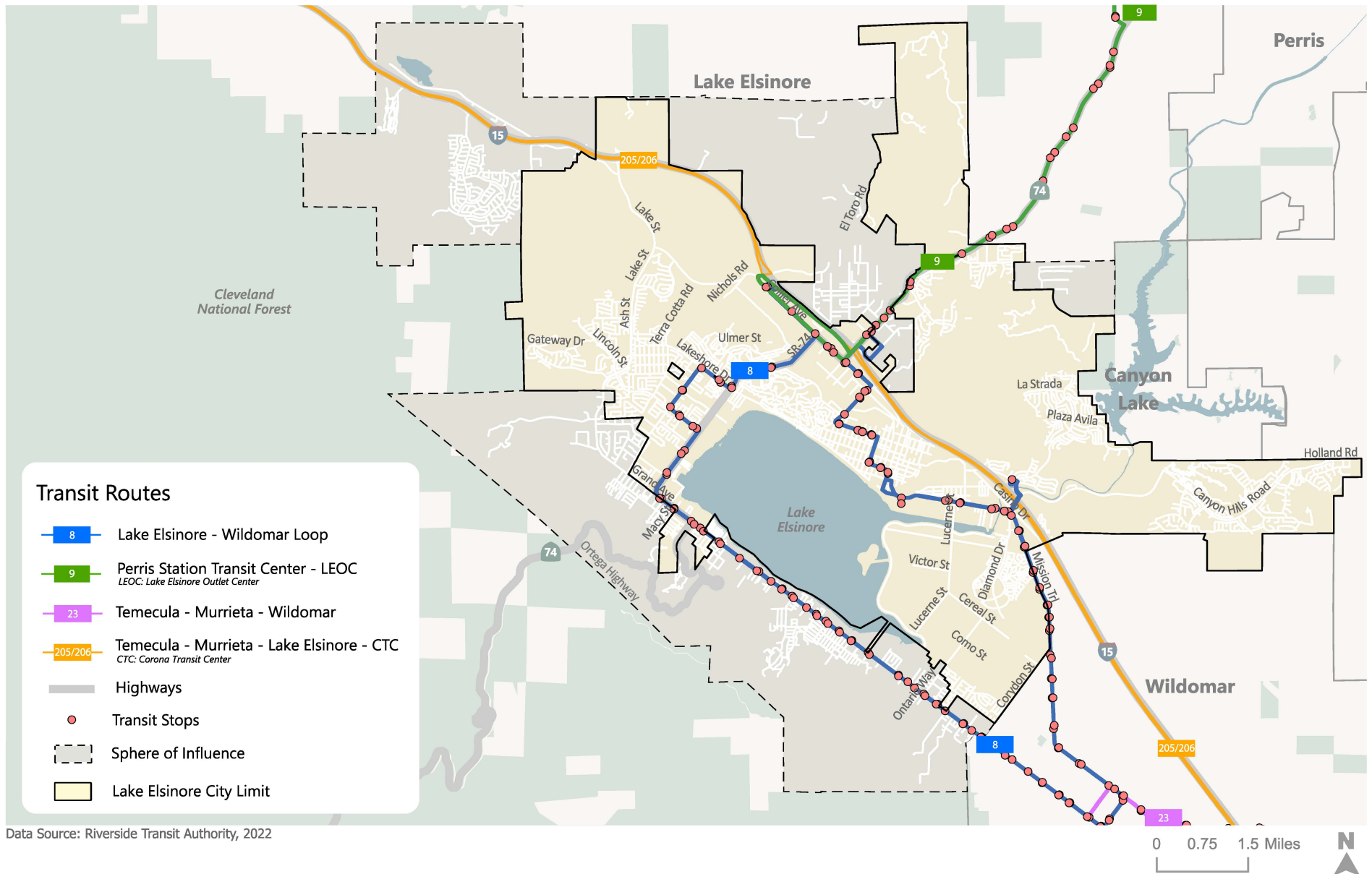
RTA operates four bus routes within Lake Elsinore city limits: Route 8 (Lake Elsinore Wildomar Loop Routes), Route 9 (Perris-Lake Elsinore), Route 205/206. RTA routes that serve Lake Elsinore are presented in Figure 11.

Table 6 shows the key destinations and service frequencies.

Table 6: Lake Elsinore Bus Route Service (2022)

Route	Key Destinations	Weekday Peak Hour Frequency	Weekend Service Frequency
Route 8	Lake Elsinore Outlet Center Walmart at Central & Cambern Palomar & Wildomar	70-minute headways	70-minute headways
Route 9	Perris Metrolink Station Walmart at Central & Cambern Lake Elsinore Outlet Center	50-minute to 70-minute headways	70-minute headways
Route 205/206 Commuter Link	Corona Transit Center Lake Elsinore Outlet Center Mulligan Family Fun Center Promenade Mall	4 buses in the AM northbound: 30-minute to 40-minute headways 3 buses in the PM southbound: 40-minute to 60-minute headways	No weekend service

Source: Riverside Transit Authority, 2022



RTA also provides Dial-A-Ride service which is an origin-to-destination advanced reservation transportation service for seniors and persons with disabilities. This service complies with the requirements of the Americans with Disabilities Act (ADA). Reservations must be made in advance, and pick-up and drop-off must be provided within a three-quarter mile range of the existing RTA fixed bus routes and during the same service hours as those routes. All RTA fixed route buses are accessible to persons with disabilities.

RTA offers 25-cent bus rides to youth, seniors, disabled and veterans on all bus routes, including Commuter Link.

Metrolink

Metrolink is a commuter rail program operated by the Southern California Regional Rail Authority (SCRRA), providing service from outlying suburban communities to employment centers such as Burbank, Irvine, and downtown Los Angeles. Currently, no Metrolink service is provided in Lake Elsinore. The closest stations are approximately 23 miles away in the City of Corona and 11 miles away in the City of Perris.

RCTC has studied the feasibility of a future Metrolink commuter line along the I-15 from Corona to Temecula, which would provide connectivity to Lake Elsinore.

Bicycle Facilities

Bicycle facilities in Lake Elsinore consist of bike lanes, routes, trails, and paths, as well as bike parking. The existing and planned bicycle network in the City is shown in Figure 12. Bicycle facilities are classified into four categories depending on their design and function as described in the following page. Lake Elsinore provides a combination of multi-use path, bike lane, and bike route facilities citywide.

