

6. TRANSPORTATION AND CIRCULATION

6.1 Introduction

Throughout the history of Lake County transportation and land use have been interrelated. Toll roads were built over the mountains bringing in settlers for farming and ranching. Farm to market roads were built to transport farm products. Roads were built to provide access to the many natural springs within the County. Towns developed around stagecoach stops. Streets were laid out to provide access to lots in the towns. Before the advent of the automobile, steamboats provided transportation between the various communities along Clear Lake. With the increased use of motor vehicles the County acquired toll roads, paved existing roads, and constructed new roads.

Today almost all of the transportation within Lake County uses the street and highway system. While the vast majority of travel is by private motor vehicle, limited transit is able to serve the transit dependent population. There is a bikeway system within Lake County, however most of the bicycle use is by bike lanes or bike routes, which are part of the street and highway system. There is no scheduled air carrier service to Lake County. There is also no railroad within the County.

The transportation and circulation chapter is divided into the following sections:

- Streets and Highways (Section 6.2)
- Public Transportation (Section 6.3)
- Bikeways (Section 6.4)
- Aviation (Section 6.5)
- Railroads (Section 6.6)
- Travel Forecast Model (Section 6.7)

6.2 Streets and Highways

The streets and highways within Lake County are operated and maintained by four separate jurisdictions. State Highways are under the jurisdiction of the California Department of Transportation (Caltrans) District 1. The district headquarters are located in Eureka. The County Highway System is under the jurisdiction of the County of Lake Department of Public Works with headquarters in Lakeport. The incorporated cities of Clearlake and Lakeport have city streets under their respective jurisdictions.

METHODS

The data presented in this section is based on information provided by the four jurisdictions that provide circulation services in the Lake County.

KEY TERMS

Arterial Streets. Arterial streets move traffic through and across town. To be effective, arterials should have few intersections, little side traffic, and allow pedestrians, bicycles and public vehicles.

Collector Streets. Collector streets connect arterials with local streets. They tend to be used for short trips within town. Collectors should relieve congestion on local streets but should also accommodate pedestrians, bicycles and public vehicles.

Local Streets. Roadways that provide access to property and minimal through traffic.

ENVIRONMENTAL SETTING

California State Highways

There are five state highways located wholly or partially in Lake County. A description of each is provided below.

State Route 20 connects Mendocino County in the northwest to Colusa County in the east. State Route 20 provides access to Blue Lakes near the Mendocino County line, and the communities of Upper Lake, Nice, Lucerne, Glen Haven, Clearlake Oaks and Clear Lake Keys along the north shore of Clear Lake. State Route 20 is a two-lane highway with a two-way left-turn through the built-up communities. The speed limits along State Route 20 are 55 miles per hour along the rural segments of the route, decreasing to 35 miles per hour in some of the built-up communities.

State Route 29 connects to Napa County in the south and terminates at State Route 20 near the community of Upper Lake. State Route 29 provides access to the communities of Middletown (where it is named Calistoga Road), Hidden Valley Lake, Lower Lake, Kelseyville, and the City of Lakeport. State Route 29 is a two-lane rural road at the Napa County line, an urban street through Middletown, a two-lane rural highway between Middletown and Lakeport, a four-lane freeway west of Lakeport and a two-lane highway north of Lakeport. The speed limits on State Route 29 range from 30 miles per hour through Middletown to 65 miles per hour along the freeway segments. There are traffic signals along State Route 29 at State Route 175 (Main Street) in Middletown, Wardlaw Street in Middletown, State Route 53

and Morgan Valley Road in Lower Lake and State Route 175 south of Lakeport.

State Route 53 is located completely in Lake County. It provides a connection between State Route 29 in the community of Lower Lake to State Route 20 north of the City of Clearlake. State Route 53 is a four-lane divided highway north of Lower Lake and decreases to a two-lane highway north of Lakeshore Boulevard in Clearlake.

State Route 175 is in two segments. The segment connects Mendocino County in the west over the Hopland Grade to the intersection with State Route 29. The road is a two-lane rural highway over mountainous terrain. Following a break in the route, the second segment of State Route 175 passes over Cobb Mountain and provides a connection between State Route 29 near Kelseyville with State Route 29 in Middletown. This segment of State Route 29 is also a two-lane rural highway over mountainous terrain.

State Route 281 is located completely within Lake County. It is a three-mile long highway that intersects State Route 29 at the south and becomes Soda Bay Road, which is operated and maintained by Lake County.

Lake County Roads

The Lake County road system is classified into four types according to their function: minor arterial, major collector, minor collector, and local roads.

