CIRCULATION ELEMENT

INTRODUCTION

The Circulation Element addresses the movement of people, goods, and services within and around the City of Live Oak. The *State of California General Plan Guidelines* indicate that a circulation element can address energy, water, sewage, storm drainage, and communications. These topics are addressed elsewhere in this General Plan. Please refer to the Public Facilities and Services Element for information on water, wastewater, storm drainage, and communications. Please refer also to the Conservation and Open Space Element for information on energy and additional information on water.

This Element contains goals, policies, and implementation programs that establish the City's circulation system to accommodate pedestrians, bicycles, motor vehicles, public transit, and other means of travel. The Vehicular Circulation Diagram (See Figure CIRC-2) graphically depicts Live Oak's major streets and the Bicycle and Pedestrian Diagram (See Figure CIRC-5) illustrates the pedestrian and bicycle infrastructure in the community. Together, the policies, implementation programs, and diagrams are intended to ensure transportation connectivity within existing and new neighborhoods, between new growth areas and existing developed areas, in and around the downtown core area, and between Live Oak and other communities.

Transportation efficiency is directly tied to land use mix, density of development, urban design, and other factors. The circulation system is significantly influenced by street pattern, block size, streetscape improvements, and a variety of other community design features. There is intentional overlap and careful consistency between the land use, circulation, and design policies in the Land Use, Circulation, and Community Character and Design Elements of this General Plan.

KEY ISSUES

Residents of Live Oak have identified the following key circulation issues facing the City:

- ✓ Live Oak is bisected by State Route (SR) 99 and the Union Pacific Railroad, making east-west travel difficult.
- ✓ The lack of frequent railroad crossings and traffic along SR 99 cause congestion on local streets in the downtown area.
- ✓ Traffic congestion occurs around the City's schools when parents drop off and pick up schoolchildren.
- ✓ Older parts of the city have a traditional street grid pattern, which provides many connections and good access throughout neighborhoods. Newer parts of the city depart somewhat from the grid pattern, using street networks that provide relatively fewer access points and fewer direct connections between neighborhoods.

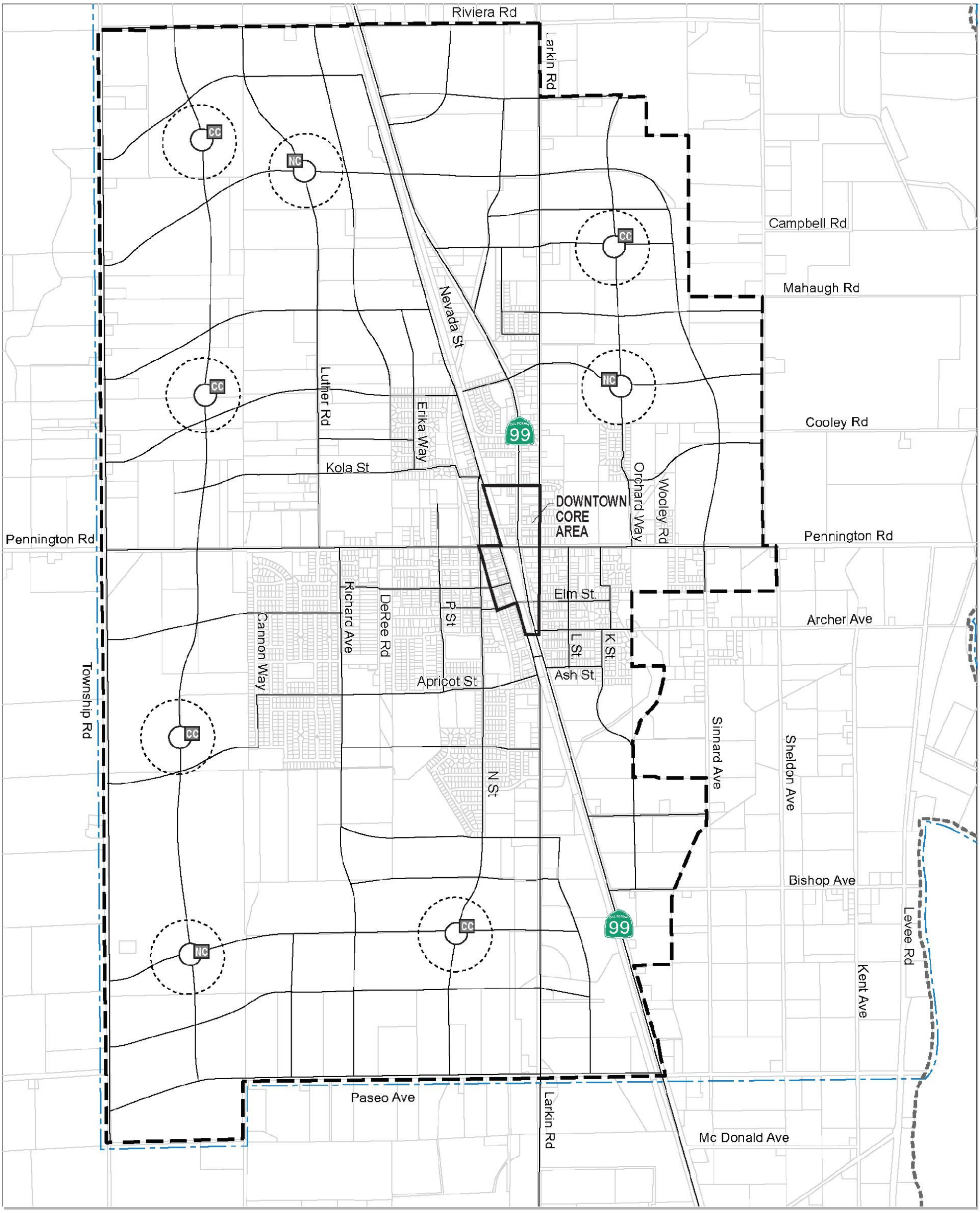
- ✓ Bicycle facilities are poorly marked or are lacking in much of the City.
- ✓ The older sections of town generally lack sidewalks.
- ✓ Many parts of the city lack safe and convenient pedestrian, bicycle, and vehicle access across the highway and railroad.
- ✓ Public transportation in Live Oak is currently limited to a single bus route operated by Yuba-Sutter Transit that makes three round trips to Yuba City and Marysville each week. There are only three transit stops in Live Oak.

CIRCULATION FRAMEWORK

Live Oak's circulation system in this General Plan is designed to accommodate multiple methods of travel—automobile, pedestrian, bicycle, and public transit. Such a strategy is often called "multi-modal." The multi-modal emphasis of this General Plan deviates from many general plans and Live Oak's previous General Plan, which focus almost exclusively on automobile travel.

Live Oak's transportation planning will encourage pedestrian and bicycle use for daily travel. The City will not design roads simply to accommodate vehicular traffic during peak demand periods. The City will also design its transportation infrastructure to facilitate a more sustainable proportion of vehicular to non-vehicular trips (encouraging the latter). [1] The City will emphasize pedestrian and bicycle safety over vehicular traffic speed in the downtown core area, in Centers (e.g., Civic Centers, Neighborhood Centers), and in other areas where high pedestrian activity in anticipated (Figure CIRC-1).

[1] Too much focus on automobile travel in transportation planning results in overly wide roads and large intersections designed to move a large amount of traffic during periods of peak demand. While such roadways may save drivers a few seconds during the morning and afternoon commute, they are more expensive to construct and maintain. Overly wide roads also create barriers for pedestrians, divide neighborhoods, increase stormwater runoff, contribute to the urban heat island effect, and generate noise. "Urban heat island effect" is the term used to describe the condition where temperatures in built areas with little vegetation are higher than those in nearby rural areas. In Live Oak the primary sources of the effect are likely to be roads, parking lots, roofs that are not shaded by trees or roofs that use dark roofing materials. Direct sunlight warms these surfaces significantly more than other surfaces. These higher temperatures can result in increased summertime peak energy demand, air conditioning costs, air pollution and greenhouse gas emissions, heat-related illness and mortality, and water quality impacts.



