

6 CIRCULATION AND TRANSPORTATION ELEMENT

The Circulation Element of the Oroville General Plan is concerned with the safe and efficient movement of people and goods in and around the City of Oroville by means of a wide range of transportation modes. The Element accounts for the critical link between land use patterns and transportation. Therefore, it has been developed in close correlation with the Land Use Element to ensure that the circulation system will be adequate to serve Oroville's existing and future land uses.

Local conditions and development patterns dictate that automobile travel is, and will remain, the primary mode of transportation in Oroville. Though the Element strongly supports alternate modes of transportation, the reductions in traffic that will result from implementation of these strategies are projected to be modest. The Circulation Element therefore addresses, as a central focus, the provision of a roadway network that has adequate capacity to serve current and projected traffic within the City. To achieve this, a number of circulation system improvements and a framework for their implementation are set forth in the Element.

The Circulation Element is a required element of the General Plan. As required by Section 65302(b) of the California Government Code, this Circulation Element is correlated with the Land Use Element, and includes information on the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals and other local transportation facilities.

State law also requires that a Circulation Element contain data and policies related to the operation of water, sewage, storm drainage, and other public utilities. These components are not included here, and instead are incorporated in the Public Facilities Element.

The California Complete Streets Act (AB 1358), passed in 2008, requires all General Plan updates after January 1, 2011 to “plan for a balanced, multi-modal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel” and defines “users of streets, roads, and highways” to include bicyclists, children, persons with disabilities, motorists, pedestrians, users of public transportation, and seniors. The policies and actions in this Circulation Element are intended to meet the requirements of Complete Streets legislation.

The Circulation Element is divided into four sections:

- ◆ Background Information
- ◆ Roadway Classifications and Standards
- ◆ Programmed and Planned Improvements
- ◆ Goals, Policies, and Actions

A. Background Information

1. Vehicular Circulation

Oroville's existing roadway system serves inter-city and regional travel, with local streets primarily serving local trips and Highways 70 and 162 serving regional travel. Congestion occurs on some roadways, mainly on arterials and collectors.

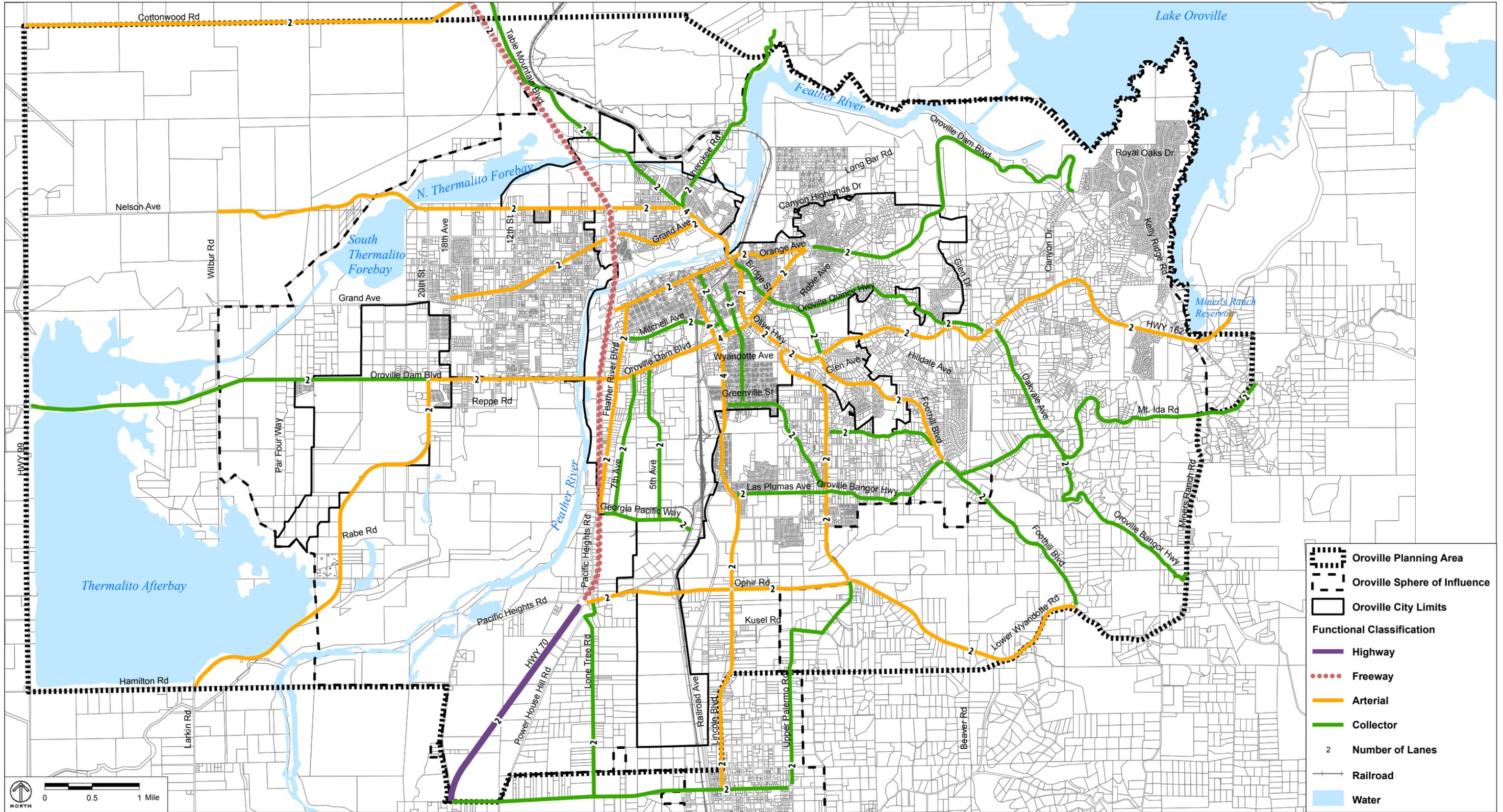
a. Existing Roadway System

The major routes in the Plan Area roadway system are shown in Figure CIR-1 according to operational classification and number of travel lanes. Highways 70 and 162 are the primary transportation corridors extending through Oroville. The classifications in Figure CIR-1 indicate the operational hierarchy of the roadway system. Highway 70 primarily serves inter-city and regional travel while the City's roadways serve local trips. One notable exception is Highway 162, which serves regional travel to Highway 99 to the west and local trips to/from the commercial uses that have developed along the corridor.

b. Roadway Capacity and Level of Service

The current Level of Service (LOS) was calculated for each roadway study segment in the roadway system to evaluate the quality of existing traffic conditions. LOS is a general measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving as well as speed, travel time, traffic interruptions and freedom to maneuver. The LOS grades are generally defined as follows:

- ◆ **LOS A** represents free-flow travel with an excellent level of comfort and convenience and the freedom to maneuver.
- ◆ **LOS B** has stable operating conditions, but the presence of other road users causes a noticeable, though slight, reduction in comfort, convenience and maneuvering freedom.
- ◆ **LOS C** has stable operating conditions, but the operation of individual users is substantially affected by the interaction with others in the traffic stream.
- ◆ **LOS D** represents high-density, but stable flow. Users experience severe restriction in speed and freedom to maneuver, with poor levels of comfort and convenience.



Source: Fehr & Peers, 2007 and City of Oroville GIS, 2005.

FIGURE CIR-1
 FUNCTIONAL CLASSIFICATION AND LANES - EXISTING CONDITIONS

- ◆ **LOS E** represents operating conditions at or near capacity. Speeds are reduced to a low but relatively uniform value. Freedom to maneuver is difficult with users experiencing frustration and poor comfort and convenience. Unstable operation is frequent, and minor disturbances in traffic flow can cause break-down conditions.
- ◆ **LOS F** is used to define forced or breakdown conditions. This condition exists wherever the volume of traffic exceeds the capacity of the roadway. Long queues can form behind these bottleneck points with queued traffic traveling in a stop-and-go fashion.

LOS was determined by comparing existing traffic volumes for selected roadway segments with peak-hour LOS capacity thresholds. These thresholds are shown in Table CIR-1 and were calculated based on the methodology contained in the *Highway Capacity Manual* (HCM) (Transportation Research Board, 2000). The HCM methodology is the prevailing measurement standard used throughout the United States.

Figure CIR-2 shows PM peak hour LOS results for the Plan Area roadways. LOS is calculated using traffic counts from 2006, 2012, and 2013 from the City of Oroville Transportation Capital Improvement Program (TCIP), Butte County Association of Governments (BCAG), and Caltrans. Traffic counts for State facilities are from 2012.

The transportation analysis is based on the PM peak hour because it represents the highest hourly volume during a typical weekday and is generally a good indication of roadway operation. PM peak hour volumes are used to design future roadways because of their regular weekday occurrence, which makes them a reasonable measure for identifying the number of through travel lanes that are needed. Using an hour with higher or lower volumes could lead to inadequate roadway designs or designs that have excessive capacity. However, this methodology does not completely capture the operational effect (i.e. vehicle queuing and delay) of closely spaced, signalized intersections.

Policy P2.1 of this Circulation Element sets forth the minimum operating standard of LOS D for all arterials, collector streets, and intersections, with some exceptions.

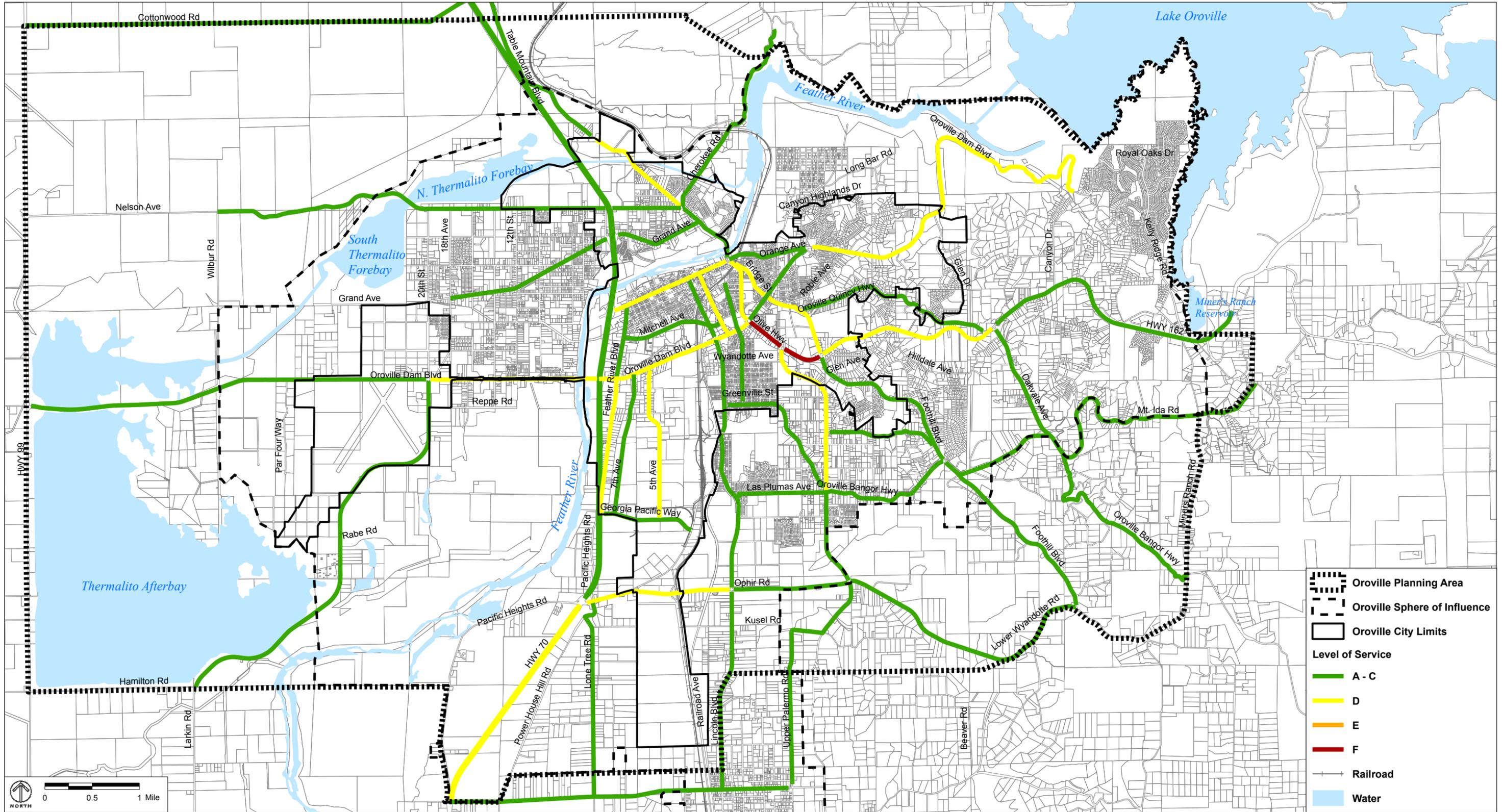
As shown in Figure CIR-2, and based on the thresholds identified in Table CIR-1, Olive Highway between Oroville Dam Boulevard and Foothill Boulevard is the only segment that exceeds the LOS D threshold established in Policy P2.1 under existing conditions. This result is consistent with field observations, which indicate

TABLE CIR-1 OPERATIONAL CLASS AND PEAK HOUR LEVEL-OF-SERVICE THRESHOLDS

Facility Type	Peak Hour LOS Capacity Threshold				
	A	B	C	D	E
Minor 2-lane Hwy	90	200	680	1,410	≤1,740
Major 2-lane Hwy/Exp	120	290	790	1,600	≤2,050
4-lane, Multi-lane Hwy/Exp	1,070	1,760	2,530	3,280	≤3,650
6-lane Expressway	1,610	2,640	3,800	4,920	≤5,480
2-lane Minor Arterial	--	--	650	1,180	≤1,250
2-lane Major Arterial	--	--	970	1,760	≤1,870
4-lane Major Arterial, Undivided	--	--	1,750	2,740	≤2,890
4-lane Major Arterial, Divided	--	--	1,920	3,540	≤3,740
6-lane Arterial, Divided	--	--	2,710	5,320	≤5,600
3-lane Arterial, One-way Rd	--	--	310	2,060	≤2,170
2-lane Freeway	1,110	2,010	2,880	3,570	≤4,010
2-lane Freeway + Aux Lane	1,410	2,550	3,640	4,490	≤5,035
3-lane Freeway	1,700	3,080	4,400	5,410	≤6,060
3-lane Freeway + Aux Lane	2,010	3,640	5,180	6,350	≤7,100
4-lane Freeway	2,320	4,200	5,950	7,280	≤8,140
6-lane Freeway	3,330	6,030	8,640	10,710	≤12,030
Minor 2-lane Collector	--	--	370	790	≤1,020
Major 2-lane Collector	--	--	550	1,180	≤1,520

Notes: -- = LOS is not achievable due to type of facility.

Source: 2012 Transportation Capital Improvement Program (TCIP) and Impact Fee Update Program, City of Oroville.



Source: Fehr & Peers, 2007 and City of Oroville GIS, 2005.

FIGURE CIR-2
 PM PEAK HOUR LEVEL OF SERVICE - EXISTING CONDITIONS

unacceptable operation, characterized by extensive vehicle queuing, on this east-bound segment of Olive Highway (SR 162). The observed vehicle queues had a relatively short duration of about 15 minutes, but had significant impacts on vehicle progression.

2. Parking

Oroville generally has an adequate supply of parking and parking deficiency is not an issue. All new residential and commercial developments are required to meet the City's parking standards, contained within the City's Zoning Code, and provide off-street parking spaces. Most streets within Oroville also have on-street parking.

3. Public Transit System

Public transportation in Oroville consists of the following services and facilities.

- ◆ Public bus service
- ◆ Commercial bus services
- ◆ Shuttle service
- ◆ Taxi service
- ◆ Park-and-ride facilities

BCAG operates the B-Line of the Butte Regional Transit system, which serves the residents of Oroville and provides intercity/regional and local fixed-route services. Oroville's B-Line service includes four local fixed transit routes within Oroville and three intercity/regional routes that provide commuter route service to Biggs, Chico, and Paradise. Figure CIR-3 shows the B-Line transit routes. The B-Line fixed stop locations have signs indicating the bus stop's location, while the flag stop areas are where riders may flag down a passing bus in any location provided it is safe for the bus to stop.

Generally, the service frequency and average daily ridership on the local Oroville transit routes is low. Table CIR-2 details the average daily boardings for bus routes serving Oroville. The regional service between Chico and Oroville, however, is well used with peak hour ridership near capacity. Additionally, Butte Regional Transit provides paratransit service through B-Line Paratransit, which offers on-demand shared ride services for seniors and persons with qualifying disabilities who are not able to use the fixed-route service.

Commercial bus service is provided by Greyhound, which has over 3,600 service locations within North America. Greyhound provides a limited service bus stop in Oroville at the ARCO gas station located at 410 Oroville Dam Boulevard. Grey-

hound provides connections from Oroville to full-service stations located in the San Francisco Bay Area and the greater Sacramento area. Commercial bus service is also provided by Amtrak. Amtrak offers daily bus service between Medford (Oregon), Redding, Sacramento and Stockton. Amtrak stops at the Oroville park-and-ride facility, which is discussed below. The Amtrak bus service provides connecting train service to the San Francisco Bay Area, San Joaquin Valley, and Los Angeles.