Although the City has a multiple Class II bikeways, many of these facilities have gaps in the network. As such, the General Plan update could consider citywide bicycle connectivity as a primary focus in future network development.



Class I/Multi-Use Path or Trail:

Provides a completely separated right-of-way for the exclusive use of cyclists and pedestrians with crossflow minimized. Typically, the most desirable for all ages and abilities
Example: Off-street bike facility along Temescal Wash in City of Lake Elsinore.



Class II/Bike Lane:

Provides a striped lane for one-way travel on a street, which may include a "buffer" zone consisting of a striped portion of roadway between the bicycle lane and the nearest vehicle travel lane. Typically, suitable for some bicyclists comfortable sharing some space with cars.
Example: Lakeshore Dr between Ash St and Machado St



Class III/Bike Route:

Provides for shared use with motor vehicle traffic to help guide bicyclists between major destinations. Typically, not suitable for most bicyclists except on local residential streets.

Example: Main Street



Class IV/Bike Track/Boulevard:

Provides a right-of-way designated exclusively for bicycle travel, which is protected from vehicular traffic. Types of separation include, but are not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking. Typically, suitable for most bicyclists.

No examples in Lake Elsinore

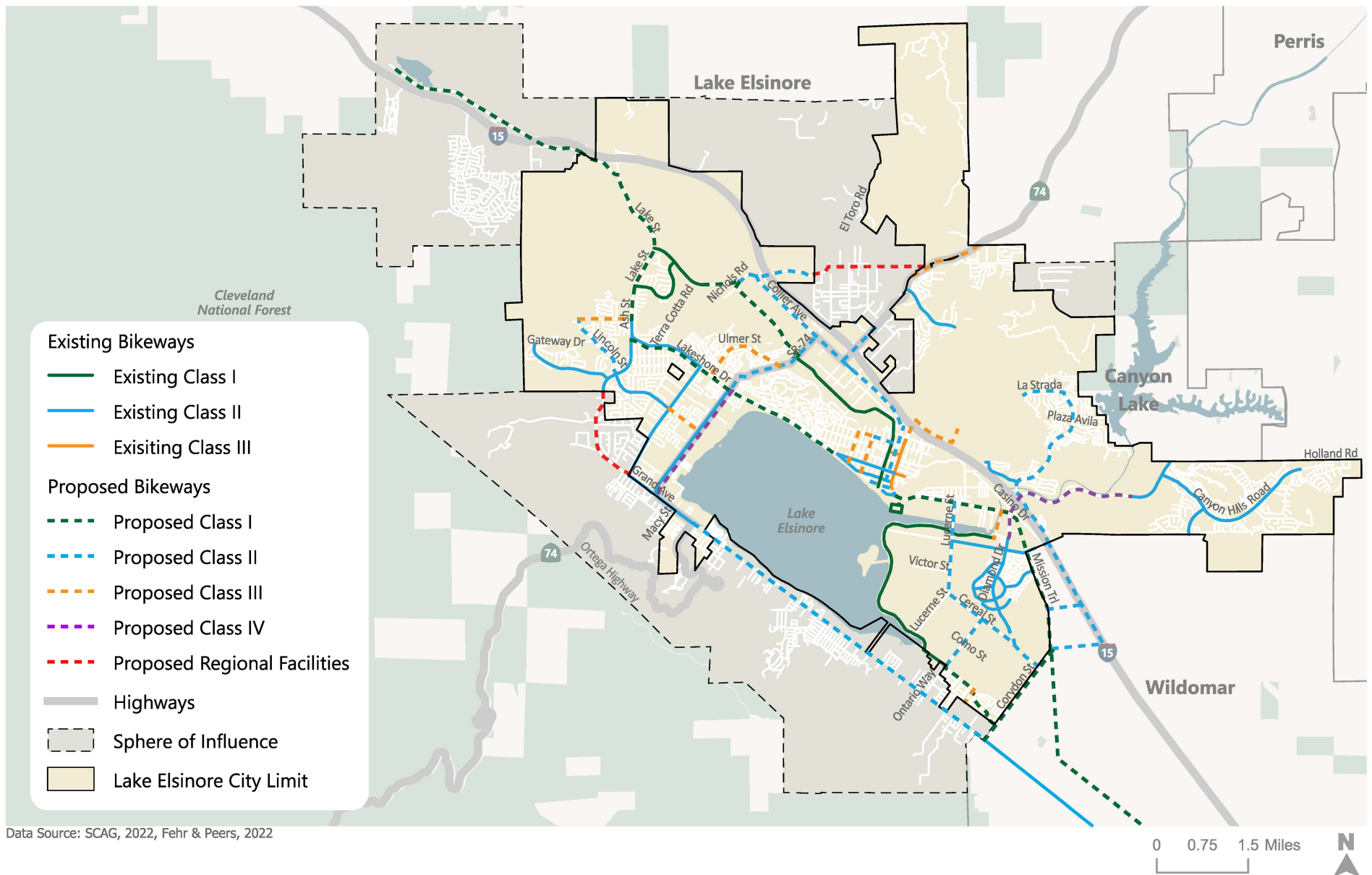


Figure 12
Existing and Proposed Bikeway Facilities

Pedestrian Network

Well-designed pedestrian and bicycle facilities are needed to make active transportation safe, accessible, attractive, and comfortable enough to be a desirable alternative to driving. It is important to provide a seamless transportation system for all modes and for all people to improve circulation. The 2011 General Plan encourages the proposal of policies and programs that facilitate pedestrian improvements.

Most of Lake Elsinore's residential streets have a speed limit of 25 miles per hour which create a pedestrian and bicycle-friendly environment along those streets.