LEGEND

Boundaries

- Study Area
- Planning Area
- Downtown Core Area
- Sphere of Influence
- Parcels

Centers

- Civic Center
- Neighborhood Center

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Source: Sutter County Assessor's Office, Live Oak GIS, Adapted by EDAW 2008

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Figure CIRC-1
Downtown and Centers

STREET TYPES, FUNCTION, STANDARDS, AND DESIGN

STREET TYPES AND FUNCTION

Live Oak's streets will be designed to serve the neighborhoods and commercial districts in which they are located. This General Plan creates five types of streets, the functions of which are described below.

- ✓ **Arterial streets** provide relatively high-speed, high-capacity access to SR 99 and other major roads. Access to arterials is generally from collector and local streets and direct access to abutting land uses is limited.
- ✓ **Major collector streets** provide medium-speed, medium-volume access within and between neighborhoods. Major collector streets would limit direct property access somewhat more than minor collectors, and would not have on-street parking (whereas minor collectors would).
- ✓ **Minor collector streets** provide low-speed, medium-volume access within and between neighborhoods and nearby major collector and arterial streets. Minor collector streets would have frequent direct access points to properties, and would have on-street parking (whereas major collectors would not provide on-street parking).
- ✓ **Local streets** provide low-speed, low-volume, direct access to abutting land uses and connections to collector streets.
- ✓ **Alleys** provide very-low-speed, very-low-volume, direct access for residents and service providers to the rear of adjacent properties. Projects may use alleys to provide access and services for rear-loaded units.

STREET STANDARDS

New streets shall meet the standards contained in Table CIRC-1 (below). For improvements required for redevelopment or infill projects, the City will allow flexibility relative to these street standards, where required, due to physical constraints.

TABLE CIRC-1
STREET STANDARDS

Functional Class	Driveway Access	Sidewalk Width[1]	Planted Median	Bike Lane[2]	Street Trees	Desired Speed (mph)[3]	On-Street Parking	Preferred Lane Width	# of Travel Lanes
Arterial	Limited	4–7'	Optional	Yes	Yes	30–45	No	11–12'	2–4
Major Collector	Limited	4–10'	Optional	Yes	Yes	25–35	Optional	11'	2–4
Minor Collector	Yes	4–10'	No	Yes	Yes	≤30	Yes	10–11'	2
Local[4]	Yes	4–6'	Optional	No	Yes	≤25	Yes	10–11'	2

Notes: mph = miles per hour.

[1] Streets in Centers (e.g., Neighborhood Centers, Civic Centers), commercial areas, the downtown core area, and other areas where a high level of pedestrian activity is anticipated should have wider sidewalks.

[2] Streets that are located adjacent and parallel to proposed Class I bicycle/pedestrian paths do not require bike lanes.

[3] This is the intended speed at which most drivers will travel given the built environmental speed controls created by the street width and design. This is not meant to represent design speed for sight distance, cornering, or other geometric properties of the roadway.

[4] Local streets can be narrower, at the City's direction, if alley access is provided for public services, utilities, and parking/garage access. Local streets in designated Employment areas may need to have wider lanes to accommodate heavy truck volumes.

VEHICULAR CIRCULATION DIAGRAM

Figure CIRC-2 presents the 2030 General Plan circulation diagram, which depicts the locations of current and planned future roadways within the City, as well as a new grade-separated crossing of the railroad and Highway 99 in the northern portion of the Planning Area.

STATE HIGHWAY/ARTERIALS

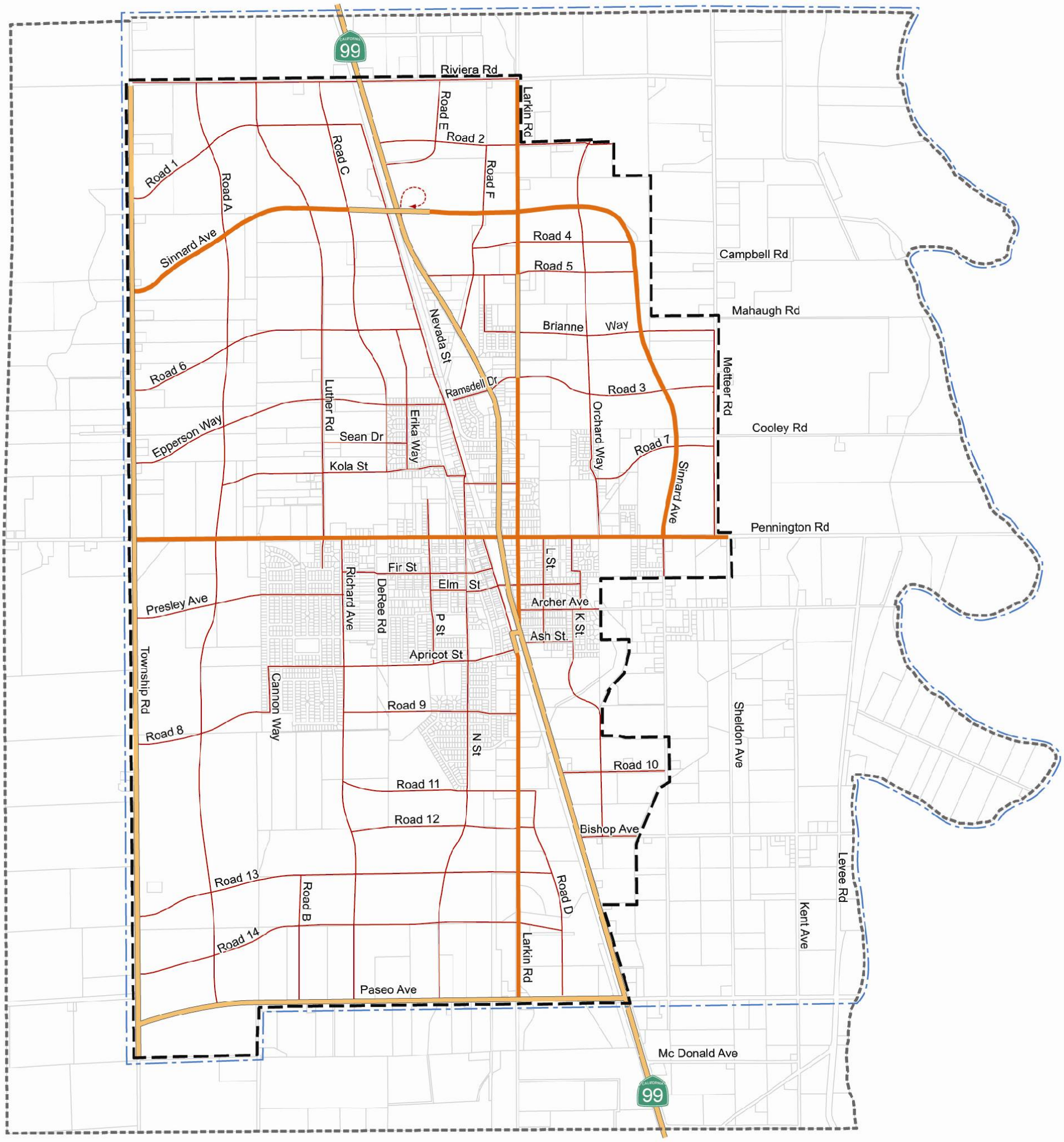
The Circulation Diagram identifies SR 99 as the primary element of the City's circulation system. This street is expected to be widened to provide two through lanes in each direction, with auxiliary lanes at major intersections. Access from SR 99 to new development is to be carefully controlled, with the intent of achieving "Expressway" standards in the area south of the Live Oak downtown area.

The Circulation Diagram identifies other arterial streets that will serve as alternatives to SR 99. Most arterials are expected to be two lanes, although some would have four lanes (Table CIRC-2). The design of access and alignment of arterial streets will accommodate travel speeds that are higher than those expected on lesser streets. Parking will be prohibited. The Circulation Diagram identifies the arterial streets.