Commercial shuttle service is provided by North Valley Shuttle with service to Sacramento International Airport. Taxi services are provided by Yellow Cab Company of Oroville and are available on demand or by reservation.

Park-and-ride lots provide a place for commuters in single-occupant vehicles to transfer to public transit or carpools. Oroville has one park-and-ride facility, which is owned by Butte County, on Highway 70 at Grand Avenue. The lot, which has 30 parking spaces, is intended to encourage ridesharing by providing a safe, attractive, and convenient place to leave a personal vehicle in order to use public transportation or another form of ridesharing. The park-and-ride lot is well used with annual counts by Caltrans from 2003 and 2004 showing 80 to 90 percent occupancy.

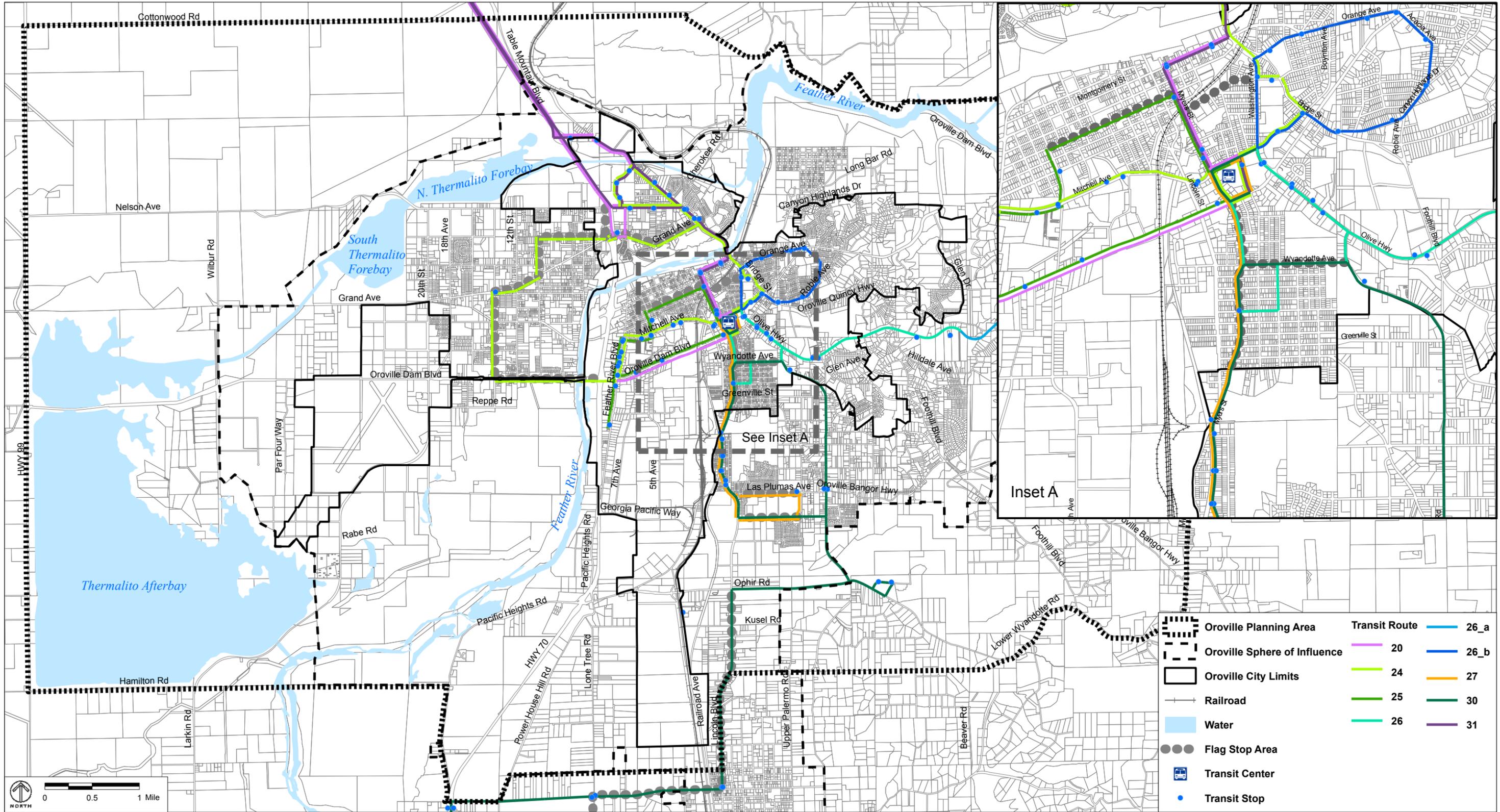
4. Bicycle System

The quality and convenience of roadways for the bicycle system varies widely in different parts of Oroville. The western and central areas of Oroville typically have more grid street networks that are relatively flat and better for bicycling. In Oroville's eastern areas, steeper terrain and windier roads make bicycling more difficult. Figure CIR-4 shows the bikeways and unpaved multi-use recreational trails in the Oroville area. Few areas are served by on-street bicycle facilities.

Caltrans classifies bikeways into the following three types:

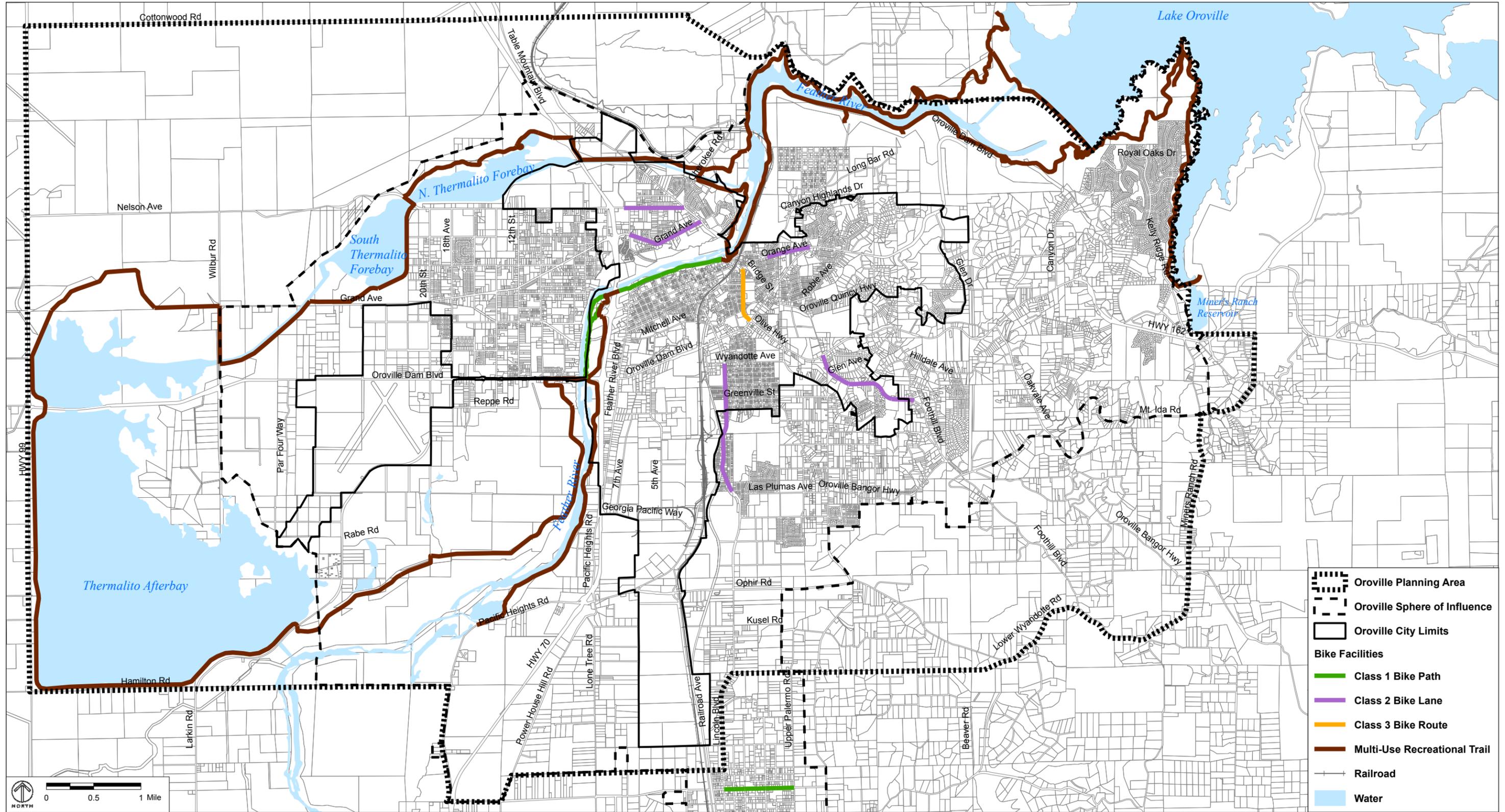
- ◆ Class I – off-street bike paths.
- ◆ Class II – on-street bike lanes marked by pavement striping.
- ◆ Class III – signed on-street bike routes that share the road with motorized vehicles.

Class II bike lanes exist on Nelson Avenue and Grand Avenue (east of SR 70), Orange Avenue (Montgomery Street to Oroville Dam Boulevard), Lincoln Boulevard (Wyandotte Avenue to Arnold Avenue) and Foothill Boulevard (Olive



Source: Fehr & Peers, 2007 and City of Oroville GIS, 2005.

FIGURE CIR-3
TRANSIT FACILITIES - EXISTING CONDITIONS



Source: Fehr & Peers, 2007 and City of Oroville GIS, 2005.

FIGURE CIR-4
BIKE FACILITIES - EXISTING CONDITIONS

TABLE CIR-2 **AVERAGE DAILY BOARDINGS FOR BUS ROUTES SERVING OROVILLE**

Service Area	B-Line Transit Route	Average Weekday Boardings
Oroville	24 Thermalito	139
	25 Oro Dam	61
	26 Olive Highway	59
	27 South Oroville	86
Regional	20 Chico-Oroville	660
	30 Oroville-Biggs	77
	31 Paradise-Oroville	15

Source: Butte County Association of Governments 2014.

Highway to Pinedale Avenue). A Class III bike route exists on Washington Avenue (Orange Avenue to Oroville Dam Boulevard).

Off-street Class I and unpaved multi-use recreational trails are located on the Feather River and Thermalito Afterbay. These off-street facilities are part of the Brad Freeman Trail, which is a 40-mile loop trail.

5. Pedestrian System

There are distinct differences in the quality and convenience for users of the pedestrian system in different areas of Oroville. Historic Downtown Oroville (generally north of Highway 162) and South Oroville are close to shopping and have grid street networks with relatively short block lengths that are good for walking. However, much of South Oroville does not have sidewalks, and the streets are narrow, with on-street parking that creates an obstacle for pedestrians. In the eastern part of the Sphere of Influence (SOI), steeper terrain, low density development, and increased distance from destinations make walking less convenient. Pedestrians also have access and use Class I and multi-use recreational trails located on the Feather River and Thermalito Afterbay.

6. Freight Delivery System

The railroad system and state highway system provide the major transportation network for the delivery of freight in the City of Oroville. Each system is discussed below, and illustrated on Figure CIR-5, as it relates to operation and service of transporting freight.

a. Rail Transportation

The City of Oroville is served by the Union Pacific Railroad. Union Pacific Railroad serves 23 states in the western two-thirds of the United States. Transported commodities include chemicals, coal, food and food products, truck trailers and containers, forest products, grain and grain products, metals and minerals, and automobiles and parts.

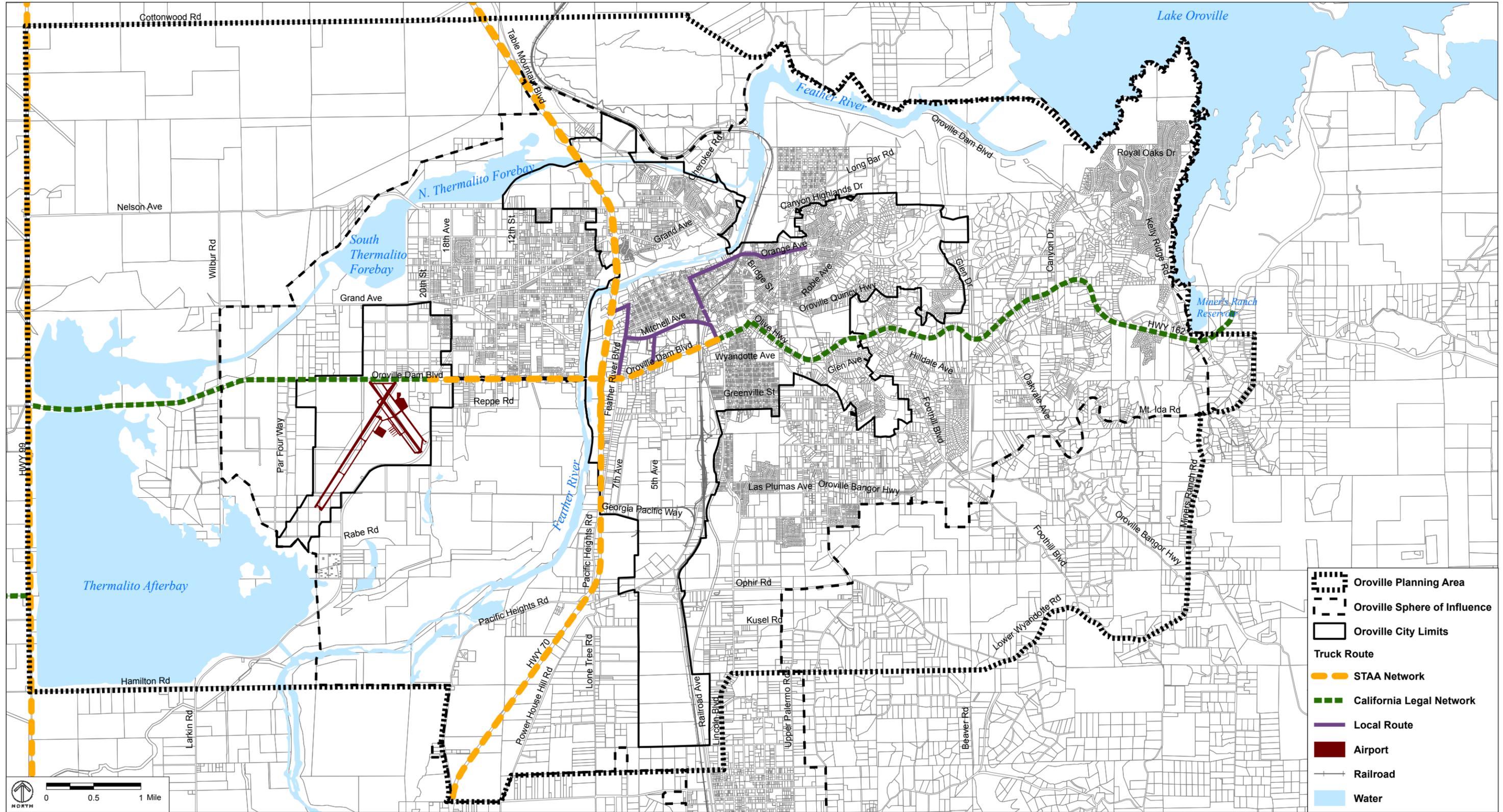
The Feather River Corridor line runs between the Interstate 5 Corridor line and the Overland Route and Central Corridor line in Nevada. Figure CIR-5 shows the Union Pacific Railroad Feather River Corridor line that runs through the City of Oroville. On average, approximately 6 to 26 trains a day travel on the Feather River Corridor line. Most of the major railroad crossings in Oroville are grade-separated, except for Mitchel Avenue.

b. Highway Transportation

Figure CIR-5 also shows designated truck routes in the City of Oroville. Highway 70, Highway 162 and some City roadway segments are designated truck routes. The entire length of Highway 70 and the segment of Highway 162 between Larkin Road and Lincoln Boulevard are included in the National Network for Service Transportation Assistance Act of 1982 (STAA). Trucks are defined as heavy freight vehicles that meet the STAA definitions in the California State Vehicle Code. Segments of Highway 162 from Highway 99 to Larkin Road and Lincoln Boulevard east are part of the California Legal Network, which limits larger trucks allowed under the STAA network. Segments of Feather River Boulevard, 5th Avenue, Lincoln Boulevard, Montgomery Street and Mitchell Avenue are designated as local truck routes.

7. Aviation System

The Oroville Municipal Airport is located south of Highway 162 and west of Larkin Road. The airport has two paved asphalt concrete runways. Runway 2/20 is the longest runway at 6,020 feet long. There are 74 aircraft based at the airport field. Aircraft operations average about 99 per day with 56 percent for transient



Source: Fehr & Peers, 2007 and City of Oroville GIS, 2005.

Notes (from Highway Design Manual):

*STAA - The Surface Transportation Assistance Act (STAA) of 1982 allows large trucks to operate on the Interstate and certain Federal Aid Primary System routes collectively called the National Network.

**California - California statues limit the overall length of a tractor semi-trailer combination operating on all highways in California unless National Network provisions apply.

