CITY OF LAKE ELSINORE GENERAL PLAN UPDATE

ANNOTATED RECIRCULATED DRAFT EIR

SCH #2005121019

APPENDIX B

CITY OF LAKE ELSINORE BACKGROUND REPORTS

PREPARED FOR:

CITY OF LAKE ELSINORE
130 SOUTH MAIN STREET
LAKE ELSINORE, CA 92530

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(RESOLUTION NO. 2011-070)

Prepared For:

City of Lake Elsinore General Plan

Background Reports

January 2006

CITY OF LAKE ELSINORE GENERAL PLAN – BACKGROUND REPORTS

1. Land Use and Recreation
2. Transportation
3. Biological Resources
4. Air Quality
5. Noise
6. Water Resources
7. Cultural, Historical, and Paleontological Resources
8. Population and Housing
9. Aesthetic and Visual Resources
10. Community Services and Utilities
11. Hazards and Hazardous Materials
12. Geology and Mineral Resources

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INTRODUCTION

The last General Plan update for the City of Lake Elsinore was in 1990. The City has experienced a lot of change in the last 15 years and is in need of updated goals, objectives, and policies that will guide development in the City and sphere of influence (SOI) and reflect the community's vision for the future. A figure of the City and associated SOI is shown in Figure i and a graphic of an aerial of the City is shown in Figure ii.

California State law as specified by Government Code §65300-65303.4 requires every jurisdiction to prepare a comprehensive, long-term General Plan to plan for the physical development of the City. The law requires mandatory elements including land use, circulation, housing, conservation, open-space, noise, and safety. As long as all of the elements are compatible and consistent with each other, the law leaves the organization and representation of this information to the discretion of the city or county. In addition, state law encourages jurisdictions to include additional elements that are deemed necessary or useful to plan for the physical development of the city or county.

The General Plan update for the City of Lake Elsinore includes three documents including Land Use Policies that are used to describe guiding principles, a Background Report assessing existing conditions, and an Environmental Impact Report (EIR) that is used to determine the impact that the changes implemented by the updated General Plan will have on the City.

The regulatory environment and existing conditions of each of the following topics were analyzed to determine what the opportunities and constraints are for planning land uses in the City and SOI:

- Land Use and Recreation
- Transportation
- Biological Resources
- Air Quality
- Noise
- Water
- Cultural/Historical/Paleontological Resources
- Population and Housing
- Aesthetics and Visual Resources
- Community Services and Utilities
- Hazards and Hazardous Materials
- Geological Resources

While public outreach is an influential and integral part of the General Plan Update process, the background report serves as an essential component for updating the Land Use Policies document and the EIR. The Report presents background information for why land use designations were maintained or changed and justification for updated goals and objectives that will be used to guide the future development of the City.

It should be noted that this Background Report is a "snapshot" of current conditions.

City Limits
Sphere of Influence

Source: City of Lake Elsinore, County of Riverside

Mooney • Jones & Stokes

10/05/05: /GIS/elsinore/mxd/figistdy

0 6,500 13,000
Feet

Study Area Boundaries
City of Lake Elsinore &
Sphere of Influence (SOI)
Figure i

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City Limits
Sphere of Influence

Source: City of Lake Elsinore, County of Riverside

Mooney · Jones & Stokes

10/05/05: /GIS/elsinore/mxd/figiistdy

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2004 Aerial Photo
City of Lake Elsinore &
Sphere of Influence (SOI)
Figure ii

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CHAPTER 1 – LAND USE AND RECREATION

Introduction

This report assesses land use and recreation in the City of Lake Elsinore and its associated sphere of influence (SOI). The regulatory environment and existing conditions will be assessed and analyzed to determine associated constraints and opportunities. The purpose of this discussion is to use the information as a resource for updating the General Plan for the City of Lake Elsinore.

Legal Basis and Requirements

Hang gliding over hills near Lake Elsinore.

Government Code Section 65302(a) states the General Plan shall include a land use and parks and recreation element "that designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land. The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan."

Terminology

The following is a brief background discussion of land use and recreation terminology.

- **Affordable Housing:** The US Department of Housing and Urban Development (HUD) defines affordable housing as housing for which the occupant pays no more than 30 percent of gross income for housing costs, including utilities.

- **Environmental Impact Statement (EIS):** A document required by the federal National Environmental Policy Act (NEPA) for major projects or legislative proposals using federal money that significantly affect the environment. An EIS describes the environmental implications of a project and lists alternative actions.

The report informs decisions makers and the public of the alternatives that would avoid or minimize adverse impacts or enhance the quality of the environment.

- **Environmental Impact Report (EIR):** A document required under the California Environmental Quality Act (CEQA) that assesses the impacts a proposed project will have on the environment and proposes mitigation measures.

- **Farmland of Local Importance:** Lands not identified as having national or statewide importance, but identified by local or concerned agencies for the production of food, feed, fiber, forage, and oilseed crops.

- **Other Land:** Land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than forty acres.

- **Prime Farmland:** Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

- **Redevelopment:** Redevelopment is a tool created by state law to assist local governments in eliminating blight from a designated area.

- **Sphere of Influence (SOI):** A plan, adopted by LAFCO, for the probable physical boundaries and service areas of a city or district.

- **Unique Farmland:** Land other than prime farmland that is used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods.

Regulatory Environment

- National Environmental Policy Act (NEPA)
- Cleveland National Forest
- California Environmental Quality Act (CEQA)
- Farmland Mapping and Monitoring Program
- State Mining and Reclamation Act of 1975
- Quimby Act

- The Local Agency Formation Commission (LAFCO)
- Southern California Association of Governments (SCAG)
- Riverside County General Plan
- City of Lake Elsinore General Plan
- City of Lake Elsinore Zoning Ordinance
- City of Lake Elsinore Specific Plans
- City of Lake Elsinore Redevelopment Districts
- Multiple Species Habitat Conservation Plan (MSHCP)

Existing Land Use and Recreation Conditions

Land Uses

The land area of City of Lake Elsinore is approximately 38 square miles with a sphere of influence (SOI) covering over 78 square miles. The SOI, adopted by the Riverside County Local Agency Formation Commission (LAFCO) represents the probable future boundaries and service area of the City.

The General Plan currently designates 19 land uses (shown in Figure 1.1), including the Specific Plan Areas (shown in Figure 1.2). Table 1.1 below lists the land uses, their associated acreage, and the percentage in relation to the total square acreage of the City. This table also includes the total acreage encompassed by streets. The following tables represent current data as of mid July 2005.

Example of tract housing development in the City.

Table 1.1 General Plan Land Uses in City Boundaries

General Plan Name	Acreage	% of Total Land Use
Business Park	158	0.68%
Commercial Office	22	0.10%
Floodway	208	0.90%
Freeway Business	380	1.65%
General Commercial	318	1.38%
High Density	47	0.20%
Lake Elsinore	2,791	12.12%
Limited Industrial	298	1.29%
Low Density	487	2.11%
Low Medium Density	1,443	6.27%
Medium Density	189	0.82%
Medium High Density	234	1.02%
Mixed-Use	22	0.10%
Neighborhood Commercial	98	0.43%
Open Space/Recreation	157	0.68%
Public/Institutional	303	1.32%
Specific Plan Area	15,295	66.40%
Streets	146	0.64%
Tourist Commercial	35	0.15%
Very Low Density	403	1.75%
Total Acres	**23,036**	**100.00%**

Source: City of Lake Elsinore

As demonstrated by Table 1.1, two thirds of land use within the City of Lake Elsinore is within Specific Plan Areas. The following is a list of Specific Plans both within the City and SOI and depicted in Figure 1.2.

- Spyglass Ridge
- Brighton Alberhill
- Canyon Creek
- Cape of Good Hope
- Canyon Hills
- East Lake
- La Laguna
- Murdock Alberhill
- North Alberhill
- North Peak
- Outlet Expansion
- Ramsgate
- Tuscany Hills
- Lakeshore Village

Existing land uses within the City of Lake Elsinore are presented in Table 1.2 below. Figure 1.3 is a map of existing land uses within the City and SOI.

Table 1.2 Existing Land Uses Within City Limits

City: Existing Land Use	Acres
Agriculture	102.04
Commercial	368.03
Institutional	111.09
Manufacturing/Industrial	653.80
Parks/Open Space	267.11
Public/Utility	132.80
Residential	3,147.31
Transportation	465.61
Vacant	16,029.46
Water	3,537.50
Total	**24,814.75**

Source: SCAG 2001

Existing land uses within the SOI are demonstrated in Table 1.3 below.

Table 1.3 Existing Land Uses Within the Sphere of Influence (SOI)

Sphere of Influence: Existing Land Use	Acres
Agriculture	772.31
Commercial	478.54
Institutional	230.12
Manufacturing/Industrial	1399.18
Parks/Open Space	322.68
Public/Utility	137.58
Residential	8099.29
Transportation	597.92
Vacant	34,267.03
Water	3798.81
Total	**50,103.46**

Source: SCAG 2001

Residential

As nearby areas such as San Diego County, Orange County, and Los Angeles become less affordable, people are beginning to move to cities such as Lake Elsinore for the relatively inexpensive housing. As a result, home prices in Lake Elsinore have risen considerably in the last several years. DataQuick Information Systems reports that sales of re-sale single-family homes, condominiums, and new homes averaged $253,000 in 2003 and increased by 29.25% to $327,000 in 2004.

Neighborhoods

There are a number of distinct neighborhoods within the City of Lake Elsinore often defined by the name of a Specific Plan. For example, residents describe themselves as being from Tuscany Hills or Canyon Creek, which are both Specific Planning areas. Other neighborhoods are defined by the development name, such as Country Club Heights. Neighborhoods are also defined by common characteristics, such as the historic downtown area, or in neighborhoods defined by location or geography.

Commercial/Industrial

As housing gets progressively more unaffordable in nearby Orange and San Diego County, people are increasingly living farther away, more willing to commute long distances to job centers in other counties. There is a desire to increase the number of higher paying jobs in Lake Elsinore to accommodate the growing population.

Existing commercial and industrial uses are scattered throughout the City. The major commercial centers include the Lake Elsinore Outlets located on Collier Avenue; the new Target shopping center recently approved which will also feature Costco and a home improvement store; and a development called "City Centre" that has a Wal-Mart and Vons. Due to its attraction as a tourist and recreation destination, there is interest in developing a strong retail base in Historic Downtown Main Street.

Recent office buildings constructed within City boundaries.

To accommodate tourists, Lake Elsinore has a shortage of hotels, motels, resorts, campgrounds, and RV parks, including the Lake Elsinore Resort and Casino.

Lake Elsinore has a strip of automobile dealerships located adjacent to I-15 including Lake Chevrolet, Shalimar Auto Sales, Brea Auto Sales, and Lake Elsinore Ford. Additional auto dealerships are slated for future development.

Agricultural

According to the Southern California Association of Governments (SCAG), the existing City of Lake Elsinore General Plan Area encompasses approximately 24,815 acres of land, ranging from older urbanized areas to newer subdivisions to large tracts of agriculture and open space. According to SCAG, 554 acres of land within the City are considered farmland of local importance; 827 acres area considered grazing land; and unique farmland accounts for 25 acres. The location of existing agricultural land uses can be seen in Figure 1.3. Lands classified as Farmland of Local Importance are primarily located in the southeast area of the City, between the northeast edge of Lake Elsinore and the southern City limits, and in the Cottonwood Specific Plan area.

Floodplain

There are several floodplain areas within the City of Lake Elsinore as seen in Figure 6.1 of the water resources chapter. These include the floodplain around the lake, to the east of the lake in the East Lake Specific Plan, along Temescal Wash, along the San Jacinto River from Canyon Lake, also known as Railroad Canyon Reservoir, and along Alberhill Creek.

Open Space

The existing General Plan Land Use designations exhibited in Figure 1.1 shows areas designated as open space within the City. Open space on land that contains endangered species and habitat may be designated for permanent preservation under the MSHCP. Land on steep slopes is difficult to develop and therefore will also likely remain as permanent open space. Land currently within the floodplain of local drainages including Lake Elsinore and Temescal Creek are currently vacant to avoid flooding. Additional open space exists although a lot of this land is designated for future development. Vacant land can be seen in the vacant lands inventory shown in Figure 1.5.

The Multiple Species Habitat Conservation Plan (MSHCP)

The MSHCP was adopted by the Riverside County Board of Supervisors on June 17, 2003 and has 16 area plans including the Lake Elsinore Area Plan that includes the City of Lake Elsinore and the City of Canyon Lake. The MSHCP is intended to conserve natural habitat and preserve biological and ecological diversity in Western Riverside. Chapter 3 of this report, biological resources, explains the MSHCP in greater

detail. The target conservation acreage range within the City of Lake Elsinore is 4,830 – 7,870 acres.

Existing endangered and threatened species in the Lake Elsinore Area Plan include the coastal California Gnatcatcher, least Bell's vireo, Stephens' Kangaroo rat, the Quino checkerspot butterfly, and many others. The MSHCP has identified particular areas within Lake Elsinore where land should be preserved to maintain core and linkage habitat for the identified species. It is the intention of the MSHCP to set aside land as permanent open space. Management independent of the City is responsible for maintaining and managing the reserve.

Parks and Recreation

Parks and recreation in the City of Lake Elsinore are enhanced by the City's natural resources such as the lake, mountains, and rugged hillsides. The City has 11 parks, the Lake Community Center, a Senior Activity Center, and playing fields for 9 local youth and adult sports leagues. Over 1,000 people use the Community Center each week, 3,500 seniors regularly use the Senior Activity Center each month, and there are 3,000 sports leagues participants. The Lake Community Center sponsors 40 recreational classes. A recently built skate center adds diversity to the collection of recreational facilities offered by the City. The City prides itself on creating community through people, parks and programs.

Gazebo in City Park on Main Street near City Hall.

The Lake

Recreational Event on Lake Elsinore.

Lake Elsinore is a freshwater lake of approximately 3,000 acres. City operated lake-oriented recreational facilities include the Seaport boat launch, Lake Elsinore Recreation Area Campground and boat launch, and the day use & beach area. Other launches and marinas include the Elsinore West Marina, Cranes Lakeside Park, Roadrunner R.V. Park, and Weekend Paradise.

When the lake is at a sufficient level, a number of water sports are enjoyed including recreational boating, sailing, water skiing, parasailing, windsurfing, wakeboarding, swimming, and jet skiing. There are a number of organizations near the lake that rent

water sports equipment. When conditions allow, events are held annually including the Wakeboarding World Championship Series and the National Water Ski Racing Association races. Sports fishing and competitive fishing tournaments are also held throughout the year.

Lake Elsinore Diamond baseball stadium, opened 1994.

Baseball Field

The Diamond is a state-of-the-art baseball park featuring a Class A California League Baseball team, Lake Elsinore Storm, that is an affiliate of the San Diego Padres. The park was built with funds from the Redevelopment Agency and adds value to the City's image as a recreation and tourism destination. The park has 6,066 fixed seats, luxury suites and a grass berm seating area on the right field line, accommodating a total of 8,000 people.

Airport

The Skylark Airport is a private airport that is the hub for air sports in Lake Elsinore and accommodates organizations such as Adventure Flights who uses the airport for Glider flights, and Skydive Elsinore, who uses the airport as their base for skydiving. The airport has a total of 31 planes based on the field including 21 single engine airplanes, 5 multi-engine airplanes, 4 glider airplanes, and 1 ultralight plane.

City of Riverside

Elsinore Area Plan: Policy Areas

The County of Riverside Elsinore Area Plan has designated a number of "Policy Areas" that are located outside the City of Lake Elsinore but within the sphere of influence with the exception of the Skylark Airport Influence Area which is mainly in the City. The Elsinore Area Plan defines Policy Areas as specific geographic districts that "contain unique characteristics that merit detailed attention and focused policies." Many of the policies were a result of lengthy citizen involvement over many years and are considered an integral part of the planning process for how the Lake Elsinore area should be developed. The policies may impact the underlying land use designations. The Policy Areas are seen in the County of Riverside's Elsinore Area Plan labeled as Figure 1.6.

Constraints and Opportunities

Constraints Due to Regulatory Requirements

Land Use

Redevelopment

For two years in a row, the Redevelopment Agency (RDA) tax increments have been cut due to the State of California's budget problems. RDA was in financial trouble during the recession of the 1990's, but was able to repay bondholders with assistance from the City and a private bank. Although RDA is once again financially healthy, the RDA is limited to conservative and prudent budgeting as a cushion against the State's confiscatory policies.

Zoning Ordinance

A Zoning Ordinance must be consistent with the General Plan and if land uses are changed and new designations are applied, there is a potential for inconsistencies and therefore conflicts with the Zoning Ordinance.

Multiple Species Habitat Conservation Plan (MSHCP)

The Multiple Species Habitat Conservation Plan (MSHCP) has the potential to constrain new development within the City due to the requirement of land to be set-aside as permanent open space. The MSHCP Elsinore Area Plan designates general areas within the City as areas in need of conservation. Examples include wetlands around Lake Elsinore and the floodplain to the east of the lake. The plan also identifies the need to provide connectivity between the Santa Ana Mountains, Temescal Wash and the foothills north of Lake Elsinore that may require some of these areas to remain at least partially undeveloped.

Other Constraints

The State Mining and Reclamation Act of 1975 can potentially constrain the location of certain land uses in areas with mineral resources.

FEMA lists areas within the City as areas within the floodplain. This may pose a constraint to developing within the floodplains. Other federal agencies restrict the way land is used by requiring permits such as the United States Army Corp of Engineers and United States Fish and Wildlife Service.

Recreation

Quimby Act

The Quimby Act is the city's primary tool in acquiring parklands. The Act allows the City to require the dedication of local park acreage, the payment of fees, or a combination of both as part of the subdivision process. Maintaining existing land uses and designations restricts the ability to collect additional development fees as permitted by the Quimby Act. With existing land uses, there is an established and known amount of development still permitted in Lake Elsinore.

MSHCP

The MSHCP may reduce the amount of land that is available for development. The required preservation of open space would not be available for active recreational uses. To be effective, large pieces of vacant land must be preserved to support the species identified in the Plan. Land that is vacant and would be prime park and recreational use have the potential to be set aside as permanent open space to support the goals of the MSHCP.

Constraints Due to Existing Conditions

Land Use

Existing conditions that have the potential to constrain implementation of development and application of new land use designations within the City include physical characteristics such as flood hazards, steep slopes, endangered species and habitat, unstable slopes, liquefaction, and active faults. Small, undevelopable parcels, non-contiguous ownership, and parcels outside of water and sewer districts also pose constraints to the application of new land uses and designations. The overuse of the Specific Plan land use designation (66%) has created an additional constraint. Numerous Specific Plan amendments and development agreements have created difficulty for staff in following what planning programs have been approved. The Specific Plan land use designation on the land use map prevents the City from presenting a vision of future land use in the City as required in the State Office of Planning and Research (OPR) guidelines for General Plans.

New development creates impacts on infrastructure including roads, parks, utilities, and schools. If new plans include the potential for increased density for commercial, residential, or industrial uses, this can put a strain on existing infrastructure.

Opportunities

Land Use & MSHCP

An opportunity to enhance regulatory requirements is regarding the jobs/housing balance goal for SCAG. Due to the imbalance of more housing than jobs, the City of Lake Elsinore can include additional commercial and industrial uses to offset the imbalance. The City can also zone for additional multi-family units to address housing needs for low and moderate-income residents.

New land use designations can help address existing and future environmental conditions within the City by maintaining wildlife corridors and other areas of open space for the preservation of endangered species and habitat as outlined in the MSHCP. New development can be clustered in areas of existing development, or on vacant land with minor environmental significance.

Recreation

Updating the General Plan offer the City an opportunity to designate more land for parks and recreation. As the population grows, and more people are attracted to the area, the City has the opportunity to maintain and enhance its image as a recreational destination by providing additional opportunities for residents and tourists to enjoy the lake and surrounding natural features.

Additional fees for parks and recreation can be collected as permitted by the Quimby Act as more development occurs in the City. By increasing density or allowing additional development, more fees will be collected that can be used towards adding new parks or improving existing parks. There is also the opportunity to implement policies to include parks as part of a development.

With the growing population, there will be need for additional parks and recreational facilities. The City has the opportunity to re-assess recreational needs and designate new land accordingly.

City Limits
Sphere of Influence
Planned Developments

Existing General Plan (City only)

- NEIGHBORHOOD COMMERCIAL
- COMMERCIAL OFFICE
- GENERAL COMMERCIAL
- TOURIST COMMERCIAL
- ELSINORE CITY CENTER
- MIXED USE
- BUSINESS PARK
- FREEWAY BUSINESS
- LIMITED INDUSTRIAL
- VERY LOW DENSITY
- LOW DENSITY
- LOW MEDIUM DENSITY
- MEDIUM DENSITY
- MEDIUM HIGH DENSITY
- HIGH DENSITY
- SPECIFIC PLAN AREA
- OPEN SPACE/RECREATION
- PUBLIC/INSTITUTIONAL
- LAKE ELSINORE
- FLOODWAY

General Plan Adopted 7-Oct-2003 (County)

- Estate Residential
- EDR-RC
- Very Low Density Residential
- VLDR-RC
- Low Density Residential
- LDR-RC
- Medium Density Residential
- Medium High Density Residential
- High Density Residential
- Highest Density Residential
- Very High Density Residential
- Commercial Retail
- Commercial Tourist
- Commercial Office
- Community Center
- Light Industrial
- High Industrial
- Business Park
- Public Facilities
- Mixed Use Policy Area
- Rural Residential
- Rural Mountainous
- Rural Desert
- Agriculture
- Conservation
- Conservation Habitat
- Open Space Recreation
- Open Space Rural
- Water
- Mineral Resources
- Indian Lands
- CITY

Source: City of Lake Elsinore, County of Riverside

Mooney · Jones & Stokes

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Existing General Plan
Figure 1.1

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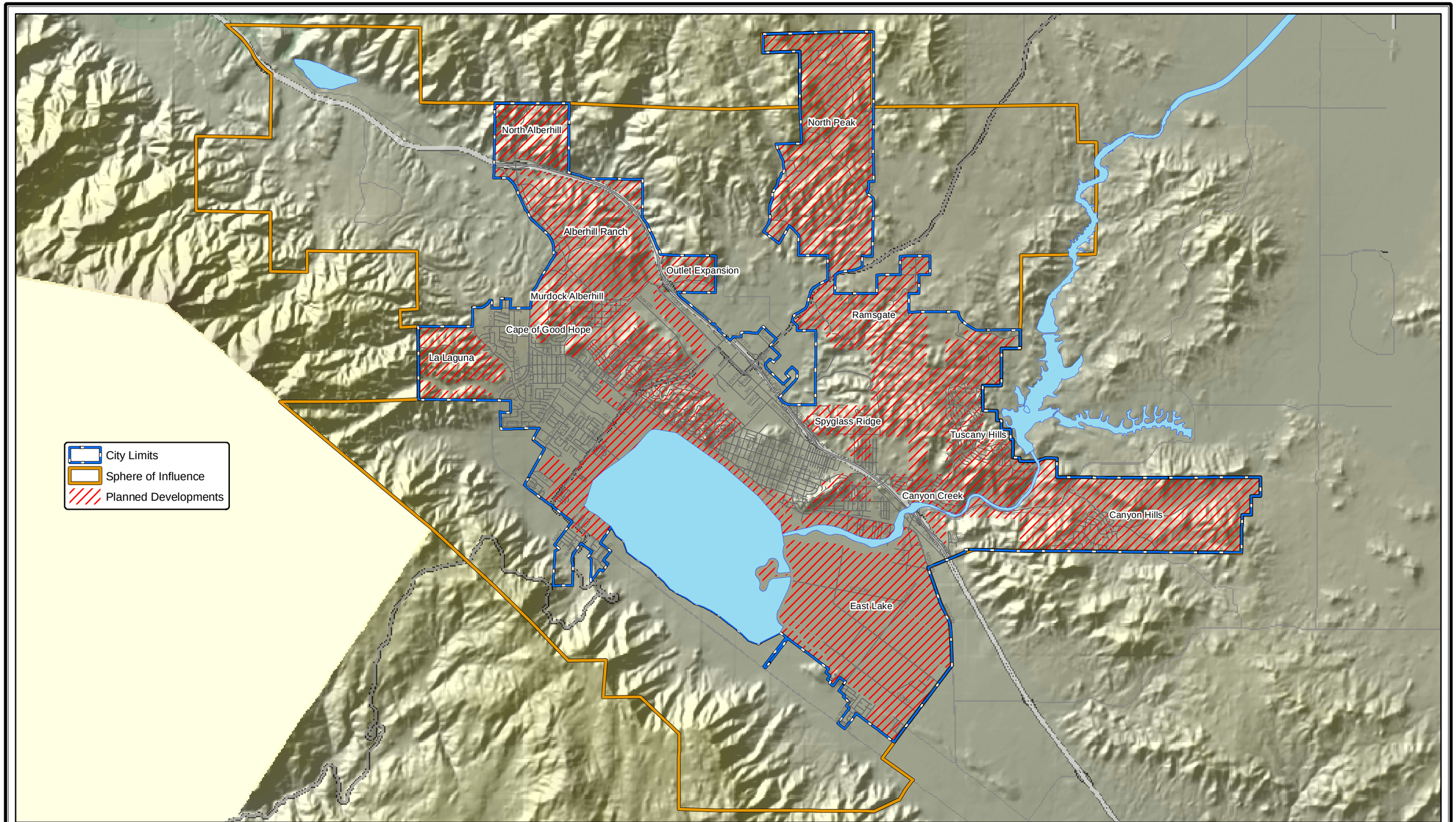