TABLE CIRC-2
STATE HIGHWAY AND ARTERIALS

Arterial	From	To	Lanes
SR 99	Paseo Avenue	Ash Street	4*
SR 99	Ash Street	Kola Street	4
SR 99	Kola Street	Riviera Road	4
Township Road	Planning Area limits	Riviera Road	2
Paseo Avenue	Township Road	SR 99	2
Sinnard Avenue	99 Access Point	Road C	2
Apricot Street/Broadway connection	Broadway	SR 99	2
Broadway	Apricot Street – Broadway Connection	Apricot Street	2
Larkin Road	Road 5	Road 3	2

* access to be limited to achieve Caltrans' Expressway standards



LEGEND

Boundaries
- Study Area
- Planning Area
- Sphere of Influence
- Parcels

Roadways
- Arterial/Highway 99
- Major Collector
- Minor Collector

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General Plan

Figure CIRC-2
Vehicular Circulation Diagram

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Source: Sutter County Assessor's Office, Live Oak GIS, Adapted by EDAW 2008

MAJOR COLLECTORS

Major collectors provide greater amenities for non-automobile traffic than arterials, permit more local access, and may include on-street parking. Major collectors are intended to promote city-wide circulation to a greater degree than Minor Collectors and may be two or four lanes (Table CIRC-3). The Circulation Diagram designates the Major Collector streets.

TABLE CIRC-3
MAJOR COLLECTORS

Major Collector Street	From	To	Lanes
Sinnard Avenue	Township Road	Orchard Way	2
Sinnard Avenue	Orchard Way	Pennington Road	2
Pennington Road	Township Road	N Street	2
Pennington Road	N Street	SR 99	4
Pennington Road	SR 99	Sheldon Avenue	2
Larkin Road	Riviera Road	Road 5	2
Larkin Road	Road 3	Paseo Avenue	2

MINOR COLLECTORS

Minor Collector streets provide both local access and community circulation and are two-lane facilities. The Circulation Diagram identifies the location of Minor Collector streets.

INTERSECTIONS

The City will need to monitor traffic operations during buildout of this General Plan and implement a series of roadway and intersection improvements consistent with City policy. Some of the needed improvements are described below. Others, such as turning lanes, will surface as a result of project- or plan-level review during this General Plan time horizon. The City will coordinate its traffic impact fee program with ongoing transportation analysis to plan and fund necessary improvements.

Several intersections could require traffic signals or roundabouts to maintain acceptable LOS. The specific type and timing of improvement will need to be analyzed at the time of implementation for effects on nearby roadways and intersections. Intersections that may need improvement potentially include:

- ✓ Riviera Road / Larkin Road
- ✓ Pennington Road / N Street
- ✓ Pennington Road / Larkin Road
- ✓ Pennington Road / Orchard Way
- ✓ Paseo Avenue / Larkin Road
- ✓ SR 99 / Road 2
- ✓ Larkin Road / Sinnard Avenue
- ✓ Larkin Road / Road 4

- ✓ SR 99 / Road 5
- ✓ Larkin Road / Road 5
- ✓ SR 99 / Road F
- ✓ Larkin Road / Road 3
- ✓ N Street / Kola Street
- ✓ Larkin Road / Kola Street
- ✓ Larkin Road / Road 11
- ✓ Richard Ave / Road 13
- ✓ N Street / Road 13
- ✓ Larkin Road / Road 13
- ✓ SR 99 / Riviera Road
- ✓ SR 99 / Ramsdell Drive
- ✓ SR 99 / Kola Street
- ✓ SR 99 / Bishop Avenue
- ✓ SR 99 / Paseo Avenue

While traffic signals may not prove to be warranted, at some intersections, it may eventually be necessary to install all-way stops, roundabouts, or to add separate left turn lanes in order to deliver minimum LOS, including:

- ✓ Township Road / Riviera Road
- ✓ Pennington Road / Sinnard Avenue

For SR 99 intersections, the City will need to collaborate with Caltrans on the installation and timing of traffic signals, including signal timing for a new signal at Larkin Road and Pennington Road that would be tied to the signal at Pennington Road and SR 99. It may be necessary to restrict one or more turning movements at this intersection.

In order to maintain acceptable LOS and avoid queuing across the railroad, it may be necessary to restrict left turns from westbound Pennington onto southbound Broadway in coordination with a project to widen Pennington Road to four lanes.

Potential intersection improvements recommended by the traffic analysis conducted to support the 2030 General Plan and EIR are included in an Appendix to the General Plan.

RAIL TRANSPORTATION

The Union Pacific Railroad Company owns and maintains the railroad line that runs through the center of Live Oak, parallel to SR 99 (Figure CIRC-3). While historically trains stopped in the city for freight service purposes, stops are no longer scheduled within City limits. Frequency of trains depends on market conditions and demand for consumer goods and energy. During the noise monitoring work conducted to support this General Plan, 21 trains passed through Live Oak per day, with about half of those passing through at night (between 10 p.m. and 7 a.m.).

The railroad presents both challenges and opportunities for the City. Because there are a limited number of at-grade crossings of the railroad, the tracks are a major barrier to east-west travel. Construction of an over-crossing is planned in the northern portion of the Planning Area to serve the needs of new growth on the north side of the City. The railroad is also a main source of noise and

potential safety hazards (see the Noise Element and Public Safety Element for more information). However, the tracks also present a potential opportunity for future industrial and agricultural processing uses in the city. Depending on the type, weight, and frequency of the products that a business would ship and the cost of trucking versus rail, access to rail freight service may provide Live Oak businesses a competitive advantage in the future. The possible use of a railroad spur for freight is a resource the City will consider in implementing its economic development strategy (see the Economic Development Element for more information). The City may explore the potential of commuter rail services or freight options in coordination with regional and state transportation agencies, as well as Union Pacific.

Figure CIRC-3
Union Pacific Railroad in Downtown Live Oak

RAILROAD CROSSINGS

The Draft Circulation Diagram continues existing railroad crossings and identifies a new grade separated crossing over the UPRR (that also would cross SR 99). The new grade-separated overcrossing would be located in the northern portion of the Planning Area, approximately 500 to 700 feet north of the Campbell Road alignment. The precise location and design of this overcrossing will be determined based on additional analysis and planning by the City and in coordination with future developments in this part of the Planning Area.

Pennington Road is planned to be improved to a four-lane roadway in the area west of SR 99 across the UPRR to N Street. Implementing this requirement will involve widening the existing UPRR crossing, constructing new sidewalks, and installing new crossing hardware.

In order to improve intersection spacing along SR 99 and improve future connectivity across the railroad, the City will collaborate with the California Public Utilities Commission, Union Pacific Railroad, and Caltrans to install a new railroad crossing in tandem with the removal of the existing crossing north of Apricot Street. This action would allow development of a new crossing with greater separation between the railroad and SR 99at a location that can be controlled by a signalized intersection. If this alternative is implemented, all public at-grade crossings would eventually be linked to SR 99

intersections that are controlled by traffic signals. Under this scenario, the existing Apricot Street-Broadway railroad crossing would be closed and replaced with a new at-grade crossing. The locations of the new crossing could be along the Road 11/Road 10/Coleman Avenue alignment, or at another location south of Apricot Street. The Ash Street and Archer Avenue connections to SR 99 would, under this scenario, be limited to right turns only. This alternative would eliminate the need for the Arterial standard at the Apricot Street/Broadway connection across the railroad and the segment of Broadway between this crossing and Apricot.

In addition to the public crossings listed in Table CIRC-4, there is an existing private railroad crossing located approximately 200 feet north of Bishop Avenue that provides access to SR 99. The private access is expected to be closed once alternative access is provided from the west and in conjunction with improvements to railroad crossings in the Planning Area.

TABLE CIRC-4
PUBLIC RAILROAD CROSSINGS

Street	Condition
Riviera Road	Existing at-grade
Sinnard Avenue (roughly 600' north of Campbell Avenue)	Proposed grade separation
Kola Street	Existing at-grade
Pennington Road	Existing at-grade
Elm Street	Existing at-grade
Apricot Street–Broadway	Existing at grade
Paseo Avenue	Existing at grade
South of Apricot Street	Proposed at-grade

BICYCLE AND PEDESTRIAN SYSTEM

Live Oak's neighborhoods and business districts will be served by a system of on- and off-street pedestrian and bicycle routes. The bicycle and pedestrian path system is intended to connect all areas of the community to all major destinations.