FIGURE CIR-5

GOODS MOVEMENTS - EXISTING CONDITIONS

general aviation, 40 percent for local general aviation, and 4 percent for air taxi purposes. Figure CIR-5 shows the location of the Oroville Municipal Airport.

B. Roadway Classifications and Standards

Each of the roadways in Oroville’s comprehensive roadway network can be categorized according to a typology known as roadway functional classification. Roadway functional classification is a method to classify a roadway based on the type of service it provides. Since two major functions of a roadway are to serve through traffic and provide access to adjacent property, different roadways prioritize these two functions differently. For instance, arterials generally prioritize the movement of traffic over access to individual adjacent properties whereas local streets prioritize access to private properties over through traffic. Roadways are also intended to provide bicycle and pedestrian access and circulation and are the backbone of the bicycle and pedestrian network.

The city’s conceptual roadway plan, with general functional classifications, is shown in Figure CIR-6. The functional classifications for roadways in Oroville are detailed below.

1. Freeways

Freeways are intended to carry traffic efficiently from one end of the city to the other, serve inter-regional travel, and provide connections from Oroville to other cities and counties. A freeway is an access-controlled facility with two or more lanes in each direction. Freeways are designed for high speed inter-city travel. State Highway 70 north of Oroville Dam Boulevard is considered a freeway.

2. Highways

Highways are State-designated, relatively high-speed, high-capacity routes designed to carry heavy traffic volumes at speeds of 40 to 55 miles per hour. Highways should serve longer distance interregional trips and link Oroville to other communities. State Highway 70 south of Oroville Dam Boulevard is a highway. Access is limited, crossings are at grade, and parking is not allowed.

3. Arterials

Arterials are designed to move large volumes of traffic and are intended to provide a high level of mobility between freeways/highways, other arterials, and local/collector roadways and provide non-freeway/highway connections between major residential, employment, and activity centers. Arterials are intended not just

for motor vehicle circulation but also for bicycle and pedestrian circulation and should not be designed to facilitate motor vehicle travel at the expense of bicycle and pedestrian circulation. As appropriate to the terrain and character of the neighborhood, arterials shall include sidewalks of sufficient width to allow two pedestrians to walk side-by-side and a planting strip wide enough to accommodate large canopy shade street trees between the sidewalk and the curb and gutter. All arterials shall also include on-street, Class III bicycle routing, Class II bicycle lanes, or Class I off-street bicycle paths, as shown on Figure CIR-3. In addition, arterials may require a raised median or center turn lane for safe and efficient movement of vehicles to and from adjacent development.

Arterials are divided into two- and four-lane facilities, as described below. Roadways classified as arterials on Figure CIR-6 that have both four-lane and two-lane segments include:

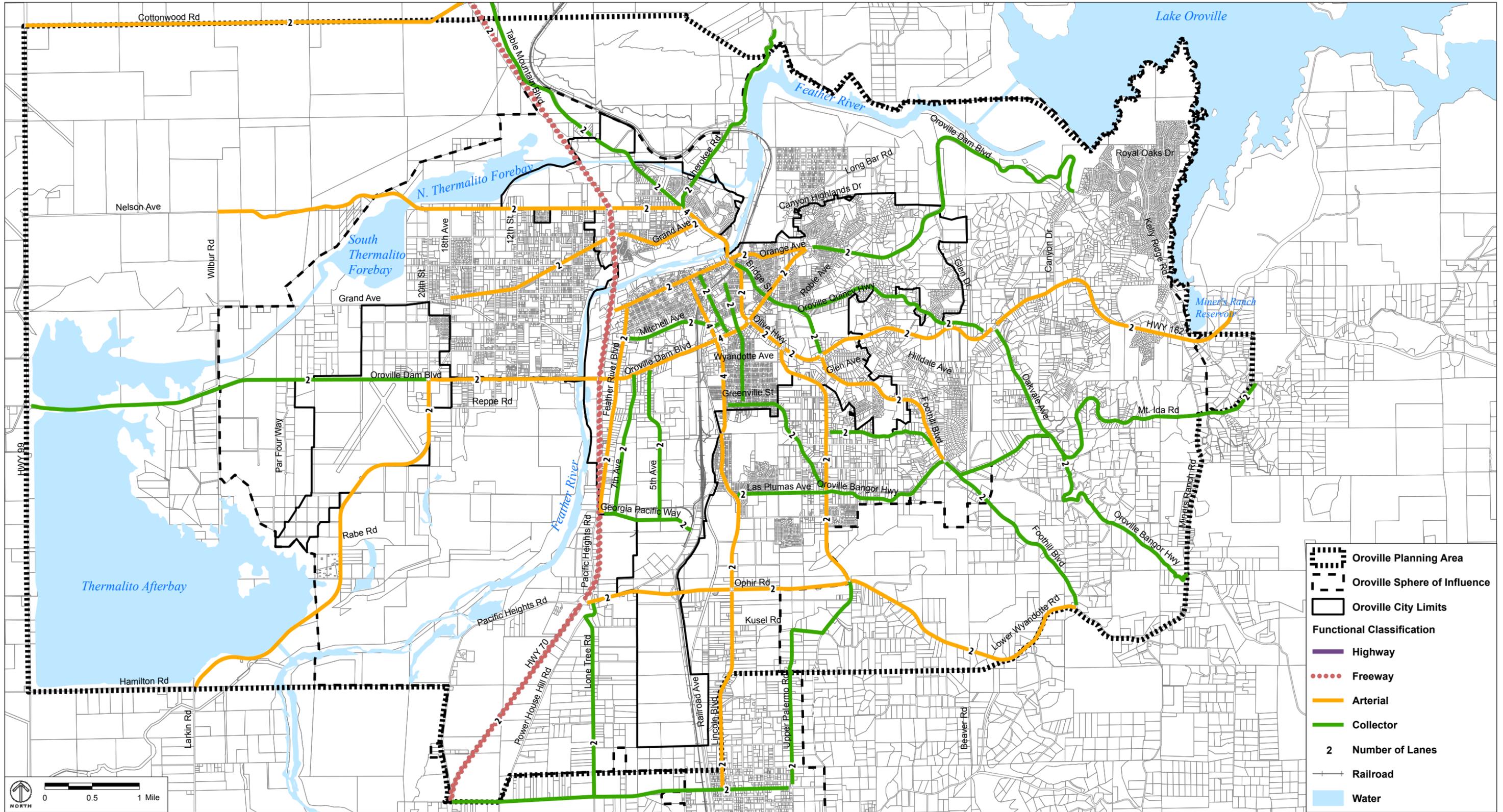
- ◆ Table Mountain Boulevard
- ◆ Oroville Dam Boulevard
- ◆ Lincoln Boulevard

Two-lane roadways classified as arterials on Figure CIR-6 include:

- ◆ Nelson Avenue
- ◆ Grand Avenue
- ◆ Foothill Boulevard
- ◆ Feather River Boulevard
- ◆ Larkin Road
- ◆ Lower Wyandotte Road
- ◆ Montgomery Street
- ◆ Orange Avenue
- ◆ Ophir Road
- ◆ Oroville Dam Boulevard E
- ◆ Highway 162
- ◆ Washington Avenue

4. Collectors

Collectors are intended to “collect” traffic from local roadways and carry it to roadways higher in the street classification hierarchy such as arterials, highways, and freeways. These roadways also serve adjacent properties. Collectors typically have one lane of traffic in each direction. Roadways that are listed as both Arterials, above, and Collectors have different segments that meet the criteria for both classifications. Roadways classified as collectors on Figure CIR-6 include:



Source: Fehr & Peers, 2007 and City of Oroville GIS, 2005.

FIGURE CIR-6
FUNCTIONAL CLASSIFICATION AND LANES - FUTURE 2035 CONDITIONS

- ◆ Cherokee Road
- ◆ Table Mountain Boulevard
- ◆ Foothill Boulevard
- ◆ Bridge Street
- ◆ Oroville Quincy Highway
- ◆ Mt. Ida Road
- ◆ Las Plumas Avenue
- ◆ Spencer Avenue
- ◆ Lower Wyandotte Road
- ◆ Mitchell Avenue
- ◆ 7th Avenue
- ◆ Upper Palermo Road
- ◆ Oroville Bangor Highway
- ◆ Oroville Dam Boulevard
- ◆ Oroville Dam Boulevard E.
- ◆ Foothill Boulevard
- ◆ Oakvale Avenue
- ◆ Oroville Garden Ranch Road
- ◆ Oro Bangor Highway
- ◆ Wyandotte Avenue
- ◆ Myers Street
- ◆ 5th Avenue
- ◆ Georgia Pacific Way
- ◆ Lone Tree Road

5. Local Streets

Local streets are intended to serve adjacent properties only and should enhance community livability. They carry very little, if any, through traffic, and generally carry very low traffic volumes, usually less than 5,000 vehicles per day. Speed limits on local roadways normally do not exceed 25 miles per hour. Figure CIR-6 does not show local streets.

C. Programmed and Planned Improvements

This section describes the programmed and planned roadway system, public transit, bicycle network, and freight delivery system improvements.

1. Roadway System Improvements

a. Metropolitan Transportation Plan/Sustainable Communities Strategy Projects
In December 2012, BCAG adopted the Butte County Metropolitan Transportation Plan and Sustainable Communities Strategy (MTP/SCS). The MTP/SCS is an integrated transportation and land use plan to implement provisions of California's Global Warming Solutions Act (AB 32) for passenger vehicle greenhouse gas reductions. The MTP/SCS includes funding for the SR 70 Passing Lane Project. Implementation will occur in three phases with the first phase programmed to begin in 2016 and the final phase programmed to begin in 2030. Phase 1 will construct a five-lane facility (i.e. two travel lanes in each direction with a center turn lane) between Ophir Road to just south of Palermo Road. Phases 2 and 3 of this

project will add passing lanes to SR 70 from the terminus of Phase 1 to Yolo County. No other capacity-increasing projects are programmed in the MTP/SCS in Oroville.

b. Congestion Mitigation and Air Quality Program

The MTP/SCS identifies funding for and describes three Congestion Mitigation and Air Quality (CMAQ) projects in Oroville: the Oroville Park and Ride Project, Table Mountain/Nelson Avenue Roundabout, and SR 162 Signalization Synchronization Project. The federal government funds CMAQ projects that improve air quality or decrease congestion. These projects are described below:

- ◆ The Oroville Park and Ride Project will construct a park-n-ride facility on Montgomery Street just west of Table Mountain Boulevard that will include a transit bus shelter, bike racks, and other amenities.
- ◆ The Table Mountain/Nelson Avenue Roundabout will construct a roundabout at the existing 2-way stop controlled intersection.
- ◆ SR 162 Signalization Synchronization Project will coordinate traffic signals along Mitchell Avenue, Myers Street, and Washington Avenue. The project will include intersection controller updates, vehicle detection, and emergency signal preemption.

c. Federal Transportation Improvement Program

The Federal Transportation Improvement Program (FTIP) is a programming document that identifies all regionally significant transportation projects and programs for Butte County that will be funded by federal, State, and local funding sources within the short-term horizon. BCAG is responsible for preparing, adopting, and submitting the FTIP. Projects identified in the FTIP include those for:

- ◆ Streets and roads
- ◆ Highways
- ◆ Transit
- ◆ Safety
- ◆ Bridge reconstruction
- ◆ Enhancements
- ◆ Other programs that receive federal dollars or require some type of federal approval

The City of Oroville has one project in the 2015 Butte County FTIP (Project HSIP5-03-009), which is for the installation of a traffic signal at the Oroville Dam Boulevard/Orange Avenue/Acacia Avenue intersection.

d. City of Oroville Transportation Capital Improvement Program (TCIP)

The City of Oroville Transportation Capital Improvement Program (TCIP), which was adopted in December 2012, includes numerous transportation improvements for City-maintained roadways, including upgrading existing City roadways to full cross-sections with center turn lanes, bike lanes, sidewalks, and landscaping. The TCIP identifies and will fund a capacity-increasing project to widen Table Mountain Boulevard between Nelson Avenue/Cherokee Road and Montgomery Street from two to four lanes.

Appendix A includes all of the intersection, roadway, and bicycle facility improvements included in the TCIP. Many of the improvements in the TCIP will improve operations of the City transportation system and mobility for all users without roadway widening. The associated City of Oroville TCIP fee schedule will fund \$75.1 million in improvements by establishing impact fees for new residential, resort and tourism, industrial, institutional, office, and commercial development.

e. Unfunded Projects

The TCIP also identifies the need to widen Olive Highway (SR 162) between Oroville Dam Boulevard and Foothill Boulevard from two to four lanes and upgrade Olive Highway between Foothill Boulevard and Miners Ranch Road to a major two-lane arterial standard. However, the TCIP will not provide funding for these improvements, since they are State facilities.

The MTP/SCS identifies a long-term future strategy to work with Caltrans to complete a Project Study Report to widen SR 162 from Oroville Dam Boulevard to Foothill Boulevard to four lanes. This strategy and corresponding improvements are not funded.

The MTP/SCS also identifies several local street and road projects in Oroville as unfunded regional priorities beyond financial constraints. These projects include the SR 70/Ophir Road Interchange Project and the SR 70 Georgia Pacific Interchange. The projects would replace the existing at-grade intersections with grade separated interchanges. These projects cannot be funded based on anticipated revenue over the term of the MTP/SCS.

2. Public Transit System Improvements

Opportunities for improved regional transit service to Oroville should be encouraged through the development of new park-n-ride lots located to serve proposed specific plan areas. A new park-n-ride lot is planned and funded in the MTP/SCS to be located on Montgomery Street, west of Table Mountain Boulevard.

3. Bicycle Network Improvements

The City's 2010 Bike Plan is shown in Figure CIR-7. The 2010 Bike Plan shows existing and planned Class I, II, and III bicycle facilities and existing multi-use trails.

In addition to Class I, II, and III facilities, Figure CIR-7 also identifies locations for potential trail/path connections where these facilities meet.

4. Freight Delivery System Improvements

Figure CIR-8 shows existing goods movement and aviation facilities and areas where new local truck routes should be provided. Oroville is well served by existing truck routes and rail facilities. However, the area south of Oroville Dam Boulevard/east of Highway 70 that is designated for retail, business service, and industrial land uses and the employment land uses around the airport do not have local truck route designations. These locations are identified as potential areas for local truck routes.

D. Goals, Policies, and Actions

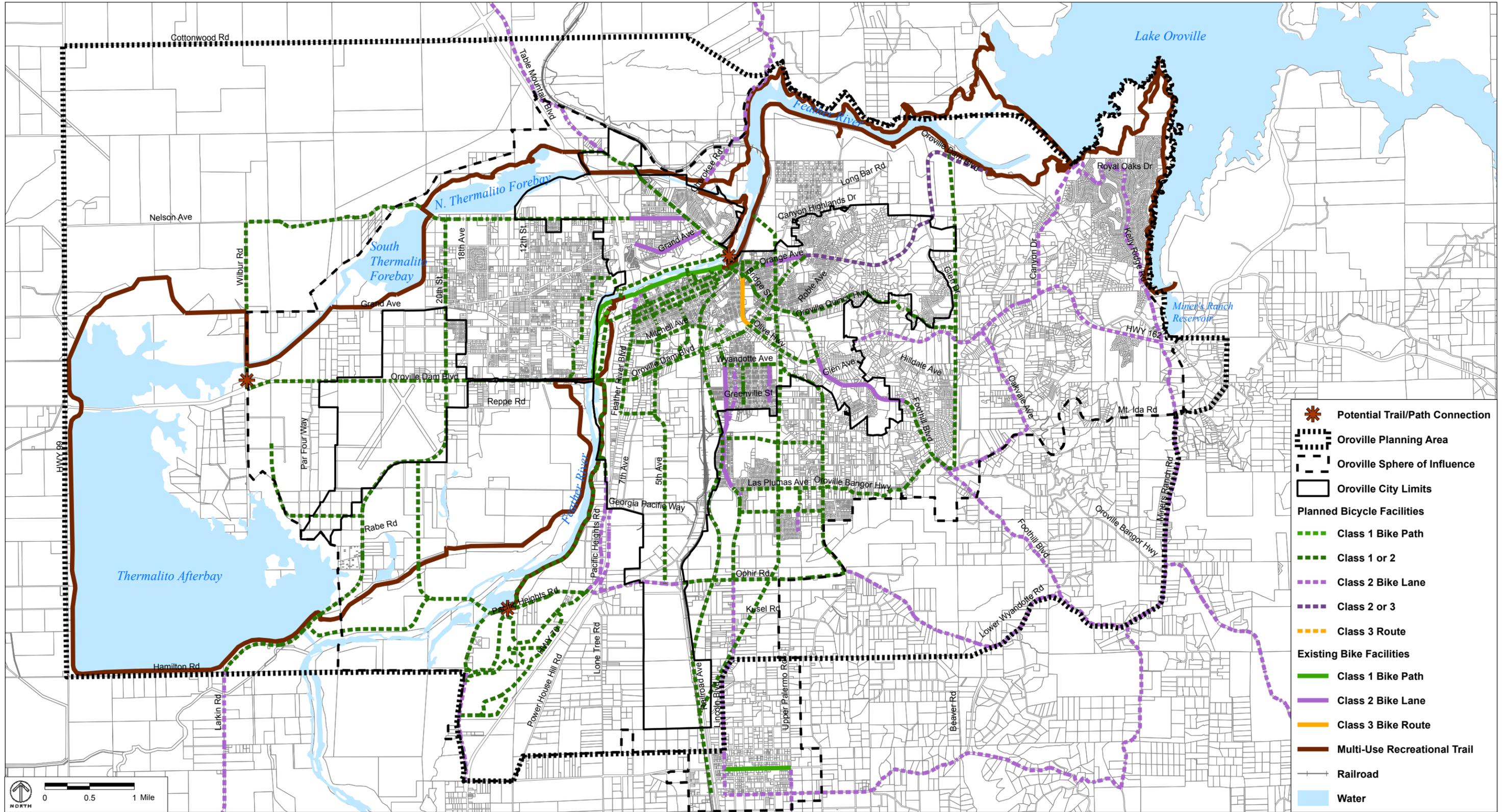
The Circulation and Transportation Element's comprehensive framework of goals, policies and actions address Oroville's need for Intergovernmental Coordination and Communication; Roadways; Transit and Ridesharing; Parking; Bicycles and Pedestrians; and Oroville Municipal Airport.