Source: City of Lake Elsinore, County of Riverside

Mooney · Jones & Stokes

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Specific Plans in Lake Elsinore
Figure 1.2

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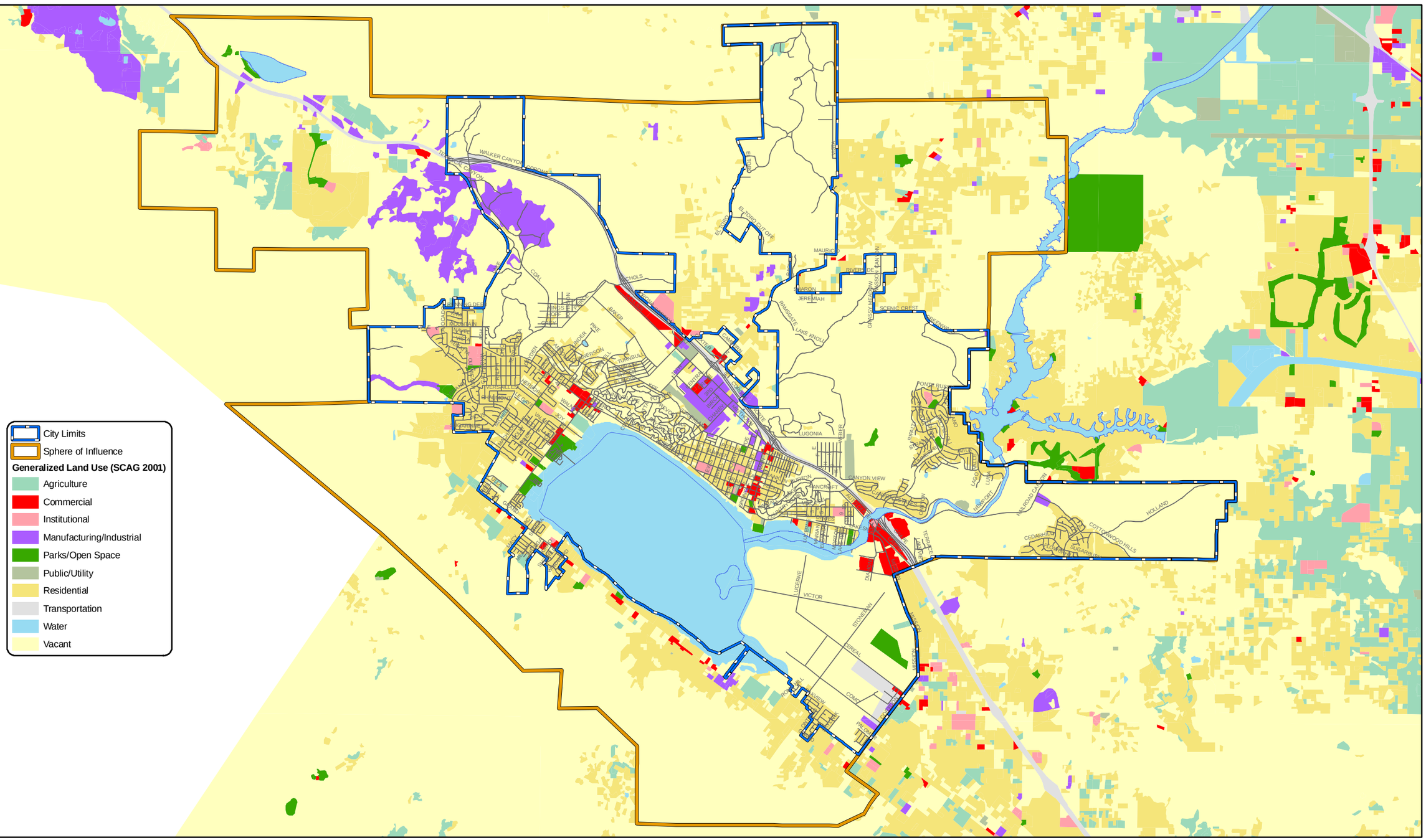

Source: City of Lake Elsinore, County of Riverside, SCAG

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Existing Land Use (2001)
Figure 1.3

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City Limits
Sphere of Influence

Farmlands

- Urban;D
- Grazing land;G
- Farmland of local importance;L
- Farmland of local potential;LP
- Prime farmland;P
- Farmland of statewide importance;S
- Unique Farmland;U

Source: State of California (CALSIL, 2000)

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0 6,500 13,000

Feet

State of California
Farmlands of Significance
Figure 1.4

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City Limits
Sphere of Influence
Undeveloped/Vacant Lands

Source: City of Lake Elsinore, County of Riverside

Mooney · Jones & Stokes

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Vacant Land Inventory (2004)
Figure 1.5

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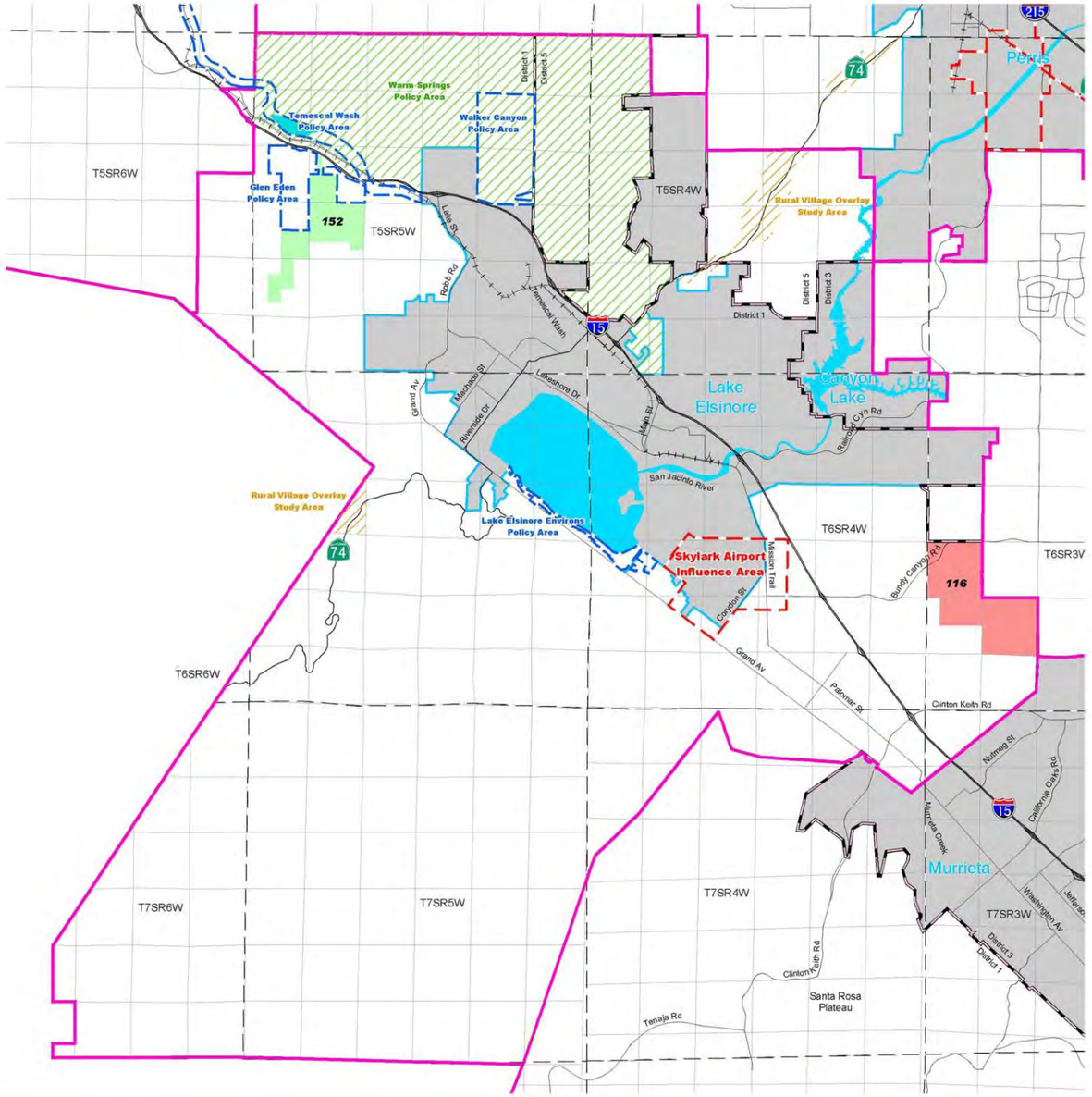

Source Information: General Plan land uses depicted on this map were developed by The County of Riverside Planning Department. The oldest data shown on this map was created in 1990. Note: This Map may show designations on lands that have been annexed to cities after 1999. The County of Riverside or the RCIP consultants here no reason or indication to believe that this map contains any inaccuracies, defects or misinformation. The County of Riverside and the RCIP consultants assume no warranties or legal responsibility, however, as to the absolute accuracy of any data or information contained within this map, regardless the location, subject and size. Data and information represented on this map is subject to update and modification without prior notification. The geographic information system and other sources should be queried for the most current information. This map or any information represented on it, shall not be reproduced or transmitted in any form or by any means, electronic or mechanical, including photo copying and recording, except as expressly permitted in writing by the County of Riverside.

Figure 4

ELSINORE AREA PLAN
POLICY AREAS

Source: Riverside County Integrated Project

Mooney · Jones & Stokes

Elsinore Area Plan: Policy Areas
Figure 1.6

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CHAPTER 2 – TRANSPORTATION RESOURCES

Introduction

This report assesses transportation in the City of Lake Elsinore and its associated sphere of influence (SOI). The regulatory environment and existing conditions will be assessed and analyzed to determine associated constraints and opportunities. The purpose of this discussion is to use the information as a resource for updating the General Plan for the City of Lake Elsinore.

Legal Basis and Requirements

Government Code Section 65302(b) states the General Plan shall include a circulation element "consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan."

Terminology

The following is a brief background discussion of transportation terminology.

- **Average Daily Traffic (ADT):** Refers to daily traffic volumes that are expected to occur on a typical weekday (Tuesdays, Wednesdays, and Thursdays).

- **Collector:** A street for traffic movement between arterial and local streets, generally providing direct access to properties. Collectors are four-lane undivided roadways without medians. Collectors can accommodate up to 20,000 ADT and maintain LOS D.

- **Intersection Turning Movement Volumes:** Intersection turning movement volumes count the movement of vehicles in an intersection over a period of time. In evaluating the effectiveness of intersection left- and right-turn lanes, it is valuable to know the volume of vehicles turning left or right and using the turn lanes.

- **Level of Service (LOS):** The level of service is a report card style of reporting on the quality of traffic operations and is usually applied to measure peak hour traffic conditions on a typical weekday. LOS "A" is considered very good, while LOS "F" is considered to be failing. The current General Plan Circulation Element for the City of Lake Elsinore recognizes LOS "D" or better as acceptable. A "deficiency" is identified when the City's LOS standard is not being met.

- **Major Highway:** Major highways, many of multi-lane or freeway design, are used primarily for through traffic. High-volume traffic corridor movements that connect major generators of travel, such as an urban arterial, characterize major highways. Major highways are high-speed facilities that incorporate restrictions on access primarily through at-grade intersections to provide an increased level of safety.

- **Major/Secondary:** Major arterials are streets carrying the traffic of local and collector streets to and from freeways and other major streets, with controlled intersections and generally providing direct access to properties. Major arterials can carry up to 35,000 average daily traffic (ADT) and operate at LOS D. Secondary arterials interconnect with and augment the major arterial system. They connect major arterials to collectors and distribute traffic to small geographic areas and communities.

- **One-way Secondary:** Secondary streets mainly serve to provide access between land uses and collector streets. Secondary streets serve all types of land use including residential, commercial and industrial. Often secondary streets located in residential areas are utilized by through traffic, which creates increased traffic noise and decreased safety. As such, the imposition of one-way secondary streets provides increased levels of traffic management.

- **Peak Hour (of Traffic):** The peak hour of traffic is normally used to refer to the morning (AM) and evening (PM) time frames when the highest traffic volumes occur on weekdays. Traffic is commonly measured from 7:00 to 9:00 AM and 4:00 to 6:00 PM to determine the peak hour for analysis purposes.

- **Secondary Highway:** A secondary highway is any road, street, parkway, or freeway/expressway that includes rights-of-way, bridges, railroad-highway crossings, tunnels, drainage structures, signs, guardrail, and protective structures in connection with highways.

- **Traffic Calming:** The combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users. Traffic calming measures can be divided into two types, volume control devices and speed control devices. In some applications, a traffic-calming device will control both speed and volume. For instance, cut through traffic might be discouraged (causing a volume reduction) if it is required to proceed at a slower speed while negotiating calming devices.

- **Traffic Management:** The management and controlling of transportation modes, carriers and services through the process of adjusting or adapting the use to meet specified objectives without resorting to substantial new road construction.

- **Transit:** Describes passenger transportation services, local, metropolitan or regional in scope. Transit incorporates the usage of bus, rail or other conveyance, which is configured to provide scheduled service on fixed routes.

- **Urban Arterial:** The primary function of an urban arterial is traffic movement with land access a secondary concern. They are designed to carry up to 35,000 average daily traffic (ADT) and operate at LOS D. Urban arterials connect with urban collectors, freeways and other arterial roads.

Regulatory Environment

The City of Lake Elsinore must comply with various Federal, State, and local laws. The following is a list of laws and policies relevant to transportation.

- California Department of Transportation (Caltrans)
- Southern California Association of Governments (SCAG)
  - Regional Transportation Plan (RTP)
- County of Riverside
- Riverside County Congestion Management Program (CMP)
  - Riverside County Integrated Project (RCIP)
- City of Lake Elsinore General Plan
- City of Lake Elsinore Zoning Ordinance

Existing Transportation Conditions

Traffic congestion near freeway interchange.

The following section outlines existing traffic conditions and alternative methods of transportation within the City and SOI. The transportation network includes roadways, airports, trains, bike paths, bus routes, sidewalks, trails, and parking facilities.

Traffic Conditions

This section of the transportation report describes existing traffic conditions in the City of Lake Elsinore, including the existing roadway features, daily traffic volumes, intersection turning movement volumes and levels of services analysis, the existing transit services, and the currently adopted General Plan Circulation Element and roadway standard cross-sections.

Existing Roadway Characteristics

Field review of the existing roadway system has been performed. Figure 2.1 depicts the existing number of through lanes on the roadway system.

Most of the arterial roadways in the City of Lake Elsinore have not been constructed to ultimate cross-section widths based upon the city's currently adopted General Plan. A brief description of each roadway is provided below:

- The I-15 Freeway (I-15) traverses in a generally north/south direction along the east side of the lake and central city. To the north, the I-15 Freeway connects with the Riverside Freeway (State Route 91), the Pomona Freeway (State Route 60), and the San Bernardino Freeway (Interstate 10) and is the link to greater Los Angeles and the Inland Empire. To the south, the I-15 Freeway connects with the Escondido Freeway (I-215) and is the link to San Diego County. The I-15 is currently 3 lanes in each direction within the SOI.

- State Route 74 (SR-74) traverses in a generally east/west direction along the north side of the lake and central city. To the west, SR-74 (known as Ortega Highway through the mountainous Cleveland National Forest) connects with the San Diego Freeway (Interstate 5) and is the link to the coast and Orange County. To the east, SR-74 connects with the Escondido I-215 and is the link to Perris and Hemet. SR-74 is mostly a 2-lane roadway except the segment north of the I-15 toward Riverside Street has been widened to a 4-lane divided roadway to accommodate the recent development along the area.

- Lake Street southerly from the I-15 to Lakeshore Drive is a two-lane undivided roadway. South of Lakeshore Drive, it has been widened to a 4-lane divided roadway. Lake Street is a major access to northern areas of the city from the I-15.

- Lakeshore Drive, a two-lane undivided roadway, is a major north/south route along the east side of the lake. Portions of Lakeshore Drive north of Riverside Drive and south of Lake Street have been widened adjacent to new development.

- Riverside Drive is a two-lane undivided roadway, which makes up a segment of SR-74 along the north end of the lake. The portion of Riverside Drive south of Lincoln Street (adjacent to the new high school) has been widened to a 4-lane roadway with a center left turn lane.

- Railroad Canyon Road northerly from the I-15 is a major link between the I-15 and the I-215 easterly of the City of Lake Elsinore. Railroad Canyon Road is currently a 4-lane divided roadway. Significant residential development is in progress along both sides of this roadway.

Newport Road, which is an extension of Railroad Canyon Road east of the City of Canyon Lake, currently is a 2-lane undivided roadway. Significant residential development is also in progress along both sides of this roadway.

- Mission Trail from Railroad Canyon Road to Palomar Street, mostly a 4-lane undivided roadway, is an important route southerly from the commercial area at the Railroad Canyon Road interchange with the I-15. Portions of the roadway in the vicinity of Bundy Canyon Road have been widened to a 4-lane divided section roadway.

- Grand Avenue between Riverside Drive and Corydon Street is a 2-lane undivided roadway. This north/south route is the only through roadway around the west side of the lake and provides an important connection to SR-74 from the area south of the lake.

Existing Daily Traffic Conditions

Figure 2.2 shows the existing average daily traffic (ADT) volumes for the study area. Daily traffic count data was compiled from 24-hour count data provided to Urban Crossroads, Inc. or estimated based on peak hour turning movement volumes at adjacent intersections using the following formula for each intersection leg:

[AM + PM Peak Hour (Approach + Exit Volume)] /(7%+8%) = Daily Leg Volume.

In the above formula, the constants of 7% and 8% are calculated AM and PM peak hour to ADT volume ratios based on the actual turning movement counts and daily counts.

Daily traffic volumes on the City of Lake Elsinore arterial system and immediate vicinity range from very low volumes to daily traffic volumes that approach or exceed 40,000 vehicles per day (VPD). Railroad Canyon Road carries volumes greater than 40,000 VPD east of the I-15. SR-74 (Central Avenue) carries 33,000 VPD east of Collier Avenue. The I-15 carries about 108,000 to 128,000 VPD in the SOI area.

Existing Intersection Traffic Conditions

Thirty-three (33) existing intersections in and near the City of Lake Elsinore have been selected for analysis in coordination with City staff for this transportation report. Figure 2.3 identifies the 33 intersections. The analysis intersections are:

Lake Street (NS) at:

- I-15 Freeway Northbound Ramps (EW)
- I-15 Freeway Southbound Ramps (EW)
- Temescal Canyon Road (EW)
- Lakeshore Drive (EW)

Lakeshore Drive (NS) at:

- Riverside Drive (EW)

Lincoln Street (NS) at:

- Riverside Drive (EW)

I-15 Northbound Ramps (NS) at:

- Nichols Street (EW)
- Central Avenue (EW)
- Bundy Canyon Road (EW)

I-15 Freeway Southbound Ramps (NS) at:

- Nichols Street (EW)
- Central Avenue (EW)
- Bundy Canyon Road (EW)

Grand Avenue (NS) at:

- Riverside Drive (EW)
- SR-74 (EW)

Collier Avenue (NS) at:

- Riverside Drive (EW)
- Central Avenue (EW)

Riverside Street (NS) at:

- SR-74 (EW)

Greenwald Avenue (NS) at:

- SR-74 (EW)

Ramsgate Drive (EW) at:

- SR-74 (EW)

Cambern Avenue (NS) at:

- SR-74 (EW)

Main Street (NS) at:

- I-15 Freeway Northbound Ramps (EW)
- I-15 Freeway Southbound Ramps (EW)
- Graham Avenue (EW)

Franklin Street (NS) at:

- Auto Center Drive (EW)

Summerhill Drive (NS) at:

- Railroad Canyon Road (EW)

Railroad Canyon Road (NS) at:

- I-15 Freeway Northbound Ramps (EW)
- Canyon Hills Road (EW)

Diamond Drive (Railroad Canyon Road) (NS) at:

- I-15 Freeway Southbound Ramps (EW)
- Mission Trail-Lakeshore Drive (EW)

Mission Trail (NS) at:

- Malaga Road (EW)
- Corydon Street (EW)
- Bundy Canyon Road (EW)

Corydon Street (NS) at:

- Grand Avenue (EW)

Figure 2.4 illustrates the existing intersection lane configurations, and the intersection traffic control devices at the study area intersections.

The existing turning movement volume data has been reviewed to verify reasonable conservation of flow with adjacent intersections. The existing intersection AM and PM peak hour traffic volumes are included on Figure 2.5 and 2.6, respectively.

Existing peak hour traffic operations have been evaluated for the 33 study area intersections. The results of this analysis are summarized in Table 2.1, along with the existing intersection geometrics and traffic control devices at the analysis locations. It is also noted that although isolated intersection analysis indicates that the I-15 Freeway/Railroad Canyon Road interchange operates at acceptable level of service, the progression of traffic through the I-15 Freeway and Railroad Canyon Road interchange creates lengthy vehicle queues.

Typical City intersection.

Table 2.1 Existing Conditions Intersection Analysis Summary

INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1]												Delay2 (SEC)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Lake St. (NS) at:																	
• I-15 NB Ramps (EW)	CSS	0.5	0.5	0	0	1	1	0	0	0	0	1	0	--4	18.8	F	C
• I-15 SB Ramps (EW)	CSS	0	1	1	0.5	0.5	0	0.5	0.5	1	0	0	0	17.3	17.2	C	C
• Temescal Canyon Rd. (EW)	CSS	0.5	0.5	0	0	1	1	0	1	0	0	0	0	92.6	94.8	F	F
• Lakeshore Dr. (EW)	TS	1	2	1	2	2	1	0.5	1.5	0	1	1	2>	22.5	17.8	C	B
Lakeshore Dr. (NS) at:																	
• Riverside Dr. (EW)	TS	1	2	0	1	2	1	1	2	1	1	1	1	38.5	50.4	D	D
Lincoln St. (NS) at:																	
• Riverside Dr. (EW)	TS	0	0	0	1	0	1	1	1	0	0	1	1	26.7	--4	C	F
I-15 NB Ramps (NS) at:																	
• Nichols St. (EW)	CSS	1	1	0	0	0	0	1	1	0	0	1	0	31.8	17.1	D	C
• Central Av. (EW)	TS	0.5	0.5	1	0	0	0	1	2	0	0	2	1	15.3	17.3	B	B
• Bundy Canyon Rd. (EW)	TS	1	1	0	0	0	0	1	2	0	0	2	0	21.1	22.6	C	C
I-15 SB Ramps (NS) at:																	
• Nichols St. (EW)	CSS	0	0	0	0.5	0.5	1	0	1	1>	1	1	0	--4	12.7	F	B
• Central Av. (EW)	TS	0	0	0	0.5	0.5	1	0	2	0	1	2	0	12.5	19.4	B	B
• Bundy Canyon Rd. (EW)	TS	0	0	0	1	1	0	0	2	0	1	2	0	21.3	19.7	C	B
Grand Av. (NS) at:																	
• Riverside Dr. (EW)	CSS	0	0	0	1	0	1	1	1	0	0	1	1	95.1	--4	F	F
• SR-74 (EW)	AWS	0.5	0.5	0	0	1	1>>	1	0	1>>	0	0	0	--4	--4	F	F
Collier Av. (NS) at:																	
• Riverside Dr. (EW)	TS	1	1	0	1	1	1	0.5	0.5	1	0	1	0	--4	--4	F	F
• Central Av. (EW)	TS	1	1	1	1	1	0	1	1	0	1	1	1>	44.3	49.7	D	D
Riverside St. (NS) at:																	
• SR-74 (EW)	CSS	1	0	1	0	0	0	0	2	0	1	2	0	21.9	37.5	C	E
Greenwald Av. (NS) at:																	
• SR-74 (EW)	TS	1	1	0	0	1	0	1	1	1	1	1	0	27.2	16.2	C	B
Ramsgate Dr. (EW) at:																	
• SR-74 (EW)	CSS	1	0	1	0	0	0	0	2	0	1	2	0	24.0	38.4	C	E
Cambern Av. (NS) at:																	
• SR-74 (EW)	CSS	0	1	0	0.5	0.5	1	1	2	0	1	2	0	--4	57.5	F	F
Main St. (NS) at:																	
• I-15 NB Ramps (EW)	CSS	1	1	0	0	1	0	0	0	0	0.5	0.5	1	--4	29.7	F	D
• I-15 SB Ramps (EW)	CSS	0	1	1	1	1	0	0.5	1.5	0	0	0	0	25.4	17.7	D	C
• Graham Av. (EW)	CSS	0	1	0	0	1	0	0.5	0.5	1	0	1	0	10.1	16.6	B	C
Franklin St. (NS) at:																	
• Auto Center Dr. (EW)	CSS	0	1	1	0.5	0.5	0	0	0	0	1	0	1	10.8	13.8	B	B
Summerhill Dr. (NS)																	
• Railroad Canyon Rd. (EW)	TS	2	2	1	1	1	1>	2	2	0	1	3	0	52.4	70.3	D	E
Railroad Canyon Rd. (NS) at:																	
• I-15 NB(EW)	TS	1	2	0	0	2	1	0	0	0	0.5	0.5	1	26.5	38.9	C	D
• Canyon Hills Rd. (EW)	TS	1	3	1	1	3	0	0	0	0	2	0	1	25.3	11.8	C	B
Diamond Dr Ramps (NS) at:																	
• I-15 SB(EW)	TS	0	2	1	1	2	0	1	1	0	0	0	0	36.4	47.1	D	D
• Mission Trail-Lakeshore Dr. (EW)	TS	1	2	1	2	2	0	1	2	0	1	2	1	36.8	37.7	D	D
Mission Trail (NS) at:																	
• Malaga Rd. (EW)	TS	1	2	0	1	2	0	1	1	1	1	2	0	17.3	24.4	B	C
• Corydon St. (EW)	TS	1	2	0	0	2	1>	1	0	1	0	0	0	16.4	15.2	B	B
• Bundy Canyon Rd. (EW)	TS	1	2	0	1	2	0	0	1	0	1	1	0	17.9	22.1	B	C
Corydon St.(NS) at:																	
• Grand Av. (EW)	TS	0	0	1	0.5	0.5	1>	1	1	0	1	1	0	15.3	20.9	B	C

Notes:

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; >> = Free Right Turn; > = Right Turn Overlap;

2 Delay and level of service calculated using the following analysis software: Traffix, Version 7.7 (2004). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross St. stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

3 TS = Traffic Signal, AWS = All Way Stop, CSS = Cross St. Stop

4 = Delay High, Intersection Unstable, Level of Service "F."