Sidewalks, bicycle/pedestrian paths, and/or bicycle lanes will be required along public rights-of-way, as directed by the City (please refer to Table CIRC-1, "Street Standards," which provides general guidance). Streets in areas with high pedestrian activity, such as Centers, the downtown core area, and commercial districts will have wider sidewalks and separate bicycle lanes. Paths will be used in areas where there are opportunities in the same corridor to circulate pedestrians, cyclists, and stormwater. As noted throughout the General Plan, the City will encourage multi-use drainage, linear parks, open space buffers, and bicycle/pedestrian pathways in new and existing development.

A simple classification system is often used in planning bicycle and pedestrian systems:

- ✓ Class I: Off-street bike paths are located within linear parks and on vacated rail lines, water corridors, or areas otherwise separated from streets.

- ✓ Class II: On-street bike lanes are located along arterial roadways that are delineated by painted stripes and other features.
- ✓ Class III: On-street bike routes share use with motor vehicle traffic. They provide a route that is signed but not striped.

This Circulation Element does not specifically dictate standards or classifications for the City's future bicycle/pedestrian system, although the City may adopt these standards as a part of the Municipal Code, Bicycle and Pedestrian Master Plan, or City Improvement Standards. Rather, the Circulation Element provides more generalized guidance for sidewalks, paths, and bicycle lanes. Sidewalks and bicycle lanes are required as described in Table CIRC-1, "Street Standards." Bicycle/pedestrian paths and bicycle lanes are described below (see also Figure CIRC-4):

- ✓ **Bicycle/pedestrian path.** This is an 8- to 12-foot-wide path along or separated from a street. This can be located within a linear park or alongside restored or newly constructed natural drainages. These features can also be located in an agricultural buffer.
- ✓ **Bicycle lane.** This is a 4 to 6-foot-wide lane painted on the outer portion of streets and through intersections. Bicycle lanes can be provided along with traffic circles, roundabouts, and other intersection configurations.

The City will implement the pedestrian and bicycle system, as illustrated on the Bicycle and Pedestrian Diagram (see Figure CIRC-5). This diagram shows locations for off-street pathways and pathways along public rights-of-way. This diagram also shows locations for bicycle lanes along streets. Sidewalks, which are provided along all streets that don't have a pathway system, are not shown on this diagram.

Figure CIRC-4
Bicycle/Pedestrian Path (left) and Bicycle Lane (right)

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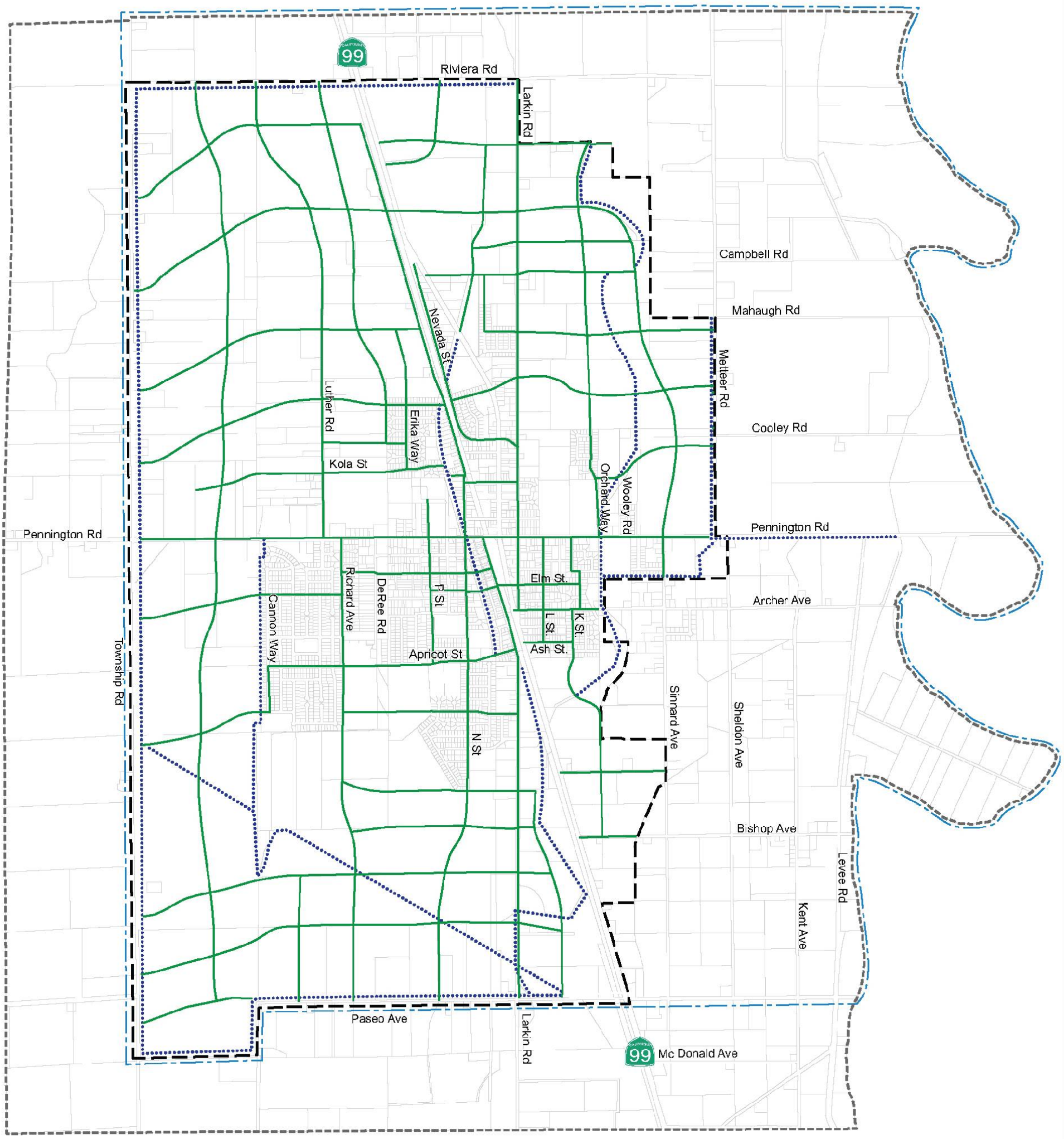

LEGEND

Boundaries
- Study Area
- Planning Area
- Sphere of Influence
- Parcels

Bicycle Routes
- Bicycle Path
- Bicycle Lane

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City of Live Oak
General Plan

Figure CIRC-5
Bicycle and Pedestrian Diagram

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Source: Sutter County Assessor's Office, Live Oak GIS, Adapted by EDAW 2008

LEVEL OF SERVICE

Most communities use a measure of perceived travel convenience called level of service (LOS) for transportation analysis and roadway design. The City will use LOS as one way to evaluate needed transportation improvements. As noted earlier, the City will also account for pedestrian, bicycle, and public transit needs when investing in local transportation improvements. This following section defines LOS and describes the City's LOS standards.

LEVEL OF SERVICE DEFINITIONS

LOS describes roadway and intersection traffic conditions with a simple lettering system (A through F) that accounts for average speed, congestion, queuing, intersection delay, and volume compared to roadway capacity. LOS A represents free-flowing traffic conditions, while LOS F indicates the highest levels of traffic congestion (system breakdown). LOS is presented below in Table CIRC-5.

TABLE CIRC-5
LEVEL OF SERVICE DEFINITIONS

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay $\leq$ 10.0 sec	Little or no delay. Delay $\leq$ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and $\leq$ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and $\leq$ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and $\leq$ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and $\leq$ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and $\leq$ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and $\leq$ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and $\leq$ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and $\leq$ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Source: 2000 Highway Capacity Manual

LEVEL OF SERVICE STANDARD

The City's LOS standard for City streets is D. LOS D standard will apply to both average daily trip (ADT) and peak-hour traffic estimates for City streets. This standard will be used to assess the City's needs for transportation improvements throughout this General Plan time horizon. The City may use the LOS standard (with exceptions indicated below) for project level analysis, calculating fair-share impact fees, and conditions of approval.

The standard is a part of the City's overall intent to create an effective circulation system that balances the demands of automobile, pedestrian, bicycle, and public transit travel modes. The City's transportation planning and investment will specifically consider the movement of people through intersections, not just motor vehicles.