1. Intergovernmental Coordination and Communication

Goal CIR-1	Promote intergovernmental communication and co-operation concerning transportation-related issues.
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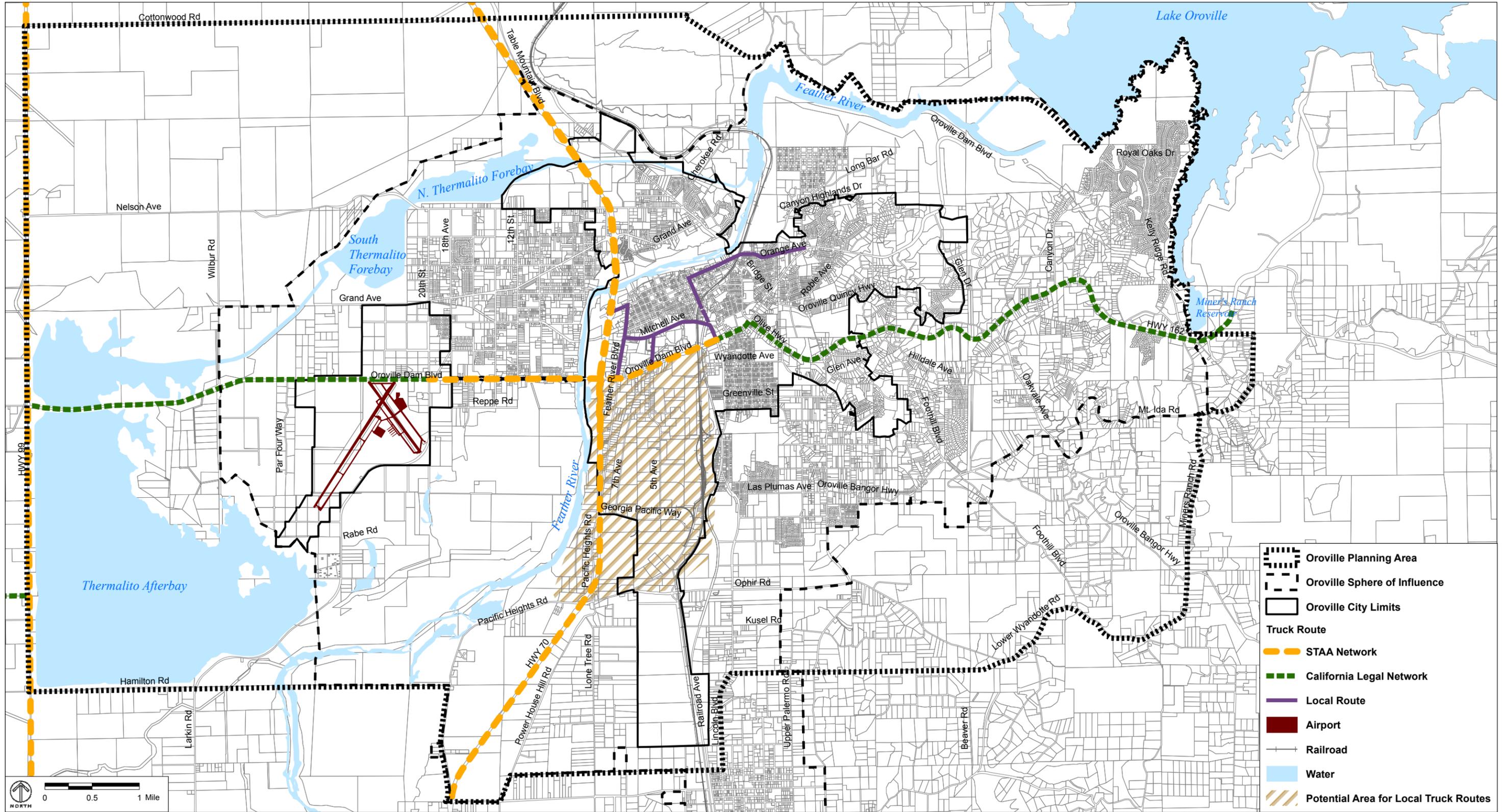
Policies

- P1.1 Coordinate with the efforts of Butte County and the State of California Department of Transportation to:
- ◆ Achieve the General Plan's roadway classification system and street network within the Oroville City Limit and Sphere of Influence;



Source: Fehr & Peers, 2007 and City of Oroville GIS, 2005.

FIGURE CIR-7
BICYCLE FACILITIES - FUTURE 2035 CONDITIONS



Source: Fehr & Peers, 2007 and City of Oroville GIS, 2005.

Notes (from Highway Design Manual):

*STAA - The Surface Transportation Assistance Act (STAA) of 1982 allows large trucks to operate on the Interstate and certain Federal Aid Primary System routes collectively called the National Network.

**California - California statutes limit the overall length of a tractor semi-trailer combination operating on all highways in California unless National Network provisions apply.

FIGURE CIR-8

- ◆ Ensure that street alignments, right-of-way and access standards in the unincorporated area are consistent with the Oroville General Plan;
 - ◆ Require, where the terrain and community character is appropriate, that roadways be constructed to urban standards as conditions of subdivision and development approval, including sidewalks, curbs, gutters, and street lighting consistent with City of Oroville Design and Improvement Standards.
- P1.2 Coordinate with the Butte County Association of Governments to provide regular updates to land use and roadway network input assumptions for the Butte County Travel Demand Forecasting model as they relate to development approved or roadway improvements constructed by the City of Oroville.
- P1.3 Coordinate local transportation planning activities with State and County agencies to ensure consistency between local and regional actions.
- P1.4 Coordinate with Caltrans on planning for State Highway facilities located within the City of Oroville’s Planning Area.
- P1.5 Work with the Butte County Association of Governments to shift transportation funding from vehicle-based transportation toward alternative transportation, and support the realignment of CMAQ and other similar flexible funds to alternative transportation projects. Measures such as increases in funding for transit, bicycle and pedestrian projects, including the establishment of a regional bicycle coordinator and accountability for local expenditures on bicycle and pedestrian facilities will be supported by the City.
- P1.6 Coordinate with all utility service providers when planning highway and street improvements that may impact existing utilities within or adjacent to their rights-of-way.

Actions

- A1.1 Work with Butte County in implementing the Butte County Short-Range Transit Plan for the Oroville area.
- A1.2 Work with Butte County and the Butte County Association of Governments to develop a GIS-based database to track land use and roadway improvements in the City of Oroville.

2. Vehicular Circulation

Goal CIR-2	Create and maintain a roadway network that provides for the safe and efficient movement of people and goods throughout the City while maintaining the quality of life for residents.
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- P2.1 Maintain a Level of Service (LOS) D or better as defined in the most current edition of the *Highway Capacity Manual* or subsequent revisions for roadways and intersections, except as specified below:

City/County Roadways:

- ◆ Lincoln Boulevard – Baggett Marysville Road to Ophir Road (LOS E)
- ◆ Ophir Road – Highway 70 to Lincoln Boulevard (LOS E)
- ◆ Ophir Road – Lincoln Boulevard to Lower Wyandotte Road (LOS F)
- ◆ Table Mountain Boulevard – Cottonwood Road to Garden Drive (LOS E)

State Facilities:

- ◆ Olive Highway – Oroville Dam Boulevard to Lower Wyandotte Road (LOS F)
- ◆ Olive Highway – Lower Wyandotte Road to Foothill Boulevard (LOS F)

- ◆ Olive Highway – Foothill Boulevard to Oakvale Avenue (LOS F)
- ◆ Olive Highway – Oakvale Avenue to Kelley Ridge Road (LOS E)
- ◆ Oroville Dam Boulevard – Feather River Boulevard to Olive Highway (LOS F)

Additional exceptions to this policy may be allowed by the City Council on a case-by-case basis, where reducing the level of service would result in a clear public benefit. Such circumstances may include, but are not limited to, the following:

- ◆ Preserving open space land
- ◆ Preserving scenic roadways/highways
- ◆ Avoiding adverse impacts to alternative transportation modes
- ◆ Right-of-way constraints would make improvements infeasible

- P2.2 Identify, schedule and implement roadway improvements as needed to accommodate planned development as it is approved and occurs in the future.
- P2.3 Make future roadway improvements to correspond to the roadway against applicable standards for the classifications and standards in Section B of this Circulation Element.
- P2.4 Make efficient use of existing transportation facilities, incorporating technologies and funding opportunities as they become available and are feasible for the City.
- P2.5 Reduce the total vehicle miles traveled through designation of land uses that support multi-modal travel and provision of more direct routes to high activity locations.
- P2.6 Roundabouts shall be considered as an alternative to stop signs or traffic signals when planning new intersections or intersection modifications on arterial and collector roadways.

- P2.7 Continue to work with BCAG in the preparation and implementation of the Metropolitan Transportation Plan/Sustainable Communities Strategy.
- P2.8 Budget for roadway improvements required to meet the City's adopted roadway standards.
- P2.9 Establish and acquire right-of-way easements along all designated freeways, arterial and major collector streets to preserve rights-of-way for designated improvements and amenities.

Actions

- A2.1 Develop a roadway improvement program to identify the timing of freeway, roadway, and intersection improvements based on market-level development projections to implement the General Plan roadway plan.
- A2.2 Periodically review the availability of federal and State funding sources and pursue those sources aggressively in support of the roadway improvement program process and alternative transportation projects.
- A2.3 Establish and maintain a master list of the most recent available traffic counts. The master list shall be updated with traffic counts taken in conjunction with project traffic studies and special counts conducted by the City.
- A2.4 Monitor the development of multi-modal level of service (MMLOS) standards by the Transportation Research Board, other agencies, and jurisdictions. When a valid methodology for Oroville is identified, develop and adopt Transportation Impact Analysis (TIA) guidelines that include MMLOS standards specific to Oroville. The MMLOS standards will apply to City-maintained roadways and will allow for flexibility as necessary to recognize site-specific constraints, such as protecting sensitive resources or ensuring pedestrian and bicycle safety.

- A2.5 Implement and maintain the Balanced Mode Circulation Plan, which guides the development of bicycle and pedestrian facilities in Oroville.

Goal CIR-3 Promote the strategic development of new roadways that benefit and enhance the existing roadway network and improve access and mobility for all modes.

Policies

- P3.1 Widths for new streets shall be limited to the minimum width necessary to adequately carry the volume of anticipated traffic and meet the City's LOS Policy of D, while allowing for adequate bicycle and pedestrian facilities, emergency access, and large vehicle access.
- P3.2 Prohibit development of private streets in new residential projects, unless emergency access standards, maintenance agreements, and design standards are met to the satisfaction of the City Engineer and there are compelling circumstances that prohibit the streets from being designed to meet public standards.
- P3.3 New development shall ensure that safe and efficient emergency vehicle access is provided.
- P3.4 Ensure, through a combination of traffic impact fees and other funding mechanisms, that new development pays its fair share of the costs of circulation improvements.
- P3.5 Provide transportation facilities based on a "Complete Streets" set of criteria that facilitates the balanced use of all travel modes (pedestrians, bicyclists, motorists, and transit users) meeting the transportation needs of all ages and abilities and providing mobility for a variety of trip purposes.

Actions

- A3.1 Conduct a study to develop strategies to improve the efficiency of traffic flow along Oroville Dam Boulevard. Improvement options could include the following:
- ◆ A new east-west arterial (north or south of Oroville Dam Boulevard).
 - ◆ A bypass between Feather River Boulevard and Olive Highway,
 - ◆ ITS strategies to enhance/maximize existing roadway capacity.
- A3.2 Establish review procedures to ensure that access standards on arterial and collector streets are maintained as development proceeds.
- A3.3 Periodically maintain and update the City's Transportation Capital Improvement Program.
- A3.4 Coordinate with BCAG and Caltrans to study alternatives to Highway 162 for access to Lake Oroville. An alternative routing could include Ophir Road, Lower Wyandotte Road and Miners Ranch Road to the intersection of Highway 162 and Kelly Ridge Road. The study should consider funding and other economic considerations.
- A3.5 Update the City's Engineering and Street Design Standards to ensure that roadway and streetscape design specification are in accordance with the Complete Streets concept described in Policy P3.5.

3. Parking

Goal CIR-4	Ensure the adequate provision of both on- and off-street parking.
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Policies

- P4.1 Wherever possible, avoid reductions in on-street parking as a means to provide additional travel lanes.
- P4.2 If future growth in traffic volumes necessitates removal of on-street parking places to provide additional traffic lanes, ensure, if feasible, that the lost on-street spaces are replaced with an equal number of off-street spaces within the same vicinity.
- P4.3 Require provision of adequate off-street parking in conjunction with all new developments outside the historic downtown.
- P4.4 Shared parking arrangements shall be encouraged.
- P4.5 Balance the need for improved traffic flow with the need for on-street parking in the design of new or reconfiguration of existing streets.
- P4.6 Prohibit on-street truck and Recreational Vehicle (RV) parking in residential areas, as such parking restricts adequate sight distances or otherwise poses a potentially hazardous situation.
- P4.7 Consider creative approaches to minimize space dedicated to surface parking lots, while ensuring adequate parking supply. Examples include shared parking agreements, use of underground parking garages and structured parking.

4. Trip Reduction and Public Transit

Goal CIR-5	Promote and maintain public and private transit systems and ridesharing programs that are responsive to the needs of Oroville residents.
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Policies

- P5.1 Cooperate with other agencies and jurisdictions to promote local and regional transit serving the area's needs.

- P5.2 Encourage BCAG to expand transit opportunities for all residents and encourage expansion of convenient transit services to all areas of the City.
- P5.3 Coordinate with BCAG on the development of new bus stop locations.
- P5.4 Implement transit policies in the Butte County BCAG Transit Plan.
- P5.5 Work with Caltrans to promote opportunities for carpooling to Chico and Sacramento.
- P5.6 Cooperate with efforts to develop an express commuter train through Oroville to Sacramento utilizing existing road bed(s) and new railroad facilities and equipment.
- P5.7 Encourage and support programs to increase ridesharing.
- P5.8 Encourage City employees to use non-automobile modes to come to work.
- P5.9 Cooperate with Caltrans and local agencies in the development of park-and-ride facilities, including bike lockers for these facilities.

5. Bicycle System

Goal CIR-6	Provide a bicycle network to encourage bicycling for both transportation and recreation.
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Policies

- P6.1 Establish Oroville as a bicycle center for Butte County by providing a comprehensive system of Class I bicycle paths, Class II bicycle lanes and multi-use recreational trails throughout the Plan Area, and particularly to connect residential neighborhoods, the Historic downtown, and the Feather River.

- P6.2 Use bikeways to link public parks, recreation areas, and other public facilities to each other and to residential and employment areas.
- P6.3 Use Class III shared used bicycle routes to connect Class I and Class II facilities.
- P6.4 Select bikeway alignments based on the following criteria:
- ◆ Whether the route minimizes potential for conflict with motor vehicle movement and parking;
 - ◆ Whether the route improves access to major facilities and destinations;
 - ◆ Whether the route links public parks and recreation areas and other public facilities;
 - ◆ Whether routes intersect with existing transit lines in support of multi-modal transportation; and
 - ◆ Whether areas are available for convenient and secure parking.
- P6.5 Reduce conflicts between bicycles and other vehicles by:
- ◆ Designating on-street bike lanes;
 - ◆ Developing off-street bike paths;
 - ◆ Signing and marking the routes thoroughly;
 - ◆ Monitoring the success of the routes and devising a system to improve their utility, if necessary; and
 - ◆ Adhering to proper design criteria and standards.
- P6.6 Provide convenient, safe, well-lighted bicycle parking racks or other parking facilities in public places and at bus and auto car-pool transfer points, while encouraging residential, commercial and industrial developers to do the same.
- P6.7 Require all new major public facilities and commercial and employment sites to include bicycle parking facilities.

- P6.8 Coordinate with Butte County and the City of Chico in designating access routes for Class I and Class II bikeways to connect Oroville and Chico.
- P6.9 Coordinate the construction and improvement of the bicycle system with development projects adjacent to bikeways, and with park and recreational facilities, schools and residential subdivisions.
- P6.10 Ensure that developments located along existing and future bikeways provide for bicycle use within and adjacent to project boundaries.
- P6.11 Bicycle safety shall be considered when designing and implementing improvements for automobile traffic operations. Improvements for motor vehicle circulation shall not detract from or degrade the bicycle circulation system.