- Not Applicable

Table 2.2 describes the definitions for Level of Service. As indicated on Table 2.1, for existing traffic conditions, all study area intersections are currently operating at Level of Service "D" or better during AM and PM peak hours except for the following intersections:

Lake Street (NS) at:
- I-15 Freeway Northbound Ramps (EW)
- Temescal Canyon Road (EW)

Lincoln Street (NS) at:
Riverside Drive (EW)
I-15 Freeway Southbound Ramps (NS) at:
- Nichols Street (EW)

Grand Avenue (NS) at:
- Riverside Drive (EW)
- SR-74 (EW)

Collier (NS) at:
- Riverside Drive (EW)

Riverside Drive (NS) at:
- SR-74 (EW)

Ramsgate Drive (NS) at:
- SR-74 (EW)

Cambern Street (NS) at:
- SR-74 (EW)

Main Street (NS) at:
- I-15 Freeway Northbound Ramps (EW)

Summerhill Drive (NS) at:
- Railroad Canyon Road (EW)

Table 2.2 Definitions of Level of Service for Uninterrupted Flow
(Flow Unrestrained by the Existence of Traffic Control Devices)

LOS “A"	Represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.
LOS "B"	In the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.
LOS "C"	In the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.
LOS "D"	Represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
LOS "E"	Represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.
LOS "F"	Used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations.

Public Transportation Network

The Riverside Transit Agency (RTA) provides public bus service to the city. Currently five bus routes along several Lake Elsinore roadways provide alternative intra-City and regional transportation options. Moreover, the Lake Elsinore Dial-a-Ride (DAR), operated by RTA, is a senior and persons with disabilities, advance reservation service designed to provide curb-to-curb transportation.

Pedestrian and Bicycle Trails

The pedestrian network consists of all the paved sidewalks and trails in Lake Elsinore. Several local roadways in Lake Elsinore do not have paved pedestrian facilities. In addition, some of the RTA bus stops are not accessible by paved sidewalks and transit riders have to wait along the side of the road in unpaved areas.

The bikeway system encourages bicycling as an alternative mode of transportation, although the terrain makes traversing the City via bicycle difficult. Existing and proposed routes of the City bikeway system are divided into four classifications; Class I, II, III, and multi-purpose. A Class I bikeway is a completely separated right-of way for the exclusive use of bicycles. Class II bikeways provide a restricted right-of-way for the exclusive or semi-exclusive use of bicycles with vehicle parking and cross flows by vehicles and pedestrians permitted. A Class III bike route provides right-of-way designated by signs or

permanent markings and are shared with pedestrians or vehicles. Finally, multi-purpose paths or trails are available for joint bicycle, pedestrian and equestrian use that may or may not be separated or paved. A graphic of the Bikeway Plan as it appeared in the last General Plan is shown in Figure 2.7.

The Bikeway Plan delineates an extensive, continuous network of bicycle routes, with Class II bikeways as the principal provision for bicycle travel through the city. More specifically, a Class I, off-street bikeway is designated for Grand Avenue through the SOI. The Class III bikeway along Main Street, Camino Del Norte, Summer Hill Drive and Ramsgate Drive is delineated specifically to emphasize and facilitate the linkage of bicycle routes through the major specific plan areas east of I-15 and the downtown area. The multi-purpose designation reflects the city's existing dedicated and proposed trail system (west end) available to equestrian, pedestrian, and bicycle users. The existing segments are unpaved; future sections may or may not be paved or separated depending upon design and use requirements.

Air Transportation

Air transportation systems located within the City and the surrounding region includes public use airports and carrier operations. Airports serving the City are tied into the regional air transportation system and operate as an efficient and convenient transportation.

Sign near airstrip identifying skydiving location.

Skylark Airport is located within the City of Lake Elsinore, in the vicinity of the southern terminus of the Lake. This airport provides glider and skydiving opportunities for the community and surrounding region. The runway surface of Skylark Airport consists of gravel and sand; as such, this surface generally does not permit optimal conditions for frequent and convenient airport operations.

Twelve public-use airports are situated within the boundaries of Riverside County. Of these airports, five are located within the generalized vicinity of the City of Lake Elsinore, including Perris Valley, located approximately 11 miles from Lake Elsinore, French Valley located approximately 18 miles away in Temecula, Riverside Municipal Airport located in Riverside approximately 20 miles away, and the Hemet-Ryan Airport approximately 22 miles from the City.

There are five major commercial airports in southern California used for passenger service, including: Palm Springs International Airport, Ontario International Airport (San Bernardino County), Orange County- John Wayne Airport, Los Angeles International Airport, and Lindbergh Field (San Diego County). Of these only Palm Springs

International Airport, located approximately 70 miles from the City, is located in Riverside County. In addition to the regional air passenger airport facilities, the March Inland Port/Air Reserve Base is located along I-215 in Riverside County, approximately 23 miles from the City. This airport provides regional air cargo service and also continues to function as an Air Reserve Base military installation. A figure of "airport influence areas" identified in the County of Riverside General Plan is included as Figure 2.8.

Park and Ride

The Riverside County Transportation Commission provides free "park and ride" sites to encourage residents to carpool or take alternative forms of transportation. Several park and ride lots exist within the City including the Ortega Market located at 15887 Grand Avenue, Lake Elsinore Outlet Mall located at Collier Street & Nichols, and finally the SR-74 park and ride lot located at Dexter Street & SR-74.

Railroads

There are currently no railroad services within the City of Lake Elsinore or SOI. However, in the past the Lake Elsinore Branch of the Santa Fe Railroad provided rail service for the immediate community as well as the surrounding region. The Lake Elsinore Branch railways were located to the north of Lake Elsinore. However, through dissolution of the Santa Fe Railroad coupled with continued growth of the City, these railways and associated infrastructure have been removed.

Scenic Routes

Caltrans has identified Interstate 15 and Highway 74 as eligible state scenic highways, but neither one is officially designated. Caltrans outlines an application process for official designation that the City has not pursued. Advantages of official designation are listed as: able to promote local tourism that is consistent with the community's scenic values, protecting the scenic values of an area, enhancing community identity and pride, and enhancing land values and making the area more attractive.

Safe Routes to Schools

The state of California encourages a program called Safe Routes to School to encourage more school children to walk or bike to school. Thirty years ago, 66% of children walked or biked to school, now, the number has dropped to 13%. This has been attributed to parent's perception that crime and traffic has made roads unsafe and opts to drive their children to school instead. To change this, various entities including the California Department of Health Services, California Highway Patrol, Center for Livable Communities, Surface Transportation Policy Project, California Bicycle Coalition, and Rails to Trails Conservancy have been working with local officials to create Safe Routes

to School programs. They work with local officials, parents, law enforcement officers, and traffic engineers to make streets safer for pedestrians and bicycle riders on heavily used school routes.

The City of Lake Elsinore began a program and has designated routes, but has not updated the plan for the last several years. There has been interest expressed in updating the map. Several schools in the Lake Elsinore area participate in a National Walk to School Day.

Constraints and Opportunities

Constraints Due to Regulatory Requirements

Caltrans has the ability to recommend measures to mitigate traffic impacts if a project is going to influence traffic flows and levels of service on a state highway. Care in increasing density or changing land use must be exercised when implementing changes to land use adjacent to state highways to avoid creating or exacerbating issues related to roadway levels of service. Increasing traffic demand adjacent to a state highway may create the need for significant mitigation measures on adjacent surface streets, possibly increasing the cost of a project.

The preliminary analysis has shown that the currently adopted General Plan Circulation Element contains highway network links that may be very difficult to build and/or may be economically unfeasible to finance. Identified challenges with the current General Plan Circulation Map are identified on Figure 2.9.

Constraints Due to Existing Conditions

Existing conditions create constraints to changing land use designations. There are many streets in the City already operating at a poor level of service. Adding additional density or changing land use patterns that will increase traffic in areas that are already operating at a poor level of service will exacerbate current conditions. In areas with a poor level of service, land uses will be constrained to those that will decrease traffic unless traffic management and traffic calming devices are employed.

There are areas in the City that do not have paved pedestrian facilities, including at bus stops. This deficiency has the potential to cause people not to walk or take public transportation. Bikeways may have to share lanes with vehicles, contributing to a sense of lack of safety, also causing residents to avoid using bike lanes. Limiting opportunities for alternative forms of transportation will continue to contribute to poor levels of service on City roadways.

Opportunities to Enhance Regulatory Requirements

Updating the General Plan is an opportunity to revise the Circulation Plan that shows highway network links that are difficult to build or are economically unfeasible. The City can look into the possibility of alternate plans that are not as difficult to build and/or those that make more sense economically. It is also an opportunity to address any existing problems on surface streets that may be contributing to state highway problems so future projects proposed adjacent to the highway will not necessarily create additional traffic demand.

Opportunities to Address Existing Conditions

A General Plan Update provides the City the opportunity to coordinate transportation projects including streets, sidewalks, bikeways, and other related infrastructure. It is also an opportunity to identify problems in existing circulation patterns and implement new policies to fix the problems. For land uses that may increase traffic, and/or introduce more pedestrian activity to streets and sidewalks, policies can be implemented requiring speed control measures such as raised crosswalks, textured pavement, speed humps, center island narrowings, and roundabouts.

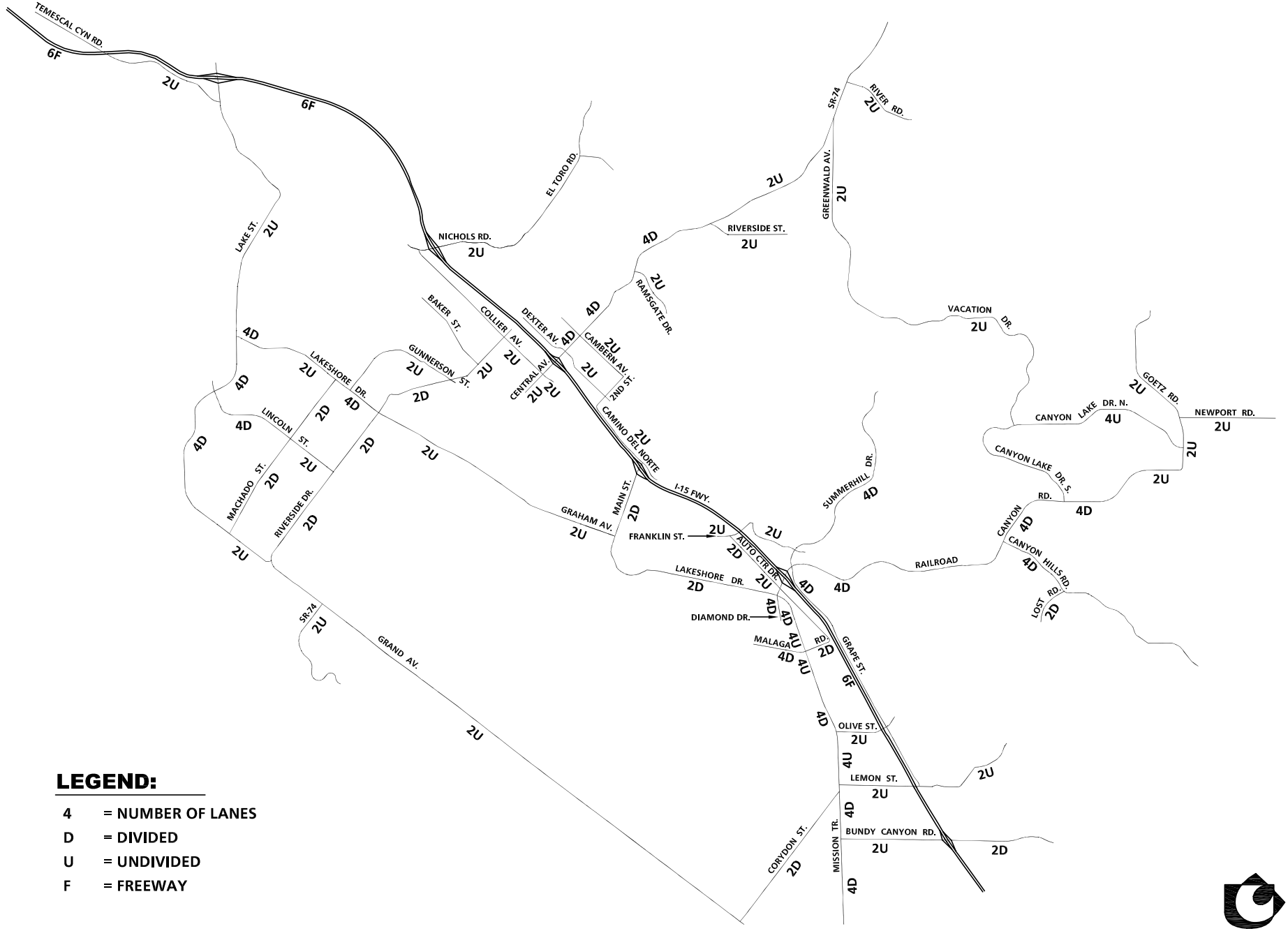
Narrow street in County Club Heights.

Public transportation is an important component of the City's circulation system and offers important opportunities to reduce air pollution and road congestion. To maximize the potential benefits of transit facilities and services, the City has an opportunity to increase the availability and use of public transit in Lake Elsinore.

Non-vehicular modes of transportation offer alternatives to driving, and provide both recreational and commuting options within the community. To promote walking and bicycling, a safe pedestrian and bicycle system composed of separate and completed bike lanes, sidewalks, and trails can be developed that will connect key activity centers of the City.

FIGURE 2.1

EXISTING NUMBER OF THROUGH LANES



LEGEND:

4	= NUMBER OF LANES
D	= DIVIDED
U	= UNDIVIDED
F	= FREEWAY

N

URBAN CROSSROADS

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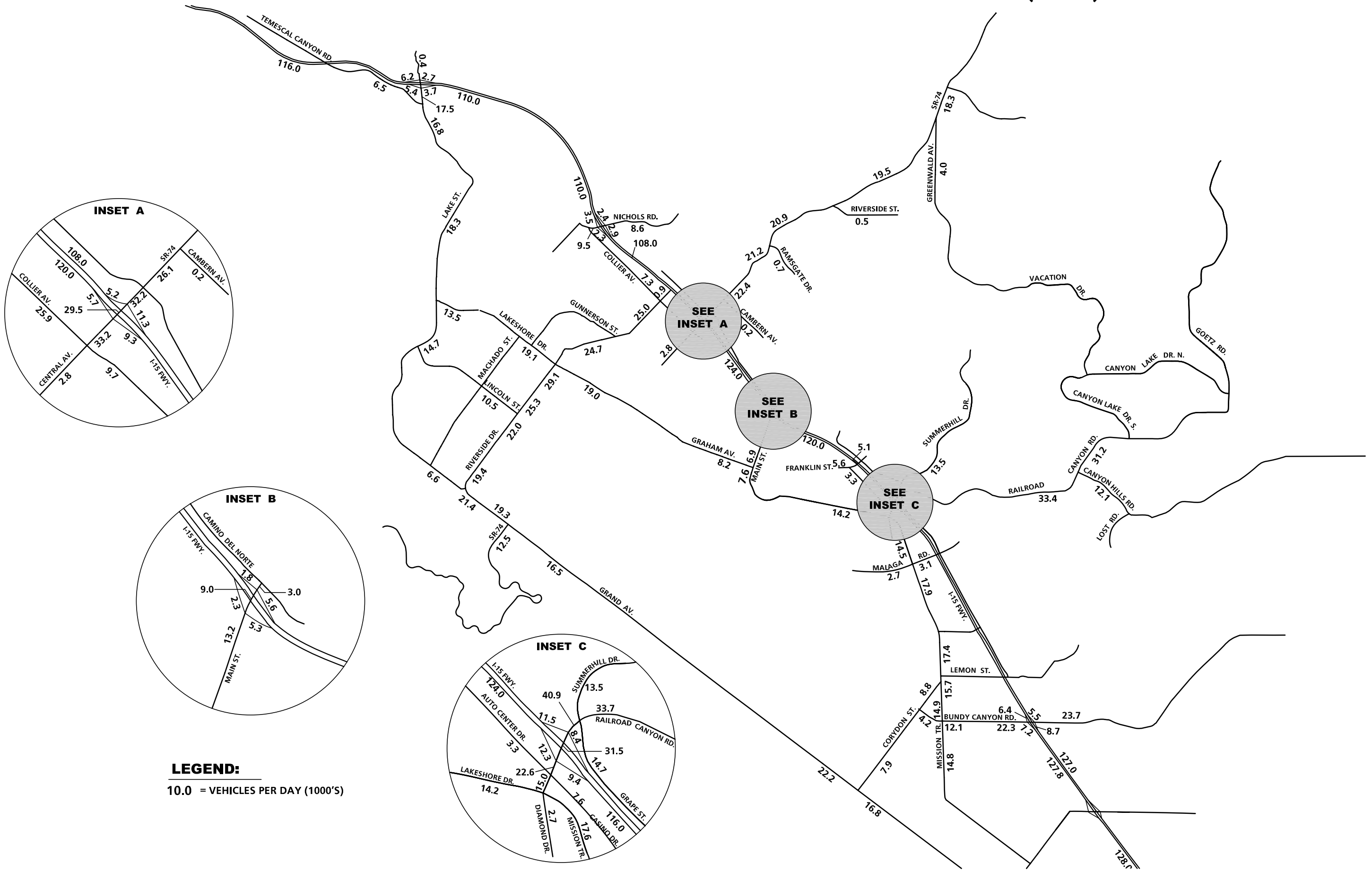
FIGURE 2.2

EXISTING (2005) AVERAGE DAILY TRAFFIC (ADT)



URBAN CROSSROADS

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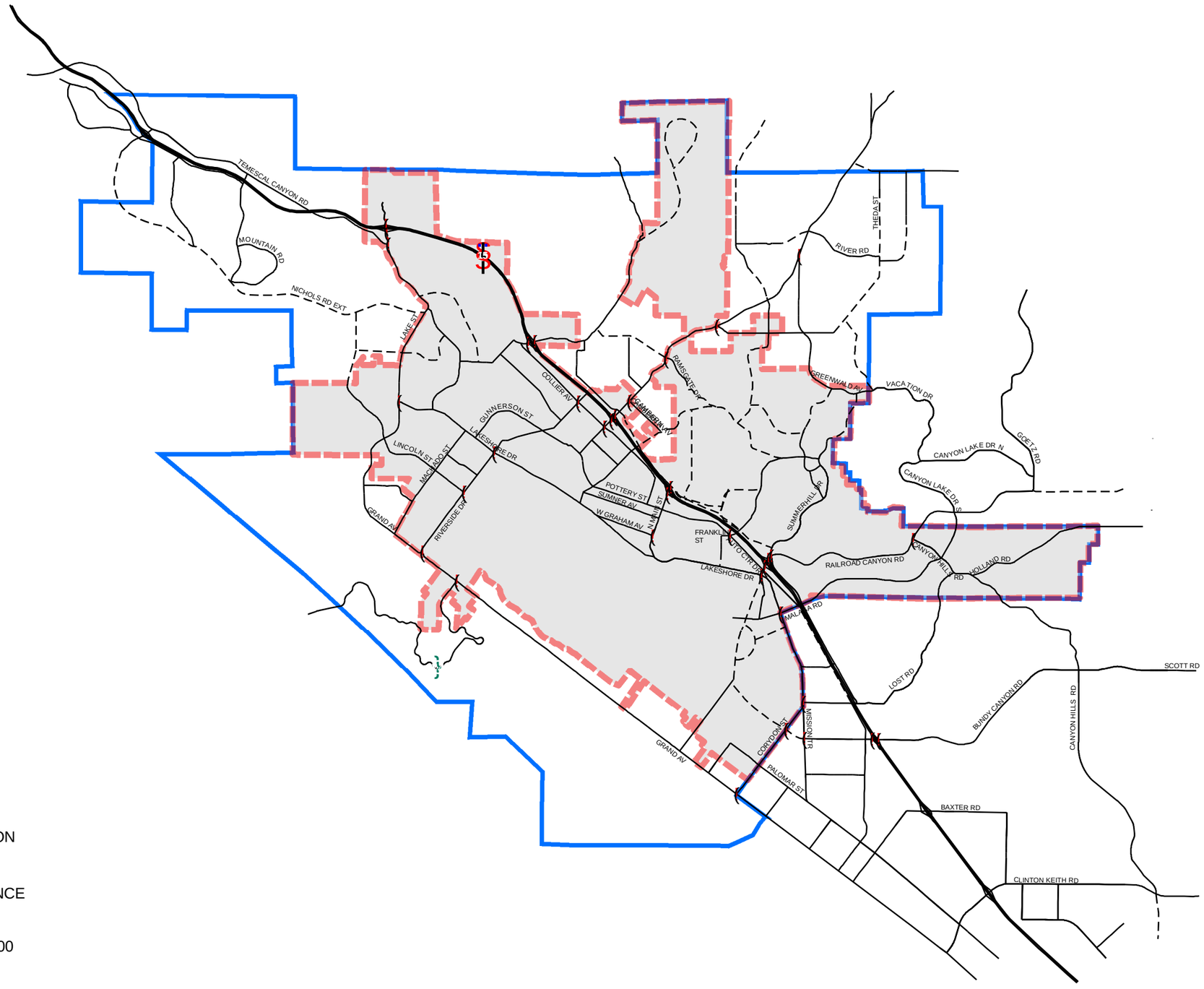
FIGURE 2.3

INTERSECTION ANALYSIS LOCATIONS



LEGEND:

- STUDY INTERSECTION
- CITY BOUNDARY
- SPHERE OF INFLUENCE

0 7100 14200

Feet

LAKE ELSINORE GENERAL PLAN UPDATE, Lake Elsinore, California - 02359:locmap sphere.mxd

URBAN CROSSROADS

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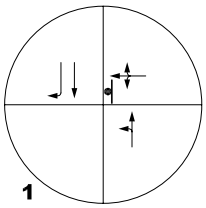
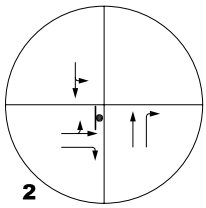
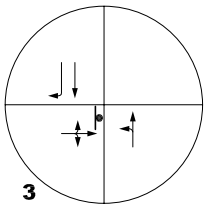
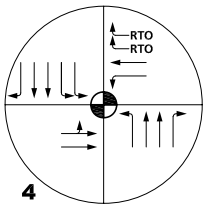
FIGURE 2.4

EXISTING INTERSECTION GEOMETRY

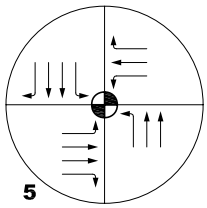

1 LAKE ST. & I-15 NB RAMPS

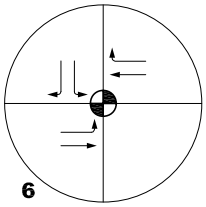

2 LAKE ST. & I-15 SB RAMPS

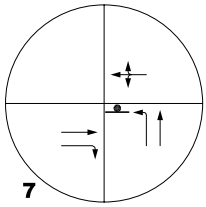

3 LAKE ST. & TEMESCAL CANYON RD.

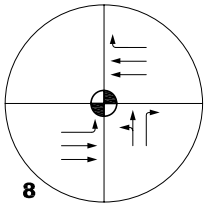


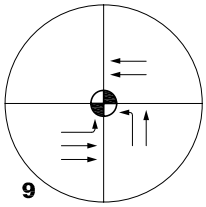
4 LAKE ST. & LAKESHORE DR.