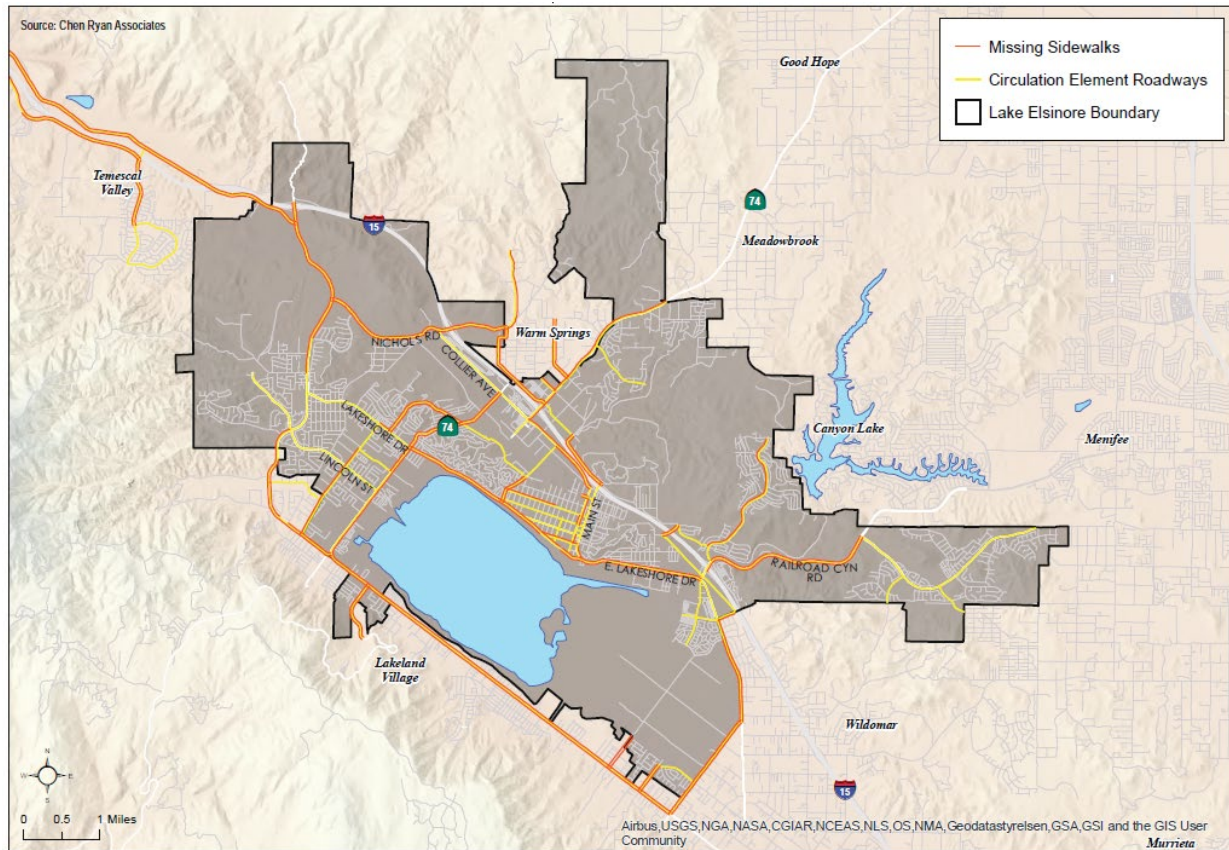
Pedestrian facilities in Lake Elsinore consist of sidewalks and crosswalks. Sidewalks are sometimes obstructed, incomplete mid-block, or damaged. Crosswalks at signalized intersections are marked and are usually provided on some approaches at major signalized intersections. Crosswalks at unsignalized intersections are generally not well marked, although crosswalks around K-12 public schools are typical marked at intersections.

The City adopted an Active Transportation Plan in October 2019 called Active LE. The plan assessed the current conditions of pedestrian facilities in the City. Figure 13 from Active LE shows the roadways identified without sidewalk.

There are opportunities to improve sidewalk continuity and mid-block crosswalks, complete sidewalks between crosswalks, and provide an optimal number of adequate crosswalks and sidewalks. Sidewalk conditions can be improved with regular maintenance and compliance measures.

Treatments such as high-visibility crosswalks, curb extensions, curb cuts, and landscaped buffers may also improve safety and accessibility for all pedestrians, particularly near schools and other activity centers where pedestrian activity is high. Providing shade trees will make pedestrians more comfortable in hot weather. These improvements can enhance the transportation experience for non-driving populations, such as older adults and children, who may use routes for short distance trips, including recreation and school trips.

Figure 13: Missing Sidewalks on Circulation Element Roadways (2019)



Source: Chen Ryan Associates (Active LE, October 2019)