Actions

- A6.1 Pursue funding from the State Bicycle Lane Account to develop new bicycle facilities.
- A6.2 Maintain and update the City's Bike Plan in an appropriate format for making application for funding from the Bicycle Lane Account, including:
- ◆ Accurate location descriptions;
 - ◆ Estimate of project costs including preliminary and construction engineering, right-of-way and construction costs;
 - ◆ Specifications that reflect conformance with current design standards for bikeways;
 - ◆ A traffic diagram that shows existing daily commuting bicycle traffic roadways throughout the Plan Area; and
 - ◆ A traffic diagram that estimates the commuting bicycle traffic expected to use the bikeways adjacent roadways one year after completion.

- A6.3 Work with BCAG to implement a public awareness program on bicycle use to increase user safety.
- A6.4 Develop a plan for creating bikeways around the Oroville Municipal Airport.
- A6.5 Increase public awareness of multi-modal transportation by publishing a map of City routes for bikes, including travel times and distances.
- A6.6 Provide for periodic maintenance and sweeping of Class I paths and Class II bike lanes.
- A6.7 As a priority project, construct Class 1 or 2 bicycle facilities along Table Mountain Boulevard between the diversion canal bridge and Garden Drive.

6. Pedestrian System

Goal CIR-7 Provide a pedestrian network that encourages walking for transportation and recreation.

Policies

- P7.1 Ensure the safe and convenient movement of pedestrians throughout the City and within neighborhoods.
- P7.2 Design public and private facilities to aid and encourage pedestrian activity.
- P7.3 Plan industrial and commercial development so that truck access through residential areas is minimized.
- P7.4 Designate appropriate truck routes with appropriate signage to minimize impacts to residential areas and sensitive land uses.
- P7.5 Require installation of sidewalks and/or walking paths along all city streets in newly developing areas.

- P7.6 Pedestrian safety shall be considered when designing and implementing improvements for automobile traffic operations. Improvements for motor vehicle circulation shall not detract from or degrade the bicycle circulation system.
- P7.7 New development in Oroville will encourage pedestrian accessibility and facilitate the use of non-automobile forms of transportation.

7. Access for Persons with Disabilities

Goal CIR-8 Facilitate the mobility of persons with accessibility needs.
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Policies

- P8.1 New development shall meet the requirements of the Americans with Disabilities Act (ADA).

Action

- A8.1 Evaluate the need for improvements to the existing street and sidewalk system to comply with ADA requirements. Prioritize identified improvements needed, identify funding, and implement improvements as funding becomes available.

8. Freight Delivery System

Goal CIR-9 Support the movement of goods within and through the City while minimizing adverse impacts to residents or businesses from rail and truck traffic.
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Policies

- P9.1 Enforce the City's designated truck route system and ordinances. Develop new local truck routes to serve planned commercial and industrial areas in the City including appropriate signing.
- P9.2 No truck traffic shall be allowed in residential areas.
- P9.3 Support rail transportation facilities and services to meet the needs of commerce as growth occurs.
- P9.4 Require and implement improvements at rail grade crossings as rail and vehicular traffic conditions warrant.

9. Aviation System

<p>Goal CIR-10 Provide a Municipal Airport that has the ability to provide the community with beneficial service while ensuring appropriate and compatible development in the airport impact area.</p>

Policies

- P10.1 Plan and develop the Oroville Municipal Airport to maximize its contributions to business efficiency and recreational opportunities in the Plan Area.

Actions

- A10.1 Acquire and/or require dedication of an aviation easement within the Overflight and Extended Runway Centerline (ERC) zone, as a condition of subdivision approval.
- A10.2 Pursue funding to complete the physical facilities called out by the Airport Master Plan of Development.
- A10.3 Pursue the construction of the improvements identified in the Airport Master Plan.

CITY OF OROVILLE
2030 GENERAL PLAN
CIRCULATION AND TRANSPORTATION ELEMENT

7 OPEN SPACE, NATURAL RESOURCES, AND CONSERVATION ELEMENT

The Open Space and Conservation Element of the Oroville General Plan is dedicated to preserving and improving the quantity, quality, and character of open space in Oroville. The Element identifies Oroville's important open space lands and ensures that future development will respect the natural and scenic qualities of those places, helping to shape the desired physical form of the community by safeguarding open space for future generations. The Element also provides direction regarding the conservation, development and use of natural resources in and around Oroville, including mineral, agricultural and cultural resources, as well addressing water and air quality. The Element also addresses energy conservation and efficiency.

State law requires that a General Plan include both an Open Space Element and a Conservation Element. The Oroville General Plan combines these two elements into a single Open Space and Conservation Element that addresses their similar and overlapping concerns and satisfies the legal requirements for both.

The Government Code identifies a series of six types of Open Space which must be addressed in the General Plan. Most of these types of Open Space are covered in this Open Space, Natural Resources and Conservation Element (OPS), while a few are covered elsewhere in this General Plan. Table OPS-1 lists all six types, and tells where they are addressed in this General Plan.

The Conservation Element is required to address the conservation, development and utilization of natural resources, including forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, water and hydrology.

This Open Space and Conservation Element addresses one additional topic that is not specifically required by State law. The issue of air quality is addressed, in consideration of the importance of the air as a natural resource and as a vital component of a healthy environment.

This Element is divided into the following ten sections:

- A. Recreational Open Space
- B. Scenic Resources
- C. Agriculture
- D. Minerals
- E. Biological Resources
- F. Water Quality
- G. Air Quality
- H. Cultural Resources
- I. Energy Use and Greenhouse Gases
- J. Military

TABLE OPS-1 GOVERNMENT CODE OPEN SPACE CLASSIFICATIONS

Category	Addressed In:
Open Space for the Preservation of Natural Resources	
<ul style="list-style-type: none"> Plant and animal habitat areas Rivers, streams, lakes and their banks Watershed lands Areas required for ecological and other scientific study purposes 	<ul style="list-style-type: none"> OPS Section E
Open Space Used for the Managed Production of Resources	
<ul style="list-style-type: none"> Agricultural lands and rangelands Forest and timber lands Mineral resource production areas 	<ul style="list-style-type: none"> OPS Section C Not applicable to Oroville OPS Section D
Open Space for Outdoor Recreation and Scenic Resources	
<ul style="list-style-type: none"> Areas of outstanding historic or cultural value Parks and other areas used for recreation Areas of outstanding scenic value Scenic corridors, trails and links between different open space areas 	<ul style="list-style-type: none"> OPS Section H OPS Section A OPS Section B OPS Sections A and B
Open Space for Public Health and Safety	
<ul style="list-style-type: none"> Areas requiring special management or regulation because of risks presented by natural hazards such as steep slopes or flooding 	<ul style="list-style-type: none"> Safety Element
Open Space in Support of the Mission of Military Installations	
<ul style="list-style-type: none"> Areas associated with military bases 	<ul style="list-style-type: none"> OPS Section J
Open Space for the Protection of Native American Sacred Sites	
<ul style="list-style-type: none"> Local tribal lands Any Native American cultural sites 	<ul style="list-style-type: none"> OPS Section H

Each of these sections has two subsections as follows:

- ◆ **Background Information:** Provides a general definition for open space and a description of the various types of open space. It also describes the various resources within Oroville, including agricultural, cultural and military re-

sources. It also summarizes information in regards to air quality, energy conservation and sustainability, greenhouse gases, military installations, and Native American sacred sites.

- ◆ **Goals, Policies, and Actions:** Provides guidance to the City related to decisions affecting the resources described above.

A. Recreational Open Space

1. Background Information

The section describes Oroville’s recreational open space lands as well as the State, regional and local park lands located throughout the Planning Area. Figure OPS-1 illustrates the location of existing or planned parks as well as other open space lands, owned by the City and entities other than the City of Oroville.

a. Open Space

Oroville has many recreational open space resources that are protected by State agencies or conservation trusts. The State of California manages a vast amount of land in the Lake Oroville State Recreation Area, including recreation areas and lands associated with the State Water Project, which begins at Oroville Dam and the Lake Oroville reservoir. The 12,000-acre Oroville Wildlife Refuge, of which 2,750 acres are within the Planning Area, is a riparian forest that serves both as habitat and as a recreational destination for hiking, bird watching, canoeing, fishing, and seasonal hunting.

b. Regional and State Parks

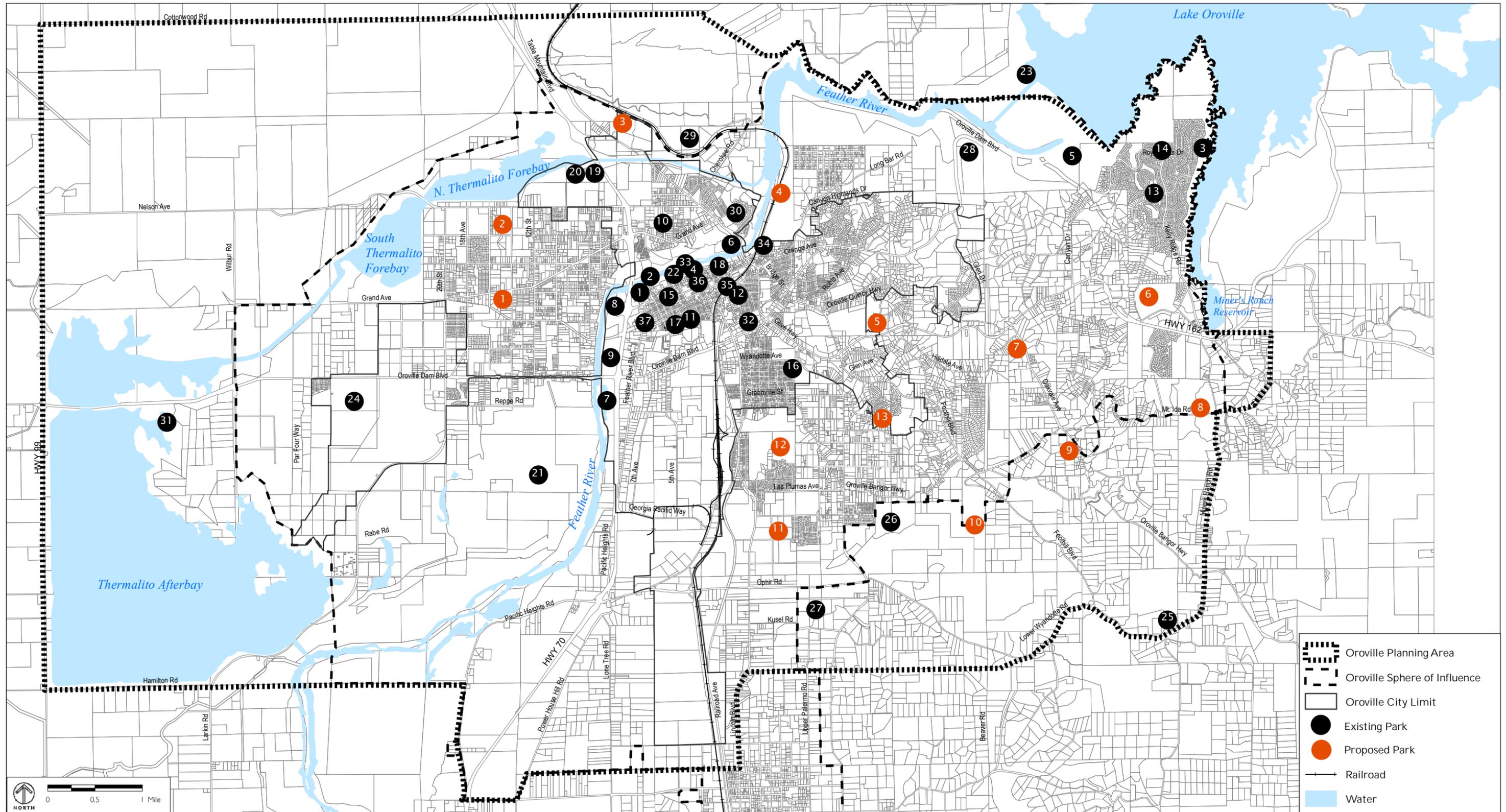
Regional and State parks offer additional open space preserves and recreational and wildlife-viewing opportunities. The City of Oroville Department of Parks and Trees works with the Feather River Recreation and Park District (FRRPD) and the California Department of Parks and Recreation (DPR) to coordinate open space corridor connections where possible and provide regional recreation opportunities in the Oroville area. The largest parks in the city include Riverbend Park (on the Feather River), Mitchell Park (south of Downtown) and Nelson Park and Recreational Center (north of Thermalito), all of which are owned and operated by the FRRPD. Some of the parks located within Oroville city limits are owned by the City, but are operated and maintained by the FRRPD. Bedrock Park is an example of this type of park. Table OPS-2 provides acreage for FRRPD- and City-owned parks within Oroville city limits.

CITY OF OROVILLE
 2030 GENERAL PLAN
 OPEN SPACE, NATURAL RESOURCES, AND
 CONSERVATION ELEMENT

TABLE OPS-2 **PARKLAND ACREAGES WITHIN THE CITY OF OROVILLE**

FRRPD Parklands	Acres
Mitchell Park	24
Nelson Park	29.6
Bedrock Lagoon at Bedrock Park	5.0
Bedrock Tennis Courts at Bedrock Park	1.5
Feather River Parkway	6.0
Riverbend Park	183.4
Total FRRPD Parklands	249.5
City of Oroville Parklands	
Hammon Park	5.5
Hewitt Park	7.8
Nature Center	5.0
Rotary Park	2.1
Lott-Sank Park	2.0
Soroptimist Park	0.3
Wallace Park	0.2
Bedrock Park	2.2
Bus Transfer Plaza	0.2
Railroad Park	0.4
Chinese Temple	0.9
Centennial Plaza	2.7
Total City Parklands	29.3
Total Parklands	278.8

Source: Sanders, Craig. Contract Planner, City of Oroville, February 21, 2008.



Existing Parks, Recreational Facilities and Open Space

- 1 Bedrock Park
- 2 Bedrock Tennis Courts
- 3 Bidwell Canyon
- 4 Chinese Temple
- 5 Dan Beebe Trail
- 6 Feather River Fish Hatchery
- 7 Feather River Parkway
- 8 River Bend Park
- 9 River Bend Park Addition
- 10 Hammon Park
- 11 Harrison Stadium
- 12 Hewitt Park
- 13 Kelly Ridge Golf Links
- 14 Kelly Ridge Visitor Center
- 15 Lott-Sank Park
- 16 Martin Luther King Jr. Park

Existing Parks, Recreational Facilities and Open Space

- 17 Mitchell Park
- 18 Municipal Auditorium
- 19 Nelson Park
- 20 Nelson Park Addition
- 21 Oroville State Wildlife Area
- 22 Rotary Park
- 23 Spillway Boat Ramp
- 24 Table Mountain Golf Course
- 25 Wyandotte Park

Existing Parks, Recreational Facilities and Open Space

- 26 Northeast Side Wyman Ravine Open Space
- 27 Southwest Side Wyman Ravine Open Space
- 28 Sycamore Hill Area Open Space
- 29 Thompson Flat Open Space
- 30 Deer Creek Open Space
- 31 Thermalito Afterbay Boat Ramp
- 32 Bus Transfer Plaza

Existing Parks, Recreational Facilities and Open Space

- 33 Centennial Plaza
- 34 Nature Center
- 35 Railroad Park
- 36 Soroptimist Park
- 37 Wallace Park

Proposed Parks, Recreational Facilities and Open Space

- 1 Grand Avenue Community Park
- 2 S. of Nelson, W. of 12th St. Neigh. Park
- 3 Garden Drive Vicinity Neighborhood Park
- 4 Proposed Equestrian Center
- 5 Linda Loma Dr/Buehler Ave/Olive Hwy. Vicinity Neighborhood Park
- 6 Riverview Drive Vicinity Neighborhood Park
- 7 Olive-Oakdale Community Park
- 8 Mount Ida/Miner's Ranch Road Vicinity Neigh. Park
- 9 Mount Ida -Oakdale Ave Vicinity Neigh. Park
- 10 East of Wyman Ravine/South of Mount Ida Road Neighborhood Park
- 11 South of Monte Vista Ave. Vicinity Neighborhood Park
- 12 South Side - Las Plumas Community Park
- 13 Oroville Garden Ranch Road, Brookdale Dr. Neigh. Park

FIGURE OPS-1

PARKS, RECREATIONAL FACILITIES AND OPEN SPACE

c. City Parks and Recreation

City Parks and Recreation refers to established City-owned and maintained parks and recreational facilities, such as neighborhood parks and pocket parks. Parks and recreation areas are fairly well distributed around the City. The Department of Parks and Trees administers and manages the City's parks and recreation areas, as well as implementing cultural programs to accommodate varied interests, ages, cultures, and abilities. These recreational opportunities for local residents range from fishing, hiking, and river-rafting to sports fields and the Downtown Skate Park.

A sufficient supply of park land is important to maintain community livability. The Oroville Parks Commission has adopted a standard of providing a minimum of three acres of neighborhood and community parks per 1,000 residents.