The City will use LOS D as a standard to be considered alongside other planning and environmental objectives. The City may elect to allow the LOS D standard to be exceeded, if necessary, to achieve other environmental, economic, and social objectives. This balancing will produce better results for residents in the long term and will provide the City with the flexibility it needs to optimize a circulation system constructed to support long-term buildout of this General Plan. The following principles will be applied when considering a traffic improvement:

- ✓ Operations of motor vehicles are important, but improvements to motor vehicle access should be compatible with the needs of bicyclists, pedestrians, and transit vehicles.
- ✓ LOS standards are applied with consideration for the land use context and the street type. Pedestrian safety and convenience is a higher priority than vehicular LOS in residential neighborhoods, Neighborhood Centers, and areas near schools and parks.

STATE ROUTE 99 LOS STANDARDS

For projects where the City is the lead agency, a LOS E standard will be applied for local segments of SR 99 and intersections of City streets with SR 99 (consistent with the current Caltrans Transportation Concept Report for this segment).

LEVEL OF SERVICE EXCEPTIONS

The Circulation Diagram has been designed to achieve the City's LOS D standard and LOS E standard for segments of, and intersections with SR 99. There are certain roadway segments where the desired LOS is not feasible and where the City will accept LOS beyond the standards included in this Element. Please see the discussion that follows.

CITY STREETS

Kola Street. The section of Kola Street from N Street to SR 99 would need to be improved to a Major Collector standard in order to achieve LOS D. This would involve widening the roadway and removing parking in a developed section of this roadway. The City does not currently consider this level of improvement to be feasible with the level of development that currently exists along this roadway segment. LOS E is acceptable for this roadway segment.

N Street. The section of N Street from Fir Street to Pennington Road would need to be addressed through improvements at N Street and California Street, which come together in the area just south of Pennington Road. The Live Oak Community Trail would be located along the westerly side of California Street in this vicinity. With implementation of the Community Trail, there would be no direct access to California or Gum Street from N Street or Pennington. This will address impacts to N Street from Pennington Road to Fir Street. Until these improvements are completed, the City considers LOS E to be acceptable for this roadway segment.

Broadway. The segment of Broadway between Apricot Street and the connection across the railroad to SR 99 would need to be widened to Arterial standards to ensure adequate LOS. This would likely involve creating a northbound right turn lane on Broadway to provide storage for traffic that is waiting to turn onto the connection to SR 99. However, Arterial standards would not be required to achieve satisfactory LOS if the City was successful in closing the Apricot Street crossing in favor of a new at-grade crossing south of Apricot Street. The improvements to Broadway will be considered by the City in coordination with either improvements to the Apricot Street/Broadway railroad crossing or closing of this crossing in tandem with construction of a new at-grade crossing south of Apricot Street. Until these improvements are completed, the City considers the forecast LOS F to be acceptable for this roadway segment.

The **Apricot Street/Broadway connection** from Broadway across the railroad to SR 99 would need to be widened to Arterial standards to deliver adequate LOS (LOS C). This change would involve widening the existing railroad crossing and creating separate eastbound left turn and right turn lanes on the approach to SR 99. Improvements to this railroad crossing would be subject to PUC approval. Because the City cannot guarantee these improvements, the forecast LOS F in this location is considered to be acceptable.

STATE ROUTE 99

Achieving acceptable LOS on SR 99 through the central portion of Live Oak would theoretically require a 6-lane arterial, reconstructing the road to Expressway standards for access and intersection spacing, or developing regional alternatives to SR 99 for north-south travel. Expressway standards would have more limited access and increased intersection spacing requirements, compared to arterial standards. Widening or limiting access in the developed portion of SR 99 would present substantial challenges given the level of existing local access, close intersection spacing, and proximity to the railroad. If the City were able to construct a new railroad crossing in the Road 11/Road 10/Coleman Avenue alignment and close the existing Apricot Street crossing, while restricting the Ash Street and Archer Avenue intersections (and other appropriate intersections) to right turns only, this would increase the distance between signalized intersections and potentially allow this segment of SR 99 to operate more like an Expressway. While this can help reduce congestion on SR 99, development of an Expressway through Live Oak is not consistent with the City's objectives for this corridor. The City would not support measures that would divide the community or create substantial barriers to safe and convenient bicycle and pedestrian movements. As indicated in this Circulation Element, however, the City intends to collaborate with Caltrans on an Access Management Plan intended to identify improvements that would be acceptable to the community and that would improve operations along SR 99.

REGIONAL ROADS

Traffic volumes forecast for Larkin Road north of Riviera Road are indicative of LOS E conditions, which exceed the County's minimum standard. To achieve LOS D on this rural road, it would be necessary to widen the road to a four-lane highway, improve the road to Arterial standards, or develop alternative north-south routes that draw traffic from Larkin Road. Historically, individual cities in Sutter County have been primarily responsible for implementing roadway improvements within each city's sphere of influence. As development proceeds throughout the County, traffic volumes on regional roadways can be anticipated to increase. It is possible that with the current arrangement (i.e., individual cities in Sutter County implement roadway improvements within their own sphere of influence), roadway improvements would not keep pace with regional growth, and may lead to LOS that is not consistent with each agency's standards. As noted in this Element, the City will collaborate with the County to identify regional routes and improvement strategies for these routes. Larkin Road will be considered as a part of this overall process. To achieve LOS D on this rural road, it would be necessary to widen the road to a four-lane highway, improve the road to an Arterial standard, or develop alternative north-south routes that draw traffic from Larkin Road.

STREET DESIGN CONSIDERATIONS

The design of streets will play an important role in creating a multi-modal circulation system and quality neighborhoods. Streets need to support a variety of ways to travel. All streets should support vehicles, pedestrians, and bicycles to the greatest extent feasible. Street layout and block size should result in multiple connections and travel routes, as well as include street trees and vegetation to create shaded and aesthetically-pleasing travel routes.

CONTEXT-SENSITIVE DESIGN

Street design should consider the type and density/intensity of surrounding land uses. The following bullets indentify different land use contexts occurring in the city and relevant considerations that should be incorporated into a street's design.

- ✓ **Residential Areas:** Minor collector and local streets are designed to emphasize walking and bicycling while also accommodating vehicle circulation and direct access to properties. Such streets should have narrow street widths and include traffic calming features (e.g., bulb-outs, islands) for pedestrian and bicycle safety and convenience.

- ✓ **Mixed-Use Areas:** Pedestrian, bicycle, and transit design elements will be emphasized in mixed-use areas. Narrower street widths (34 to 36 feet) are intended to reduce travel speeds on main street segments. Traffic-calming design features can be used where necessary, although narrow streets themselves have the effect of calming traffic. Streets in mixed-use areas should identify pedestrian crossings using alternative paving materials (e.g., pavers, brick, cobbles, colored concrete), and streetscapes may include architectural features and public art to provide a unique, high-quality pedestrian environment.

- ✓ **Employment Areas:** Employment areas should be designed to accommodate significant volumes of large vehicles. Wider lanes and wider parking areas may be required along local streets in Employment areas, depending on the type and frequency of anticipated truck traffic. Sidewalks

and bicycle lanes might be used less frequently compared to other areas, but should still be accommodated.

- ✓ **State Route 99 Corridor:** The SR 99 corridor plays an important role in Live Oak's circulation system. This is a major state thoroughfare, but also is a main street serving commercial districts in Live Oak and a major gateway to the community. While traffic flow should be maintained, pedestrian safety and aesthetics must be priorities. There is an approximately 100-foot right-of-way for SR 99 within the Planning Area that currently includes between two and three 12-foot lanes, with turning lanes at major intersections. A more context-sensitive design could include narrower lanes within the downtown core area of Live Oak. In central Live Oak, safety and aesthetics would benefit from turning pockets in appropriate locations; wide, separated sidewalks, landscaping, including street trees; and other enhancements. The pedestrian environment would be further enhanced over time as the City encourages buildings that are closer to the highway right-of-way, with parking provided on local streets in the area and/or behind proposed buildings (Figure CIRC-6).