Two Lake County roads are classified as minor arterials. The Nice-Lucerne Cutoff provides a connection between State Route 29 on the west to State Route 20 on the east along the north shore of Clear Lake. It provides a shortcut between the two state highways with reduced travel time and reduced mileage. The other minor arterial is Bottle Rock Road which connects State Route 29 with State Route 175 on Cobb Mountain. Bottle Rock Road runs parallel to State Route 175, but is a better alignment.

Major collectors provide travel within the County to communities not served directly by the State Highway System. Butts Canyon Road provides a connection between Middletown and Pope Valley in Napa County. Morgan Valley Road provides a connection between Lower Lake and the Homestake McLaughlin project adjacent to Napa County. Seigler Canyon Road connects Cobb Mountain with State Route 29 near Lower Lake. Soda Bay Road is a continuation of State Route 281 near Konocti Harbor along the south side of Clear Lake to South Main Street at Highway 175 extension south of Lakeport. South Main Street continues to the Lakeport city limits. Scotts Valley Road connects State Route 20 near Blue Lakes with Eleventh Street in the City of Lakeport.

Minor collectors collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road. Elk Mountain Road, Hoberg Drive, Main Street in Kelseyville, Gaddy Lane, Sulphur Creek Road, Red Hills

Road, Socrates Mine Road and Highland Springs Road are examples of minor collector roads.

Local roads are access-serving roads. The primary purpose is to provide access to abutting land uses. They carry traffic from the lane to collector roads.

Lakeport City Streets

The City of Lakeport uses a four-tier functional classification system, (i.e., freeways, arterials, collectors, and local streets).

State Highway 29 is the only freeway in Lake County. It is under the operational jurisdiction of Caltrans.

Arterials are intended to provide for traffic movement between areas and across portions of the city. A subordinate function of arterials is the provision of direct access to abutting land. Since the primary function of an arterial is to provide for the movement of vehicles rather than afford access to abutting land or temporary parking for vehicles, arterial streets are typically subject to regulation and control of parking, turning movement entrances, exits, or curb use where conditions warrant. Arterial streets within the City of Lakeport include Main Street, High Street, Lakeshore Drive, Lakeport Boulevard, Martin Street, and Eleventh Street.

Collector streets link small areas/neighborhoods to the arterial street system. They also carry much of the through traffic within residential, industrial, and commercial areas and serve to connect adjacent neighborhoods. An important part of their function is to provide access to abutting property. Collector streets include Adams Street, Armstrong Street, Bevins Street, Boggs Lane, Clear Lake Avenue, Central Park Avenue, Forbes Street, Industrial Avenue, Kimberly Drive, Park Street, Shady Lane, Second Street, Third Street, Sixth Street, Sixteenth Street and Twentieth Street.

Local streets are intended to provide direct access to residential, commercial, industrial, or other abutting lane. These streets should serve local traffic movements and are not intended to handle through traffic.

Clearlake City Streets

The City of Clearlake has a four-tier functional classification system (i.e., major arterials, arterials, collectors and local streets).

State Route 53 is the only major arterial in the City of Clearlake. It is under the jurisdiction of Caltrans.

Arterial streets in Clearlake are Lakeshore Drive (between State Route 53 and Manatee Avenue), Olympic Drive, Old Highway 53 (between State Route 53 and Olympic Drive), and Sulphur Bank Drive. Examples of collector streets

in Clearlake area are Davis Street, Burns Valley Road, Mullen Avenue and Uhl Avenue.

Local streets provide access to property and minimal through traffic. All streets in Clearlake not designated as arterials or collectors are local streets.

6.3 Public Transportation

METHODS

The information presented in this section is based on data received through contacting the Public Works Department and Lake Transit, the bus service provider in the County.

KEY TERMS

Dial-a-Ride. Dial-a-Ride is a transportation service for the general public that is available on an on-call basis. This service is intended for those who are unable to use the regular fixed route transit service.

Local Bus Service. Bus service designed to transport riders to locations within the community.

ENVIRONMENTAL SETTING

Transit service in Lake County is provided by Lake Transit. There are six fixed routes within Lake County.

- **Route 1** provides service between Lakeport and Clearlake along the north shore of Clear Lake. Service is provided to Sutter Lakeside Hospital, Upper Lake, Robinson Rancheria, Nice, Lucerne, Glen Haven and Clearlake Oaks. Route 1 operates Monday through Friday.
- **Route 2** provides service between Clearlake and communities in south county. Service is provided to Lower Lake, Twin Lakes, Hidden Valley, Middletown, Anderson Springs, Cobb and Loch Lomand. Route 2 operates Monday through Friday.
- **Route 3** provides service between Clearlake and St. Helena Hospital in Angwin including service to Lower Lake, Twin Lakes, Hidden Valley, Middletown and Calistoga three days per week, Monday, Wednesday and Thursday. Route 3 also has connecting service from Calistoga to Santa Rosa on Thursdays only.