The City owns and operates the Feather River nature Center and Native Plant Park ("Meditation Park"), which is located on the south bank of the Feather River. Figure OPS-1 illustrates the sites of existing parks, recreational facilities and open space, as well as general locations slated for future green space development.

d. School Facilities

Playing fields and playground facilities associated with schools within the Planning Area comprise an important recreational resource. Thirteen elementary, five junior high and four high schools have the potential to offer recreational facilities to the public, which could help meet the community's park and recreational needs. These facilities would include ball fields; basketball, tennis, handball and volleyball courts; areas for hard-surface play and multi-purpose turf areas.

e. Trails

The Oroville area trail network enhances the recreational enjoyment, health and safety of the community. With the increased awareness of the health benefits of walking and jogging, the trend towards promotion of non-motorized transportation, the growing recreational use of bicycles and the continued popularity of horseback riding, a greater portion of the community than ever before will enjoy Oroville's existing and future trails.

The California Hiking and Equestrian Trail (comprised of segments known as the Dan Beebe Trail and the Bridle Trail), owned and maintained by the DPR, is the longest recognized trail within the Planning Area, stretching from the Thermalito Diversion Dam about seven miles to the Kelly Ridge Visitor's Center and then to Bidwell Canyon and Saddle Dam in the east. As implied in its name, this trail is geared for use by foot traffic and horses.

A proposed unpaved multi-use recreational trail, called the Brad Freeman Trail, will also begin at Garden Drive and loops around the North and South Thermalito Forebays, the Thermalito Afterbay, and through the Oroville Wildlife Refuge. The trail will eventually reconnect with the Feather River Parkway in Historic Downtown allowing users to travel continuously from Historic Downtown through the Thermalito waterways and the Oroville Wildlife Refuge.

There are also existing, less formally recognized trails and paths used frequently by Planning Area residents; these include dozens of unimproved dirt trails within the Oroville Wildlife Refuge.

2. Goals, Policies, and Actions

Goal OPS-1	Provide a comprehensive, high-quality system of recreational open space and facilities to maintain and improve the quality of life for Oroville residents.
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Policies

- P1.1 Preserve and develop open space that includes a diversity of passive and active recreational amenities, that is geographically distributed throughout the City, and that is easily accessible by pedestrians and bicyclists.
- P1.2 Develop the Thermalito Forebay and Afterbay as a destination water recreation park defining the western boundary of the community, in accordance with the State's original master plan for recreation development associated with the Federal Energy Regulatory Commission (FERC) license.
- P1.3 Where feasible, develop dual purpose recreational facilities that can additionally serve as drainage basins. These sites should be built with a contoured or tiered design to optimize the potential for drainage.
- P1.4 Support appropriate management of local lakes and reservoirs and releases from these water bodies to sustain recreational uses and an appropriate environment that maintains natural conditions for aquatic and other species.

- P1.5 Support County, State, and other efforts to develop and fund open space recreation facilities along the Feather River for recreational uses to serve the wider regional population.

Actions

- A1.1 Identify and pursue State, federal, private, and foundation funding to preserve, protect, and enhance open space.
- A1.2 Review and comment on plans and actions of local, State, and federal agencies concerning management and releases from local reservoirs. In so doing, request that the recreational and wildlife benefits of local lakes and streams be considered.

Goal OPS-2 Engage in coordinated and cooperative planning efforts between local, regional, and State parks providers.
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Policies

- P2.1 Coordinate park and trail development and operation with the Feather River Recreation and Park District and other participating entities and agencies.
- P2.2 Work with the Feather River Recreation and Park District to continue joint planning for future development of the Feather River Parkway and bicycle path.
- P2.3 Work with the Feather River Recreation and Park District to enhance Mitchell and Nelson Parks, so as to ensure that they achieve true “community park” status by providing adequate space for a range of activities aimed at a variety of user groups, without sacrificing their value as popular sports facilities.
- P2.4 Recognize and support the efforts of Feather River Recreation and Park District, including the collection of impact fees to fund the acquisition of new community parks.

- P2.5 Encourage coordinated park and trail development and operation efforts with the State Department of Parks and Recreation, local school districts and private purveyors in establishing and maintaining park and recreation facilities within and adjacent to the Planning Area.

Actions

- A2.1 In coordination with the Feather River Recreation and Park District, and the other affected and participating agencies, prepare and adopt a Parks, Recreation, Open Space, and Trails Master Plan, including, but not limited to, the following elements:
- ◆ Acreage and service area standards for all park classifications, open space sites and school sites that offer recreational opportunities;
 - ◆ An appropriate level of service for parkland within the City of Oroville and a cumulative level of service for the Planning Area.
 - ◆ A trail plan with identification of a trails system and publication of a trails system map, including routes for walking, jogging, hiking, bicycling, and equestrian use;
 - ◆ An assessment of existing and future parks, recreation, and open space needs. Methods to achieve coordination and cooperation between the City and the Feather River Recreation and Park District facilities into the City system;
 - ◆ Identification of and planning for the needs of special user groups, such as the disabled and elderly in park and recreation facility development;
 - ◆ Development of an action plan to provide for sites and facilities to meet the City's needs, including a priority program of acquisition and improvement of park lands, analysis of revenues to be received, a funding strategy and a schedule for acquisition, development and maintenance of facilities;

- ◆ Development of a procedure to review park standards periodically to determine whether needs are being satisfied and whether long-term costs will be affordable, and how to proceed if they are not.

A2.2 Work with the Feather River Recreation & Park District to consider adoption of a Development Impact Fee that would be applied to development throughout the City to fund a range of community, neighborhood, and regional parks and facilities.

Goal OPS-3	Create a high quality, diversified public park system that provides adequate and varied recreational opportunities conveniently accessible to all present and future residents, and that enhances Oroville's unique attributes.
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Policies

- P3.1 New development will be required to provide adequate parkland at a ratio of 5 acres per 1,000 residents in accordance with the Quimby Act (California Code 66477). Golf course development shall not be counted towards park acreage requirements.
- P3.2 Promote new park development and use through the selection of highly visible locations in populated areas.
- P3.3 Maximize visual and physical access to waterways and open water within park areas, provided that such access will not conflict with preservation of habitat values.
- P3.4 Where human presence will not negatively impact sensitive species, locate neighborhood and community parks adjacent to or surrounding riparian corridors, in order to take advantage of the scenic value of the riparian corridor, to ensure its preservation, to strengthen the connection between riparian corridors and parkland throughout the Planning Area, and to maintain the presence of nature in the Planning Area.

- P3.5 Enhance the wildlife value of the Planning Area’s “urban forest” by landscaping park and recreation lands with native vegetation and by preserving existing trees and shrubs where they offer significant wildlife value.
- P3.6 Minimize substitution of private recreation facilities for developer fee payment or park dedication to ensure that a public park system will be permanently available to the entire community.
- P3.7 Pursue cooperative efforts with local school districts through joint use agreements for park and recreational facilities creation and operations.
- P3.8 Require all development proposals, rezoning requests and/or General Plan amendments to be submitted to the Department of Parks and Trees for review and response.
- P3.9 Continue to collect user fees for improving and operating park and recreation facilities.

Goal OPS-4 Support the development of an extensive, interconnected multi-use trail system for Oroville.
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Policies

- P4.1 Create and maintain a system of multi-use and specialized use trails serving both recreational needs, such as walking, hiking, jogging, and equestrian and bicycle use, and emergency access needs.
- P4.2 Consider conversion of abandoned rail corridors and power line corridors into recreational trails.
- P4.3 Establish agreements with private entities and public agencies for development and maintenance of trails through their property.
- P4.4 Seek dedication of existing trails and confirmation of prescriptive rights for trails that exist on private property.

Actions

A4.1 As a component of the Parks, Recreation, Open Space, and Trails Master Plan and in coordination with the Feather River Recreation and Park District, prepare a Trails Section depicting regional and community multi-use and specialized trails. The Trails Plan shall incorporate the following provisions:

- ◆ Identification of existing and future trails throughout the Planning Area, connections to trails outside of the Planning Area, and, ultimately, trail connections to other communities, including other communities throughout Butte County;
- ◆ Specification of which trails are to be designated for which types of uses, recognizing that separate trails may be needed for specialized uses;
- ◆ Identification of off-road bicycle paths in addition to on-street bike lanes to ensure that bicyclists have the option of riding somewhere separate from automobile traffic, consistent with the City's General Bikeway Plan;
- ◆ Analysis of how trail alignments relate to access to existing transit lines, and a strategy for provision of transit access points for weary hikers;
- ◆ Design trails in proximity to riparian corridors where such locations will not negatively impact biotic resources;
- ◆ Location of trail rights-of-way with concern for safety, consideration for nearby residents, convenience and enabling users to see the Oroville area in ways not available to road-bound travelers;
- ◆ Connections between important cultural and natural features;
- ◆ Landscape and design standards that include an emphasis on maintenance of natural vegetation and topography along the trailway; and
- ◆ A program for construction, maintenance and rehabilitation of trails.

- A4.2 Seek grant funding for, design and implement a trails system known as the Feather River Trail Parkway. This trail system shall run along the Feather River, from the Lake Oroville Dam to the Oroville Wildlife Area, using existing trail segments, and creating new segments, where necessary.
- A4.3 Seek grants for trail development and maintenance.

B. Scenic Resources

1. Background Information

The City of Oroville has a number of scenic resources available in the form of prominent land formations and preserves.

a. Views

The Oroville area has multiple prominent land forms that help its citizens to distinguish places and locate themselves within the city, including Table Mountain and the Foothills. Table Mountain is a large, flat-topped mountain, just north of Oroville, and is highly visible from many parts of the Planning Area. Some parts of Oroville also have views towards the foothills, located just east of the city. Views of the city are possible for the people who live in these foothills and views of the foothills are available from most areas in the city.

b. Preserves

Preserves are single-use areas that are not likely to change in form, character or use in the near future. By the nature of their existing land use, preserves have little or no chance of providing a mix of land uses or ingress via circulation or transportation networks. Along with the Feather River Nature Center and Native Plant Park (“Meditation Park”) there are five preserves identified as components of Oroville’s urban form:

i. Feather River Nature Center and Native Plant Park

The Feather River Nature Center and Native Plant Park is a stone structure located on Old Ferry Road on the south bank of the Feather River across the river from the Feather River Fish Hatchery. Constructed in the 1930s, it operated as a Works Progress Administration (WPA) bathhouse and has been restored and converted into a Nature Center. The historic construction and scenic vistas make it a wonderful place for families to encounter the natural beauty of the Feather River. The site also contains picnic tables and other recreational amenities.

ii. Oroville Dam Area Preserve

This area includes the steeply-sloped hillsides around the dam. This area could provide passive open space recreation opportunities for Oroville residents.

iii. Feather River Waterfront Preserve

The waterfront is located between Highway 70 and the Feather River. Riverbend Park is part of this preserve. This area contains other active and passive recreation opportunities.

iv. Oroville Wildlife Refuge Preserve

The refuge begins at Highway 162, between the Feather River to the west and the Oroville Municipal Airport and Thermalito Afterbay to the east, continuing south to the Planning Area boundary. Mine tailings from Oroville's past fill much of the Wildlife Refuge.

v. North and South Thermalito Forebay Preserve

The North and South Thermalito Forebay receive water diverted from Lake Oroville as part of the State Water Project, one of the largest water and power systems in the world. North Thermalito Forebay offers recreation opportunities including swimming, boating and picnicking. South Thermalito Forebay also provides recreational opportunities including boating and fishing. Flat rice fields and grazing land surround the forebays.

vi. Thermalito Afterbay Preserve

Thermalito Afterbay also receives water diverted from Lake Oroville as part of the State Water Project. The Afterbay includes opportunities for boating, swimming and fishing. The Afterbay is adjacent to the Oroville Wildlife Area and the Feather River Fish Hatchery Annex.

2. Goals, Policies, and Actions

Goal OPS-5 Maintain and enhance the quality of Oroville's scenic and visual resources.

Policies

- P5.1 Maintain the appearance of Oroville, as seen from the freeway, as a city to be visited, enjoyed and admired.

- P5.2 Limit freeway-oriented signs. Combine freeway signs listing available accommodations and services, and allow only small identity signs on buildings adjoining the freeway.
- P5.3 Maintain the scenic view of the Feather River and Table Mountain.
- P5.4 Require new light fixtures within new development to be designed and sited so as to minimize light pollution, glare, and light trespass into adjoining properties.

Actions

- A5.1 Conduct a study to identify and locate scenic vistas and viewsheds throughout the City and develop a program to protect these resources and provide public awareness.
- A5.2 Conduct a study to identify the most serious sources of light pollution and day-time glare in Oroville, and implement a program to work with relevant public and private property owners to retrofit, remove or replace light polluting fixtures or glare-inducing surfaces.

C. Agricultural Resources

1. Background Information

Areas used for agriculture are scattered throughout the Planning Area and Oroville's Sphere of Influence (SOI). Row crops and rice fields occur predominantly in mostly flat areas in the northwest portion of the Planning Area along Highway 99. Within the Planning Area, small olive groves occur on hillsides in the southeastern portion and citrus orchards in the southwest corner.

The California Land Conservation Act of 1965, better known as the Williamson Act, works to preserve agricultural and open space lands through restrictive use contracts administered by counties and cities under State regulations. Private landowners voluntarily restrict their land to agricultural and compatible open space uses under minimum 10-year rolling term contracts, with counties and cities also acting

voluntarily. In return, the property tax on a Williamson Act parcel is assessed at a rate consistent with its actual use, rather than potential market value.¹

Approximately 12 percent (6,000 acres) of agricultural land in the Planning Area are designated Williamson Act land. Roughly 900 acres of these Williamson Act lands are considered prime agricultural lands and under a Williamson Act contract within the Oroville Planning Area. Figure OPS-2 shows the location of all Williamson Act lands and their designation as well as farmland not covered by the Williamson Act.

2. Goals, Policies, and Actions

Goal OPS-6 Preserve the maximum feasible amount of agriculturally productive land, in order to maintain agriculture’s contributions to the local economy, lifestyle, air quality, habitat value, and sense of Oroville’s heritage.

Policies

- P6.1 Support the South Feather Water and Power Agency and the Thermalito Water and Sewer District investigations of the need, availability, and cost of irrigation water to support agriculture within the Planning Area.
- P6.2 Cooperate with Butte County to retain agricultural uses on lands within the Oroville Sphere of Influence prior to their annexation to the City.
- P6.3 Encourage activities that support local agriculture such as farmers’ markets, on-site sale of produce, community gardens, and special events promoting local agricultural products.

Actions

- A6.1 Study the possibility of forming a local land trust, possibly in cooperation with Butte County, or solicit the interest of an ex-

¹ California Department of Conservation, 2002, *California Land Conservation (Williamson) Act Status Report*, August, , page 1.

isting land trust experienced in acquiring agricultural land and open space in California.

- A6.2 Provide public land, traffic control, cleanup, and other City services to farmers' markets, including technical assistance to encourage markets to accept Supplemental Nutrition Assistance Program (SNAP or CalFresh) and Supplemental Nutrition for Women, Infants and Children (WIC).
- A6.3 Create an accessible inventory of publicly-owned and private vacant sites appropriate for community gardens or other forms of urban agriculture.
- A6.4 Provide support to community gardens, including technical assistance, water hookups, equipment loans, and assistance in obtaining liability insurance.

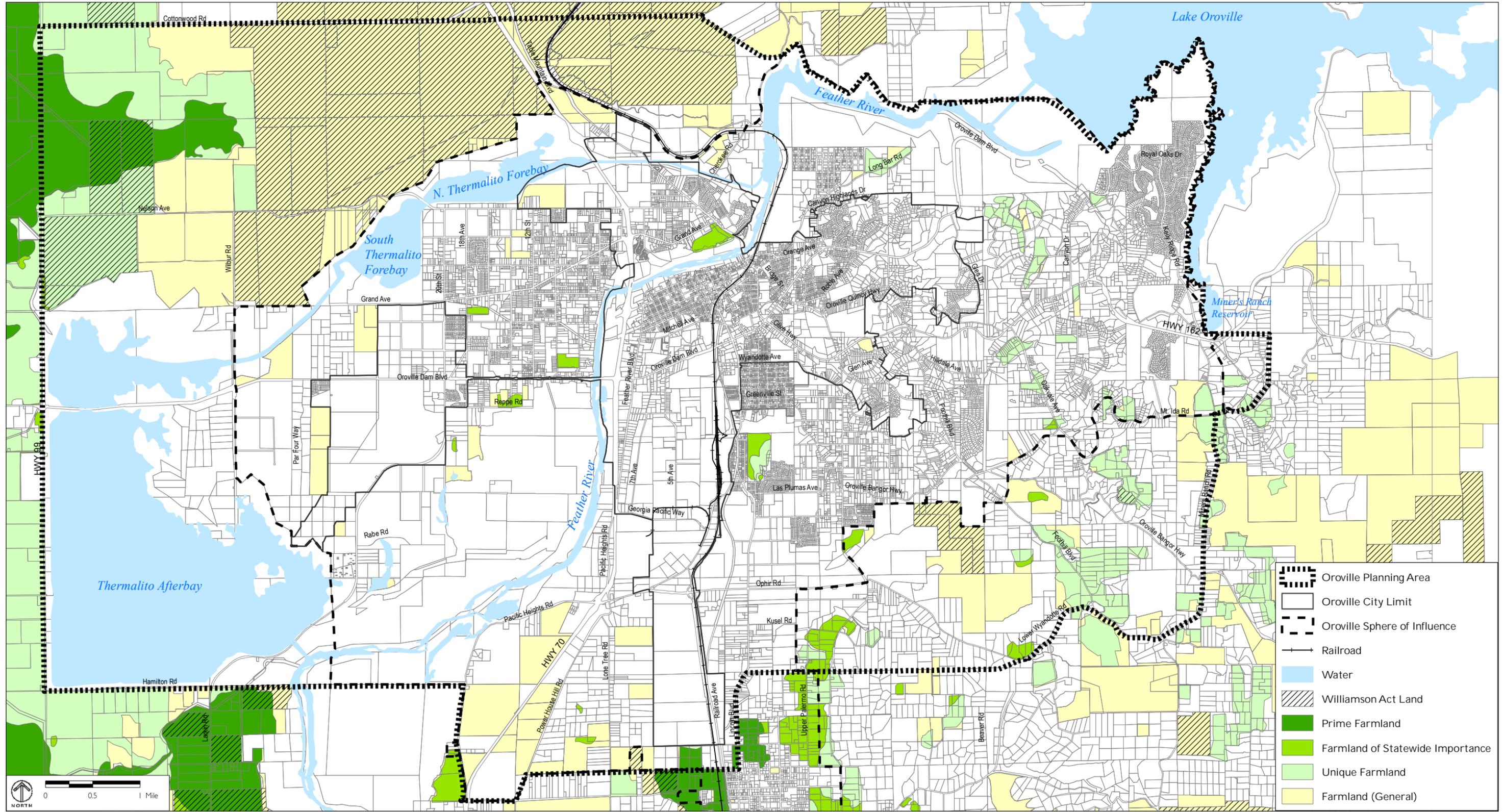
D. Mineral Resources

1. Background Information

Sand and gravel, stone, and gold mining are the three primary mining industries in Butte County. Of these, the Butte County's Energy, Natural Resources, and Recreation Element identifies only sand and gravel operations as present within the Oroville Planning Area. Despite its historical importance, gold mining has dwindled to a negligible level within the Planning Area.