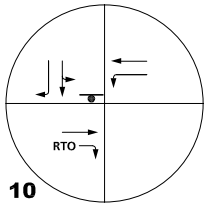

5 LAKESHORE DR. & RIVERSIDE DR.


6 LINCOLN ST. & RIVERSIDE DR.

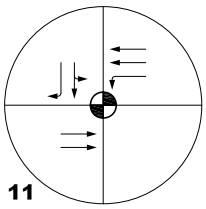

7 I-15 NB RAMPS & NICHOLS ST.

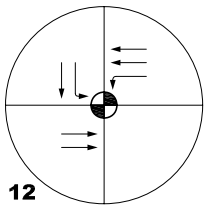

8 I-15 NB RAMPS & CENTRAL AV.

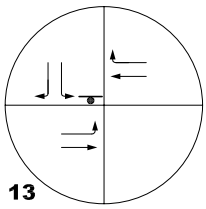

9 I-15 NB RAMPS & BUNDY CANYON RD.

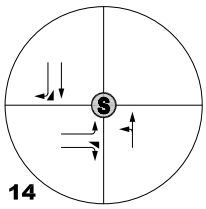


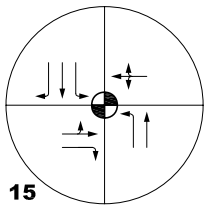
10 I-15 SB RAMPS & NICHOLS ST.

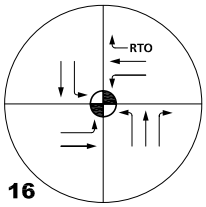

11 I-15 SB RAMPS & CENTRAL AV.


12 I-15 SB RAMPS & BUNDY CANYON RD.

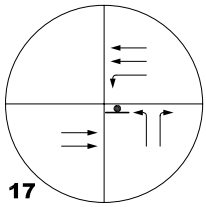

13 GRAND AV. & RIVERSIDE DR.

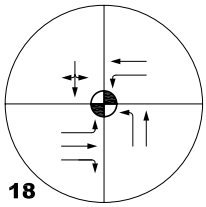

14 GRAND AV. & SR-74

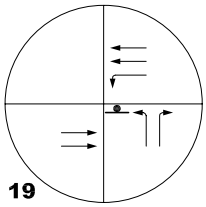

15 COLLIER AV. & RIVERSIDE DR.

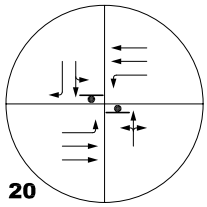


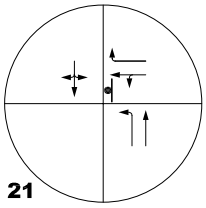
16 COLLIER AV. & CENTRAL AV.

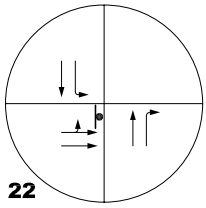

17 RIVERSIDE ST. & SR-74

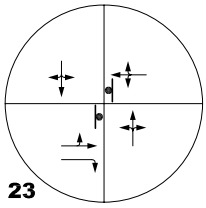

18 GREENWALD AV. & SR-74

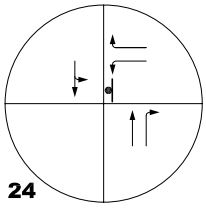

19 RAMSGATE DR. & SR-74

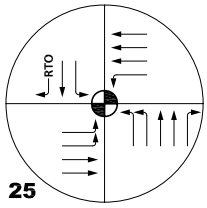

20 CAMBERN AV. & SR-74


21 MAIN ST. & I-15 NB RAMPS

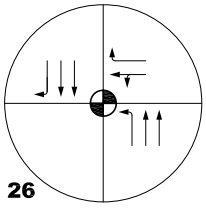

22 MAIN ST. & I-15 SB RAMPS

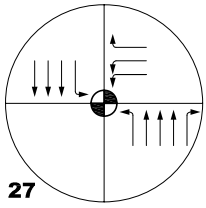

23 MAIN ST. & GRAHAM AV.

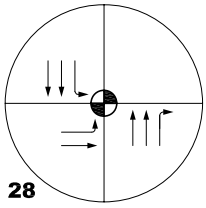

24 FRANKLIN ST. & AUTO CENTER DR.

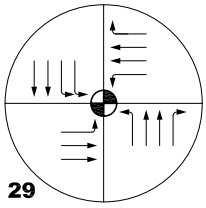


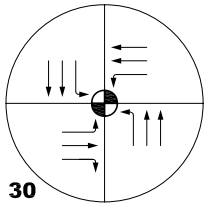
25 SUMMERHILL DR. & RAILROAD CANYON RD.

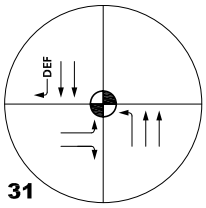

26 RAILROAD CANYON RD. & I-15 NB


27 RAILROAD CANYON RD. & CANYON HILLS RD.

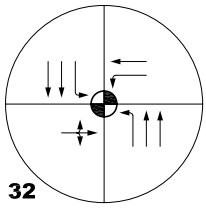

28 DIAMOND DR. & I-15 SB

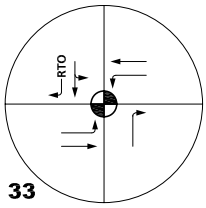

29 DIAMOND DR. & MISSION TR./ LAKESHORE DR.


30 MISSION TR. & MALAGA RD.



31 MISSION TR. & CORYDON ST.


32 MISSION TR. & BUNDY CANYON RD.



33 CORYDON ST. & GRAND AV.

LEGEND:

- = TRAFFIC SIGNAL
- = ALL WAY STOP
- = STOP SIGN
- RTO = RIGHT TURN OVERLAP
- = FREE RIGHT TURN

URBAN CROSSROADS

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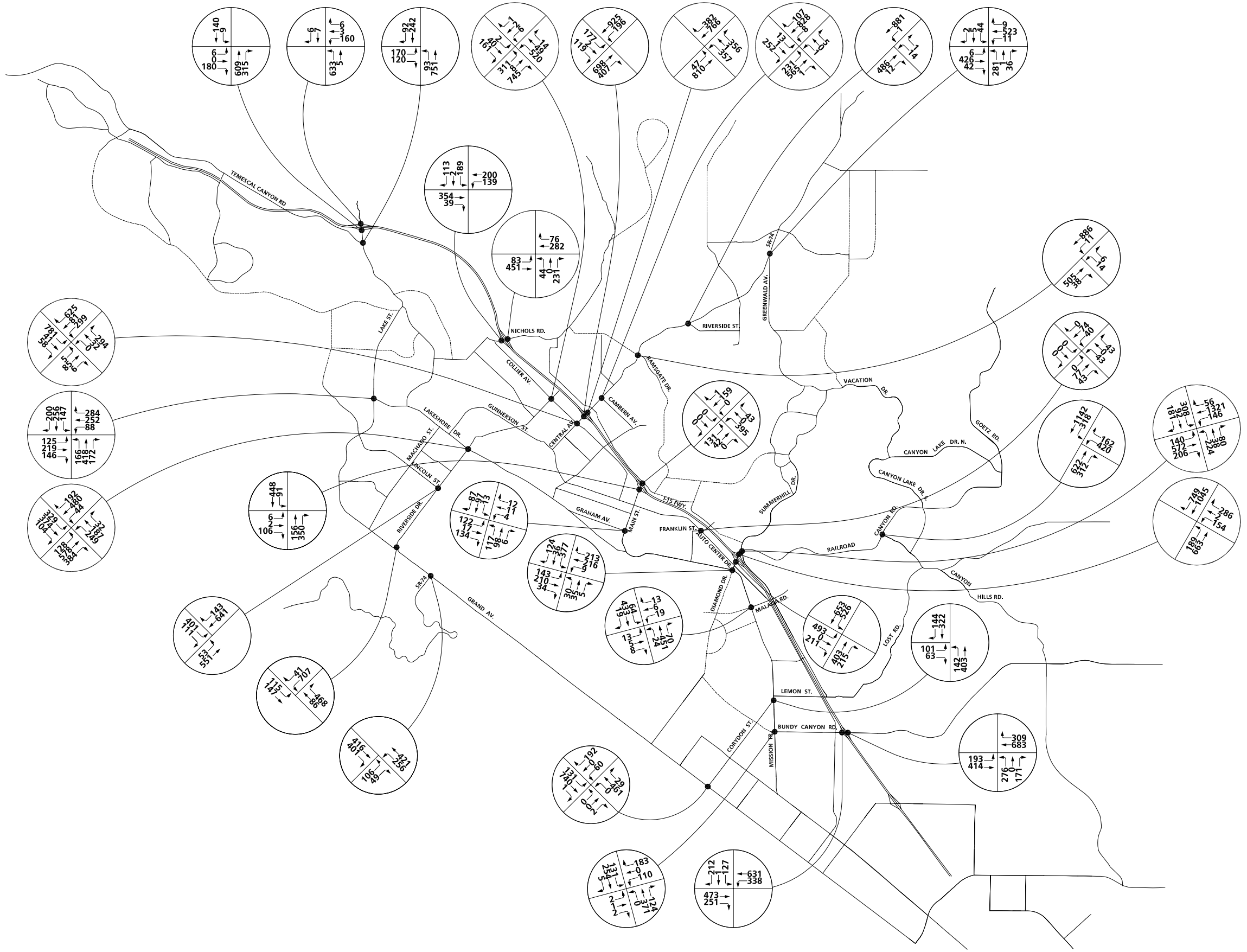
FIGURE 2.5

EXISTING (2005) AM PEAK HOUR INTERSECTION VOLUMES



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URBAN CROSSROADS

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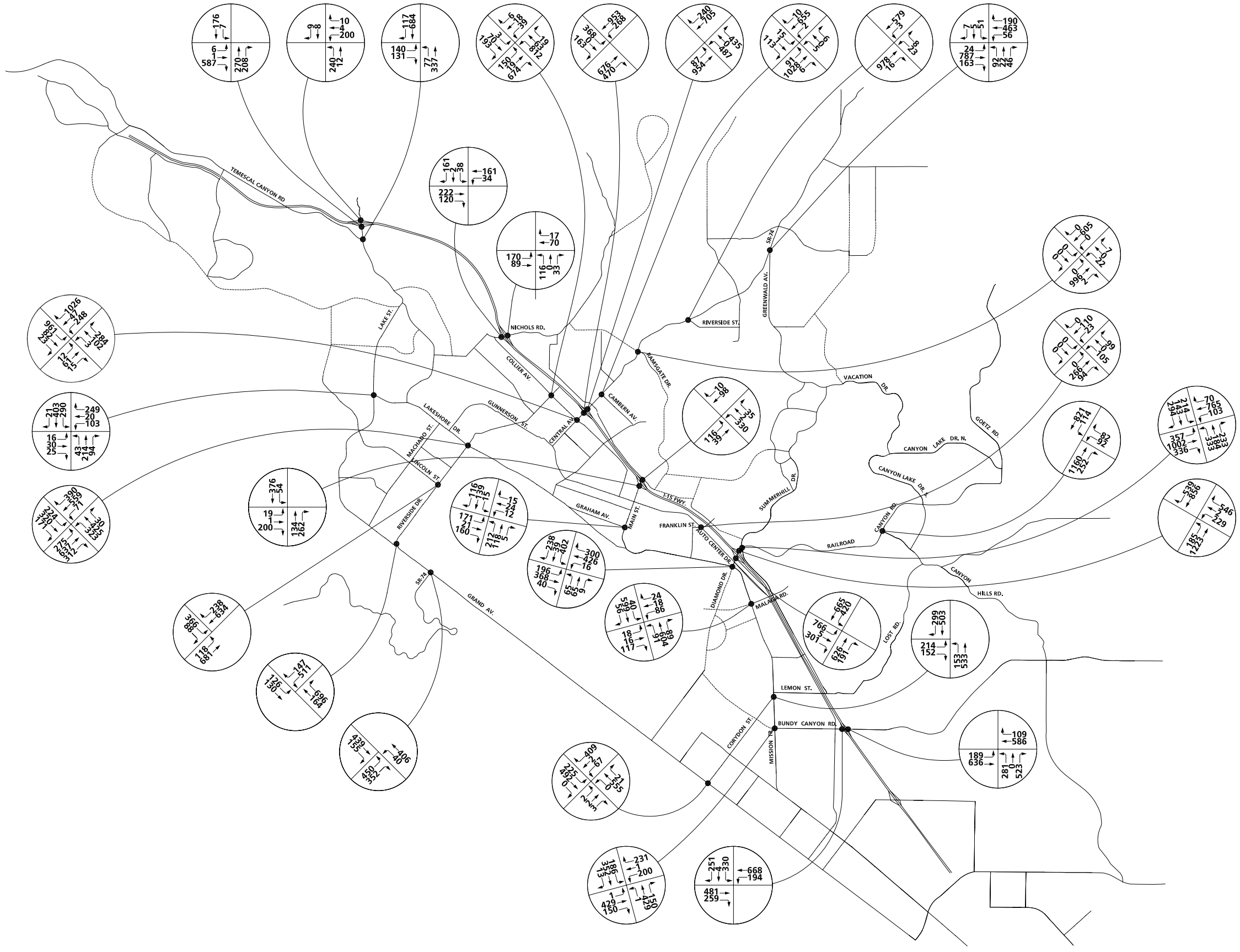
FIGURE 2.6

EXISTING (2005) PM PEAK HOUR INTERSECTION VOLUMES



LAKE ELSINORE GENERAL PLAN UPDATE, Lake Elsinore, California - 02359: expmvol.dwg

URBAN CROSSROADS

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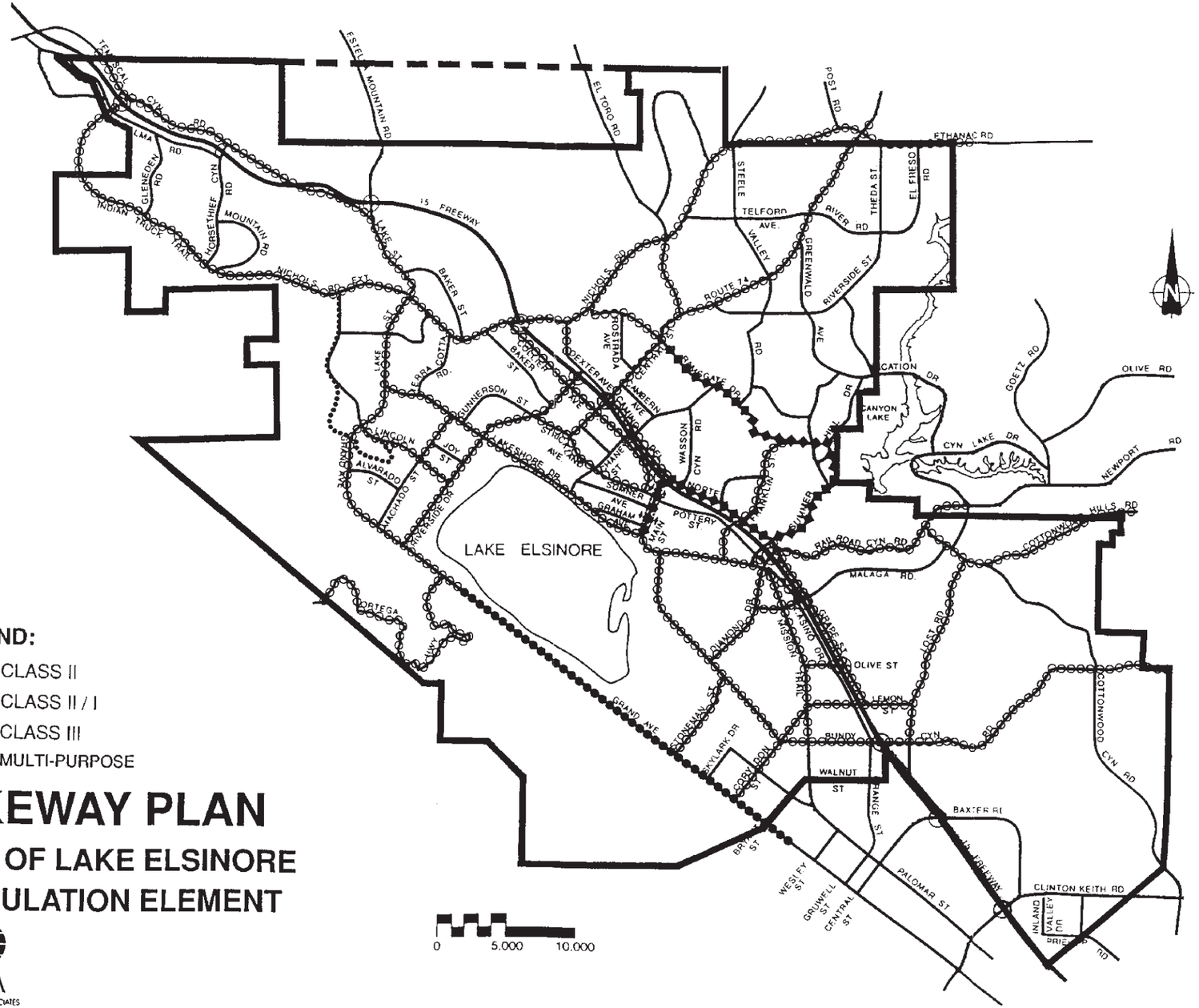

LEGEND:

- CLASS II
- CLASS II / I
- CLASS III
- MULTI-PURPOSE

BIKEWAY PLAN

CITY OF LAKE ELSINORE
CIRCULATION ELEMENT

WSA
WILBUR SMITH ASSOCIATES

EXHIBIT VIII - 5

Source: City of Lake Elsinore General Plan: 1990

Mooney · Jones & Stokes

G//Projects/05019.05/Graphics/Background Report/2-7.cdr (12/02/05)

Bikeway Plan
Figure 2.7

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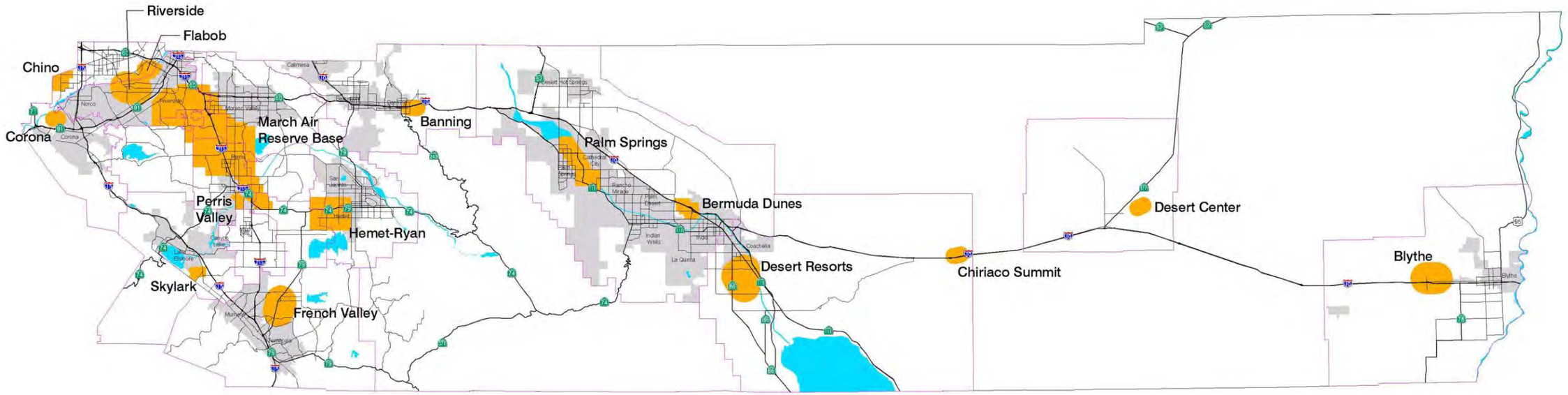

Airport Influence Areas
Water
City
Area Plan Boundary

0 65,000 Feet

Source Information: Riverside County

The County of Riverside or the RCIP consultants have no reason or indication to believe that this map contains any inaccuracies, defects or misinformation. The County of Riverside and the RCIP consultants assume no warranties or legal responsibility, however, as to the absolute accuracy of any data or information contained within this map, regardless the location, subject and size. Data and information represented on this map is subject to update and modification without prior notification. The geographic information system and other sources should be queried for the most current information. This map or any information represented on it, shall not be reproduced or transmitted in any form or by any means, electronic or mechanical, including photo copying and recording, except as expressly permitted in writing by the County of Riverside.

RIVERSIDE COUNTY
AIRPORT INFLUENCE AREAS

Figure C-6

Source: Riverside County Integrated Project

Mooney · Jones & Stokes

Riverside County: Airport Influence Areas
Figure 2.8

G//Projects/05091.05/Graphics/Background Report/2-8.cdr (12/20/05)

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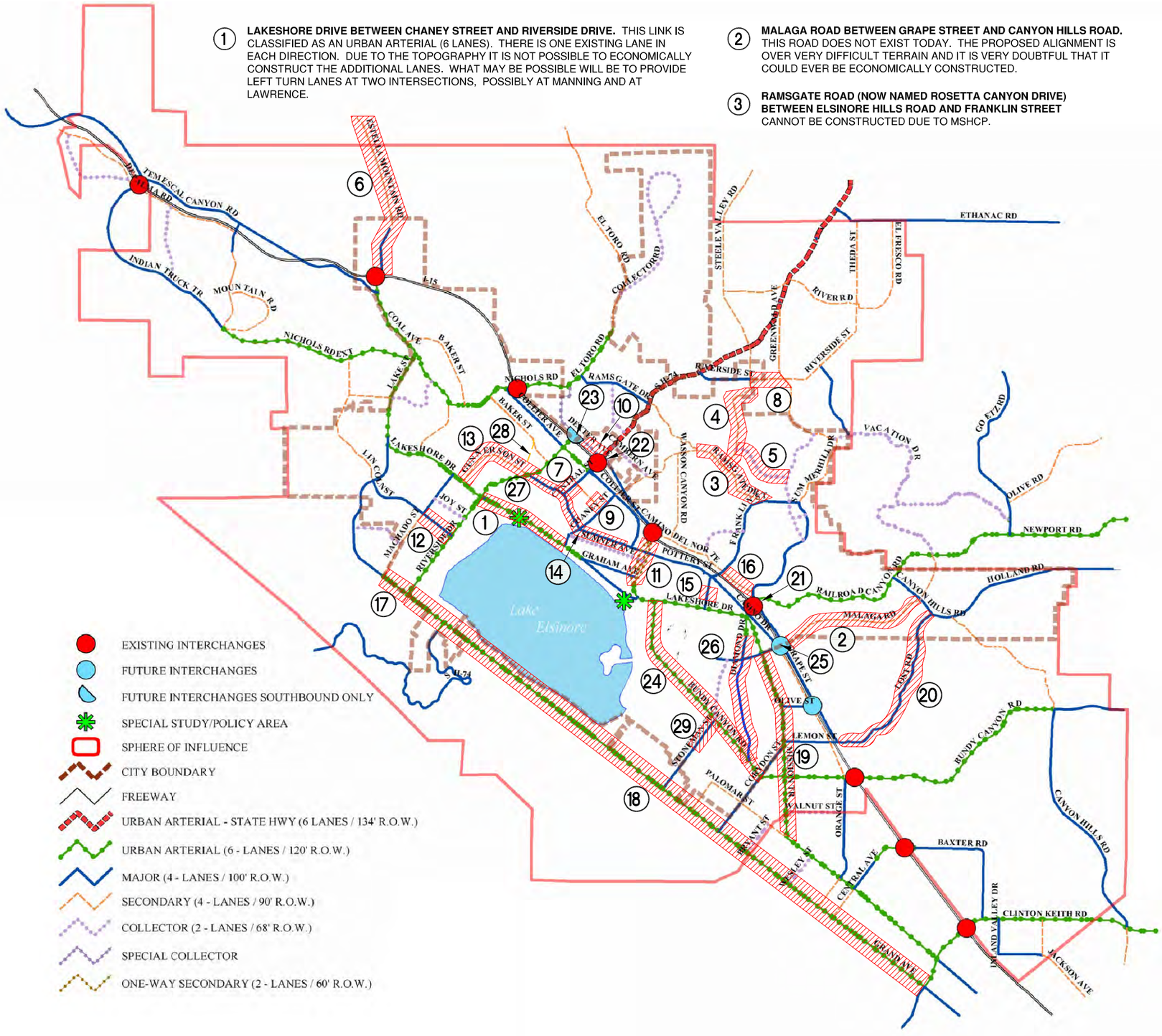
FIGURE 2.9

IDENTIFIED CHALLENGES FOR THE CITY OF LAKE ELSINORE CURRENTLY ADOPTED CIRCULATION ELEMENT



(1) **LAKESHORE DRIVE BETWEEN CHANEY STREET AND RIVERSIDE DRIVE.** THIS LINK IS CLASSIFIED AS AN URBAN ARTERIAL (6 LANES). THERE IS ONE EXISTING LANE IN EACH DIRECTION. DUE TO THE TOPOGRAPHY IT IS NOT POSSIBLE TO ECONOMICALLY CONSTRUCT THE ADDITIONAL LANES. WHAT MAY BE POSSIBLE WILL BE TO PROVIDE LEFT TURN LANES AT TWO INTERSECTIONS, POSSIBLY AT MANNING AND AT LAWRENCE.