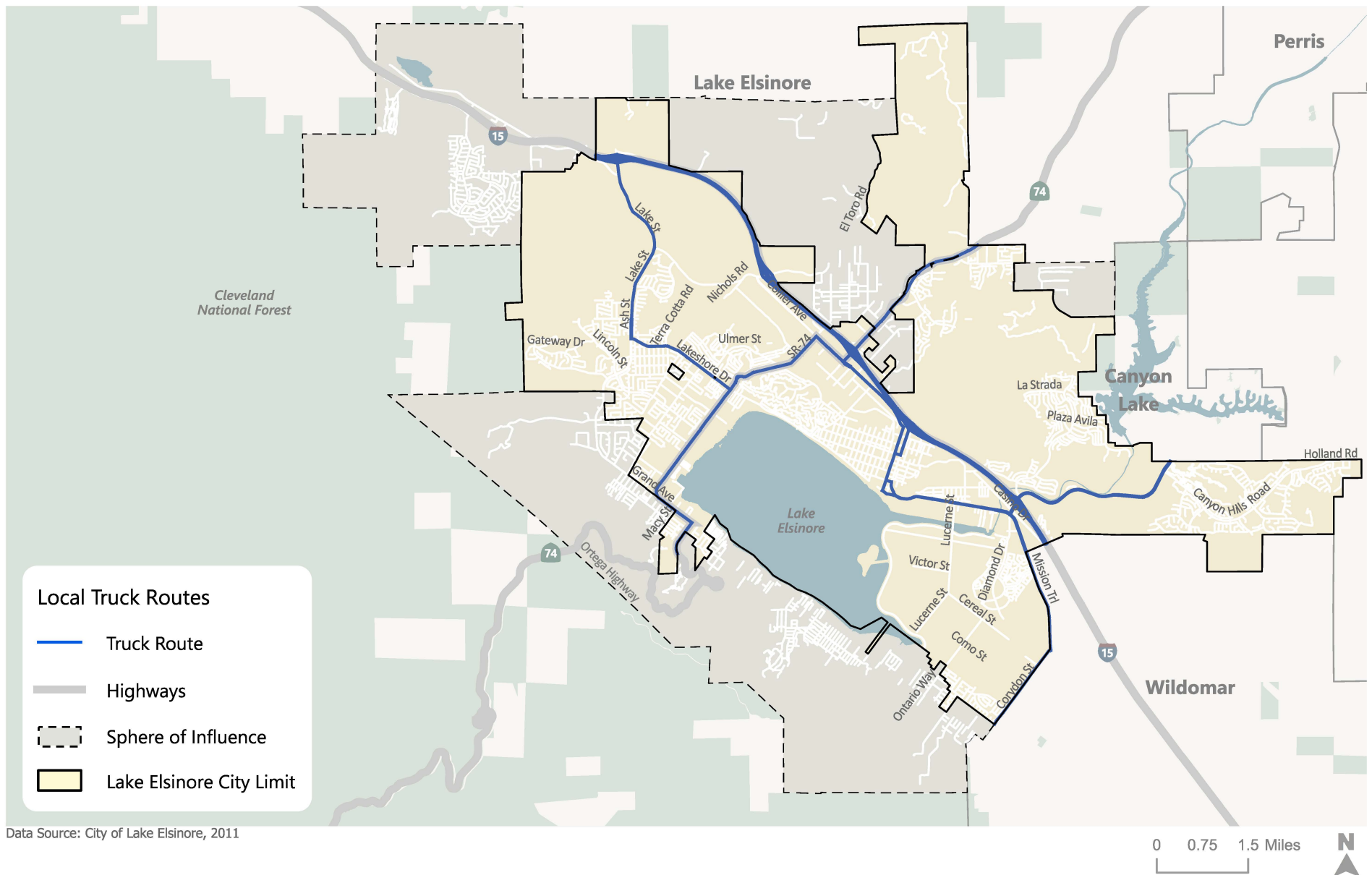
Freight and Goods Movement

Truck Routes

Goods movement plays an important role in both the circulation network and the economy of Lake Elsinore. Often, it can be difficult to accommodate trucks and other vehicles without impeding other modes or the well-being of residents. Effectively accommodating goods movement along its roadways is critical for local transportation planning.

Truck traffic on City streets is restricted to specific routes for trucks that are designated over three tons. These truck routes help to facilitate the movement of goods throughout the City, while providing a connection between major freeway facilities to local roadways. Trucks are allowed on designated routes even if they do not have an origin or destination within the City of Lake Elsinore. Figure 14 displays the truck route system in the city.

Technological innovation is presenting opportunities to improve the efficiency of goods movement in the future. In updating the Circulation Element, it will be important to consider the impact of this type of innovation and provide a flexible policy framework in response.



Other Considerations

This section discusses key items, such as the future of transportation and state regulations. The General Plan can respond to these items and set forth policies to address concerns and anticipate growing technologies.

Transportation Improvement Funding

Senate Bill 1 Transportation Funding

The California Legislature passed Senate Bill No. 1 (SB 1) in 2017. The bill focuses on transportation funding through an increase in vehicle fees and gas taxes. The increases in fees and taxes are expected to raise an average of \$5 billion per year in new revenue for road repairs, transit, and active transportation. The City can anticipate funding from these sources to assist with maintenance of existing infrastructure and construction of new infrastructure once existing roads have been brought up to a state of good repair. Measure I and SB 1 are the City's prime sources of funding for transportation improvements and maintenance. Additional funding is still needed to fund the gap in deferred maintenance of roadways.

Active Transportation Program

The Active Transportation Program (ATP) was created by Senate Bill 99 and Assembly Bill 101 to encourage increased use of active modes of transportation, such as biking and walking. The ATP consolidates various transportation programs, including the Federal Transportation Alternative Program, State Bicycle Transportation Account, and federal and state Safe Routes to School Programs, into a single program.⁶ The ATP is meant to increase the proportion of active mode trips, increase the mobility and safety of active transportation users, enhance public health, improve greenhouse gas reduction efforts, and ensure disadvantaged communities benefit from the program by dedicating 25% of program funds.

Program funding is distributed in three ways, including to the State of California, to areas with populations of 200,000 or less, and to Metropolitan Planning Organizations. In 2017, the City of Lake Elsinore was awarded a Caltrans Sustainable Communities Grant for the development of an ATP. To complement with the City vision of becoming "the ultimate lake destination" this ATP process leverages existing planning documents to foster, develop, and grow the City's bicycle, sidewalk, and trail related network. These efforts improved equity and helped reach AB 32 goals of reducing greenhouse gas emissions.

Emerging Technologies

From electric vehicles to autonomous vehicles and ride hailing services, new technology is already changing the way we move. Further developments and innovations have the potential to make travel

⁶ www.catc.ca.gov/program/ATP

safer, more convenient, and more environmentally sustainable. This section covers some of the new technologies to consider in planning for mobility through 2045.

Asphalt Repair System

The City of Lake Elsinore became the first California entity to use a promising, new in-place asphalt repair technology designed to repair local roads for good. This new road repair equipment was built by Colorado-based HEATWURX® Corporation to repair potholes and smaller road damage. For the city, the new system will save taxpayer's money, reduce the construction worker's stay on road resulting in less vehicle delay and eventually benefit the environment.

Autonomous Vehicles

California has granted permits to 65 firms allowing for self-driving cars to be tested on the street with a backup driver at the wheel. This technology has the potential to revolutionize mobility and is important to consider in updating the circulation element of the General Plan.

There are several levels of vehicle autonomy. They range from cruise control (low level of autonomy) to fully autonomous vehicles (AVs) that require no interaction with the driver. Manufacturers are developing this technology, and the Federal and State governments will likely determine regulations for a fully autonomous fleet. It is unknown how long it will take to convert all cars to autonomous vehicles or if that will ever happen. However, the expansion of AVs will likely alter travel behavior in the city. AVs are expected to make car travel less stressful, increase travel safety, and reduce operational inefficiencies on freeways, all leading to an increase in demand for automobile travel and potential farther expansion of land uses. The transition period, when streets carry large numbers of both conventional and autonomous vehicles, will involve complex interactions and require new informed analysis methods and professional judgment to address conflicts and benefits. Developing strategies that anticipate a future AV fleet and provide infrastructure to support this fleet will be an important part of the General Plan Update.

Parking utilization will be altered by the introduction of AVs. In the United States, a considerable amount of land is dedicated to parking by way of minimum parking requirements. Today there are about five parking spaces per vehicle in the United States; however, in the future as more shared AVs are available, the need for parking will likely be reduced. The General Plan Update will need to anticipate how these changes could affect the design of streets.