- **Route 4** provides service between Clearlake and Lakeport along State Route 29. A loop that includes Riviera West, Clearlake Riviera, Buckingham and Soda Bay is provided at certain times of the day. Route 4 operates Monday through Friday.
- **Route 5** provides local service hourly within the City of Clearlake. Route 5 operates Monday through Friday.
- **Route 6** also provides local service hourly within the City of Clearlake and the community of Lower Lake. Route 6 operates Monday through Friday.

As noted above, service is provided Monday through Friday except for Route 3. The hours of operation are between 7:00 am. and 6:00 p.m. There is no service on major holidays.

In addition to the fixed route services described above, Lake Transit provides dial-a-ride service in the cities of Lakeport and Clearlake as well as the communities and Lucerne, Nice, Upper Lake, Glen Haven, Clearlake Oaks, Lower Lake, North Lakeport, Kelseyville, Middletown, Twin Lakes, Hidden Valley, Cobb, Loch Lomond, Buckingham, Soda Bay, Riviera West and Clearlake Riviera.

6.4 Bikeways

METHODS

The information presented in this section is based on the 2002 Lake County Regional Bikeway Plan.

KEY TERMS

The Regional Bikeway Plan designates bikeways as Class I, Class II, or Class III, which are defined as follows:

Class I Bikeway. A Class I Bikeway is also known as a Bike Path. It has a completely separated right-of-way for exclusive use of bicycles and pedestrians. Crossflows of motorized vehicles are minimized.

Class II Bikeway. A Class II Bikeway is also known as a Bike Lane. It has a marked lane for one-way bike travel on streets or highways with through travel by motor vehicles prohibited. Adjacent vehicle parking and crossflows by motor vehicles are permitted.

Class III Bikeway. A Class II Bikeway (bike route) provides for shared use with pedestrian and/or automobile traffic, and is designated with signs only indicating "Bike Route".

ENVIRONMENTAL SETTING

Classification of Bikeways

A bikeway includes all facilities that provide for bicycle travel. Bikeways are an element of an effort to improve bicycle safety and convenience, either to help accommodate motor vehicle and bicycle traffic on shared roadways or to complement the road system to meet needs not adequately met by roads. On-street bikeways can serve to enhance safety and convenience, especially if other commitments are made in conjunction with the establishment of bikeways such as elimination of parking or increasing roadway width and elimination of surface irregularities and roadway obstacles.

Designation of bike route should indicate that there are particular advantages to using these routes as compared with alternative routes. Class III Bikeway facilities are established by placing Bike Route signs along roadways. Since bicyclists are permitted on all roadways, except prohibited freeways, the decision to sign the route should be based on the advisability of encouraging bicycle traffic on the route. To be a benefit to bicyclists, bike routes should offer a higher degree of service than alternative streets.

Existing Bikeways

The existing bikeways in Lake County tend to be located in communities surrounding Clear Lake. The Lake County Regional Bikeway Plan identifies five existing bikeways, all of which are designated as Class II, that are located in the following five communities in Lake County.

City of Clearlake. The City of Clearlake has a single bikeway that extends approximately 1 mile from Lakeshore Drive to Lakeview Way. This bikeway comprises the first phase of a larger bikeway system. Phase II will include an additional 0.5 mile of bikeway, and Phase III will include an additional 0.78 miles.

Kelseyville. The Konocti Road Bikeway extends from Konocti Road Junction at Main Street in Kelseyville to a point 0.7 miles to the east.

Lakeport. The Lakeshore Boulevard Parkway in Lakeport extends from Main Street along Clear Lake Avenue and High Street to meet Lakeshore Boulevard. It then extends to the north on City and County segments of Lakeshore Boulevard to Park Way.

Lower Lake. The Lake Street Bikeway in Lower Lake extends from Morgan Valley Road to Cache Creek, just south of Dam Road.

Middletown. The Hartmann Road Bikeway in Middletown extends along Hartmann Road from Coyote Valley School to Hidden Valley Road in the community of Hidden Valley Lake.

6.5 Aviation

METHODS

The information presented in this section is based on the information provided by the Lampson Field Airport, and information found in the Airport Land Use Plan. The Airport Land Use Plan was prepared by the Lake County Airport Land Use Commission.

KEY TERMS

There are no key terms in this section.