(2) **MALAGA ROAD BETWEEN GRAPE STREET AND CANYON HILLS ROAD.** THIS ROAD DOES NOT EXIST TODAY. THE PROPOSED ALIGNMENT IS OVER VERY DIFFICULT TERRAIN AND IT IS VERY DOUBTFUL THAT IT COULD EVER BE ECONOMICALLY CONSTRUCTED.

(3) **RAMSGATE ROAD (NOW NAMED ROSETTA CANYON DRIVE) BETWEEN ELSINORE HILLS ROAD AND FRANKLIN STREET** CANNOT BE CONSTRUCTED DUE TO MSHCP.

(4) **ELSINORE HILL ROAD FROM SOUTH OF RIVERSIDE STREET TO RAMSGATE DRIVE** CANNOT BE CONSTRUCTED DUE TO MSHCP.

(5) **UNNAMED COLLECTOR ROAD BETWEEN ELSINORE HILLS ROAD AND BELLA VISTA** CANNOT BE CONSTRUCTED DUE TO MSHCP.

(6) **ESTELLA MOUNTAIN ROAD NORTH OF I-15.**

(7) **CENTRAL BETWEEN PASADENA AND STRICKLAND.** CENTRAL CANNOT BE CONSTRUCTED OVER THE OUTFLOW CHANNEL.

(8) **RIVERSIDE STREET BETWEEN WASSON CANYON CREEK AND GREENWALD.** THE COST OF BRIDGING THE CREEK MAY NOT BE JUSTIFIED REGARDING TRAFFIC BENEFITS.

(9) **PASADENA STREET FROM 3RD TO CHANEY.** MAY BE DIFFICULT TO EXTEND TO CHANEY DUE TO SCHOOL DISTRICT OFFICES. OFF-SET T-INTERSECTIONS MIGHT BE FEASIBLE; HOWEVER, ALL RIGHT-OF-WAY AND CONSTRUCTION BURDEN WILL FALL ON WHOM EVER DEVELOPS.

(10) **DEXTER AVENUE FROM CENTRAL TO 500' NORTH** WILL NOT EXIST WHEN THE INTERCHANGE IS RECONSTRUCTED.

(11) **THE SPRING STREET/CHESTNUT COUPLET AROUND MAIN STREET NEEDS TO BE ANALYZED ABOUT ECONOMICAL FEASIBILITY.** SPRING STREET IS NECESSARY AND BASICALLY FUNCTIONS AS A COLLECTOR ROAD. IT IS THE TRUCK ROUTE AROUND OLD DOWNTOWN. MAIN STREET IS 2 LANES TOTAL IN THE DOWNTOWN AREA AND WILL NOT BE WIDENED TO 4 LANES. CHESTNUT IS A LOCAL RESIDENTIAL STREET WITH OLDER HOUSING FRONTING THE STREET. MAIN STREET WILL NEED TO BE WIDENED TO AT LEAST 4 LANES AS IT NEARS THE I-15.

OTHER EXISTING STREETS WITH WIDENING CHALLENGES:

(12) LINCOLN STREET BETWEEN MACHADO AND RIVERSIDE DRIVE.

(13) GUNNERSON BETWEEN LAKESHORE AND RIVERSIDE DRIVE.

(14) STRICKLAND, SUMNER, POTTERY BETWEEN RIVERSIDE DRIVE AND 6TH STREET.

(15) 6TH STREET BETWEEN PARK AND MILL.

(16) CANYON ESTATES DRIVE BETWEEN SUMMERHILL AND FRANKLIN.

(17) GRAND BETWEEN RIVERSIDE AND MACHADO.

MAJOR DIFFERENCES BETWEEN CITY AND COUNTY CIRCULATION ELEMENTS:

(18) GRAND AVENUE BETWEEN RIVERSIDE DRIVE AND CLINTON KEITH ROAD IS 6 LANES ON CITY GP AND 4 LANES ON COUNTY.

(19) MISSION TRAIL BETWEEN MALAGA AND PALOMAR IS 6 LANES ON CITY GP AND 4 LANES ON COUNTY.

(20) LOST ROAD IS 4 LANES ON CITY GP AND 2 LANES ON COUNTY.

INTERCHANGE UPGRADES:

(21) RAILROAD CANYON/DIAMOND AT I-15. PSR COMPLETED. PR (PA/ED) UNDERWAY.

(22) CENTRAL (SR-74) AT I-15. DRAFT PSR BEING CIRCULATED.

OTHER COMMENTS:

(23) RIVERSIDE DRIVE IS SHOWN AS A HALF DIAMOND INTERCHANGE AT I-15. THIS WILL NOT HAPPEN. HOWEVER, A BRIDGE ACROSS THE I-15 AT RIVERSIDE WILL OCCUR IN THE FUTURE.

(24) BUNDY CANYON ROAD BETWEEN LAKESHORE DRIVE AND DIAMOND DRIVE CANNOT BE BUILT DUE TO ENVIRONMENT CONSTRAINTS.

(25) THE HOV INTERCHANGE AT MALAGA ROAD AND I-15 CANNOT BE BUILT DUE TO ITS PROXIMITY TO RAILROAD CANYON ROAD.

(26) DIAMOND DRIVE SOUTH OF LAKESHORE DRIVE/MISSION TRAIL IS 4-LANE MAJOR ROAD.

(27) COUNTRY CLUB HEIGHTS IS VERY HILLY AND REGULAR STREET STANDARDS ARE DIFFICULT TO ADMINISTER. SPECIAL STREET STANDARDS SHOULD BE DEVELOPED FOR THIS AREA.

(28) THE EXTENSION OF BAKER TO RIVERSIDE DRIVE WILL BE DIFFICULT IF NOT IMPOSSIBLE TO CONNECT DUE TO PONDS AND OTHER HABITAT. IT MAY BE POSSIBLE TO CONNECT TO GUNNERSON, IF JUSTIFIED BY MODEL VOLUMES.

URBAN CROSSROADS

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CHAPTER 3 – BIOLOGICAL RESOURCES BACKGROUND REPORT

Introduction

This report assesses existing biological resources in the City of Lake Elsinore and its associated sphere of influence (SOI). The regulatory environment and existing conditions will be assessed and analyzed to determine associated constraints and opportunities. The purpose of this discussion is to use the information as a resource for updating the Conservation Element of the General Plan.

Legal Basis and Requirements

Government Code Section 65302(d) states the General Plan shall include a conservation element for the "conservation, development, and utilization of natural resources including water and its hydraulic force, forest, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources."

Regulatory Environment

The City of Lake Elsinore must comply with various Federal, State, and local laws. The following is a list of laws and policies relevant to biological resources. A description of each of the following can be found in the biological resources section of the Environmental Impact Report:

- Federal Endangered Species Act
- Executive Order 13186: Migratory Bird Treaty Act
- Clean Water Act
  - Section 401
  - Section 402
  - Section 404
- Executive Order 11990—Protection of Wetlands
- Fish and Wildlife Coordination Act
- California Endangered Species Act
- California Fish and Game Code
- California State Wetlands Conservation Policy
- Porter-Cologne Water Quality Control Act
- Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)
- Riverside County General Plan
- City of Lake Elsinore General Plan

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

The study area is located within the boundary of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The City of Lake Elsinore adopted the MSHCP in June 2004. The MSHCP is a comprehensive, multi-jurisdictional effort that includes the County and fourteen cities, including Lake Elsinore. Rather than deal with endangered species on a one-by-one basis, this Plan provides an integrated approach to the conservation of 146 species and provides federal and state authorization for impacts to those species under permits held by the City and other Plan participants. As one of the conditions of those permits, City and other Plan participants have agreed to assemble a reserve system of approximately 500,000 acres will be created, connecting current and future conserved lands. Approximately 347,000 of these targeted acres are currently within public ownership and 153,000 acres are currently in private ownership.

Implementation of the plan, including acquisition, administration, operation, and maintenance of reserve lands, will be the responsibility of the newly created Western Riverside County Regional Conservation Authority (RCA), a public agency governed by a board of elected city and county officials. The area covered by the MSHCP has been divided into nine analysis units in a progress report prepared in 2004 by the RCA. Much of the area within the Lake Elsinore SOI lies within RCA Conservation Area 8. The objective of the approved MSHCP is to contribute to the economic viability of the region by providing landowners, developers, and those who build public infrastructure with certainty, a streamlined regulatory process, and identified project mitigation.

Existing and Proposed Conservation Areas

The City of Lake Elsinore is focusing its conservation efforts on adding lands to existing Core Reserves and Linkages within and adjacent to the Elsinore Area Plan. Figure 3.1 shows the public and quasi-public lands that are part of the existing reserve system, and the areas identified in the MSHCP as the focus for future additions to the reserve system. Based on mapping in the MSHCP, approximately 3,500 acres in the City and SOI are part of the existing reserve system within the MSHCP. The goal is add between 4,830 acres and 7,870 acres to the reserve system within the City over a 25-year period within the "criteria area" shown on Figure 3.1. As of the 2004 Annual Report, which is a summary of activities for the initial six-month period that federal and state permits were issued for the MSHCP, June 22, 2004 through December 31, 2004, 868 acres were conserved. Since February of 2000, a total of 2,190 acres has been

Sign identifying one of the City's many habitat conservation areas.

conserved which is 34% of the middle range of the target conservation. Under the MSHCP and its permits, the City reviews proposed land uses in the "criteria area" to determine if they are compatible with the MSHCP's conservation goals and will contribute to assembling the reserves. The MSHCP in the City of Lake Elsinore is addressed in open space and conservation policies in the General Plan. There also are MSHCP survey, habitat evaluation, and mitigation fee requirements that apply to projects in City and are administered through the Planning Department.

Existing Biological Resources

The City and SOI are located in the Elsinore Valley, which is bounded on the west by the east flank of the rugged Santa Ana Mountains and rises into hills to the east. Based on mapping prepared for the MSHCP and as seen in Table 3.1, approximately 13,000 acres of the total area are developed lands or have exotic vegetation and approximately 600 acres are agricultural lands. The remainder of the area is natural vegetation communities, primarily chaparral and Riversidian sage scrub. Table 3.1 and Figure 3.1 indicate the natural community types. Each type and its associated species are described in more detail in the sections below. Designated and proposed conservation areas within the City and SOI also are identified and described.

Natural Communities

There are sixteen natural communities, plus agricultural and developed lands, that occur in the City and/or SOI as shown in table 3.1. Several of the natural communities are considered "sensitive" or "special status" habitats because they are unique, have relatively limited distribution in the region, or have high wildlife value as defined by federal, state, and local government conservation programs. Many are, or correspond to, vegetation series and associations identified in the California Natural Diversity Database (CNDDB) as "rare." Such communities within the City and/or SOI include:

- Riversidian sage scrub
- Riversidian alluvial fan sage scrub
- Diegan coastal sage scrub
- dense Englemann oak woodland
- coast live oak woodland
- southern willow scrub
- southern cottonwood-willow riparian forest
- southern sycamore-alder riparian forest
- coastal and valley freshwater marsh
- vernal pools

Table 3.1 Natural Communities in the City and SOI

Type	City	SOI	Total
Nonnative Grassland	5,533	1,938	7,471
Coastal Sage Scrub			
Riversidian Sage Scrub*	6,453	4,454	10,907
Diegan Coastal Sage Scrub	24	713	737
Riversidian Alluvial Fan Sage Scrub*	43	274	317
Chaparral			
Chamise Chaparral	214	4	218
Chaparral	2,824	10,562	13,386
Woodlands			
Coast Live Oak Woodland*	61	397	458
Dense Engelmann Oak Woodland*	0	5	5
Oak Woodland	5	57	62
Riparian			
Riparian Forest	56	42	98
Riparian Scrub	183	153	336
Southern Cottonwood/Willow Riparian*	0	22	22
Southern Willow Scrub*	27	47	74
Marsh			
Coastal and Valley Freshwater Marsh	32	0	32
Open Water/Reservoir/Pond	2,373	57	2,422
Vernal Pools*, **	--	--	--
Agricultural Lands			
Field Croplands	88	291	379
Grove/Orchard	26	198	224
Residential/Urban/Exotic	6,876	6,080	12,956
TOTAL	**24,818**	**25,294**	**50,104**

Notes

*Considered to be a special status/sensitive habitat because it is unique, has relatively limited distribution in the region, has high wildlife value, and/or is directly or indirectly protected federal, state, or local regulations and policies.

**Individual vernal pools and vernal pool complexes were not mapped in the MSHCP or for the City General Plan but are known to occur in the City and SOI.

Source: GIS database for MSHCP (July 2003).

Nonnative Grassland

Nonnative grasslands are characterized by a dense to sparse cover of annual grasses with flowering culms (stems) 0.2 to 1.5 meters high. They are often associated with numerous species of showy-flowered, native wildflowers, especially in years of favorable rainfall. Flowering occurs with the onset of the late fall rains, and growth, flowering, and seed-set occur from winter through spring. With a few exceptions, the plants are dead through the summer-fall dry season, persisting as seeds. Nonnative grasslands occur on fine-textured soils that are moist during the winter rainy season and very dry during summer and fall. Adjacent communities may include oak woodland on moister, better-drained soils.

Composed almost entirely of annual grasses and other herbaceous annuals, this community is dominant over a large area immediately southwest of Lake Elsinore and also as a mosaic interspersed with coastal sage scrub communities. Plants typical of this community include several species of brome (*Bromus* spp.), wild oat (*Avena* spp.), filaree (*Erodium* spp.), schismus (*Schismus* spp.), fescue (*Vulpia* spp.), and a variety of wildflowers such as California poppy (*Eschscholtzia californica*), phacelia (*Phacelia* spp.), and goldfields (*Lasthenia californica*).

Coastal Sage Scrub

Coastal sage scrub is characterized by low shrubs and an absence of trees. Shrubs include either pure stands or mixtures of coarse, deciduous species that drop their leaves in response to periodic drought conditions. Coastal sage scrub occurs primarily below 914 meters (3,000 feet) above mean sea level on western slopes of mountains, on steep, south-facing, wind-exposed slopes, and in areas where the marine layer penetrates inland to foothills and canyons. Soils are typically well drained and relatively shallow. Shrubs are more widely spaced than in chaparral and do not have the characteristic rigidity or thick drought-resistant leaves of those in chaparral. Remaining dormant throughout the dry season, plants either drop their leaves or produce smaller leaves on secondary shoots, which reduces water loss. Root systems are generally shallow, and some shrubs store water in succulent leaves and stems. Other plants produce aromatic oils from the surfaces of leaves, making them less appealing to grazing animals and reducing water loss, but at the cost of increased flammability during

Sensitive habitat found in the hillsides surrounding the City.

the fire season. Typical species in this community include California sagebrush (*Artemisia californica*), long-stemmed buckwheat (*E. elongatum*), California buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), bush monkeyflower (*Mimulus longiflorus*), brittlebush (*Encelia farinosa*), California bush sunflower *(Encelia californica*), coast goldenbush (*Isocoma menziesii*), laurel sumac (*Malosma laurina*), deerweed (*Lotus scoparius*), golden yarrow (*Eriophyllum confertiflorum*), and coast prickly pear (*Opuntia littoralis*), lupines (*Lupinus* spp.).

Riversidian Sage Scrub

Riversidian sage scrub typically is a fairly open vegetation community, with at least 20 percent cover by California sagebrush, California buckwheat, and Spanish brome (*Bromus madritensis*). See description of coastal sage scrub above for additional details about plant species composition. In the City and SOI, this community occurs in many locations, often on hills and slopes adjacent to developed areas. In many locations, the herb layer of the Riversidian sage scrub is dominated by nonnative invasive forbs and grasses, which reduces the quality of these areas as potential habitat for various species.

Riversidian sage scrub is considered a special status or sensitive habitat.

Diegan Coastal Sage Scrub

Similar to Riversidian sage scrub, this community is found where moisture is relatively more available. Dominant species are California sagebrush, California buckwheat, laurel sumac, lemonade berry (*Rhus integrifolia*), and white sage. This community occurs only in small patches within the existing City limits; substantially more acres of this type occur in the SOI than in the City.

Riversidian Alluvial Fan Sage Scrub

Riversidian alluvial fan sage scrub grows on sandy, rocky alluvial soils deposited by streams that experience periodic flooding. The soils in these areas are well drained to excessively drained and have low water holding capacity and low fertility. Vegetation consists of drought-deciduous subshrubs and large evergreen woody shrubs adapted to these soil characteristics and survival of, or rapid recruitment after, intense, periodic flooding and erosion. Pioneer, intermediate, and mature stages of alluvial fan sage scrub plant community are often distinguished. The pioneer stage has sparse vegetation and low plant diversity. The intermediate stage is characterized by dense vegetation dominated by subshrubs. The mature stage has dense, full-grown subshrubs, along with evergreen woody shrubs. Scale-broom is a shrub species found most often on alluvial soils associated with drainages. Other common shrub species of this vegetation community are often characteristic species of either Riversidian sage scrub or chaparral communities. These common subshrub species include coastal sagebrush, California buckwheat, chamise, brittlebush (*Encelia*

farinosa), hairy yerba santa (*Eriodictyon trichocalyx*), sugarbush, birch-leaved mountain mahogany, and deerweed (*Lotus scoparius*).

Small patches of this community are present in the City in washes where the soil has been deposited and is periodically scoured by flowing water from slopes above. Soils tend to be sandy and porous. Substantially more acres of this community occur in the SOI than in the City.

Riversidian alluvial fan sage scrub is considered a special status/sensitive habitat.

Chaparral

Chaparral is widely distributed on dry slopes and ridges at low and mid-elevations. It typically consists of shrubs with tough, broad leaves, although species composition may vary considerably with many different subtypes. This community also is highly adapted to periodic natural fires.

Chamise chaparral, which is the most common chaparral type in Riverside County, is dominated by chamise (*Adenostoma fasciculatum*). Southern mixed chaparral often occurs adjacent to Riversidian sage scrub and chamise chaparral, but generally on sites with more moisture. Common chaparral shrubs include toyon (*Heteromeles arbutifolia*), chamise, several California lilacs (*Ceanothus megacarpus, C. crassifolius, C. cuneatus, and C. spinosus*), birch-leaved mountain mahogany (*Cercocarpus betuloides*), manzanita (*Arctostaphylos* spp.), and scrub oak (*Quercus berberdifolia*).

Generally taller and denser than sage scrub communities, this community is found in the City primarily on the eastern slopes of the Santa Ana Mountains. It is more broadly distributed in the SOI.

Oak Woodland

Oak woodland varies from open savannas with grassy understories to fairly dense woodlands with shrubby understories. This community typically integrates with both nonnative grassland and riparian woodland. Annual rainfall is generally between 38 and 64 centimeters (15 and 25 inches), and intermittent streams may be present. The dominant trees in the Riverside area are coast live oak (*Quercus agrifolia*), with smaller amounts of Engelmann oak (*Quercus engelmannii*), black walnut (*Juglans californica*), western sycamore (*Platanus racemosa*), toyon, and blue elderberry (*Sambucus mexicana*). Smaller trees and shrubs along with herbaceous plants and grasses that form the vegetative understory include sugar bush (*Rhus ovata*), squawbush (*Rhus trilobata*), poison–oak (*Toxicodendron diversilobum*), coastal wood fern (*Dryopteris arguta*), and bracken fern (*Pteridium aquilinium*).

Within the City and SOI this community is typically located near intermittent stream courses and is known to occur in the canyons on the east face of the Santa Ana Mountains.

Coast Live Oak Woodland

Coast live oak woodlands vary from closed-canopy stands of coast live oak to mixtures with conifers and broadleaf trees to open savannas. The shrub layer is poorly developed, but may include toyon, laurel sumac, or blue elderberry. The herb component is typically continuous and dominated by rip-gut brome (*Bromus diandrus*) and several other introduced species. This community typically occurs on north-facing slopes and shaded ravines.

Coast live oak woodland is considered a special status/sensitive habitat. It occurs in both the City and SOI, with substantially more acres in the SOI than in the City.

Dense Englemann Oak Woodland

Dense Englemann oak woodland is a climax woodland dominated by Englemann oak (*Quercus englemannii*), with coast live oak as an additional significant constituent. The understory is composed of typical grassland species. Canopy cover is dense. This vegetation community appears on moderately moist sites, especially in steep canyons. Dense Englemann oak woodlands are known to occur southeast of Lake Mathews between Galivan Road and Lake Mathews Drive.

Dense Englemann oak woodland is considered a special status/sensitive habitat. It occurs in the SOI but not within the existing City boundaries.

Riparian Forest, Woodland, and Scrub

Riparian forests and woodlands are dependent on the presence of or proximity to non-seasonal water sources. The water may be surface water or shallow groundwater. Riparian woodlands may measure a few meters in width to much broader, depending on water flow. Where non-seasonal streams flow out of the mountains and onto flatter grasslands, the riparian woodland community may be a relatively broad one, but in the higher elevations where water flows down a narrow passageway often confined by steep hillsides, this community may be very narrow. Riparian woodland may also occupy areas surrounding human-made lakes and reservoirs. Typical species of this community include willows (*Salix* spp.), western sycamore, black walnut, Fremont and black cottonwood (*Populus fremontii* and *P. trichocarpa*), white alder (*Alnus rhombifolia*), coast live oak, mule fat (*Baccharis salicifolia*), and smaller plants such as poison-oak, California blackberry, horsetails (*Equisetum* spp.), and scarlet and creek monkeyflower (*Mimulus cardinalis* and *M. guttatus*).

Riparian scrub is characterized as a scrubby streamside thicket, dominated by any of several willows, mule fat, or a mix of these. Vegetation may vary from open to impenetrable. Willows typically occur on relatively fine-grained sand and gravel bars that are close to river channels and/or groundwater. Coarser substrate soils or areas where there is relatively great depth to the water table favors dominance by mule fat. This early successional community may precede any of several riparian woodland or forest types absent severe flooding disturbance.

Riparian forest and scrub communities occur along streambeds in the City and SOI and along the shore of Lake Elsinore. Types include southern willow scrub, composed of relatively small willows and mulefat, southern cottonwood – willow riparian forest, with taller willows and cottonwoods, and southern sycamore – alder riparian woodland, composed of western sycamore, white alder, and often lower densities of willows, cottonwoods, or oaks. In general, all riparian communities are considered to be special status/sensitive habitats.

Southern Willow Scrub

Southern willow scrub is distinguished by dense, broadleaved, winter-deciduous riparian thickets dominated by several willow species, including black willow, sandbar willow, red willow (*Salix laevigata*), and arroyo willow, with scattered Fremont cottonwood and western sycamore. Most stands are too dense to allow much understory development. Typical soils include loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. This community requires repeated flooding to prevent succession to southern cottonwood-sycamore riparian forest. It occurs in both the City and SOI and is considered a special status/sensitive habitat.