Electric Vehicles

Adoption of electric vehicles is becoming more widespread, and facilities for charging electric vehicles are in demand. In a car-dependent community, owning electric vehicles could be encouraged by constructing supporting facilities for them. As driving electric vehicles helps reduce emissions and supports AB 32 goals, the City of Lake Elsinore should consider guiding policies for vehicle charging infrastructure.

In this space, there could be an opportunity to create wireless charging areas for cars, bikes, micro transit, and other mobility options that can charge in these areas. As the City considers potentials retrofits of

parking areas or develops roadways, they may want to consider this potential future and incorporate specific elements to make implementation easier once an integrated platform is developed.

Solar Roadway Technology

Solar roadway is another technological advancement that is currently being researched by agencies such as the Federal Highway Administration (FHWA). Solar panel cells are embedded into the roadway to harvest solar radiation into renewable energy. The surface of the solar cells is laminated in glass and light-emitting diodes (LEDs). While there are still constraints to work through, such as surface friction, water infiltration, cost of construction/maintenance, and lower than expected energy returns, the potential for this technological advancement and others like it may be considered in the update of the General Plan policies.

Transportation Network Companies

Transportation network companies (TNCs), such as Uber and Lyft, are increasing in popularity and usage. TNCs combine web-based applications, such as mobile applications, and ridesharing vehicles. While TNCs could reduce private vehicle ownership levels, they are also likely to increase total vehicle miles traveled. The greatest factors that TNCs will affect in cities include parking, curb-space management, and transit use—especially in areas where parking is currently considered “difficult”.

When people use TNC services in place of a privately-owned automobile, the demand for parking goes down, while the demand for curbside drop-off and pick-up locations rises. As TNCs continue to rise and capture a greater share of travel modes, the City will have to identify areas where it is difficult park and develop strategies for curb space management, while reconsidering minimum parking requirements. Minimum parking requirements may be reduced or eliminated; or maximum parking requirements could be introduced in specific areas of the city.

TNCs can help improve first-last mile connections, where a person must find transportation options to get to a transit station, and from transit to their destination. The General Plan Update should consider appropriate curbside management strategies, such as areas that either prioritize or restrict passenger loading and unloading, as well as safety.

Microtransit

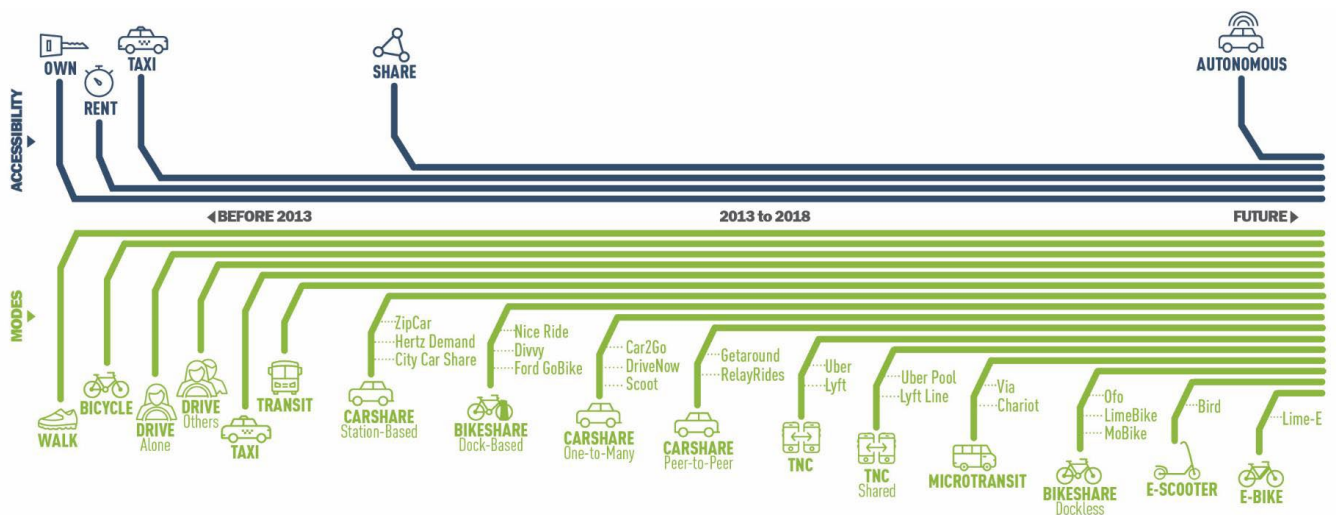
Microtransit is technology-enabled, demand-responsive transit services that are open to everyone. They can be used as incremental improvements to coverage-oriented dial-a-ride or paratransit services by suburban transit agencies, as supplements of low-performing suburban fixed route services by transit agencies, or as a premium for-profit fixed route service interlining with already overcapacity urban transit corridors. When considering a new service, a fixed-route bus is likely to best accomplish a ridership goal, while microtransit is better suited to a coverage goal that complements existing fixed-route transit service.

Mobility Hubs

Mobility Hubs can range from a small (bus shelter, bike parking, Transportation Network Company (TNC) drop-off spaces to very large (commuter rail integration with a bus transfer facility, transit plaza, bike repair station, bike share, TNC pick up, microtransit, bikeshare etc.). In Lake Elsinore, the Metrolink station currently provides the best potential to implement a robust mobility hub. While selecting a location for a mobility hub, the following components should be considered:

- Proximity to key transportation infrastructure and services,
- Easily accessible on foot or bicycle,
- Residents with low levels of mobility accessibility,
- Mixed land use, and
- Potential for future growth.