Oroville's position within the "gravel belt" of Butte County, where sediments washed down from the Sierra Nevada reach the slower moving rivers of the flatter Central Valley, places it in an area for potential gravel mining. The gravels are valued, as are sands within the deposits, to be used in combination with Portland cement or asphalt compounds in construction and road building.

Sand and gravel deposits are also mined for silica, used in the production of cleansers, abrasives, and toothpaste. All of the sand and gravel mining operations within the Planning Area are located south of the Oroville city limits, adjacent to or east of the Feather River. There is one sand/gravel mine on the north side of Ophir Road.



Source: California Department of Conservation - Williamson Act Lands, 2006. California Department of Conservation FMMP - Important Farmland, 2004. City of Oroville GIS, 2005.

FIGURE OPS-2
AGRICULTURAL LANDS

Urban preemption of prime deposits and conflicts between mining and other uses throughout California led to passage of the Surface Mining and Reclamation Act of 1975 (SMARA). This Act establishes policies for conservation and development of mineral lands and contains specific provisions for the classification of mineral lands by the State Geologist.

SMARA requires all cities and counties to incorporate in their General Plans mapped designations approved by the State Mining and Geology Board. These designations include lands categorized as Mineral Resource Zones, the most significant of which is a designation of mineral resources that are of regional or Statewide significance. These categories must be recognized by the local General Plan, to establish policies and programs for the conservation and development of these resources.

The State Geologist has not yet mapped the mineral resources in Butte County, nor does the State intend to formally survey Butte County within the next 2 to 3 years.² A policy in the Butte County General Plan's Energy, Natural Resources and Recreation Element states that the County Board of Supervisors shall formally request that the State Division of Mines and Geology map mineral resources in Butte County of "Regional or Statewide Significance."³ The Oroville General Plan reiterates this policy.

2. Goals, Policies, and Actions

Goal OPS-7 Protect economically viable mineral resources and related industries in Oroville, while avoiding land use conflicts and environmental impacts from mining activities.

Policies

- P7.1 Manage mineral resource extraction to ensure that this activity results in the fewest possible environmental impacts. Require preparation and assured implementation of a rehabilitation plan for mineral extraction sites as a condition of mining approval.

² Clinkenbeard, John, Program Manager of Human Resources, California Geological Survey. Personal communication with José Moreno, DC&E, on October 17, 2007.

³ Butte County, 1989, *General Plan Draft Energy, Natural Resources and Recreation Element*.

The mineral resource extraction plan should address the protection and restoration of biotic resources.

P7.2 New or expanded mining operations within the City of Oroville and its Sphere of Influence shall adhere to the following guidelines:

- ◆ Demonstrate no significant adverse impacts from the mining operations on adjoining areas and uses, including, but not limited to, those associated with noise, dust, and vibration.
- ◆ Demonstrate no substantial increase in hazards to neighboring uses, water quality, air quality, agricultural resources, or biological resources.
- ◆ Demonstrate that the proposed plan complies with existing applicable County and State waste management standards.
- ◆ Incorporate sufficient buffering between mining operations and adjacent non-mining uses to minimize noise in accordance with guidelines described in the Noise Ordinance.
- ◆ Incorporate landscaping buffers and other measures to minimize visual impacts to the extent possible.

P7.3 If the State Division of Mines and Geology determines that the Planning Area contains significant aggregate resources, conserve sufficient aggregate resources to meet the Planning Area's fair share of future regional needs.

P7.4 Apply zoning regulations permitting extraction as a conditional use on any lands that may be designated as Significant Construction Aggregate Resource Areas.

P7.5 Restrict permitted uses on lands containing important mineral resources to those compatible with mineral extraction, except in cases where such uses offer public benefits that outweigh those of resource extraction.

P7.6 Reclaim former mining sites to a condition which is readily adaptable for alternative land uses, consistent with the Land

Use Map and other applicable policies, in accordance with the California Surface Mining and Reclamation Act (SMARA).

E. Biological Resources

1. Background Information

Biological communities in the Planning Area were significantly impacted beginning in the mid-1800s as the area was first hydraulically mined, and later dredged for gold, as well as developed for agriculture. Despite these human modifications to the natural environment, important biological resources continue to exist in and around Oroville.

Within the Planning Area, several regional parks and other protected public lands contain sensitive biological habitats (e.g. riparian, oak woodland and vernal pool) and may support State and federally listed species. These lands include the Thermalito Afterbay, Thermalito Forebay, Oroville Wildlife Area, and other natural lands managed by the California Department of Fish and Wildlife (DFW), California Department of Parks and Recreation (DPR), and the Feather River Recreation and Parks District. Although not in the Planning Area, nearby open space and wilderness areas such as the Plumas National Forest and North Table Mountain Wildlife Area provide important biological resources to the region. Wide-ranging wildlife species (e.g. black-tailed deer, osprey, golden eagle, bald eagle, and numerous species of migratory birds) within these areas could migrate through or forage in the Planning Area. Important biological resources in the Planning Area are described in greater detail below.

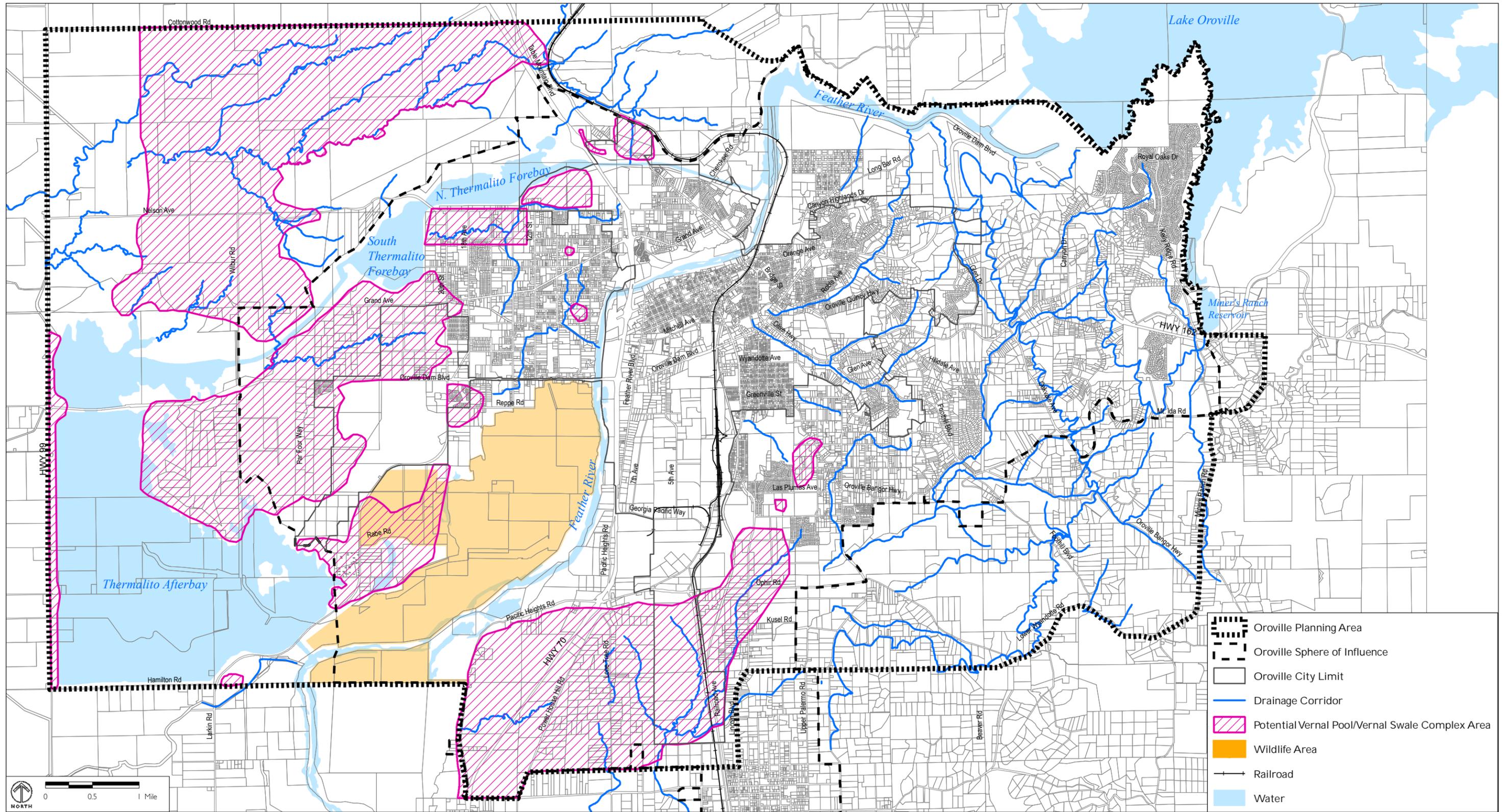
a. Biological Communities

Nine main types of biological communities occur in the Planning Area. These nine communities include:

- ◆ **Foothill Pine-Blue Oak Woodland.** Foothill pine-blue oak woodlands are scattered throughout the Planning Area but are concentrated in the eastern half of the Planning Area in a mostly rural setting, with extensive woodlands occurring around Lake Oroville.
- ◆ **Riparian Woodlands.** Riparian woodlands are common throughout the Planning Area and occur along portions of the Feather River, Thermalito Afterbay and Forebay, Thermalito Diversion Pool, and along numerous perennial and ephemeral drainages in the eastern portion of the Planning Area. Riparian

woodlands are also commonly associated with dredge tailings throughout the Planning Area.

- ◆ **Annual Grasslands.** Annual grasslands occur throughout the Planning Area. Large, open areas of annual grasslands occur primarily in the western half of the Planning Area and are typically grazing pastures for livestock. Annual grasslands also form the understory for foothill pine-blue oak woodland and occur on vacant parcels in developed areas.
- ◆ **Chaparral.** A small aggregation of chaparral occurs in the northern portion of the Planning Area on the south-facing slopes of South Table Mountain. Small scattered areas of chaparral are also present within the understory of woodlands throughout the Planning Area.
- ◆ **Agricultural Lands.** Areas used for agriculture are scattered throughout the Planning Area. Row crops and rice fields occur predominantly in mostly flat areas in the northwest portion of the Planning Area along Highway 99. Within the Planning Area small olive groves occur on hillsides in the southeastern portion and citrus orchards in the southwest corner.
- ◆ **Wetlands.** Wetlands are considered sensitive natural communities by several resource agencies and should be given special consideration in the Planning Area because they provide a variety of important ecological functions and essential habitat for wildlife resources. Natural wetland habitats are steadily declining compared to their historical distribution, as a result of land management practices and development activities. Four types of wetlands occur in the Planning Area.
- ◆ **Vernal Pools.** Vernal pools occur primarily in the western half of the Planning Area and are concentrated in the areas shown on Figure OPS-3. The largest area of vernal pools is located north and south of Cottonwood Road between Highways 99 and 70; these pools are northern volcanic mud flow vernal pools. Vernal pools in the Planning Area occur within annual grasslands and represent a variety of pool types, including northern hardpan and northern volcanic mudflow pools. Vernal pools may occur as individual pools with discrete boundaries or be connected with other vernal pools via vernal swales to form a vernal pool complex. Vernal swales consist of vernal pools that occur within shallow, linear depressions.



Source: City of Oroville GIS, 2005 and Butte County Association of Governments Draft Butte Regional Habitat Conservation Plan, 2007

Note: The information presented in this figure should be used for general planning purposes only. The boundaries of vernal pool areas shown on this figure are not precise and may not be inclusive of all vernal pool habitat in the Planning Area. Project level analysis will require individual review, including possible field surveys.

FIGURE OPS-3

VERNAL POOLS AND DRAINAGE CORRIDORS

- ◆ **Drainages.** Perennial and ephemeral drainages occur throughout the Planning Area and are shown in Figures OPS-3. These drainages are typically associated with riparian habitat described above and may support patches of freshwater marsh. Primary drainages within the Planning Area include the Feather River, Cottonwood Creek, Little Cottonwood Creek, Wyman Ravine, Wyndotte Creek, and the Western Canal.
- ◆ **Freshwater Marsh.** Freshwater marsh occurs in the northwest portion of the Planning Area along the margins of flooded rice fields adjacent to Highway 99. Drainages and open water habitats in the Planning Area may also support patches of freshwater marsh.
- ◆ **Reservoir.** The Thermalito Afterbay and Thermalito Forebay are large reservoirs located on the Feather River in the western portion of the Planning Area formed by earthen dams. The Thermalito Afterbay and Thermalito Forebay provide resting and foraging habitat for migratory waterfowl traveling along the Pacific Flyway. The Thermalito Afterbay is part of the larger Oroville Wildlife Area (shown on Figure OPS-3). The eastern portion of the preserve surrounding the Feather River contains numerous dredge tailings and borrows pits. The distribution of biological communities in the Planning Area is closely associated with topography and hydrology. Some of the flat valley area supports agricultural lands, the hilly portions support most of the remaining grassland and woodland communities and stream corridors support riparian communities.

b. Special-Status Species

Special-status species are plants and animals that are legally protected under the State and/or federal Endangered Species Act or other regulations, and species that are considered by the scientific community to be sufficiently rare to qualify for such listing. Special-status plants and animals are species in the following categories:

- ◆ Species that are candidates for possible future listing as threatened or endangered under the federal Endangered Species Act.
- ◆ Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act.
- ◆ Species that meet the definitions of rare or endangered under the California Environmental Quality Act (CEQA).
- ◆ Plants listed as rare, plants about which more information is needed to determine their status, plants of limited distribution that may be included as special-

status species on the basis of local significance or recent biological information, or plants considered to be “rare, threatened, or endangered in California,” under the California Native Plant Protection Act.

- ◆ Animals fully protected in California under the California Fish and Wildlife Code.
- ◆ Animal species of special concern to the Department of Fish and Wildlife.

i. Special-Status Plants

A total of 37 special-status plants have the potential to occur or are known to occur in the Planning Area. Of these 37 species, five species are federally and/or State listed: Hoover’s spurge (*Chamaesyce hooveri*), Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*), hairy Orcutt grass (*Orcuttia pilosa*), slender Orcutt grass (*Orcuttia tenuis*) and Greene’s tuctoria (*Tuctoria greenei*). Slender Orcutt grass has been reported twice within the Planning Area and Butte County meadowfoam has been reported on the western boundary of the Planning Area. The USFWS has designated critical habitat for Butte County meadowfoam in the northwestern portion of the Planning Area.

ii. Special-Status Wildlife

A total of 13 State and/or federally listed and 19 non-listed special-status wildlife species are known to occur or have the potential to occur in the Planning Area based on a review of existing information and presence of suitable habitat. USFWS has designated critical habitat in the northwestern portion of the Planning Area for vernal pool fairy shrimp and vernal pool tadpole shrimp.

iii. Special-Status Fish

Within the Planning Area, the Feather River and its tributaries provide habitat for fall/late fall and spring-run Chinook salmon, Central Valley steelhead, white sturgeon, green sturgeon and Pacific lamprey. Critical habitat for Central Valley steelhead and Central Valley spring-run Chinook salmon is designated in the Feather River from the confluence of the Yuba River upstream to Oroville Dam.