ENVIRONMENTAL SETTING

Lake County has two airports, the Lampson Field Airport and the Pearce Airport.

The Lampson Field Airport is operated by the County of Lake Public Works Department. Lampson Field Airport is located south of the City of Lakeport off of Highland Springs Road. Lampson Field Airport has a single 3,600-foot long lighted runway.

Pearce Airport is also owned and operated by Lake County, and is located near the southeastern rim of Clear Lake in the City of Clearlake. The airport consists of a single runway that is 2,548 feet in length.

There is no scheduled carrier air service to Lake County.



Additional information on airports in Lake County can be found in Section 3.2, "Land Use" and Section 7.4, "Man Made Hazards."

6.6 Railroads

There are no railroads located in Lake County.

6.7 Travel Forecast Model

METHODS

The information on existing traffic conditions was based on information contained in the Lake County Travel Forecast Model, traffic count information provided by the Lake County Public Works Department and Caltrans, and population and employment data contained in the Census

2000 publications. Details on the model update and calibration are provided in the “Environmental Setting” section, below.

KEY TERMS

Traffic Analysis Zone (TAZ). This is a special area delineated by state and/or local transportation officials for tabulating traffic-related data, especially journey-to-work and place-of-work statistics.

Census Enumeration Districts (CED). Geographic boundaries used by the Census Bureau before 1980.

ENVIRONMENTAL SETTING

The Lake County Travel Forecast Model was originally developed in the 1980s. The latest update and calibration of the model were performed by Dowling Associates for the *Lake Countywide Road Needs Study* in 2000, using data from 1990 Census (Census 2000 was not available yet). The last model calibration retained Census Enumeration Districts (CED), geographic boundaries used by the Census Bureau before 1980, as traffic analysis zones. Census Tracts or Block Groups replaced CED after the 1980 Census. It is necessary to adopt new census geography for TAZ. In addition, since the updated population and employment data are now available through the 2000 Census and the California Employment Development Department (EDD), the model needs to be updated with forecasts based on the most recent demographic and land use data.

The Lake County Travel Forecast Model is implemented in the Quick Response System (QRS II). QRS II provides a complete travel-forecasting package, including trip generation, distribution, and assignment steps. Three sets of input data are required for a model run in QRS II:

Zonal Demographic and Employment Data. At a minimum, housing units, retail and non-retail employment are required for the generation of trips for each TAZ.

External Trips. External trips are sometimes referred to as gateway trips. These are trips that have a starting or ending point within Lake County, but cross the County boundary into surrounding counties.

Through Trips. These are trips that pass through Lake County, but do not have a beginning or ending point within Lake County.

Update of Demographic Data

Census Block Groups are used as TAZ for the current model update. For most of Lake County, the average sizes of Census Blocks are suitable for used

as TAZ, since the County contains a significant portion of undeveloped rural land uses. However, in densely developed areas like the cities of Lakeport and Clearlake, the resolution of a Census Block Group is too coarse to capture the variation of traffic due to different development intensities with its boundary. In regions like this, Block Groups are further divided into two to three smaller TAZ. Zonal division is sometimes necessary even for a large block group in rural areas, if major arterials or highways divide the zone into parts. Having more than one TAZ representing an area enables the model to capture different volumes of the roadways.

The number of housing units for each block group in Lake County is derived from Census 2000. If a block group has been divided into several TAZ, the total number of housing units for this block group will also be divided proportionally according to the sizes of the TAZ.

Update of Employment Data

Retail and non-retail employment counts in Lake County are derived from EDD (year 2000 data). Since employment data are for the entire County, certain assumptions were made in order to reasonably distribute the County total to each TAZ. It was assumed that the number of retail and non-retail employment in a TAZ are proportional to the population in the TAZ. For example, if a TAZ accounts for 20% of the total population in the County, it was assigned 20% of the County's total retail and non-retail employment.

External and Through Trips

External stations are usually located at the crossing of a major highway and the County line. External trips are those that have a starting or ending point within Lake County, but cross the County boundary into surrounding counties. Estimation of the 2000 external trips is based on the 2001 highway traffic volumes published by Caltrans and Lake County Public Works. The annual daily traffic (ADT) volumes on the highway (two-way volumes) connecting a external station is used to estimate the total number of trips produced and attracted by the external station. For through trips, the original Lake County model also used traffic counts from Caltrans to project through trips.

Model Calibration

Updating of the above input data for the 2000 baseline model has been completed. Various trip generation rates and trip distribution friction factors were applied to the model to see which set of parameters would result in model outputs that better match 2001 traffic counts. The final selection of model parameters provides traffic forecasts that are within 10% of traffic counts.