Figure 15: Disruptive trends in vehicle accessibility and travel mode



Appendix A: Major Improvement Projects

Major Improvement Projects (2016)

RTP ID	Route Name	From	To	Description	Completion Year
RIV091007	SR-74	I-15	Ortega Mountains	Widening of SR-74 from 2 to 6 lanes	2040
3M0734	I-15	Malaga Road (Overcrossing)		Construct new 4 lane overcrossing over I-15	2028
3M0736	I-15	Nichols Road (Interchange)		Reconstruct/Widen interchange from 2 to 6 lanes and reconstruct/widen ramps	2025
RIV010206 RIV010206A	I-15	Main Street (Interchange)		Widening of Main St undercrossing interchange from one lane in each direction to two lanes in each direction, reconstruct/widen and signalize ramps	2028
3M0737	I-15	Lake Street (Interchange)		Reconstruct/widen interchange from 2 to 6 lanes and reconstruct/widen ramps.	2025
RIV010206 RIV010206B	I-15	Franklin Street (Interchange)		Construct a new interchange at Franklin Street. Realign and extend existing roadways and install new traffic signals	2027
RIV010206A	I-15	Railroad Canyon Road (Interchange)		Widen Railroad Canyon Road and reconstruct/widen ramps	2025
RIV091007 RIV131127	SR-74	Hunco Way	Ortega Mountains	Widening of SR-74 from 2 to 4 through lanes (2 lanes in each direction), West of I-15 to the Ortega mountains. New traffic signal at intersection of SR-74 (Riverside Dr) and Grand Ave	2026

RIV131127	SR-74 (Grand Ave)	Riverside Drive (SR-74)	Ortega Hwy (SR-74)	Widen from 2 to 4 lanes	2035
RIV131127	SR-74 (Riverside Dr)	Lakeshore Drive	Grand Ave	Widen from 2 to 6 lanes	2030
3TC04TR10	Regional Transit Center	Lake Elsinore		Regional transit center for mass transit service in central western riverside county along I-15 corridor.	2031

Source: SCAG 2020 RTP/SCS

Memo

Date: November 17, 2025

To: Yu Tagai, City of Lake Elsinore

From: Paul Herrmann, P.E.
Marsha Phillips

Subject: Lake Elsinore General Plan Update – Vehicle Miles Traveled (VMT) Assessment

Fehr & Peers has completed an analysis of Vehicle Miles Traveled (VMT) in support of Lake Elsinore General Plan Update (GPU) Environmental Impact Report (EIR). The assessment is consistent with Senate Bill 743 (SB 743) and the *City of Lake Elsinore Vehicle Miles Traveled CEQA Threshold* (June 2020).

Approach & Traffic Modeling Methodology

The most current version of the Riverside County travel demand forecasting model (RIVCOM) was utilized to estimate VMT for the analysis scenarios. RIVCOM is WRCOG's subarea model that is locally calibrated and validated to Riverside County, and is consistent with the 2020 Southern California Association of Governments Regional Transportation Plan/Sustainable Communities Strategy (2020 SCAG RTP/SCS) with a 2018 base year and a 2045 future year. The future year land use datasets and roadway network in Lake Elsinore were updated to be consistent with a 2045 future year that reflects the build out of the 2045 No Project Condition (Approved General Plan, consistent with the SCAG RTP/SCS) and the 2045 Plus Project Condition. The roadway networks for each scenario are provided as **Figures 1–3**, and for reference, the roadway names are provided in **Figure 4**. The land use assumptions for each scenario by City boundary and Sphere of Influence (SOI) are summarized in **Table 1**.

Table 1: Land Use Inputs for the City of Lake Elsinore

Land Use	Base 2018	Existing 2025	Adopted GP 2045	Proposed GP 2045
Lake Elsinore + SOI				
Population	79,669	94,177	136,866	151,892
Households	23,377	27,957	45,954	46,610
Population per Household	3.41	3.37	2.98	3.26
Total Employment	16,066	20,456	26,799	40,795
Retail Employment	5,012	6,640	7,359	14,830
Non-Retail Employment	11,054	13,793	19,440	25,965
Service Population	95,735	114,770	163,665	192,687

Note: Existing 2025 land use inputs were estimated by interpolating between Base Year 2018 and Adopted General Plan Year 2045 data.

Source: Fehr & Peers

As shown in **Table 1**, the Proposed Plan results in an increase in employment and households as compared to the Adopted Plan when reviewing the City Boundary and SOI. Specifically, the Proposed Plan results in increases in retail and warehousing and logistics use as compared to the Approved Plan. There is also a proposed decrease in households within City Limits and increase in households in the SOI.

VMT Impact Criteria

City of Lake Elsinore Vehicle Miles Traveled CEQA Thresholds (June 2020) outlines the methodology for VMT assessment for land use projects and defines adopted thresholds of significance for impact assessment, which are defined below. This transportation impact assessment compares VMT generated by the 2045 Plus Project Condition (Proposed General Plan) to VMT generated by the 2045 No Project Condition (Approved General Plan), reviewing total VMT and per capita VMT to provide a comprehensive assessment.

CEQA VMT Impact Thresholds

The Lake Elsinore thresholds of significance for use as part of the environmental review process under CEQA, as defined in the City's VMT Impact Thresholds, are defined for General Plans and Specific Plans. The thresholds of significance are:

1. Any increase in the Citywide average VMT per Service Population of the Proposed General Plan compared to the Adopted General Plan Buildout Conditions would be considered a significant impact.
2. Any increase in the total Citywide daily VMT of the Proposed General Plan calculated using the Boundary Method compared to the Adopted General Plan Buildout Conditions would be considered a significant impact.

The VMT per Resident/Employee and Boundary VMT per service population are also presented in this assessment as reference. These methodologies and metrics are detailed below.

VTM Analysis Methodology

For all methodologies outlined, VMT can be presented as total VMT or as VMT per Service Population, Resident, or Employee. Total VMT represents all VMT generated in the City on a typical weekday. VMT per Service Population, Resident, or Employee is an efficiency metric which represents VMT generated on a typical weekday per person who lives and/or works in the City. VMT per person can be measured as VMT per Resident for residential only projects known as home-based (HB) VMT, VMT per Employee for employment only projects known as home-based-work (HBW) VMT, and VMT per Service Population for projects and land use plans which include both residential and employment uses as well as all other VMT such as shopping, school, and truck VMT. Total VMT gives an estimate of the total travel, while VMT per person measures the efficiency of travel.

Total VMT and per person estimates were calculated using the three methodologies outlined below. Please note that there are multiple methods to estimate VMT, and there are limitations in the available VMT assessment tool, RIVCOM, which is a typical four-step travel demand forecasting model. The model steps, which convert person trips to vehicle trips, limit the ability to separate trips by trip purpose (e.g. residential-based trips or work-based trips) while also accounting for all modal trips, as noted further below.