Southern Cotd-willow riparian forests are tall, open, broadleaved winter-deciduous riparian foresttonwood-Willow Riparian Forest

Southern cottonwoods dominated by Fremont cottonwood, black cottonwood, and several tree willows. Understories consist of shrubby willows. The dominant species require moist, bare mineral soil. Sub-irrigated and frequently overflowed lands along rivers and streams provide the necessary conditions for germination and establishment. Other typical plant species include California mugwort, mule fat, wild cucumber (*Marah macrocarpus*), western sycamore, Goodding's black willow (*Salix gooddingii*), sandbar willow (*Salix exigua*), yellow shining willow (*Salix lasiandra*), arroyo willow (*Salix lasiolepis*), and stinging nettle (*Urtica dioica*). It occurs in the SOI and is considered to be a special status/sensitive habitat.

Southern Sycamore-Alder Riparian Woodland

Southern sycamore-alder riparian woodland is a tall, open, broadleaved, winter-deciduous streamside woodland dominated by western sycamore and white alder. These stands seldom form closed canopy forests, and may appear as trees scattered in a shrubby thicket of hard drought-resistant evergreens and deciduous species. Soils consist of very rocky streambeds subject to seasonally high-intensity flooding. White alder increases in abundance on more perennial streams, while western sycamore favors more intermittent hydrographs. Other common forms of vegetation include California mugwort, coast live oak, horsetail, smilo grass (*Piptatherum miiaceum*), California blackberry, poison-oak, blue elderberry, and stinging nettle (*Urtica dioica*). This woodland is considered to be a special status/sensitive habitat.

Marsh

Marsh communities are dominated by perennial, emergent flowering plants (monocots) generally up to four to five meters tall. Vegetation often forms completely closed canopies. Bulrush (*Scirpus* spp.) and cattail (*Typha* spp.) species dominate. Marsh communities are found on sites permanently inundated by fresh water and lacking significant current. Conditions of prolonged saturation permit accumulation of deep, peaty soils in this community.

Coastal and Valley Freshwater Marsh

This community is generally found in areas with slow-moving or ponded water, where shallow topography is subject to prolonged saturation. One of these areas is northeast of Lake Elsinore, around a small lake that was created several years ago. It is recognized by the presence of plants that grow up through shallow water, such as cattail, bullrush, and sedge). This community occurs in the City but not the SOI and is considered a special status/sensitive habitat.

Open Water / Reservoir / Pond

Rare white pelicans in quiet lake area.

Open water/reservoir/pond areas are called lacustrine ecosystems and are characterized by inland depressions or dammed riverine channels containing standing water, including both near-shore (limnetic) and deepwater habitats (littoral). Usually, to meet this classification, each area must exceed 20 acres (8 hectares) and be deeper than 6.6 feet (2 meters). The lower San Jacinto River, Lake Elsinore, and several other ponds and creeks within the study area provide open water habitat, relatively free of vegetation, that supports fish, amphibians, and waterfowl. Among the warm water fishery species that provide

recreational fishing in Lake Elsinore are largemouth bass, catfish, and crappie. Recent efforts to improve the water quality in Lake Elsinore have included the harvesting of carp in order to restructure the fishery composition, and also the installation of a series of axial flow pumps designed to increase vertical water circulation, thereby maintaining higher levels of dissolved oxygen in the water. These areas are subject to a wide range of regulations and, depending on site-specific conditions, typically are considered to be a special status/sensitive habitat.

Vernal Pools

Vernal pools are seasonal wetlands that form in localized depressions with subsurface hardpans, allowing ponded rainwater to remain above the surface into the dry season. These seasonal wetlands create a moist environment to which a specialized group of plant species is adapted. Species composition varies among pools and among years. However, as noted in Riverside County (2003c), common species in vernal pools in or near the project area include woolly marbles (*Psilocarphus brevissimus*), toad rush (*Juncus bufonius*), spike rush (*Eleocharis* species), wire-stem popcorn flower (*Plagiobothrys leptocladus*), Mexican speedwell (*Veronica peregrina* ssp. *xalapensis*), annual hairgrass (*Deschampsia danthonioides*), alkali pepper-grass (*Lepidium dictyotum*), and water pygmy weed (*Crassula aquatica*); many special status species are also

Agricultural Lands

Limited areas of groves, orchards, and cropland persist in the study area. These lands have little value as habitat for wildlife other than those species highly adapted to disturbance.

Residential / Urban / Exotic

A substantial portion of the area within the Lake Elsinore SOI has been developed, and remaining natural resources in these areas are now limited to ornamental trees and garden shrubs that may provide some habitat for nesting birds.

Special Status Species

In this report, plants and animals are identified as being "special status species" if they are listed or proposed for listing under federal or state law; are identified as "sensitive," "a species of concern," or "a species of special concern" on lists maintained by federal or state agencies; or are on the list of (biologically) endangered and rare plant species maintained by the California Native Plant Society. Table 3.2 identifies the special status species that are known to occur or have a reasonable potential for occurrence in the City and/or SOI.

Table 3.2 Special Status Species That Occur or Potentially Occur in the City and/or SOI

Species Common/ Scientific Name	Status[1]	Habitat Affinities
Plants		
Chaparral sand-verbena *Abronia villosa* var. *aurita)*	Federal: None State: None CNPS: 1B	Exposed sites with sandy soils, especially washes and dunes, in chaparral, sage scrub, and alluvial scrub
California orcutt grass *Orcuttia californica*	Federal: E State: E CNPS: 1B	Vernal pools; alkaline soils and southern southern basaltic claypan,
Coulter's goldfields *Lasthenia glabrata* ssp. *Coulteri*	Federal: None State: None CNPS: 1B	Coastal salt marshes, playas, valley and foothill grassland, vernal pools. Alkaline soils in playas, sinks, and grasslands. 1–1,400 meters in elevation.
Davidson's saltscale *Atriplex serenans* var. *davidsonii*	Federal: None State: None CNPS:1B	Alkali vernal pools, alkali annual grasslands, alkali playa, and alkali scrub components of alkali vernal plains.
Hammitt's clay-cress *Sibaropsis hammittii*	Federal: None State: None CNPS: 1B	Chaparral and valley and foothill grassland at elevations of 700m to 1100m.
Intermediate mariposa lily *Calochortus weedii* var. *intermedius*	Federal: None State: None CNPS: 1B	Rocky hill-and-valley landscapes with chaparral, sage scrub, or grasslands
Little mousetail *Myosurus minimus* ssp. *Apus*	Federal: None State: None CNPS: 3	Vernal pools and poorly drained spots in moist grasslands, generally under alkaline conditions.
Long-spined spineflower *Chorizanthe polygonoides* var. *longispina*	Federal: None State: None CNPS: 1B	Chaparral, coastal scrub, meadows, valley and foothill grassland. Gabbroic clay. 30–1,450 meters in elevation.
Many-stemmed dudleya *Dudleya multicaulis*	Federal: None State: None CNPS: 1B	Chaparral, coastal scrub, valley and foothill grassland. In heavy, often clayey soils or grassy slopes. 0–790 meters in elevation.
Munz's onion *Allium munzii*	Federal: E State: T CNPS: 1B	Chaparral, coastal scrub, cismontane woodland, pinyon-juniper woodland, valley and foothill grassland. Only in Riverside County. Heavy clay soils; grows in grasslands and openings within shrublands or woodlands. 300–1,035 meters in elevation.
Palmer's grapplinghook *Harpagonella palmeri*	Federal: None State: None CNPS: 4	Chaparral, coastal sage scrub, grasslands; clay soils.
Parry's spineflower *Chorizanthe parryi* var. *parryi*	Federal: None State: None CNPS: 1B	Coastal scrub, chaparral. Dry slopes and flats; sometimes at interface of 2 vegetation such as chaparral and oak woodland; dry, sandy soils. 40–1,705 meters in elevation.

Species Common/ Scientific Name	Status[1]	Habitat Affinities
Robinson's pepper-grass *Lepidium virginicum* var. *robinsonii*	Federal: None State: None CNPS: 1B	Chaparral, coastal scrub. Dry soils, shrubland. 1–945 meters in elevation.
Round-leaved filaree *Erodium macrophyllum*	Federal: None State: None CNPS: 2	Cismontane woodland, valley and foothill grassland. Clay soils. 15–1,200 meters in elevation.
San Diego ambrosia *Ambrosia pumila*	Federal: E State: None CNPS: 1B	Chaparral, coastal scrub, valley and foothill grassland, vernal pools. In the U.S., known only from San Diego and Riverside counties. Sandy loam or clay soil. In valleys, persists where disturbance has been superficial. 20–415 meters in elevation.
San Jacinto Valley crownscale *Atriples coronata* var. *notatior*	Federal: E State:None CNPS: 1B	Flooplains (seasonal wetlands) dominated by alkali scrub, alkali playas, vernal pools, and, to a lesser extent, alkali grasslands.
Slender-horned spineflower *Dodecahema leptoceras*	Federal: E State: E CNPS: 1B	Chaparral, coastal scrub (alluvial fan sage scrub), flood deposited terraces and washes.
Small-flowered microseris *Microseris douglasii* var. *platycarpha*	Federal: None State: None CNPS: 4	Clay soils in associations with native grasslands or vernal pools.
Smooth tarplant *Centromadia pungens* ssp. *Laevis*	Federal: None State: None CNPS: 1B	Valley and foothill grassland, chenopod scrub, meadows, playas, riparian woodland, alkali meadow, alkali scrub; also in disturbed places. 0–480 meters in elevation.
Invertebrates		
Riverside fairy shrimp *Streptocephalus woottoni*	Federal: E State: None	Areas of tectonic swales/earth slump basins in grassland and coastal sage scrub. Inhabit seasonally astatic pools filled by winter/spring rains. Hatch in warm water later in the season.
Quino checkerspot butterfly *Euphydryas editha quino*	Federal: E State: None	Open areas in grasslands, forb-lands, coastal sage scrub, and chaparral, usually with low disturbance and a well-developed biological soil crust. Primary larval host plant is *Plantago erecta.*
Amphibians		
Western spadefoot *Spea hammondii*	Federal: SOC State: SSC	Grassland, coastal sage scrub, and other habitats with open sandy gravel soils. Breeds in vernal pools and temporary ponds/pools associated with river bottoms and floodplains. Primarily a species of the lowlands, frequenting washes, floodplains of rivers, alluvial fans, and alkali flats.
Reptiles		
Coast (San Diego) horned lizard *Phrynosoma coronatum (blainvillei)*	Federal: None State: SSC	Open or sparse scrub and chaparral communities. This species prefers loose, friable soil for burrowing.

Species Common/ Scientific Name	Status[1]	Habitat Affinities
Orangethroat whiptail *Cnemidophorus hyperythrus*	Federal: None State: SSC	Chaparral, sage scrub and open edges of riparian areas; specialist to some degree on native termites.
Coastal western whiptail *Aspidoscelis tigris stejnegeri*	Federal: SOC State: None	Found in deserts and semiarid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.
Northern red-diamond rattlesnake *Crotalus ruber ruber*	Federal: None State: SSC	Chaparral, woodland, grassland, and desert areas. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks, or surface cover objects.
Western pond turtle *Clemmys marmorata pallida*	Federal: None State: SSC	Ponds, small lakes, perennial pools in drainages, marshes, slow-moving sometimes-brackish water.
Birds		
American bittern *Botaurus lentiginosus*	Federal: SOC State: None	Freshwater marshes and vegetated borders of ponds and lakes.
Bald Eagle *Haliaeetus leucocephalus*	Federal: T State: E	Open areas, forest edges, and mountains near large lakes and rivers. Requires tall trees for nesting. Three known nest efforts in or near western Riverside County, but not within the project area, in the last ten years.
Bell's sage sparrow *Amphispiza belli belli*	Federal: SOC State: SSC	Extensive patches of chaparral less than about 2 meters in height and sage scrub shaded and relatively open at the ground layer.
Black-crowned night-heron *Nycticorax nycticorax*	Federal: None State: None	Many types of wetlands; inland relay are large wetland areas.
Burrowing owl *Speotyto cunicularia*	Federal: SOC State: SSC	Requires fairly large expanses of relatively open, level or hummocky terrain, including grasslands, agricultural fields, dairies, flood channels, and occasionally may use undisturbed areas of golf courses or airports.
Cactus wren *Campylorhynchus brunneicapillus*	Federal: None State: SSC	Coastal sage scrub with thickets, patches, or tracts of large branching cacti, thorny shrubs, and small trees.
Coastal California gnatcatcher *Polioptila californica californica*	Federal: T State: SSC	Obligate resident of several distinct subassociations of the coastal sage scrub community.
Cooper's hawk *Accipiter cooperii*	Federal: None State: SSC	Mature forest, open woodlands, parks, and residential areas.
Double-crested cormorant *Phalacrocorax auritus*	Federal: None State: None	Occupies diverse aquatic habitats in all seasons. Diet is primarily fishes. Tolerates only minimal disturbance at nesting colonies.
Downy woodpecker *Picoides pubescens*	Federal: None State: None	Nests in extensive lowland riparian woodland and forest; will forage in many adjacent habitats.

Species Common/ Scientific Name	Status[1]	Habitat Affinities
Least Bell's vireo *Vireo bellii pusillus*	Federal: E State: E	Riparian habitat with some tree layer and a dense understory, often of young willows, but sometimes mule fat, blue elderberry, California rose, desert wild grape, and a variety of other shrubby species.
Loggerhead shrike *Lanius ludovicianus*	Federal: SOC State: SSC	Open areas (e.g., grassland, rangeland, fallow agricultural fields), especially where there are scattered large shrubs, trees, or other suitable perches at moderate height.
Northern harrier *Circus cyaneus*	Federal: None State: SSC	Coastal lowlands, marshes, mesic grasslands, and agricultural fields. Probably extirpated locally as a breeder.
Osprey *Pandion haliaetus*	Federal: None State: SSC	Large water bodies supporting fish with surrounding or nearby suitable nest sites.
Peregrine falcon *Falco peregrinus*	Federal: E/delisted State: E, P	Open areas, mud flats with waterfowl, shorebirds. Not currently believed to breed in Riverside County.
Southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	Federal: None State: SSC	Rocky slopes, especially where a relatively open shrub cover dominated by California sagebrush is interspersed with grassy areas.
Southwestern willow flycatcher *Empidonax traillii extimus*	Federal: E State: E	Riparian woodlands along rivers and streams, with mature dense stands of willows, cottonwoods, and sometimes alders. Requires some inundation or soil saturation in riparian at least through May.
Tree swallow *Tachycineta bicolor*	Federal: None State: None	During winter and migration, found in open areas, grasslands, meadows, brushlands, and near water sources.
Tricolor blackbird *Agelaius tricolor*	Federal: SOC State: SSC	Freshwater marshes. Suitable breeding habitat includes cattails and bulrushes, as well as nonnative thistles and mustards.
White-faced ibis *Plegadis chihi*	Federal: None State: SSC	Nests in large, shallow marshes with islands of emergent vegetation. Forages in a wide variety of marsh and mudflat habitats.
White-tailed kite *Elanus leucurus*	Federal: None State: P	Nests in riparian woodland edges, pasture lands and savannah, oaks, and sycamores. Forages in open areas with short grass and/or forbs.
Yellow-breasted chat *Icteria virens*	Federal: None State: SSC	Nests and forages in dense, low riparian growth including edges of woods, fencerows, dense thickets, and brambles in low wet places near streams, pond edges, or swamps and in old overgrown clearings and fields.

Species Common/ Scientific Name	Status[1]	Habitat Affinities
Yellow warbler *Icteria virens*	Federal: None State: SSC	Nests in mature riparian forest and woodland, foraging largely in the upperstory; more common as a spring and fall migrant in varied habitats.
Mammals		
Bobcat *Lynx rufus*	Federal: None State: None	Variety of habitats, including conifer, oak, riparian, pinyon-juniper forest, chaparral; dependent on extensive open space and connectivity, with rabbits a central part of the diet.
Mountain lion *Puma concolor*	Federal: None State: None	Variety of habitats, requires very large tracts of land with low levels of human disturbance and development.
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	Federal: None State: SSC	Coastal scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon juniper, and annual grassland in sandy herbaceous areas, usually in association with rocks or coarse gravel.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	Federal: None State: SSC	Arid regions supporting short-grass habitats such as annual grassland, often adjacent to or mixed with Riversidian sage, scrub, alluvial fan scrub, Great Basin sagebrush, chaparral, disturbed habitat, or agriculture.
Stephens' kangaroo rat *Dipodomys stephensi*	Federal: E State: T	Inhabits annual grassland with sparse perennial vegetation and open sage scrub in the San Jacinto Valley and adjacent areas of western Riverside County and northwestern San Diego County.

[1] Indicates federal and state listing status as of January 2005 and CNPS list for plants.

Codes and Abbreviations

C :	Candidate
CNPS:	California Native Plant Society
1B:	Rare and endangered in California and throughout its range
2:	Rare and endangered in California but more common elsewhere
4:	Limited distribution
P:	Fully Protected species identified in the California Fish and Game Code
SOC:	Species of Concern
SSC:	California Department of Fish and Game Species of Special Concern
T:	Threatened

Existing and Proposed Conservation Areas

The City is a participating agency in the MSHCP and as such is working with Riverside County, other cities in the region, USFWS, DFG, Caltrans, California State Parks, U.S. Forest Service, and U.S. Bureau of Land Management to complete the MSHCP Conservation Area over a 25-year period. Specifically, the City is focusing its conserva-

tion efforts on adding lands to existing Core Reserves and Linkages within and adjacent to the Elsinore Area Plan, public and quasi-public lands that are part of the existing MSHCP Conservation Area, and the Criteria Area in and adjacent to the City and SOI, as seen in both Figure 3.1 and 3.2. Based on mapping in the MSHCP, approximately 3,500 acres in the City and SOI are part of the existing MSHCP Conservation Area. The City's conservation target under the MSHCP is to add between 4,830 acres and 7,870 acres to the MSHCP Conservation Area. The Criteria Area within the City and SOI will be the focus of the conservation effort.

Constraints and Opportunities

Constraints and opportunities in the City of Lake Elsinore and the SOI can understood by analyzing existing conditions and the existing regulatory environment. The purpose of this section is use the information for updating and implementing conservation-related policies for the General Plan.

Constraints

Multiple Species Conservation Plan (MSHCP)

There are constraints on conservation in the City and SOI, with or without the MSHCP. With the MSHCP, the primary constraints are (1) the narrowed geographic focus for conservation within the City and SOI because of the MSHCP focus on the Criteria Area, and (2) the priority given to regionally- versus locally important resources. Without the MSHCP, the primary constraints are (1) absence of regulatory protections for and incentives to conserve non-special- status/sensitive resources and (2) the priority given to project-level mitigation determined in connection with federal and state permits and authorizations. An additional constraint that applies with or without the MSHCP is that most of the natural open space and most of the special-status/sensitive resources occur on private property.

View of San Jacinto River channel near Diamond Stadium.

Because most of the City and its SOI currently is natural open space and most of the natural open space consists of special status/sensitive habitats (see Table 3.2), there are opportunities to protect and/or conserve each type of biological resource in the City and

SOI as the City continues to develop. None of the existing resources is precluded from conservation because of existing land uses or other conditions. Further, the MSHCP provides a regional, ecosystem-based framework for ensuring long-term persistence and vitality of the conserved resources by linking them to the overall MSHCP Conservation Area. In this regard, implementation of the MSHCP represents an opportunity for conservation benefits in the City and SOI that could not be achieved solely through a local conservation program.

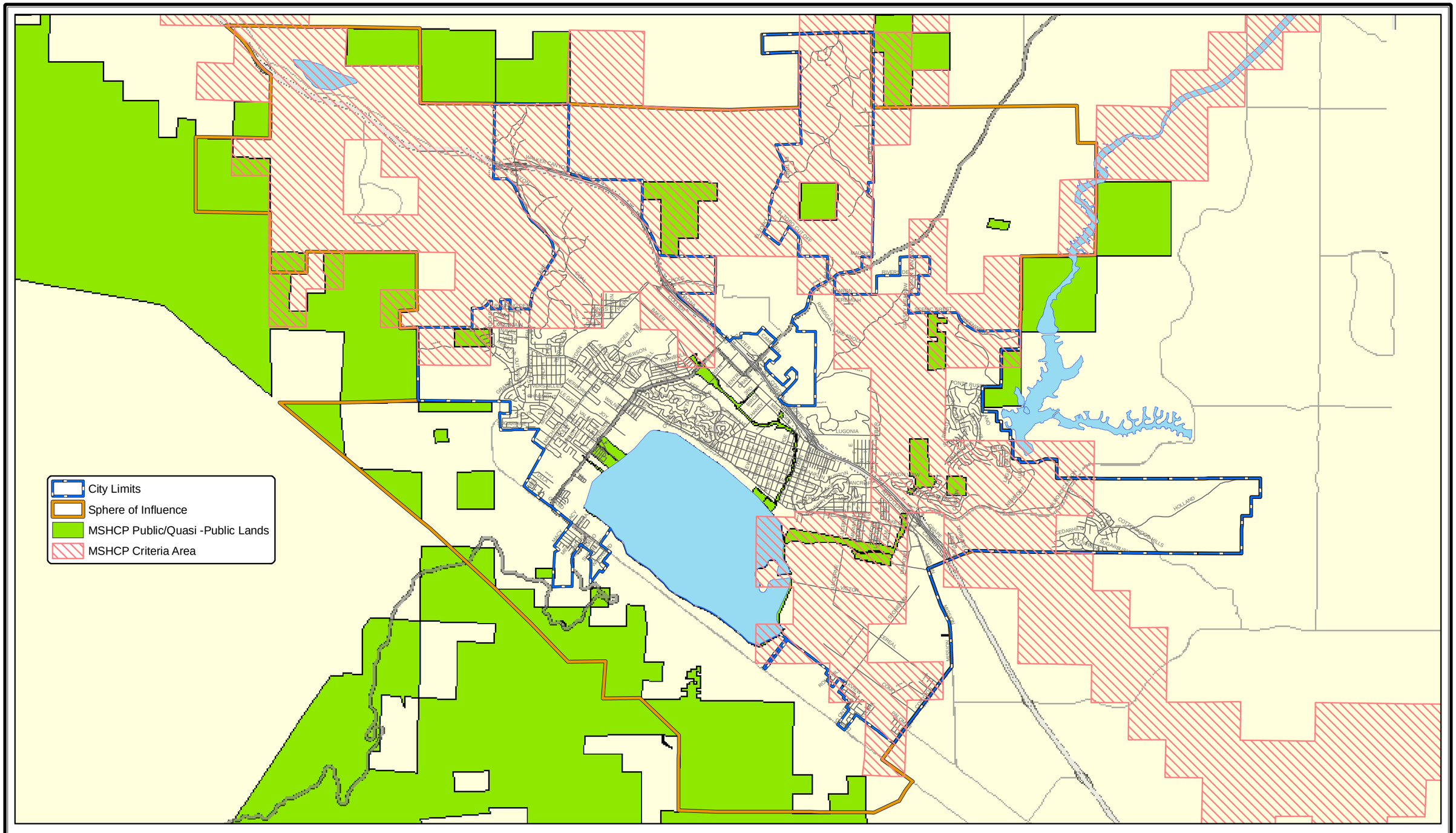
While the MSHCP provides a uniform approach to the potential presence of special status species and natural communities, preserving these species and communities will require careful planning on the part of the City of Lake Elsinore to avoid preventable reduction of its valuable natural resources. When considering changes in land use designations, the locations of sensitive water resources, natural communities, special status species, and their associated habitats will need to be addressed in order to optimize the balance between development and the continued health of the natural resources present within the City of Lake Elsinore and SOI.

Opportunities to Enhance Regulatory Requirements

Updating the General Plan, and adapting current development policies, codes, and ordinances wherever necessary to comply with the MSHCP and water quality regulations will allow future project planning to proceed on a well defined, predictable path. It will also provide a reliable mechanism to ensure compliance with the MSHCP. This will encourage development in areas with relatively lower levels of biological value and allow conservation of higher value areas, enhancing both development potential and the long-term viability of natural systems within the City of Lake Elsinore and SOI.

Opportunities to Address Existing Conditions

Opportunities exist throughout the City of Lake Elsinore and the SOI for preservation of open space in accordance with the requirements of the MSHCP. Continued focus on acquiring targeted acreage as defined in the MSHCP will provide linkages for species such as the coastal California gnatcatcher and Least Bell's Vireo.