- ✓ **SR 99 Gateway Corridors.** At gateway points to the Planning Area, the SR 99 corridor could be designed to preserve the rural aesthetic. Just south of Riviera Road and just north of Paseo Road, some of the existing trees along SR 99 (including former orchards) could be preserved as new trees are planted (Figure CIRC-7 shows existing trees along SR 99 north and south of Live Oak). Setting urban development back from SR 99 in the new growth area, with planted, earthen berms along the highway would preserve a more rural aesthetic for drivers as they enter the City and provide necessary buffering between residential development and the highway. Gateway aesthetic themes should continue from the edge of the Planning Area to the north and south ends of the downtown core area, with attractive design features that let the traveler know they have entered the community (see the Community Character and Design Element for more information).

Figure CIRC-6
Potential Future of State Route 99 through Downtown Live Oak

Figure CIRC-7
Orchard and Other Trees in State Route 99 Gateway Corridors

COMPLETE STREETS

Complete streets are those designed to support safe, attractive, and comfortable access and travel for *all* users, whether in motor vehicles, on foot, on bicycle, or using public transit. The City will require complete streets in all new neighborhoods and will improve existing streets to be more complete in providing for bicycle and pedestrian movements, as funding is available. See Figure CIRC-8 (below left) for an example of a complete street, as compared with an incomplete street (below right).

Figure CIRC-8
Complete Street (above left) versus Incomplete Street (above right).

Improvements required for complete streets depend on the type of the street (see Table CIRC-1 above). While all streets will be required to have sidewalks for pedestrians, the required bicycle improvements will vary. Public transit improvements, including bus stops and pullouts, should be focused in the downtown core area, along SR 99, and in Centers.

STREET PATTERNS

A community's street and block pattern defines the usefulness of its transportation network for multi-modal mobility. The 2030 General Plan requires that development within the new growth area be served by a well-connected street pattern with small blocks. The layout of Live Oak's streets and blocks will have a profound impact on the efficiency of the City's circulation system for both automobile travel and other modes.

The traditional grid street pattern is one approach for ensuring a highly connected neighborhood. However, modifications to the grid pattern could also provide a highly connected transportation network. In general, highly connected street patterns have:

- ✓ a dense system of parallel routes, both east-west and north-south, with many streets providing through connections;
- ✓ frequent intersections; and,

- ✓ frequent points of access.

Highly connected streets are convenient for pedestrians, bicyclists, and drivers. They reduce travel times for emergency responders and increase public service efficiencies. With a highly connected street network, traffic is dispersed and single streets are less likely to have high traffic volumes. With lower traffic volumes, streets can be smaller, less expensive to construct and maintain, more pedestrian friendly, and more pleasant public spaces. Figure CIRC-9 (below left) shows a well-connected street pattern next to one without good connections (below right).

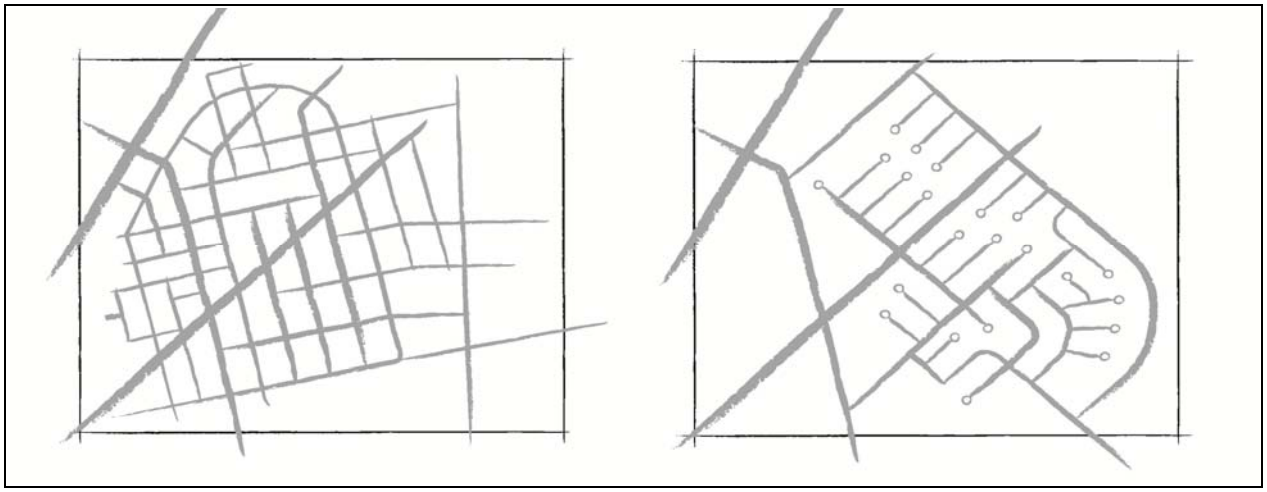

Figure CIRC-9
Connected versus Circuitous Street Patterns

GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS

Following are goals and policies that address circulation through buildout of the Live Oak General Plan in 2030.

Goal CIRC-1. **Develop a highly connected circulation system.**

Policy CIRC-1.1 New development shall provide highly connected street and pedestrian/bicycle networks, with many connections between neighborhoods, between new neighborhoods and older neighborhoods, and between Neighborhood and Civic Centers and the surrounding neighborhood.

Policy CIRC-1.2 Block length should be limited in new residential and mixed-use development areas to accommodate pedestrians and bicyclists, with smaller block lengths in and around Neighborhood and Civic Centers.

Policy CIRC-1.3 Where cul-de-sacs are allowed, they must allow emergency and bicycle/pedestrian through access, where appropriate.

Policy CIRC-1.4 The maximum allowable length of a cul-de-sac is 500 feet unless an exception is approved by the Community Development Director in consultation with relevant emergency service providers.

Policy CIRC-1.5 No property subdivision may have more than 25 percent of the total public street length in cul-de-sacs unless an exception is granted by the Community Development Director based on findings related to such issues as the small size of the subdivision, the infill location, or the location of the subdivision next to the railroad or Highway 99.

Policy CIRC-1.6 New development shall contribute on a fair-share basis toward construction of an overcrossing of the railroad and SR 99.

Policy CIRC-1.7 The following local streets shall be extended into proposed developments, as appropriate: Samuel Street to the south, Wooley Road to the north, and Jasmine Drive and Heather Drive to the west.

Goal CIRC-2. Improve the convenience and safety for multi-modal travel in existing development.

Policy CIRC-2.1 The City will seek funding for, and include pedestrian and bicycle improvements in Capital Improvements Planning, as feasible. Such improvements will include, but are not limited to:

- ✓ construction of sidewalks where they do not currently exist,
- ✓ widening of sidewalks in high pedestrian traffic areas,
- ✓ installation of bike paths and lanes, and
- ✓ improved crossings of roads and the railroad for bicycles and pedestrians.

Policy CIRC-2.2 The City and Redevelopment Agency will prioritize transportation investments that better connect neighborhoods to major destinations, with safer and more convenient pedestrian, bicycle, and transit stops and routes.

Policy CIRC-2.3 The City will seek funding and consult with property owners to increase connectivity in existing neighborhoods by constructing new roads and/or bicycle/pedestrian paths at the end of dead-end streets and cul-de-sacs in the existing developed areas.

Policy CIRC-2.4 The City will seek funding for and, as feasible, install traffic-calming measures, such as planted medians, landscaped planter strips, landscaped traffic circles, and other designs in areas with excessive traffic, as appropriate.

Policy CIRC-2.5 The City and Redevelopment Agency will explore opportunities to construct new, or improve the safety of existing east-west crossings, or may require such improvements as a condition of new development, as appropriate.

Policy CIRC-2.6 The City will consider its own operations and maximize opportunities to use, and encourage employees' use of pedestrian, bicycle, and transit facilities.

Goal CIRC-3. **Ensure safe and convenient daily travel for pedestrians, bicyclists, transit users, and drivers as Live Oak grows.**

Policy CIRC-3.1 New development shall construct and dedicate streets that accommodate the full range of locally available travel modes.

Policy CIRC-3.2 New development shall construct and dedicate and/or contribute to a connected bicycle/pedestrian network that is designed to promote travel to all schools, parks, and other major destinations.