PRODUCTION/ATTRACTION VMT

The Production/Attraction (PA) method for calculating VMT sums all weekday VMT generated by trips with at least one trip end in the study area by trip purpose. The PA method tracks trips with at least one trip end in the analysis area to/from their ultimate destination unless that destination is outside of the model boundary area. Productions are land use types that generate trips (residences) and attractions are land use types that attract trips (employment). Productions and attractions are converted from person trips to vehicle trips for the purposes of calculating VMT. The PA method allows project VMT to be evaluated based on trip purpose which is consistent with the California Governor's Office of Land Use and Innovation (LCI) recommendations in the Technical Advisory.

PA matrices do not include external trips that have one trip end outside of the model boundary or truck trips, and therefore do not include those trips in the VMT estimates. This is not consistent with the LCI recommendations that suggest full accounting of VMT should be completed.

ORIGIN/DESTINATION VMT

The Origin/Destination (OD) method for calculating VMT sums all weekday VMT generated by trips with at least one trip end in the study area and tracks those trips to their estimated origins/destinations. The OD method is completed after the final loops of assignment in the travel demand model (after person trips have been converted to total vehicle trips). Origins are all vehicle trips that start in a specific traffic analysis zone, and destinations are all vehicle trips that end in a specific traffic analysis zone.

The OD method accounts for external and truck trips and therefore provides a more complete estimate of all VMT within the study area. This methodology also estimates VMT consistent with VMT estimates in Air Quality, Noise, and Energy sections of an EIR.

Unfortunately, OD trip matrices do not separate trips by trip purpose, and therefore VMT cannot be calculated by HBW attraction VMT per employee or HB production VMT per resident, but only by

total VMT. It should also be noted that, although VMT includes trips to/from the City that originate or are destined to locations outside of the model area, those trip lengths are artificially truncated at the model boundary.

BOUNDARY METHOD VMT

The boundary method is the sum of all weekday VMT on a roadway network within a designated boundary. Boundary method VMT estimates VMT by multiplying the number of trips on each roadway segment by the length of that segment. This approach includes all trips, including those trips that do not begin or end in the designated boundary and is another way to summarize VMT. This is the only VMT method that captures the effect of cut-through and/or displaced traffic. The boundary utilized in the assessment below is the Lake Elsinore City Limits Boundary including the Sphere of Influence.

HALF ACCOUNTING METHOD

Project VMT was estimated using the Half Accounting shown in Table 3 (for Greenhouse Gas (GHG) Emissions impact analysis) and Full Accounting (for transportation impact analysis) OD Methods. There are three types of trips that were considered for this analysis (trips that pass through the City are not included in the Project OD VMT forecasts):

- Internal → Internal: Trips that start within the boundary and end within the boundary
- Internal → External: Trips that start within the boundary and end outside the boundary
- External → Internal: Trips that start outside the boundary and end inside the boundary

The Half Accounting Method is referred to as the Regional Targets Advisory Committee (RTAC) method. The Half Accounting Method is used to evaluate GHG Emissions for General Plan documents (especially when looking at GHG as it relates to Climate Action Plans).

Using this methodology, 100 percent of the trip length with two trip ends within a jurisdiction is attributed to that agency, and 50 percent of the trip length with only one trip end within a jurisdiction is allocated to the jurisdiction (the other 50 percent is allocated to the jurisdiction where the other trip end is located). This accounting method also provides VMT by passenger vehicles, light heavy-duty trucks, medium heavy-duty trucks and heavy heavy-duty trucks.

VMT Forecasts and Impact Assessment

Table 2 summarizes Citywide VMT forecasts for the transportation impact assessment. As shown, the change in the land use plan results in decreases in HB VMT/resident and HBW/employee, indicating a more efficient plan. The Proposed Plan is also more efficient in every metric as compared to existing conditions. However, due to the increase in retail and warehouse uses (which also reflects increase in trucks), the VMT forecasts at the Citywide OD VMT, OD VMT/SP and Boundary level *increase*, which would therefore result in a **significant transportation impact** related to VMT.

Table 2: VMT Summary for the City of Lake Elsinore

Land Use	Existing 2025	Adopted GP 2045	Proposed GP 2045
City of Lake Elsinore + Sphere of Influence			
Population	94,173	136,866	151,892
Employment	20,258	26,799	40,795
Service Population	114,760	163,665	192,687
Total OD VMT	4,024,913	5,626,952	6,340,295
OD VMT/SP ³	35.07	34.38	32.90
HB VMT ¹	3,157,353	4,528,133	4,624,306
HB VMT/Resident	33.53	33.08	30.44
HBW VMT ²	494,662	664,959	736,634
HBW VMT/Employee	24.42	24.81	18.06
Boundary VMT	6,230,423	7,965,041	8,712,929
Boundary VMT/SP	54.29	48.67	45.22

Notes:

1. HBP VMT = Home-based production VMT; VMT generated by trips originating or ending at homes in Lake Elsinore.
2. HBWA VMT = Home-based-work attraction VMT; VMT generated by trips originating or ending at employment centers in Lake Elsinore.
3. OD VMT = Origin-Destination VMT, sum of all trips originating or ending
4. SP = Service Population; the sum of population and employment.
5. **Bolded** values indicate a significant transportation impact.

Table 3 summarizes the RTAC VMT forecasts for Existing (2025) Conditions, Approved Plan (2045) Conditions, and Proposed Plan (2045) Conditions. The data is separated by autos, light heavy-duty trucks, medium heavy-duty trucks and heavy heavy-duty trucks.

Table 3. Daily VMT (Half Accounting RTAC Methodology) for City of Lake Elsinore + SOI

Trip Type	Auto	Light Trucks	Medium Trucks	Heavy Trucks	Total VMT
Existing 2025					
Internal → Internal	283,566	1,924	1,309	955	287,755
Internal → External	1,792,040	13,523	17,686	42,763	1,866,012
External → Internal	1,708,871	13,490	17,683	42,676	1,782,721
RTAC VMT					2,112,121
Approved General Plan (2045)					
Internal → Internal	375,654	2,435	1,510	1,155	380,753
Internal → External	2,415,068	16,292	20,512	50,235	2,502,107
External → Internal	2,276,908	16,194	20,439	49,797	2,363,339
RTAC VMT					2,813,476
Proposed General Plan (2045)					
Internal → Internal	486,843	3,807	2,745	2,138	495,532
Internal → External	2,606,086	20,008	27,531	67,828	2,721,453
External → Internal	2,545,721	19,926	27,478	67,392	2,660,519
RTAC VMT					3,186,518

Source: RIVCOM Model; Fehr & Peers, 2025.