Source: City of Lake Elsinore, County of Riverside

Mooney · Jones & Stokes

12/01/05: /GIS/elsinore/mxd/fig3_1msh

MSHCP Criteria Area
Figure 3.1

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City Limits
Sphere of Influence
MSHCP Criteria Area

Vegetation

- Agriculture
- Developed
- Grassland
- Chaparral Scrub
- Upland Scrub
- Scrub Woodland
- Oak Woodland
- Riparian
- Wetland

Source: City of Lake Elsinore, County of Riverside

Mooney · Jones & Stokes

12/01/05: /GIS/elsinore/mxd/fig3_2veg

0 6,500 13,000

Feet

Vegetation Communities
Figure 3.2

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CHAPTER 4 – AIR QUALITY

Crowd of hang gliders in hillside over Lake Elsinore.

Introduction

This report assesses air quality in the City of Lake Elsinore and its associated sphere of influence (SOI). The regulatory environment and existing conditions will be assessed and analyzed to determine associated constraints and opportunities. The purpose of this discussion is to use the information as a resource for updating the General Plan for the City of Lake Elsinore.

Terminology

The following is a brief background discussion of air quality terminology.

- **Lake Elsinore Convergence Zone**: a zone where the two major airstreams in Western Riverside County meet.

- **Mobile Emission Source – Off-road:** Emissions from off-road motor vehicles, including tailpipe and evaporative emissions. Off-road air pollutant emission sources include aircraft, ships, trains, racecars, and construction vehicles.

- **Mobile Emission Source – On-road:** Emissions from on-road motor vehicles, including tailpipe and evaporative emissions. On-road air pollutant emission sources are those that are legally operated on roadways and highways.

- **Stationary Emission Source – Point:** Point sources of air pollutant emissions occur at a specific identified location, are usually associated with manufacturing and industry, and commonly require a permit from the South Coast Air Quality Management District (SCAQMD) to operate. Examples of point sources are boilers or combustion equipment that produce electricity or generate heat, such as heating, ventilation, and air conditioning (HVAC) units.

- **Stationary Emission Source – Area:** Area sources of air pollutant emissions are widely distributed and produce many small emissions, and they do not require permits to operate from the SCAQMD. Examples of area sources include residential and commercial water heaters, painting operations, portable generators, lawn mowers, agricultural fields, landfills, and consumer products, such as barbeque lighter fluid and hair spray, the area-wide use of which contributes to regional air pollution.

- **Temperature Inversion:** Warm layer of air that traps the cool marine air lay underneath it and prevents vertical mixing.

Regulatory Environment

The City of Lake Elsinore must comply with various Federal, State, and local laws. The following is a list of laws and policies relevant to air quality.

- Federal and State Ambient Air Quality Standards
- Federal Clean Air Act
- California Clean Air Act of 1988
- California Air Resources Board rules and regulations
- The Southern California Association of Governments (SCAG): Regional Comprehensive Plan and Guide (RCPG)
- South Coast Air Quality Management District rules and regulations
- Lake Elsinore General Plan

Existing Air Quality Conditions

Climate and Meteorology

Regional (Western Riverside County)

Temperature inversions are the prime factor that allows contaminants to accumulate in the Basin. The mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds. The topography and climate of Southern California combine to create an area of high air pollution potential in the Basin. During the summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cup over the cool marine layer, which prevents pollution from dispersing upward. This inversion allows pollutants to accumulate within the lower layer. Light winds during the summer further limit ventilation from occurring.

Due to the low average wind speeds in the summer and a persistent daytime temperature inversion, emissions of hydrocarbons and oxides of nitrogen have an opportunity to combine with sunlight in a complex series of reactions. These reactions produce a photochemical oxidant commonly known as smog. Since the Basin experiences more

days of sunlight than any other major urban area in the United States except Phoenix, the smog potential in the region is higher than in most other areas of the nation.

Local (Lake Elsinore Planning Area)

The major factors affecting local air pollution conditions in the Lake Elsinore planning area are the extent and types of both region-wide and local emissions, climate and meteorology. The general climate of Lake Elsinore is characterized by sparse winter rainfall and hot summers tempered by cool ocean breezes. The climate in and around Lake Elsinore, as well as most of Southern California, is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. This high-pressure cell produces a typical Mediterranean climate with warm summers, mild winters, and moderate rainfall. This pattern is infrequently interrupted by periods of extremely hot weather brought in by Santa Ana winds. Most of the area's precipitation occurs intermittently between November and April; the area is still dominated by sunny or partly sunny conditions during these months. Cyclic land and sea breezes are the primary factors affecting the regions mild climate. The daytime winds are normally sea breezes, predominantly from the west, that flow at relatively low velocities.

Distant view of smog obscuring scenery.

Just south of Lake Elsinore, the Lake Elsinore Convergence Zone acts as an invisible boundary that obstructs much of the inland basin air pollutants from continuing south beyond the Lake Elsinore area. Coastal winds within the Elsinore Convergence Zone are a primary factor for the obstruction, and allow for air pollutants to be dispersed just south of the Convergence Zone, but also allow for their accumulation within the Lake Elsinore area, including surrounding communities to the north and east.

Air Quality

Regional (South Coast Air Basin, including Western Riverside County)

As California's largest metropolitan region, the Southern California Air Basin (SCAB) contains some of the highest air pollutant concentrations statewide. The SCAB includes the western portion of Riverside County, including Lake Elsinore. On-road

motor vehicles in the SCAB are the largest contributors to CO, NO_x, and ROG emissions; other on-road and off-road mobile emission sources are also significant contributors to CO and NO_x emissions. Area-wide and stationary sources contribute to the remainder of air pollutant emissions within the SCAB. While high growth rates are often associated with corresponding increases in emissions and pollutant concentrations, aggressive emission control programs in SCAB have resulted in emission decreases and a continuing improvement in air quality.

The South Coast Air Quality Management District (SCAQMD) operates a network of thirty monitoring stations throughout the SCAB to effectively monitor twenty-seven source receptor areas (SRA) of the expansive region. The SCAB relies on one or more monitoring stations to document local air pollutant concentration levels within each SRA. Concentration levels vary widely at each SRA depending on location and time of year. The highest levels of ozone and particulate matter recorded in SRAs in the interior valleys generally occur during warm, stable periods in summer and autumn. Recorded carbon monoxide concentrations are highest near heavy traffic on freeways or near large business districts.

Criteria Air Pollutants

The federal and state governments have established ambient air quality standards for six criteria pollutants: ozone, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulates (PM10 and PM2.5), and lead. Ozone, NO_2, and particulates are generally considered to be "regional" pollutants, as these pollutants or their precursors affect air quality on a regional scale. Pollutants such as CO, SO_2, lead, and particulates are considered to be local pollutants that tend to accumulate in the air locally. PM10 and PM2.5 are considered to be localized pollutants as well as regional pollutants.

The quality of the surface ambient air quality is evaluated by measuring the concentrations of certain regulated pollutants (criteria air pollutants) and comparing the levels with national and State air quality standards. If a pollutant concentration is lower than the state or federal standard, the area is classified as being in attainment for that pollutant. If a pollutant violates the standard, the area is considered a non-attainment area. If data is insufficient to determine whether a pollutant is violating the standard, the area is designated as unclassified. The attainment status of western Riverside County in relation to the criteria pollutants of concern is summarized in Table 4.1a. The state and federal Ambient air Quality Standards are shown in Table 4.1-b.

Table 4.1a State and Federal Attainment Designations for Western Riverside County

Pollutant	Federal Standards	State Standards
1-hour ozone	Extreme non-attainment	Serious non-attainment
8-hour ozone	Severe (17-year) non-attainment	Extreme non-attainment
Carbon monoxide (CO)	Serious non-attainment	Attainment
Inhalable particulate matter (PM10)	Serious non-attainment	Non-attainment
Inhalable particulate matter (PM2.5)	Non-attainment	Non-attainment

Ozone and Carbon Monoxide

The Air Resources Board (ARB) currently classifies the Basin as extreme non-attainment for the 8-hour ozone standard (ARB Area Designation Map 2004). The United States Environmental Protection Agency (EPA) designates the Riverside County portion of the SCAB as an extreme non-attainment area for the 1-hour ozone standard and a severe (17-year) non-attainment area for the 8-hour ozone standard. The SCAB is designated as an attainment area by ARB for carbon monoxide under State standards.

Rainbow captured in City following winter storm.

Table 4.1b Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Ozone*	O_3	1 hour	0.09	NA	180	NA	If exceeded	NA
		8 hours	0.070	0.08	137	157	If exceeded	If fourth highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor within an area
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20.0	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
(Lake Tahoe only)		8 hours	6	NA	7,000	NA	If equaled or exceeded	NA
Nitrogen dioxide	NO_2	Annual average	NA	0.053	NA	100	NA	If exceeded on more than 1 day per year
		1 hour	0.25	NA	470	NA	If exceeded	NA
Sulfur dioxide	SO_2	Annual average	NA	0.03	NA	80	NA	If exceeded
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	NA	655	NA	If exceeded	NA
Hydrogen sulfide	H_2S	1 hour	0.03	NA	42	NA	If equaled or exceeded	NA
Vinyl chloride	C_2H_3Cl	24 hours	0.01	NA	26	NA	If equaled or exceeded	NA
Inhalable particulate matter	PM10	Annual geometric mean	NA	NA	20	NA	If exceeded	NA
		Annual arithmetic mean	NA	NA	NA	50	NA	If exceeded at each monitor within area
		24 hours	NA	NA	50	150	If exceeded	If exceeded on more than 1 day per year
	PM2.5	Annual geometric mean	NA	NA	NA	NA	If exceeded	NA
		Annual arithmetic mean	NA	NA	12	15	NA	If 3-year average from single or multiple community-oriented monitors is exceeded
		24 hours	NA	NA	NA	65	NA	If 3-year average of 98th percentile at each population-oriented monitor within an area is exceeded
Sulfate particles	SO_4	24 hours	NA	NA	25	NA	If equaled or exceeded	NA
Lead particles	Pb	Calendar quarter	NA	NA	NA	1.5	NA	If exceeded no more than 1 day per year
		30-day average	NA	NA	1.5	NA	If equaled or exceeded	NA

Notes: All standards are based on measurements at 25ºC and 1 atmosphere pressure.
National standards shown are the primary (health effects) standards.
NA = not applicable.

* The U.S. Environmental Protection Agency recently replaced the 1-hour ozone standard with an 8-hour standard of 0.08 part per million. EPA issued a final rule that will revoke the 1-hour standard on June 15, 2005. However, the California 1-hour ozone standard will remain in effect.

Source: California Air Resources Board 2003

There have been no violations of the CO standard within SCAB in the past three years (SCAQMD Guide 2004). The United States EPA federally designates the entire SCAB as a non-attainment area for carbon monoxide.

Inhalable and Fine Particulate Matter (PM10 and PM 2.5)

The Basin exceeds federal standards for particulate matter (PM10 and PM2.5). For PM10, EPA designates the Basin as serious non-attainment while CARB designates the Basin as simply non-attainment (SCAQMD Guide 2004).

Over the past 30 years, direct emissions of PM10 in the SCAB have been increasing, while direct emissions of PM2.5 have decreased slightly. Area-wide emissions of both PM10 and PM2.5 have been increasing. The increase in PM10 and PM2.5 has been attributed to growth in emissions from area-wide sources, primarily fugitive dust from paved and unpaved roads and other sources. The increase in activity of these area-wide sources reflects the increased growth and VMT in the air basin. As with other pollutants, the PM10 statistics also show overall improvement. Despite the overall decrease, ambient concentrations still exceed the State annual and 24-hour PM10 standards.

Other Criteria Air Pollutants

- **Oxides of Nitrogen, Including Nitrogen Dioxide.** Oxides of nitrogen (NO_x) and nitrogen dioxide (NO_2) emissions in SCAB have been trending downward since 1985. This decline should continue as more stringent motor vehicle and stationary source emission standards are adopted and implemented.

  The SCAB is one of only a few areas in California where nitrogen dioxide (NO2) has been a problem; however, the SCAB attained the State 1-hour NO2 standard in 1994, bringing the entire State into attainment. While the federal standard has not been exceeded since 1991, SCAB's attainment status is currently unclassified. NOx emissions remain of concern because of their contribution to the formation of ozone and particulate matter (SCAQMD Guide 2004).

- **Sulfur Dioxide.** EPA and CARB consider the Basin a SO_2 federal and State attainment area. Though SO_2 concentrations have been reduced to levels well below state and federal standards, further reductions in SO2 emissions are needed because SO_2 is a precursor to sulfate and PM10. (SCAQMD Guide 2004)

- **Sulfates.** The SCAB is in attainment with State standards for sulfates.

- **Lead.** Both the EPA and CARB designate the Basin as an attainment area for lead for national and State ambient air quality standards (SCAQMD Guide 2004).

- **Hydrogen Sulfide.** The SCAB is currently unclassified for attainment status with State standards for hydrogen sulfide.

- **Volatile Organic Compounds.** Sources and emissions of Volatile Organic Compounds (VOCs) are primarily associated with indoor environments through the common use of household products including: paints, paint strippers, and other solvents; wood preservatives; aerosol sprays; cleansers and disinfectants; moth repellents and air fresheners; and stored fuels and automotive products. VOCs are regulated, however, because a reduction in VOC emissions reduces certain chemical reactions that contribute to the formation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM10 and lower visibility levels. It should be noted that there are no state or federal ambient air quality standards for VOCs because they are not classified as criteria pollutants.

Toxic Air Contaminants

The ARB maintains a statewide air quality monitoring network of 18 air quality monitoring stations, measuring ambient concentrations of 64 substances considered toxic air contaminants. Toxic air contaminants (TAC) are pollutants that may be expected to result in an increase in mortality or serious illness or that may pose a present or potential hazard to human health. Health effects of TACs include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases that lead to death. TACs are often referred to as "non-criteria" air contaminants because ambient air quality standards have not been established for them.

The ARB's TAC monitoring network provides air quality data in support of general population exposures; therefore, localized impacts, often referred to as near-source or neighborhood exposures, are not included in CARB's TAC evaluations. The CARB, in conjunction with the Office of Environmental Health Hazard Assessment (OEHHA), has screened hundreds of TACs and identified ten TACs as posing the greatest health risk in California, based primarily on ambient air quality data. The ten TACs, their associated estimated unit cancer risk, and 2004 total emissions of the TACs within the SCAB portion of Riverside County, are listed in Table 4.2. Table 4.3 identifies common TAC sources within any given State air basin.

Table 4.2 TAC Estimated Cancer Risk, Concentrations and Emissions

Toxic Air Contaminant	Health Risk*	SCAB Annual Average Concentration	SCAB (Riverside County) TAC Emissions Tons/Year
Acetaldehyde	7	1.41 ppb	205
Benzene	69	0.75 ppb	413
1,3-Butadiene	55	.21 ppb	86
Carbon Tetrachloride	42	.09 ppb	<0.01
Chromium, Hexavalent	24	.18 ng/m3	0.05
para-Dichlorobenzene	11	.15 ppb	156
Formaldehyde	28	4.16 ppb	599
Methylene Chloride	2	0.63 ppb	1083
Perchloroethylene	4	0.18 ppb	566
Diesel Particulate Matter	300**	--	996

Source: ARB Almanac 2005.

ppb: parts per billion

* Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration.

** A diesel particulate matter unit risk value of 300 is used as a reasonable estimate in the *"Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles"* (ARB, October 2000).

Table 4.3 Facility Types That Emit Air Pollutants of Concern

Categories	Facility Type	Air Pollutants of Concern
Commercial	Autobody Shops	Metals, Solvents
	Furniture Repair	Solvents[2], Methylene Chloride
	Film Processing Services	Solvents, Perchloroethylene
	Distribution Centers	Diesel Particulate Matter
	Printing Shops	Solvents
	Diesel Engines	Diesel Particulate Matter
Industrial	Construction	Particulate Matter, Asbestos
	Manufacturers	Solvents, Metals
	Metal Platers, Welders, Metal	Hexavalent Chromium, Nickel
	Spray (flame spray) Operations	Metals
	Chemical Producers	Solvents, Metals
	Furniture Manufacturers	Solvents
	Shipbuilding and Repair	Hexavalent chromium and other metals
	Rock Quarries and Cement	Solvents
	Manufacturers	Particulate Matter, Asbestos
	Hazardous Waste Incinerators	Dioxin, Solvents, Metals
	Power Plants	Benzene, Formaldehyde
	Research and Development	Particulate Matter
	Facilities	Solvents, Metals, etc.
Public	Landfills	Benzene, Vinyl Chloride, Diesel
	Waste Water Treatment Plants	Particulate Matter
	Medical Waste Incinerators	Hydrogen Sulfide
	Recycling, Garbage Transfer	Dioxin, Benzene, PAH, PCBs
	Stations	1,3-Butadiene
	Municipal Incinerators	Diesel Particulate Matter, Dioxin, Benzene, PAH, PCBs, 1,3-Butadiene
Transportation	Truck Stops	Diesel Particulate Matter
Agricultural Operations	Farming Operations	Diesel Particulate Matter, VOCs, NOx, PM10, CO, SOx, Pesticides
	Livestock and Dairy Operations	Ammonia, VOCs, PM10

Source: CARB Air Quality Handbook

[1]Not all facilities will emit pollutants of concern due to process changes or chemical substitution. Consult local air district regarding specific facilities. Example TAC sources not limited to SCAB.

[2]Some solvents may emit toxic air pollutants, but not all solvents are toxic air contaminants.

Local (Lake Elsinore Planning Area)

Existing air quality conditions in the Lake Elsinore planning area can be characterized in terms of the ambient air quality standards that California and the federal government have established for several different pollutants. The pollutants of greatest concern in the Lake Elsinore (SRA 25) area are CO, ozone, PM2.5, and PM10.

Local Pollutants of Concern

- **Carbon Monoxide.** CO is essentially inert to plants and materials but can have significant effects on human health. CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. Effects on humans range from slight headaches to nausea to death.

  Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

- **Ozone.** Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Ozone is a severe eye, nose, and throat irritant. Ozone also attacks synthetic rubber, textiles, plants, and other material. Ozone causes extensive damage to plants by causing leaf discoloration and cell damage. Ozone is formed by a photochemical reaction in the atmosphere; ozone precursors, which include ROG and NO_x, react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. The ozone precursors, ROG and NO_x, are emitted by mobile sources and by stationary combustion equipment.

- **Inhalable Particulate Matter.** The federal and state ambient air quality standard for particulate matter applies to two classes of particulates: particulate matter which is 2.5 microns or less in diameter (PM2.5) and particulate matter which is 10 microns or less in diameter (PM10). Particulates can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulates also reduce visibility and corrode materials.

Local Ambient Air Pollutant Concentrations

Ambient air pollutant concentrations within SRA 25 are monitored by the SCAQMD using the data collected from local monitoring stations listed in Table 4.4. Stations are listed in order of proximity to Lake Elsinore and identify the pollutants monitored at each station.

Table 4.4 Ambient Air Quality Monitoring Stations - Lake Elsinore Area

Monitoring Station	Location	Pollutants
Lake Elsinore-W. Flint St.	506 West Flint Street Lake Elsinore, CA 92530	CO, NO2, O3, PM10
Perris	237 1/2 North D Street Perris, CA 92570	O3, PM10
Riverside-Magnolia	7002 Magnolia Avenue Riverside, CA 92506	CO, PM2.5
Riverside-Roubidoux	5888 Mission Boulevard Riverside, CA 92509	CO, NO2, O3, PM10, SO2, PM2.5

Sources: http://www.arb.ca.gov/qaweb/sitelist_generator.php. Site updated Feb 10th 2005;
1. California State and Local Air Monitoring Network Plan – 2004. 2004. CalEPA ARB. November. Sacramento, CA.
2. USEPA AirData webpage. 2005. Monitor Locator Map - Criteria Air Pollutants. website: http://www.epa.gov/air/data/monloc.html?co~06065~Riverside%20Co%2C%20California. Monitor information in this map comes from a monthly extract of EPA's Air Quality System (AQS) database. Data for this map were extracted on June 1, 2005

Air quality monitoring data collected from the local monitoring stations for the Lake Elsinore area have been compared with State and federal standards for criteria pollutants, and are summarized in Table 4.5. The high concentration of stationary sources of air contaminants in the western portion of the Basin and mobile sources throughout the Basin, contribute to poor air quality in the region.

Table 4.5 Ambient Air Quality Monitoring Data from Lake Elsinore-Flint Street, Perris, and Riverside County-Magnolia Monitoring Stations

Pollutant Standards	2002	2003	2004
Ozone[e] (O3)			
Maximum 1-hour concentration (ppm)	0.139	0.154	0.13
Maximum 8-hour concentration (ppm)	0.114	0.137	0.113
Number of Days Standard Exceeded			
NAAQS 1-hour (>0.12 ppm)	6	7	2
CAAQS 1-hour (>0.09 ppm)	52	50	34
NAAQS 8-hour (>0.08 ppm)	41	36	21
Carbon Monoxide[e] (CO)			
Maximum 8-hour concentration (ppm)	1.87	1.39	1.14
Maximum 1-hour concentration (ppm)	2.5	4.0	2.0
Number of Days Standard Exceeded			
NAAQS 8-hour (>9.0 ppm)	0	0	0
CAAQS 8-hour (>9.0 ppm)	0	0	0
NAAQS 1-hour ($\geq$35 ppm)	0	0	0
CAAQS 1-hour ($\geq$20 ppm)	0	0	0
Particulate Matter[f] (PM10)			
National maximum 24-hour concentration ($\mu g/m^3$)	100.0	142.0	83.0
National second highest 24-hour concentration ($\mu g/m^3$)	79.0	116.0	79.0
State maximum 24-hour concentration ($\mu g/m^3$)	95.0	135.0	66.0
State second highest 24-hour concentration ($\mu g/m^3$)	75.0	111.0	58.0
National[b] annual average concentration ($\mu g/m^3$)	45.1	43.9	41.4
State[c] annual average concentration ($\mu g/m3$)	42.8	-	-
Number of Days Standard Exceeded			
NAAQS[d] 24-hour (>150 $\mu g/m^3$)	0.0	0.0	0.0
CAAQS[d] 24-hour (>50 $\mu g/m^3$)	10	-	-
Particulate Matter[g] (PM2.5)			
National maximum 24-hour concentration ($\mu g/m^3$)	75.5	73.3	93.8
Second highest 24-hour concentration ($\mu g/m^3$)	69.6	5935	67.1
National[b] annual average concentration ($\mu g/m^3$)	27.1	22.6	20.8
State[c] annual average concentration ($\mu g/m^3$)	-	22.6	-
Number of Days Standard Exceeded			
NAAQS 24-hour (>65 $\mu g/m^3$)	2	1	2

Notes:
CAAQS: California Ambient Air Quality Standards.
NAAQS: National Ambient Air Quality Standards.
NA: Insufficient data available to determine the value.
ppm: parts per million parts of air, by volume
$\mu g/m^3$: micrograms per cubic meter of air
a. State standard for PM10 >50 $\mu g/m^3$, 24-hour. Collected every 6 days.
b. National annual average based on arithmetic mean.
c. State annual average based on geometric mean.
d. Based on an estimate of how many days concentrations would have been greater than the standard.

Sources: California Air Resources Board 2005; Environmental Protection Agency 2004.
2005e. Lake Elsinore-Flint Street Monitoring Station data.
2005f. Perris Monitoring Station data.
2005g. Riverside-Magnolia Monitoring Station data.

Data from the 2002–2004 monitoring period for the Riverside/Lake Elsinore SRA monitoring area indicate that local air quality is not in compliance with the State and federal one-hour average and eight-hour average ozone standards. Data also indicate that the State 24-hour PM10 standard was violated about 10 percent of the time in Lake Elsinore; the State annual PM10 standard of 20 micrograms per cubic meter (µg/m3) was also exceeded. The Lake Elsinore area exceeded the state 24-hour PM10 standard between 2002 and 2004, but did not exceed the federal 24-hour PM10 standard. The federal 24-hour PM2.5 standard was exceeded five times during the monitoring period and the federal annual average PM2.5 standard (of 15 ppm) was also exceeded in 2003. Neither federal nor State CO standards were exceeded during the 3-year monitoring period.

Sensitive Land Uses

Poor air quality affects some individuals more than others. Sensitive individuals are defined as people that are more susceptible to the effects of air pollution than the general population such as children, the elderly, and people with pre-existing serious health issues. Sensitive land uses are defined as locations where these individuals are likely to be found. These areas may include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential communities.

Fleet Rules: South Coast Air Quality Management District (SCAQMD)

To reduce both smog forming and toxic air pollutants, the SCAQMD adopted seven rules that will gradually shift public agencies and certain private entities to lower emissions and alternative fuel vehicles whenever a fleet operator with 15 or more vehicles replaces or purchases new vehicles. Alternative fuel vehicles are inherently cleaner than conventional vehicles (particularly diesel) and the shift is expected to help reduce emissions from mobile sources. The seven Fleet Rules as listed on the SCAQMD's website are as follows:

Rule 1186.1. Less-Polluting Sweepers

To reduce air toxic and criteria pollutant emissions, this rule requires certain public and private sweeper fleet operators to acquire alternative-fuel or otherwise less-polluting sweepers when purchasing or leasing these vehicles for sweeping operations undertaken by or for government entities in the jurisdiction of the Air Quality Management District (AQMD).