Policy CIRC-3.3 New development shall contribute on a fair-share basis to construct streets and bicycle/pedestrian paths in new growth areas that serve areawide or citywide travel needs.

Policy CIRC-3.4 New development shall contribute on a fair-share basis to improve streets in existing developed areas affected by new development traffic.

Policy CIRC-3.5 In areas with high pedestrian activity, streets should be relatively narrow and curb radii should be designed to promote pedestrian safety and convenience, while also ensuring adequate emergency access.

Policy CIRC-3.6 Bicycle parking should be provided as a part of all non-residential development.

Goal CIRC-4. **Provide parking in a way that balances the needs of motorists, pedestrians, bicyclists, transit users, and community aesthetics.**

Policy CIRC-4.1 Projects located in Neighborhood Centers, Civic Centers, and areas with the Downtown Mixed Use land use designation may have reduced off-street parking requirements.

Policy CIRC-4.2 New development, especially in Centers and within the Downtown Mixed Use land use designation, should use shared parking, wherever possible, to meet the City's off-street parking requirements.

Policy CIRC-4.3 New development will use on-street parking to meet parking needs, where feasible, to reduce or avoid the need for off-street parking.

Policy CIRC-4.4 As funding is available, the City will paint additional on-street parking spaces along streets in existing developed areas to reduce the need for off-street parking.

Policy CIRC-4.5 Shade trees shall be provided in any proposed surface parking to achieve a minimum of 50 percent canopy coverage at maturity. A ratio of at least one tree for every six parking spaces is recommended, although 50 percent canopy coverage will require more of some tree species and fewer of other species.

Goal CIRC-5. **Allow for efficient delivery of materials and shipment of products for Live Oak businesses without adversely affecting residents.**

Policy CIRC-5.1 The City will work cooperatively with the California Department of Transportation (Caltrans), the Sacramento Area Council of Governments (SACOG), and property owners to plan and fund improved access to and from SR 99 for existing and future businesses, including:

- ✓ Examine alternatives for improvements to Highway 99 (capacity and bicycle/pedestrian safety improvements) and identify preferred conceptual plans to provide certainty for existing and future property owners along Highway 99;
- ✓ Enhance and add cross-town circulation connections that make crossings of SR 99 and the railroad easier and more convenient for Live Oak residents and commerce; and,
- ✓ Work cooperatively with Caltrans, SACOG, and Sutter County to examine opportunities for a bypass around Live Oak in the Paseo Road/Township Road corridor.

Policy CIRC-5.2 The City will consult with Caltrans, Sutter County, the California Highway Patrol, the California Public Utilities Commission, and the Union Pacific Railroad Company to appropriately regulate the safe movement of truck traffic and hazardous materials throughout the City.

Goal CIRC-6. **Provide convenient public transit service for Live Oak residents and businesses.**

Policy CIRC-6.1 The City will consult with Yuba-Sutter Transit to maximize the availability of public transit options for Live Oak residents. This will include the development of local transit routes that provide frequent regular service to all areas of the city and transit connections to nearby communities of Gridley, Yuba City, and Marysville.

Policy CIRC-6.2 The City will consult with Yuba-Sutter Transit to develop convenient commuter routes from Live Oak to major employment areas, such as Yuba City, Marysville, and Sacramento, and provide transit commuter routes serving Live Oak Employment areas, as it becomes feasible.

Policy CIRC-6.3 The City will consult with Butte Regional Transit to develop a transit route that can stop in Live Oak on a regular basis and provide a connection to Butte County communities and employment centers.

Policy CIRC-6.4 New development shall provide transit stops and bus pull-out lanes, consistent with City direction, long-range transit plans, and policies of local transit providers.

Policy CIRC-6.5 Transit stops will be focused in Neighborhood Centers, Civic Centers, near schools, employment centers, retail establishments, parks, retirement communities, and in the downtown core area.

Policy CIRC-6.6 Existing and future transit stops should have benches, covered sitting areas, and other amenities that make public transit more comfortable and attractive as a travel choice.

Policy CIRC-6.7 The City will provide incentives to City employees for using public transit or ridesharing, such as free or discounted transit passes and priority parking areas.

Policy CIRC-6.8 The City will consult with Yuba-Sutter Transit regarding possible sponsorship of bus routes for large employers in Live Oak.

Policy CIRC-6.9 The City will provide incentives to local businesses that sponsor transit routes or create their own travel demand management programs. Incentives may include, but are not limited to, streamlined permitting, and reduction of parking requirements.

Goal CIRC-7. Redesign SR 99 within Live Oak to better meet local needs.

Policy CIRC-7.1 The City will consult with Caltrans, SACOG, and other relevant agencies to plan, fund, and implement context-sensitive design solutions along SR 99 that calm traffic, enhance aesthetics, and improve pedestrian safety and convenience, consistent with this General Plan.

Policy CIRC-7.2 The City will encourage and support narrower lanes for SR 99 between Kola Street and Archer Avenue, as one way to increase safety and encourage slower traffic.

Policy CIRC-7.3 As development occurs along SR 99, this should include construction of separated sidewalks with street trees along property frontages.

Policy CIRC-7.4 The City will limit new direct access points to SR 99 and will encourage new development along SR 99 to provide driveway access from local streets instead of the highway.

Policy CIRC-7.5 The City will improve the safety and convenience of pedestrian activity along SR 99 and crossings of SR 99 in and around the downtown core area, as funding is available.

Goal CIRC-8. Ensure seamless and effective transportation throughout the Planning Area and the surrounding region.

Policy CIRC-8.1 The City will consult with other local and regional transportation planning agencies, including Sutter County, Butte County, Caltrans, and the Sacramento Area Council of Governments, to ensure consistency among agencies' transportation systems and plans.

Policy CIRC-8.2 The City will integrate local transportation planning with regional transportation planning and provide direction to the state and SACOG regarding community preferences for the design of regional transportation routes within Live Oak.

Policy CIRC-8.3 The City will consult with the California Public Utilities Commission, Amtrak, Union Pacific Railroad Company, and any other relevant agencies to encourage and accommodate any future opportunities for future regional bus transit and rail stops in Live Oak.

Implementation Program CIRC-1

The City will assess transportation impact fees and plan transportation improvements based, in part, on LOS analysis and standards described in this Circulation Element. The City will also explicitly consider the impact of traffic improvements on pedestrian, bicycle, and public transit safety and convenience. The City will allow exceedance of vehicular LOS for future development projects, if necessary. Transportation investments will be implemented according to the following guidance:

- ✓ Roadway or intersection widening is a less desirable type of mitigation for traffic impacts and generally should be considered after other options are exhausted.
- ✓ The City will seek to improve roadway capacity by timing lights to optimize LOS at congested intersections.
- ✓ The City will seek opportunities to decrease congested routes by providing more connectivity and route choice options.

In areas where proposed development would result in exceeding the local LOS standards, the developer(s) shall redesign the project to increase connectivity, enhance bicycle/pedestrian/ transit access, or through other means to meet LOS standards. After all feasible site planning approaches are exhausted, if LOS is still exceeded, projects will contribute on a fair-share basis for street improvements required to bring the areas roadways to within the City's LOS standards. Improvements needed to accommodate new growth shall not be funded by existing city residents or businesses.

In general, traffic mitigation programs in Live Oak will be structured to provide incentives for projects to reduce their per-unit and per-employee trip generation rates. Traffic impact fees for new developments in Live Oak shall not be calculated simply on a per-unit basis, but will consider the number of bedrooms and type of home (townhome, apartment). It is important to take into account the substantial variations in actual trip generation of the full range of residential types. Commercial traffic impact fees shall not be calculated simply on a square-footage basis, but will take into account whether the commercial project is designed to attract drivers or oriented toward pedestrians and neighborhoods. Projects that rely on highway traffic have higher traffic generation rates, and therefore relatively higher contribution toward roadway improvements. Retail and service establishments located and designed for pedestrian, transit, and bicycle access will have comparatively lower traffic impact fees. This approach

applies to new development rather than redevelopment or the change of use or user in existing developments.