Notes:

1. RTAC VMT = 100% internal-internal + 50% internal-external + 50% external-internal

Lake Elsinore Goals, Policies, and Actions related to VMT Reduction

This section outlines some of the goals, policies, and actions aimed at reducing Vehicle Miles Traveled (VMT), from the City of Lake Elsinore's General Plan update.

Goal 1: Meet the mobility needs of all users who live in, work in, or visit Lake Elsinore, and encourage sustainable travel options.

Policies:

- Balance the needs of all users of all ages and abilities by requiring complete streets provision for all new streets.
- Build upon the principle and vision of Active LE managed by Public Works to provide a robust network for riders, walkers, and rollers to use for transportation and recreation.
- Partner with local and regional transit agencies such as Riverside Transit Authority to make transit a viable option for city residents, workers, and visitors. Encourage Transit-Oriented Development (TOD) through policies in the Land Use Element, such as creating mobility hubs near major attractions such as the Outlets at Lake Elsinore and Main Street.
- Enhance user experience with strategically placed scooter- or electric bicycle charging and share stations in more densely populated areas through private-public partnerships. Leverage the area's recreational activities to include city-to-trail facilities.

Goal 2: A transportation network that remains flexible and adaptive to its surrounding context and changes in mobility.

Policies:

- Maximize efficiency and safety through innovative intersection and street designs. Balance the speeds and movements of vehicles with the safety and comfort of non-motorized users.
- Require new developments, including Accessory Dwelling Units (ADUs), to reduce VMT with Transportation Demand Management (TDM) strategies. Target major land use developments, especially those with 100 or more employees. These can include incentives for carpooling, transit use, active transportation, parking credits, etc, which will be managed by the Planning Department.

Goal 4: A transportation network that meets and exceeds the needs of users today while ensuring a healthy environment for tomorrow.

Policies:

- Mitigate Vehicle Miles Traveled (VMT) and greenhouse gases with smart land use planning (reference Land Use Element), such as infill development, and promotion of modes other than single occupants.
- Develop a citywide charging network for a wide range of mobility options, from vehicles to bicycles to scooters.
- Leverage mobility technologies and innovations to enhance the livability of residents and visitors. Partner with new mobility companies, such as Transportation Network Companies (TNC) or microtransit to fill gaps in first/last mile travel. Design for autonomous vehicles (Avs) in street elements, parking, and connected cities.

These policies and actions can greatly help mitigate VMT by implementing measures designed to invest in smart land use like Transit Oriented Development (TOD) and utilize Transportation Demand

Management (TDM) strategies when planning for housing. Additionally, these policies aim to improve bicycling and transit networks to encourage daily use of transit, carpooling, and other non-motorized vehicles like bicycles and scooters.

Many of these policies have already been accounted for in the future VMT forecasts and therefore additional reductions associated with these policies would not be appropriate. These policies are intended to reduce VMT, though, the amount of VMT reduction potential is dependent on the level of implementation of each measure. Since there are not many defined projects, it is difficult to measure a quantifiable reduction in VMT to apply to the project estimates. Even with full implementation of the policies, the City cannot guarantee that these policies alone would be enough to reduce the VMT impact to a less-than-significant level.

Lake Elsinore Climate Action Plan

Fehr & Peers supported the City of Lake Elsinore's Climate Action Plan (CAP) (prepared by Ascent) by evaluating the potential Vehicle Miles Traveled (VMT) reductions achievable through land use and transportation strategies. The purpose of this work was to quantify how various measures could shift trips away from single-occupancy vehicle use or reduce trip lengths.

VMT reduction measures generally aim to provide alternatives to driving and/or reduce the need for long-distance travel. Examples include:

- Promoting higher-density, mixed-use development
- Improving public transit service and coverage
- Enhancing active transportation infrastructure
- Implementing telecommuting policies
- Encouraging carpooling or ride-sharing programs

In coordination with City staff, Fehr & Peers analyzed 16 VMT mitigation measures applicable to Lake Elsinore across the following categories:

- Land Use
- Trip Reduction Programs
- Parking Management
- Transit
- Neighborhood Design

The range of VMT reduction potential is based on the level of implementation, as outlined in the *Lake Elsinore CAP VMT Reduction Memorandum* (November 2025), which provides additional detail on the methodology, assumptions, and descriptions of each measure. Based on the methodologies documented in the assessment, the combined measures at highest implementation are estimated to result in a 1.628% maximum VMT reduction for the year 2045, which is insufficient to reduce VMT to a less-than-significant level.

WRCOG VMT Exchange Program

The Western Riverside Council of Governments (WRCOG) is in the process of designing a Voluntary Exchange Program to help developers and project sponsors mitigate VMT impacts. The program will allow developers of projects to purchase VMT reduction credits. These credits would be generated by public agencies through real-world transportation improvements, such as active transportation,

transit, or other eligible VMT-reducing projects. These credits can then be applied to offset VMT increases associated with new development or infrastructure projects.

Based on current WRCOG estimates, the average cost per VMT for affordable housing projects on the exchange is anticipated to range between \$0.10 and \$0.22 per VMT, with an average of approximately \$0.14 per VMT. These estimates are location dependent and not defined for Lake Elsinore yet, and it is unclear how many projects may be available within Lake Elsinore. It should be noted that these figures are preliminary and reflect ongoing work by WRCOG to refine the VMT Exchange Program. As such, they represent a lower-bound estimate of potential mitigation costs. Once the program is active, the City of Lake Elsinore would need to formally join the agreement to make use of the VMT credit system. Until that time, credits cannot be purchased or applied to offset VMT impacts from this project.

Conclusion

The Proposed Plan has many advantages related to VMT as compared to the Adopted Plan, including in most cases a more efficient land use mix that results in less miles traveled per person (HB VMT/Resident and HBW VMT/Employee). However, the total miles traveled within the City (OD VMT, OD VMT/SP, and Boundary VMT) is anticipated to be higher in the Proposed Plan than the Adopted Plan, which results in a significant transportation impact related to VMT. This is primarily due to the increase in population, commercial customers, and trucks accommodated by the Proposed Plan. Even with the additional goals, policies and actions related to VMT reduction identified as part of the Proposed Plan, which are not reflected in the traffic modeling, the project is not anticipated to reduce the impact of increased total VMT to a less-than-significant level, resulting in a **significant and unavoidable transportation impact related to VMT**.