Rule 1191. Clean On-Road Light- and Medium-Duty Public Fleet Vehicles

This rule requires public fleets in the AQMD's jurisdiction operating passenger car, light-duty truck, or medium-duty vehicle fleets to acquire low-emitting gasoline or alternative-fuel vehicles when procuring these vehicles.

Rule 1192. Clean On-Road Transit Buses

This rule requires public transit fleets operating in the AQMD's jurisdiction to acquire alternative-fuel heavy-duty vehicles when procuring these vehicles.

Rule 1193. Clean On-Road Residential and Commercial Refuse Collection Vehicles

For public and private solid waste collection fleets, this rule requires fleet operators to acquire alternative-fuel refuse collection heavy-duty vehicles when procuring these vehicles for use within the AQMD's jurisdiction.

Rule 1194. Commercial Airport Ground Access Vehicles (Taxicabs, Shuttles, etc.)

For public and private fleets that provide passenger pickup services at commercial airports in the AQMD's jurisdiction, this rule requires fleet operators of passenger cars, light-duty trucks, medium-duty transit vehicles, and heavy-duty transit vehicles to acquire cleaner burning or alternative-fueled vehicles when procuring these vehicles. Vehicles with wheel chair access are exempt. Cleaner burning vehicles are those certified by the California Air Resources Board (CARB) as ultralow-emission vehicles (ULEVs), super-ultralow-emission vehicles (SULEVs), or zero-emission vehicles (ZEVs).

Rule 1195. Clean On-Road School Buses

This rule requires public and private school bus fleet operators in the AQMD's jurisdiction to acquire alternative-fuel school buses when procuring or leasing new school buses or to retrofit used or existing school buses with a CARB-approved control device for use within the AQMD's jurisdiction.

Rule 1196. Clean On-Road Heavy-Duty Public Fleet Vehicles

To reduce air toxic and criteria pollutant emissions, this rule requires public fleets in the AQMD's jurisdiction operating heavy-duty vehicle fleets to acquire alternative-fuel, dual-fuel, or dedicated gasoline heavy-duty vehicles when procuring or leasing these vehicles for use within the AQMD's jurisdiction. If the fleet operator obtains an approved Technical Infeasibility Certification for this purchase, a diesel-powered heavy-duty engine or vehicle with an approved control device may be purchased.

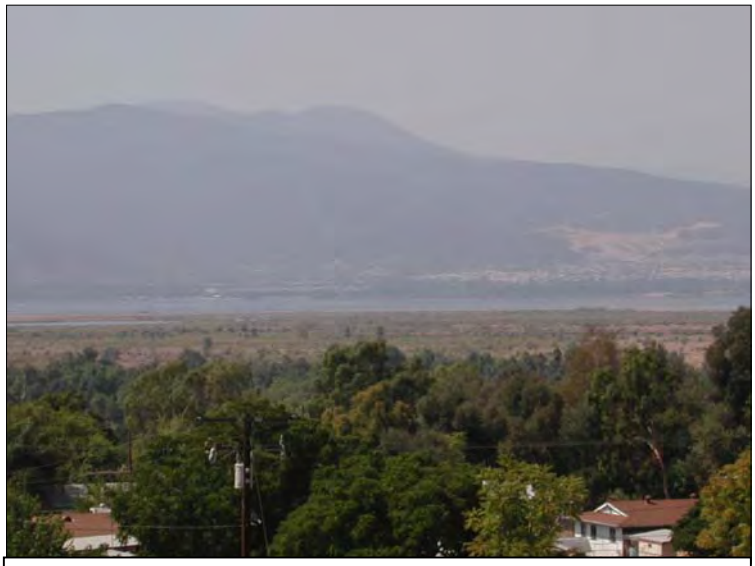
Constraints and Opportunities

Constraints Due to Regulatory Requirements

Future development associated with build-out of the updated General Plan will result in local air pollutant emissions both from short-term emissions associated with

construction activities and long-term emissions associated with additional traffic and stationary sources.

The introduction of new land uses or changes in land use densities associated with implementation of the General Plan update have potential to exceed current air quality standards through increased emissions of criteria air pollutants and TAC. Proposed new land uses, including industrial, commercial, and residential for areas currently designated as open-space or other low-use type land use, would result in an increase in local air pollutant emissions. Increasing type or density of land uses may result in additional vehicle trips and increased emissions. The level and types of air pollutant contributions would vary according to types of land use, densities, and degree of activity.



Hazy day connoting poor air quality.

For example, converting the land use designation of an individual parcel, or group of parcels, from open-space to industrial would result in an increase of air pollutant emissions associated with industrial facility activities. Such pollutant emissions would include ROG, NOx, CO, and PM10 from increased vehicular activity (commuter, delivery, on-site operations), and may include diesel exhaust from trucks and equipment, and/or solvents or other TACs associated with certain industrial operations.

Continued development will increase the amount of stationary air pollutant sources within the City. These emissions will be limited and regulated by the SCAQMD through their New Source Review (NSR) permitting procedures.

Constraints Due to Existing Conditions

Existing air quality conditions have potential to constrain the implementation of new land uses and designations within the City. Air pollutants carried west by the Santa Ana winds and through the Inland Empire region into the Lake Elsinore area, are blocked from traveling further west or south by the Lake Elsinore Convergence Zone, just south of Lake Elsinore. This convergence zone obstructs the dispersal and allows for the accumulation of air pollutants within Lake Elsinore and the surrounding communities to the north and east. Due to this existing climatological condition, the contribution of any air pollutants from sources within the Lake Elsinore planning area have the potential to significantly contribute to cumulative air quality conditions.

Land use patterns and densities affect the amount of air pollutants generated by individual neighborhoods and communities. Land uses that are segregated throughout a community increase the number of motor vehicle trips and associated air pollutant emissions since opportunities to walk, ride bicycles, and use public transportation between home and work or shopping are generally reduced.

Opportunities to Enhance Regulatory Requirements

The City of Lake Elsinore has an opportunity to address air quality issues by updating the General Plan. The most effective mechanism for encouraging land use compatibility and the reduction or avoidance of cumulative air pollution impacts in the Lake Elsinore area is the General Plan. Air quality considerations can be incorporated into multiple General Plan Elements to work collectively to avoid incompatible land uses that would affect air quality effects on residents.

The State's 2003 General Plan Guidelines emphasize the importance of incorporating sustainable development and environmental justice policies in the planning process.

Mixing residential uses in conjunction or in proximity to commercial, business, and employment uses can lessen the reliance on motor vehicle use or reduce the distance of necessary vehicle trips. Smaller, higher-density uses also produce less air emissions on a per unit basis from the use of natural gas for space and water heating.

Opportunities to Address Existing Conditions

Updating the General Plan is an opportunity to implement new land use designations within the City to help address existing and potential future air quality conditions. New land uses can be sited to reduce the likelihood that sensitive individuals would be exposed to direct air pollutants. Uses such as auto body shops, furniture repair, and heavily trafficked truck routes can be placed away from residences, hospitals, and schools.

Policies can be implemented that emphasize improved air quality standards and encourage coordination with ARB, local air districts, and other land use agencies to assess and mitigate cumulative air pollution impacts. Policies can include the need to facilitate communications with community groups, local businesses, and residents to determine the best way to address existing incompatible land uses that may affect sensitive individuals. Part of this communication should be between residents and businesses regarding nuisance issues related to air quality, and ensuring that residents know how to register a complaint with AQMD (AQMD's "Cut Smog" program).

New land use designations should also emphasize a jobs/housing balance within the Lake Elsinore planning area. A healthy jobs/housing balance can reduce vehicle emissions generated by long commute distances by employees or residents between home and work.

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CHAPTER 5 – NOISE

Introduction

This report assesses noise conditions in the City of Lake Elsinore and its associated sphere of influence (SOI). The regulatory environment and existing conditions will be assessed and analyzed to determine associated constraints and opportunities. The purpose of this discussion is to use the information as a resource for updating the General Plan for the City of Lake Elsinore.

Legal Basis and Requirements

Government Code Section 65302(d) states the General Plan shall include a noise element "which shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources (1) Highways and freeways, (2) Primary arterials and major local streets, (3) Passenger and freight on-line railroad operations and ground rapid transit systems, (4) Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation, (5) Local industrial plants, including, but not limited to, railroad classification yards, and (6) Other ground stationary noise sources, including, but not limited to, military installations, identified by local agencies as contributing to the community noise environment."

Terminology

The following is a brief background summary of noise terminology.

- **Ambient noise level:** The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal of existing level of environmental noise at a given location.

- **CNEL (Community Noise Equivalent Level):** The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.

- **dB (Decibel):** A unit for measuring the amplitude of a sound, equal to twenty (20) times the logarithm to the ratio of the sound measured to the reference

pressure, which is 20 micropascals. A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.

- **dBA (A-Weighted Decibel):** The sound level in decibels as measured on a sound level meter using the A-weighting network. An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **L_{dn} (Day-Night Level):** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m. L_{dn} and CNEL values rarely differ by more than 1 dB.[1]

- **L_{eq} (Equivalent Sound Level):** The equivalent steady-state sound level that, in a stated period of time, would contain the same acoustical energy.

- **Noise contours:** Lines drawn around a noise source indicating equal levels of noise exposure. CNEL and Ldn are the metrics used in this document to describe annoyance due to noise and to establish land use planning criteria for noise.

- **Noise sensitive land uses:** These land uses include, but are not necessarily limited to; schools, hospitals, rest homes, long term care facilities, mental care facilities, residential uses, places of worship, libraries, and passive recreation areas.

Regulatory Setting

The City of Lake Elsinore is subject to various Federal, State, and local laws, regulations, and polices. The extents to which these apply depend on the type of project being evaluated. For example, FHWA noise regulations and standards only apply to roadway projects in the City that use Federal funding. The following is a list of laws, regulations, policies, or agencies with noise standards that may apply to the City:

- Noise Control Act of 1972
- United States Environmental Policy Act (USEPA)
- U.S. Department of Housing and Urban Development (HUD)
- Federal Aviation Administration (FAA)

1 As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this study. In general, human sound perception is such that a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level.

- Federal Highway Administration (FHWA)
- Federal Transit Administration (FTA)
- State of California General Plan Guidelines
- California Noise Insulation Standards
- Division of Aeronautics Noise Standards
- CEQA, Public Resources Code §21000 et seq.
- County of Riverside General Plan – Noise Element
- Riverside County Ordinances
  - Ordinance No. 457.94
  - Ordinance No. 625.1
- Riverside County Airport Land Use Commission (ALUC)
- City of Lake Elsinore General Plan
- City of Lake Elsinore Zoning Code

Existing Noise Conditions

Noise-Sensitive Land Uses

Land uses in the Lake Elsinore planning area include varying densities of clustered residential developments and incontiguous residences, different densities and types of businesses and commercial developments, open space, and recreation. The locations and densities of these land uses, in conjunction with major transportation routes, and other significant activities within the Lake Elsinore area, such as construction, contribute to create the ambient noise conditions, or setting, of the area.

Sensitive land uses are generally defined as locations where people reside or where the presence of noise could adversely affect the use of the land. These land uses include uses such as schools, hospitals, residences, libraries, and recreation areas. The City has designated noise sensitive zones for land uses that require exceptional quiet.

Existing Ambient Noise Conditions

Topography and Climate

Noise amplitude and attenuation characteristics are key factors in the establishment of noise conditions, and vary considerably according to natural climate and topographical features. Meteorological factors affecting noise characteristics within the Lake Elsinore planning area include temperature changes, Santa Ana winds, and amounts and durations

of rainfall. Topographical features in the planning area include the steep Santa Ana Mountains and Elsinore Mountains to the south and west, the large centrally located and low-lying Lake Elsinore and surrounding local valley, and rolling hills throughout much of the area. Manmade features within the planning area, such as buildings and structures, agricultural fields, roadways, also affect noise amplitude and attenuation.

Short-Term Noise Monitoring

As seen in Figure 5.1, noise measurements were conducted at five receptor locations throughout the City to provide a general understanding of the overall daytime ambient noise environment of the Planning area. The results of the short-term noise modeling are summarized in Table 5.1.

Table 5.1 City of Lake Elsinore Short-Term Monitoring Noise Levels

Receiver	Start Time	Duration (minutes)	Measured Sound Levels (dBA)				Dominating Noise Sources
			L_{eq}	L_{90}	L_{50}	L_{10}	
1	12:05 p.m.	10	53	42.2	47.7	52.9	Small family using playground approx. 100 ft. from meter; park otherwise deserted. Two small planes overpass, medium altitude.
2	12:47 p.m.	10	42	35.3	38.9	44.7	One car passby at slow speed. One jet overflight, high altitude
3	1:39 p.m.	10	50.6	46.6	48.7	52.6	Freeway, birds, leaf blower on Pottery Street.
4	2:20 p.m.	10	49.6	44.1	47.2	53.2	One crow, traffic on Lake Street/Grand Avenue intersection with Lakeshore Drive.
5	3:49 p.m.	10	41.4	31.2	33.5	42	Humming of power lines on south side of El Toro Rd. One jet overflight, high altitude.

Vehicular Traffic

Because two highly utilized transportation corridors, I-15 and SR 74, traverse the City, roadway traffic is one of the more prevalent sources of noise within the City area. Traffic noise varies in how it affects land uses depending upon the type of roadway, distance of the land use from that roadway, topographical setting, and other physical land features such as landscaping, walls, buildings, and other structures. Some variables that affect the amount of noise emitted from a road are speed of traffic, flow of traffic, and type of traffic (e.g. tractor

Traffic along the I-15 freeway is a major noise source in the City.

trailers versus cars). Another variable affecting the overall measure of noise is a perceived increase in sensitivity to vehicular noise at night.

As seen from Figure 5.2, traffic noise modeling results indicate that the highest noise levels associated with traffic occur along the northwest-southeast trending Interstate 15, which bisects the entire length of the City. The high traffic noise levels along I-15 are attributed to the combination of high vehicle speeds and traffic volumes.

Industry

Industrial and manufacturing facilities are also stationary noise producers that may affect sensitive land uses. Industrial land uses have the potential to exert a relatively high level of noise impact within their immediate operating environments. The scope and degree of noise impacts generated by industrial uses is dependent upon various critical factors, including the type of industrial activity, hours of operation and the sites' location relative to other land uses.

Noise-related completes are often aimed at facilities such as Elsinore Ready Mix located in Country Club Heights that makes concrete. Other noise complaints usually come as a result of noisy contractors when new housing tracts are under construction.

Airports

The Skylark Airport is a privately owned airport that occupies approximately 150 acres of land located at the southern City limits boundary on Corydon Road. The airport houses 21 single-engine aircraft, 5 multi-engine aircraft, and 4 gliders. McConville Airpark is another privately owned airport that occupies 194 acres of land close to SR 74 and is located near, but outside of the city limits in Orange County. The site is currently undergoing change in ownership, is not included in the Orange County ALUC Airport Environs Land Use Plan, and currently has no reported aircraft.

Schools

Schools can be a source of nuisance noise for neighboring residential uses. Noise generating activities include children at play, bells, and public address systems. High schools may include stadiums used for day and evening athletic events, and the use of public address/loudspeaker systems can also generate substantial noise levels during the day and/or evening.

Other Noise Sources

Other sources of noise include recreational boating and personal watercraft on Lake Elsinore, the Motocross Park, Diamond Stadium, and construction activities.

Lake Elsinore Motocross Track.

Vibration

As with noise, vibration can be described by both its amplitude and frequency. Amplitude may be characterized by displacement, velocity, and/or acceleration. Typically, particle velocity (measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration. Vibration can be felt outdoors, but the perceived intensity of vibration impacts are much greater indoors due to the shaking of the structure.

The most common sources of vibration in the Lake Elsinore planning area are transit vehicles, construction equipment and large vehicles. Several land uses are especially sensitive to vibration, and therefore have a lower vibration threshold. These uses include, but are not limited to concert halls, hospitals, libraries, vibration-sensitive research operations, residential areas, schools, and offices.

Table 5.2 presents the human reaction to various levels of peak particle velocity. Traffic vibrations exhibit a range of frequencies similar to typical construction activities; however, due to their suspension systems, city buses often generate significantly higher frequencies, around 30 Hz, at high vehicle speeds.

Table 5.2 Human Reaction to Typical Vibration Levels

Human Reaction to Typical Vibration Levels	
Vibration Level Peak Particle Velocity (inches/second)	**Human Reaction**
0.0059-0.0188	Threshold of perception, possibility of intrusion
0.0787	Vibrations readily perceptible
0.0984	Continuous vibration begins to annoy people
0.1968	Vibrations annoying to people in buildings
0.3937-0.5905	Vibrations considered unpleasant when continuously subjected and unacceptable by some walking on bridges.

Source: Caltrans, 1992

Constraints and Opportunities

Constraints Due to Regulatory Requirements

Existing regulations that apply to noise, such as maximum allowable exposure limits and land use compatibility standards have potential to constrain the distribution of new land uses associated with Lake Elsinore's General Plan Update.

The Environmental Protection Act (EPA), HUD, and the State of California General Plan Guidelines establish indoor and outdoor noise limits to protect public health and welfare. Constraints to implementing new land use designations will be siting noise-sensitive users such as residences and schools in areas where ambient noise levels will not exceed recommended limits. In addition, new land uses that produce noise are limited to areas where they will not affect sensitive users.

Constraints Due to Existing Conditions

Existing noise conditions within the city have the potential to constrain the implementation of new land uses and designations within the City. The following discussion explains what the existing conditions are and why they have the potential to constrain the implementation of new land uses.

The city is located in proximity to Highway 74 and Interstate 5. Both of these transportation corridors are highly used and pose a significant amount of noise for uses adjacent to the roads. Because it may be infeasible to build sound walls or implement other measures to reduce all traffic noise, increases caused by changes in land use may be significant and unavoidable. Certain noise-sensitive uses may be unable to be located adjacent to major transportation corridors due to traffic and its associated excessive noise level.

Development pursuant to new or revised land use policies, land use designations, and projected population increases, will result in an increase of dwelling units and land area used for new non-residential construction. This new development will generate additional traffic that will increase noise levels along the city's transportation corridors.

New land uses, especially those considered sensitive to noise, have potential to be exposed to excessive noise levels if located near noise-emitting sources. Particular problems could arise in cases where noise-producing uses are located immediately adjacent to sensitive uses, such as business park areas near residences or schools. Mixed-use projects also present unique concerns, such as when restaurants with nighttime entertainment are located close to residential units. In addition, construction related activities would be short-term sources of noise that could affect occupants of neighboring uses.

Opportunities to Enhance Regulatory Requirements Affecting Noise

Implementing new land uses is an opportunity to enhance regulatory requirements associated with noise. In addition, new policies can be employed that will align with regulatory requirements in order to meet acceptable noise standards.

Since most regulatory requirements deal with achieving acceptable noise standards for noise-sensitive uses, implementing new land use designations is an opportunity to site uses in ways that noise standards will not be exceeded. Schools, or residences can be placed away from freeways, boating, sport park use and events. When residential structures or other uses cannot be placed away from a noise-emitting source, they can be required to have higher levels of insulation as indicated by California Noise Insulation Standards (Title 24).

Compliance with Title 24 may require the inclusion of significant architectural and mechanical improvements, including, but not limited to the use of air conditioning and/or mechanical ventilation systems, double paned glass, solid core exterior doors, approved door and window frames and seals, and other measures.

Other measures to reduce noise impacts include implementing design requirements for proposed new structures, or modifications to existing structures or landforms, that would buffer noise-sensitive land uses from noise sources, or that would take advantage of existing barrier features, such as terrain or structures, to block sound transmission.

Opportunities to Address Existing Noise Conditions

New land use designations can help address existing and future noise conditions within the City. Examples of existing noise conditions as discussed in this report include traffic from the transportation corridors, industrial facilities, airports, and schools. Problems stem from exposing people to excess amounts of noise from these sources. Updating the General Plan offers an opportunity to address these conditions, attempt to alleviate problems, and eliminate future noise levels by siting land in suitable areas to achieve appropriate noise standards as established by local, state, and federal policies.

City Limits
Sphere of Influence
Monitoring locations

Source: City of Lake Elsinore, County of Riverside

Mooney · Jones & Stokes

12/01/05: /GIS/elsinore/mxd/fig5_1nml

0 6,500 13,000
Feet

Noise Monitoring Locations
Figure 5.1

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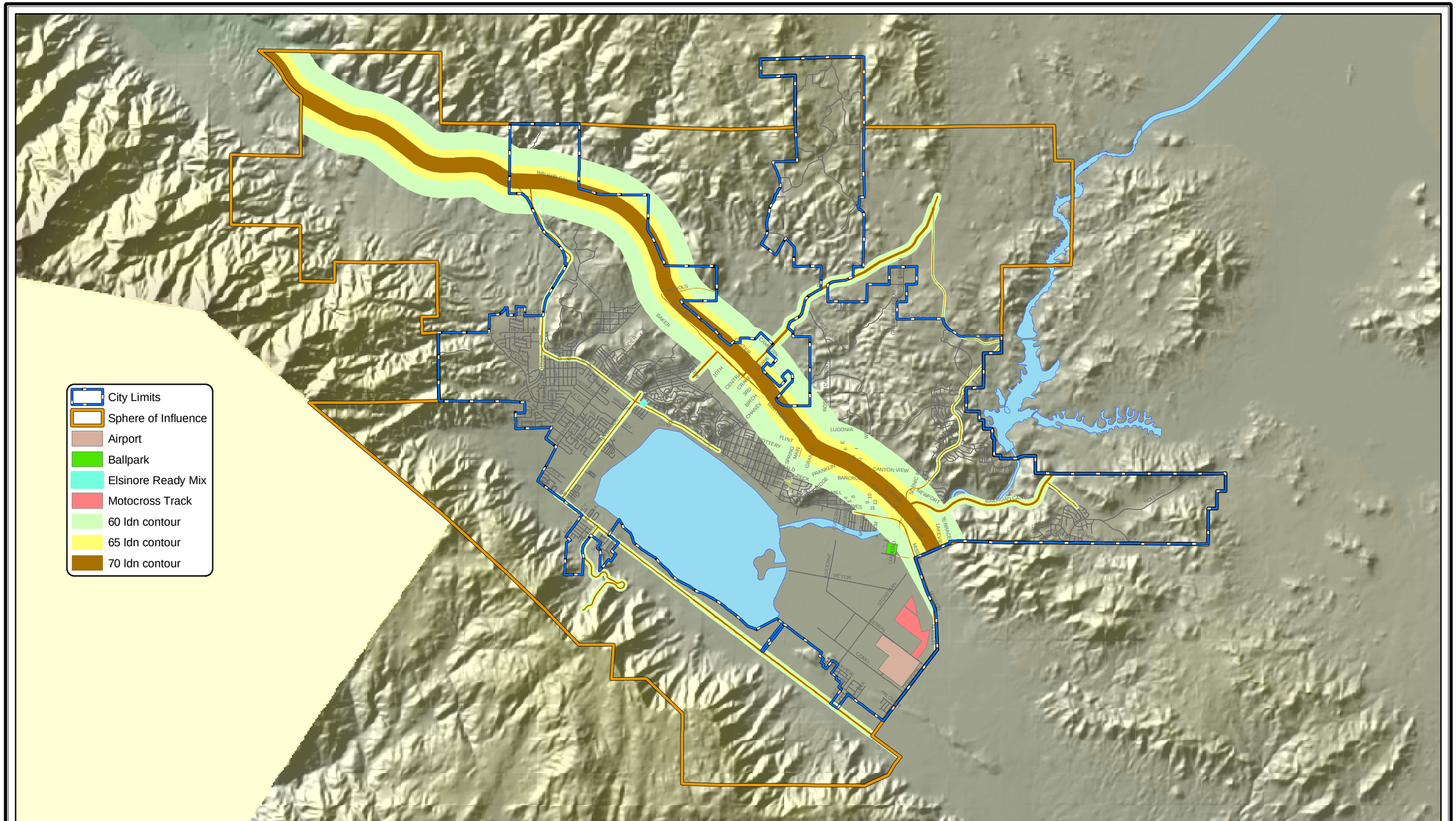

Source: City of Lake Elsinore, County of Riverside

Mooney · Jones & Stokes

12/01/05: /GIS/elsinore/mxd/fig5_2ncm

0 6,500 13,000

Feet

Noise Contours
Figure 5.2

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