Implementation Program CIRC-2

The City will consult with the Sacramento Area Council of Governments to revise the local approach to traffic impact analysis to take advantage of emerging, more sophisticated, land use, density- and design-sensitive modeling techniques. The City will promote the use of land use/transportation modeling that is sensitive to not only land use, but also pedestrian-oriented design. When calculating traffic impacts of development projects, the City will encourage the use of models that show reduced trip-generation rates for higher residential densities. Traffic modeling will be sensitive to the travel demand benefits of building homes and destinations near each other, projects that reduce parking and bring buildings to the street, and other proven land use planning and site design techniques. Modeling and impact assessment will show transportation benefits for projects that provide and promote convenient transit access. Other future methods to reduce Live Oak residents' need to drive will be included in City-approved traffic reports, as appropriate. Projects located and designed to manage travel demand in the City will enjoy correspondingly lower traffic impact fees.

Implementation Program CIRC-3

Following adoption of the 2030 General Plan, the City will revise its development impact fees based on a Nexus Study, including areawide serving transportation facilities, such as a railroad and Highway 99 overcrossing in the northern portion of the City.

Implementation Program CIRC-4

Following adoption of the General Plan, the City will revise the Zoning Ordinance, Subdivision Ordinance, and Public Works Improvement Standards, as necessary, to ensure a highly connected transportation system. Revisions to these implementing documents will be consistent with Circulation Element, and will include such item as:

- ✓ establish maximum block sizes in residential, mixed-use, and commercial areas;
- ✓ require stubbing of streets to adjacent planned development areas;
- ✓ establishment of a minimum connectivity index, particularly near Neighborhood Centers and Civic Centers, in order to ensure multiple route choices and emergency access; and,
- ✓ specify exceptions to connectivity standards.

Implementation Program CIRC-5

Following adoption of the General Plan, the City will revise the off-street parking requirements, as necessary, based on policy in this Circulation Element. Since different land uses have different peak demand periods, it is often cost-effective in the short- and long-term for property owners, land developers, end users, and the City alike to encourage joint- or shared-use parking, particularly in mixed use areas. Revisions in the off-street parking standards required to better optimize the amount of surface parking provided in different areas of the City will be

considered. The following guidelines should be considered in revisions to implementing documents:

- ✓ Off-street parking requirements may be reduced for projects located in Centers (e.g., Neighborhood Centers and Civic Centers) and in the downtown core area, as well as for affordable housing projects.

- ✓ Consider opportunities to reduce residential off-street parking requirements for multifamily units and/or other medium and high density housing.

- ✓ Consider reducing or eliminating off-street parking requirements for guest parking in locations where on-street parking is provided.

- ✓ Parking for nonresidential development may be reduced if located in Centers, where on-street parking is provided, or if parking can be shared with adjacent uses with different timing for parking needs.

- ✓ Parking requirements should specify minimum parking, as with the current code, as well as parking *maximums*, in order to create a pedestrian-friendly environment. The City will retain the discretion to approve projects proposing parking above the maximum with conditions, such as providing parking lot shading beyond that required by City standards.

Implementation Program CIRC-6

Following adoption of the General Plan, the City will analyze future mixed-use development potential in the downtown core area and the ability to accommodate new parking needs through provision of on-street parking. Both existing and future street connections will be considered for adding on-street parking. Wide streets might accommodate diagonal parking on one or both sides. Narrower streets might only accommodate parallel parking. The future amount of on-street parking will be compared with the parking demand of future mixed-use development, considering the different daily periods of peak demand for different land uses. The findings of this study should inform changes to the City's off-street parking requirements and Improvements Standards for downtown core area streets, as appropriate. The City may also choose to instead conduct the above parking analyses as a part of an overall downtown core area plan.

Implementation Program CIRC-7

Following adoption of the General Plan, the City will revise the Street Design Criteria, as necessary, to implement policy of this Circulation Element. As a part of these revisions, the City will consider pedestrian-friendly street standards, especially for areas where high pedestrian activity is anticipated. The following guidelines should be considered in revisions to the City's Improvement Standards:

- ✓ Driveways may be constructed using pervious surfaces (such as porous concrete, porous cement, pavers, turf-blocks), or other designs and materials that reduce stormwater runoff.

- ✓ Shared driveways are encouraged in zero lot line, courtyard, and other compact single-family residential designs, as well as in multifamily housing.

- ✓ Curb radii in new growth areas should be reduced. Consider 15–20 feet for local streets, 20–25 feet for minor collectors, and 25–30 feet for major collectors.

- ✓ Street intersections should follow a four-way grid or modified grid pattern.

- ✓ Roundabouts and traffic circles can be used to control traffic at intersections, particularly those without a perfect 90-degree orientation.

Implementation Program CIRC-8

The City will seek funding to work collaboratively with Caltrans (and SACOG, as appropriate) to prepare a conceptual corridor plan for SR 99. The plan should include such design components as wide, separated sidewalks, street trees and other landscaping, street furniture, and other amenities, as appropriate. The plan will provide conceptual design guidance for SR 99 property frontage, as well as the SR 99 right-of-way. The plan will identify priorities for phasing and financing of these improvements. This conceptual corridor plan will identify local preferences for improvements to the highway itself, which would be pursued by Caltrans in coordination with the City later. The City will accommodate Caltrans design and engineering standards, but will not include preliminary engineering as a part of this corridor plan, which is meant instead to identify preferred conceptual approaches, consistent with the General Plan. With this conceptual corridor plan, the City will proactively seek funding to implement segments of corridor improvements over time. Aspects of this streetscape plan will be integrated into the City's Improvement Standards, as appropriate. The City and Redevelopment Agency may fund and/or implement sections of this streetscape plan in advance of development, with fair-share contribution of benefiting properties to reimburse the City or Redevelopment Agency when they develop. The City will consider ongoing reimbursement payments rather than a single up-front payment where necessary to encourage redevelopment of the SR 99 corridor.

Implementation Program-CIRC-9

On an ongoing basis, the City will identify priority transportation improvements in the existing developed City consistent with the Circulation Element and include such improvements in grant applications, capital improvements planning, and through other funding mechanisms, as appropriate.

Implementation Program-CIRC-10

Following General Plan adoption, the City will identify and restrict truck traffic to designated truck routes. The City will allow truck traffic by direct route to and from restricted streets, where required for the purpose of making pickups and deliveries of goods. The City will sign and enforce designated truck routes, as appropriate.

Implementation Program-CIRC-11

Following General Plan adoption, they City will collaborate with Caltrans, the Public Utilities Commission, Union Pacific Railroad, local property owners and businesses, and other relevant agencies to develop and implement an Access Management Plan for SR 99 and railroad

crossings in the Planning Area. This Plan will address forecast level of service issues along SR 99 and City streets with forecast LOS issues. The Access Management Plan will consider the location and design of a new railroad crossing south of Apricot Street to be constructed in tandem with the closing of the Broadway/Apricot Street crossing. The Access Management Plan will identify a phased and logical approach to improving operations of SR 99 while ensuring ongoing local access, including the area between Ash Street and Ramsdell Drive. To the extent that this Access Management Plan includes removal or construction of crossings of the Union Pacific Railroad line, the City will consult with the Public Utilities Commission.

Implementation Program-CIRC-12

Following General Plan adoption, the City will monitor the number of pedestrians crossing the railroad at Kola Street, Pennington Road, and Elm Street, Riviera Road, the new Road 11/Road 10/Coleman Avenue crossing (if constructed), and Paseo Avenue. As necessary, the City will pursue improvements and maintenance of adequate traffic and pedestrian controls at each location, including installation of fencing to limit access to the railroad, in order to ensure safety. The City will seek funding for safe pedestrian and bicycle crossings of the railroad and/or SR 99 at approximately Epperson Way, Road F, and Road 10/Bishop Avenue/Coleman Avenue, among other appropriate locations.

Implementation Program-CIRC-13

Following General Plan adoption, the City will collaborate with Sutter County to identify regional routes that would serve traffic generated under the 2030 General Plan. The City will collaborate with Sutter County and other relevant agencies on funding, planning, and improvement strategies for these routes. Larkin Road will be considered as a part of this overall process. To achieve LOS D on this rural road, it would be necessary to widen the road to a four-lane highway, improve the road to an Arterial standard, or develop alternative north-south routes that draw traffic from Larkin Road.

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