2. Goals, Policies, and Actions

Goal OPS-8	Preserve and protect all special-status species, species that are candidates for federal or State listing, State species of special concern, and CNPS listed plant species.
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Policies

- P8.1 Require a biological assessment of any proposed project site where federally-, or State-listed species or critical habitat may be present.
- P8.2 Require a habitat-based site assessment during the project design phase to determine the potential for special-status species to occur within a proposed project area. If potential habitat for special-status plant or animal species is identified, additional focused surveys may need to be conducted during the appropriate season.
- P8.3 Require agency consultation for proposed projects for which there is the potential to impact federal or State-listed species, or other appropriate agency assistance for non-listed special-status species.
- P8.4 Require proposed trail projects that have the potential to impact special-status species to coordinate trail planning and development with habitat preservation efforts.
- P8.5 Make information available to interested parties concerning the presence and condition of special-status species.
- P8.6 If special-status plant or animal species are found to be located within a development site, the developer shall mitigate project impacts in accordance with State and federal law. Examples of mitigation may include:
- ◆ Redesign the proposed project to avoid and minimize impacts.
 - ◆ Restrict construction to specific seasons based on project-specific special-status species issues (e.g. minimizing impacts to special-status nesting birds by constructing outside of the nesting season).
 - ◆ Confine construction disturbance to the minimum area necessary to complete the work.

- ◆ Mitigate for the loss of special-status species by purchasing credits at an approved conservation bank (if a bank exists for the species in question), funding restoration or habitat improvement projects at existing preserves in Butte County, or purchasing or donating mitigation lands.
- ◆ Maintain a minimum 100-foot buffer on each side of all riparian corridors, creeks and streams for special-status and common wildlife. Ruddy Creek would be an example of where this applies.
- ◆ Establish setbacks from the outer edge of special-status species habitat areas.
- ◆ Prohibit livestock grazing or drainage into the setback of special-status species habitat areas.
- ◆ Construction of barriers to prevent compaction damage by foot or vehicular traffic.

Actions

- A8.1 Work with BCAG to develop a regional Habitat Conservation Plan and Natural Community Conservation Plan and database, and subsequently update it as necessary, for the management and protection of sensitive biological resources such as wetlands, riparian corridors, and critical habitat areas. The plan should be developed in cooperation with the California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, and local interest groups, and should address all known critical habitat areas, special-status plant populations, wildlife movement corridors specifically including deer migration routes, and should prioritize areas for management and protection that are likely to be impacted by development.
- A8.2 Prepare and maintain an updated list of State and federally listed, threatened, and endangered species and species that are candidates for listing known or suspected to occur in the City of Oroville and its immediate vicinity, as well as other special status species identified by the California Department of Fish and Wildlife and the Mt. Lassen Chapter of the California Native

Plant Society. This list should be monitored and updated every two years.

- A8.3 Develop a set of guidelines for preservation of special-status species, including, if it is found to be feasible, a tiered approach that would prioritize protection of State and federally listed species. Such an approach may include identification of appropriate buffers for preservation of species identified on a development site, and appropriate avoidance and mitigation measures for special-status species determined to be affected by a proposed development.

Goal OPS-9 Protect areas of significant wildlife habitat and sensitive biological resources to maintain biodiversity among plant and animal species in the City of Oroville and the surrounding area.

Policies

- P9.1 Encourage the Department of Water Resources and Department of Fish and Wildlife to manage and maintain the Oroville Wildlife Refuge for multiple uses, while protecting property values on land adjacent to the refuge.
- P9.2 Minimize loss of wetland value or acreage consistent with the needs of wildlife and humans, to the extent practicable and as regulated by State and federal law.
- P9.3 Work with Butte County and the Department of Fish and Wildlife to support the protection of migratory and resident deer herds in the Planning Area, by preserving habitat and movement corridors.
- P9.4 Develop a program to preserve wildlife corridors that includes designing and constructing freeway and arterial street undercrossing areas at locations that currently serve as wildlife corridors.

- P9.5 Require the preparation of a site-specific tree management and preservation report by a certified arborist or urban forester for development proposals on sites that contain significant oak woodlands and related habitat. This report shall include recommendations for the retention of healthy mature trees wherever feasible and promote the concept of oak regeneration corridors within project design.
- P9.6 Protect sensitive plant and wildlife habitat from destruction and intrusion by incompatible land uses where appropriate. All efforts to protect sensitive habitats should consider:
- ◆ Sensitive habitat and movement corridors in the areas adjacent to development sites, as well as on the development site itself.
 - ◆ Prevention of habitat fragmentation and loss of habitat connectivity.
 - ◆ Use of appropriate protection measures for sensitive habitat areas such as non-disturbance easements and open space zoning.
 - ◆ On-site or off-site habitat restoration as a potential mitigation, with a no net loss of habitat policy.
 - ◆ Potential mitigation or elimination of impacts through mandatory clustering of development, and/or project redesign.
- P9.7 Protect native plant species in undisturbed portions of a development site and use native species for replanting in disturbed portions of the project site.
- P9.8 Support efforts to eradicate invasive and noxious weeds and vegetation on public and private property.
- P9.9 Monitor the on-going health of sensitive habitat resources in Oroville and ensure the continued effectiveness of General Plan policies intended to protect, preserve and enhance these resources.

- P9.10 Encourage the coordinated design of large projects to preserve on-site open space, cluster development (where feasible) and conserve natural communities and/or habitat for special-status species that have been identified in proposed project areas.
- P9.11 Utilize native plant species to landscape public open space areas to promote the unique local flora of the region and provide habitat for local species.
- P9.12 Preserve orchards, woodlands, and wetlands by clustering development in locations where the land supports fewer natural resources, and infrastructure is in or is close to the project site.

Actions

- A9.1 Work with Butte County to coordinate the maintenance of open space and habitat preservation at or near South Table Mountain.
- A9.2 Work to create and establish a mitigation bank designed to offset development impacts on wetlands.
- A9.3 Develop a plan to enhance individual oaks, oak woodlands and other native tree groups throughout the Planning Area. The plan will provide options for the management of oaks and other tree resources.
- A9.4 Develop guidelines and an education strategy for property owners about issues concerning development near or adjacent to sensitive communities or habitats that support special-status species. The guidelines should clearly define the range of activities allowed within buffer areas adjacent to sensitive habitats.
- A9.5 Develop a Greenway Program to preserve and connect wildlife and sensitive habitat corridors.

Goal OPS-10 Protect riparian, riverine, and open water habitats.

Policies

- P10.1 Require an appropriately sized buffer or setback, as determined by a qualified biologist, on each side of a riparian corridor, creeks, stream, wetland, or pond. Development shall be prohibited within established setback areas for these riparian corridors, creeks, stream, wetland, ponds, and waterways.
- P10.2 Support a multi-use concept for riparian corridors that incorporates open space, aesthetic, habitat and wildlife corridor values, while addressing social, cultural, flood control, and recreation needs.
- P10.3 Encourage the Department of Water Resources to maintain water levels in State Water Project facilities, including Lake Oroville, to optimize protection of fisheries and other biotic resources, preserve open water as open space, and maximize recreational opportunities per the Department of Water Resources Bulletin 117-6, while also allowing for power generation, flood control and water supply.
- P10.4 Work with the Department of Water Resources and Department of Fish and Wildlife to ensure the ongoing operation of the Feather River Fish Hatchery.
- P10.5 Work with the Department of Fish and Wildlife and Department of Water Resources to ensure the preservation and enhancement of species of resident and anadromous fish along the Feather River, in Lake Oroville, and throughout the Planning Area.
- P10.6 Support removal or relocation of levees on the west side of the Feather River south of Oro Dam Boulevard as a means to enhance habitat in and around the Oroville Wildlife Refuge.
- P10.7 Work with the Oroville Mosquito Abatement District and the Butte County Mosquito Abatement District to ensure that

preservation, pre-planning and design of water features is coordinated with acceptable disease vector control measures.

- P10.8 Consider the effects of mosquito abatement measures on other aquatic species and minimize these effects where known special-status species occur.

Actions

- A10.1 Search for and acquire State, federal, foundation, and private funding to preserve, promote, restore, protect and enhance riparian corridors throughout the Planning Area.
- A10.2 Continuously monitor the Department of Water Resources' compliance with its Federal Energy Regulatory Commission licensing agreements.

F. Water Quality

1. Background Information

The State Water Resources Control Board (SWRCB) has jurisdiction over nine Regional Water Quality Control Boards, whose charge it is to identify and implement water quality objectives. The Oroville area falls under the authority of the Central Valley Regional Water Quality Control Board (CVRWQCB), Region 5, and is located within the Sacramento River Basin (Basin SA). The Water Quality Control Plan (Basin Plan) which affects this hydrologic sub-basin was most recently revised in March 1990.

All land uses, whether undeveloped, agricultural, industrial or urban, have some type of water quality impacts. Water quality problems are typically characterized by erosion and sedimentation considerations, and concerns about contamination of ground or surface water. Major sources of chemical or toxic discharge within the Oroville region include agriculture, silviculture, municipalities, and industries.

Water quality is intimately tied to water supply, since adequate uncontaminated flows significantly mitigate the presence of contaminated flows, through dilution, flushing and general availability of alternate sources. Water supply is discussed further in the Public Facilities and Services Element of this General Plan. Dis-

charge requirements and pretreatment of industrial wastewater are also discussed in the Public Facilities and Services Element.

a. Erosion and Sedimentation

Lands that are preserved in agriculture are subject to surface water flows that carry particles away from a site. This erosive action results in downslope or downstream sedimentation, which can impair drinking water, as well as adversely affect fisheries and water-related habitat. In addition, toxic substances may bind to soil particles, which then distribute and circulate contaminants throughout the riparian, estuarine and marine systems. Given Oroville's position, primarily upslope and upstream of the intensive Central Valley agriculture, and the dispersed nature of agricultural operations throughout the Planning Area, it is unlikely that erosion and sedimentation within the Planning Area would be a significant concern.

Erosion and sedimentation can also result from timber harvesting practices, including road construction, logging and post-logging operations, and from the construction and operation of mines. The CVRWQCB has not identified any particular water quality problems within the Oroville area related to upstream timber harvesting or mining activities.

Land development and associated construction activities in steeper portions of the Planning Area might be expected to contribute regionally to erosion and sedimentation. The CVRWQCB encourages the submission of an erosion plan for construction in steeper areas, including areas where greater than 10,000 square feet of surface area and/or more than 100 cubic yards of excavated material will be disturbed; this would probably include construction in all areas of moderate and high slopes.

Although historically a problem of regional significance, dredging activities are not currently identified as a significant source of erosion and sedimentation within the Planning Area. While flood control maintenance dredging may be necessary on some waterways, it has not been identified by the a RWQCB as a problem in Oroville.

b. Contamination

Sources of water contamination in the Oroville Planning Area include:

i. Pesticides, Fertilizers, Herbicides, and Urban Runoff

The CVRWQCB has not identified any existing problems or concerns relating to pesticides, herbicides, fertilizers, or urban runoff within the Planning Area. How-

ever, each of these contaminants are of continuing concern, and policies to reduce the potential for water quality impacts are included below.

ii. Septic Systems

Residences in the portions of the Planning Area not served by sewers are on septic systems. According to the Butte County Environmental Health Department, there is no record of any ongoing water quality problems related to contamination by septic systems, although the City is aware of occasional incidents of malfunction.

iii. Industry-related Toxics

The EPA has identified the following three superfund sites in the Planning Area that affect surface and/or groundwater quality:

- ◆ Koppers Industries
- ◆ Oroville Army Airfield (Oroville Municipal Airport)
- ◆ Sierra Pacific

Each of these sites are currently undergoing cleanup and monitoring. These sites are discussed in more detail in the Safety Element of this General Plan.

2. Goals, Policies, and Actions

Goal OPS-11 Protect water quality and quantity in creeks, lakes, natural drainages, and groundwater basins.
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Policies

- P11.1 Maintain the natural condition of waterways and flood plains to ensure adequate groundwater recharge and water supply where feasible, given flood control requirements.
- P11.2 Minimize impermeable paving that negatively impacts surface water runoff and groundwater recharge rates.
- P11.3 Protect surface and groundwater resources from contamination from runoff containing pollutants and sediment, through implementation of the Central Valley Regional Water Quality Control Board's (CVRWQCB) Best Management Practices.

- P11.4 Cooperate with State and local agencies in efforts to identify and eliminate or minimize all sources of existing and potential point and non-point sources of pollution to ground and surface waters, including leaking fuel tanks, discharges from storm drains, auto dismantling, dump sites, sanitary waste systems, parking lots, roadways and logging and mining operations.
- P11.5 Manage and maintain open space areas so as to minimize water, energy, pesticide, and fertilizer use.
- P11.6 Require those responsible for contamination to remediate contaminated soils or groundwater.

Actions

- A11.1 Create a comprehensive mapping of groundwater resources in the Planning Area based on existing groundwater management studies and maps and, where necessary, new groundwater mapping studies to result in comprehensive coverage of the Planning Area.
- A11.2 Participate in the on-going regional response to the Environmental Protection Agency's stormwater permit regulations.
- A11.3 Develop and distribute an informational brochure to promote awareness of non-point source pollution and to educate local residents and business-owners about ways to reduce it. The brochure might address topics such as responsible use of pesticides, fertilizers, household chemicals, landscaping to control erosion, maintenance of septic systems, and proper disposal of used motor oil and batteries.

G. Air Quality

1. Background Information

Air quality is a critical element in the natural environment, and the availability of clean, non-polluted air is an important factor for human health and quality of life for all Oroville residents. The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted from those

sources. Meteorological and topographical conditions are also important factors. Atmospheric conditions, such as wind speed, wind direction and air temperature gradients, interact with the physical features of the landscape to determine the movement and dispersal of air pollutants.

Oroville is located in central Butte County, in the Sacramento Valley Air Basin (SVAB). The SVAB includes Butte, Sacramento, Sutter and Yolo Counties and parts of Solano, Placer, and El Dorado Counties. The SVAB is bounded on the west by the Coast Ranges and on the north and east by the Cascade Range and Sierra Nevada. The San Joaquin Valley Air Basin is located to the south. Oroville, although north of the Sacramento metropolitan area, often suffers from transport of pollutants from the Sacramento area.

The SVAB has a Mediterranean climate characterized by hot, dry summers and cool, rainy winters. During summer, the wide, flat expanse of the Sacramento Valley provides an ideal environment for the formation of photochemical smog. Hot, cloudless days of low-velocity winds allow sunlight to combine with photochemically reactive hydrocarbons, or ozone precursors (reactive organic gases [ROG]), along with nitrogen oxides (NO_x) produced throughout the Valley, resulting in an increase in ozone, particularly during late afternoons. Winds arising later may help disperse pollutants, but may also transfer it to other areas from Sacramento to Oroville.

There are no monitoring stations within the Planning Area. The closest monitoring stations are in Chico and Paradise. Monitoring data indicates that ozone concentrations occasionally exceeded State and federal standards during the past five years; PM₁₀ (particulate matter) concentrations often exceeded State standards; PM_{2.5} concentrations exceeded the federal standard twice during the most recent five years of data; and carbon dioxide (CO₂) concentrations did not violate State or federal standards in Chico. Although the Chico monitoring results are not representative of Oroville, they indicate that CO₂ is not likely to be an issue in Oroville; this conclusion is based on the lower number of motor vehicle trips and vehicle miles traveled in the Oroville area than in the Chico area.

In general, the prevailing wind in the Sacramento Valley is from the southwest because of marine breezes flowing through the Carquinez Strait. The influx of air through the Carquinez Strait forms a low-level southerly jet between 500 and 1,000 feet above the surface that is capable of speeds in excess of 35 mph. This jet is important for air quality in the Sacramento Valley because of its ability to transport air pollutants over large distances.

The SVAB's climate and topography contribute to the formation and transport of photochemical pollutants throughout the region. The region experiences temperature inversions that limit atmospheric mixing and trap pollutants, resulting in high pollutant concentrations near the ground surface. The highest concentrations of photochemical pollutants occur from late spring to early fall, when photochemical reactions are greatest because of more intense sunlight and the lower altitude of daytime inversion layers.

2. Goals, Policies, and Actions

Goal OPS-12 Reduce particulate matter pollution in Oroville to meet State and federal ambient air quality standards.

Policies

- P12.1 Cooperate with the Butte County Air Pollution Control District to achieve 5 percent annual emissions reductions for non-attainment pollutants, including ozone and particulate matter, by implementation of air pollution control measures as required by State and federal standards.
- P12.2 Support planning measures in the Sacramento metropolitan area that would result in a net decrease in the production of ozone precursors and other wind-transported pollutants that ultimately affect air quality in the Planning Area.
- P12.3 Require all construction projects to implement dust control measures to reduce particulate matter emissions due to disturbance of exposed top-soils. Such measures would include watering of active areas where disturbance occurs, covering haul loads, maintaining clean access roads, and cleaning the wheels of construction vehicles accessing disturbed areas of the site.

Actions

- A12.1 Develop a program to identify and reduce local sources of particulate matter. These sources could include construction, wood-burning stoves, dust from City activities, or other sources.
- A12.2 Require all road improvements and parking areas to be built to City standards to reduce dust and particulate matter.

Goal OPS-13 Reduce emissions of air contaminants, including greenhouse gases, and minimize public exposure to toxic, hazardous, and odoriferous air pollutants.

Policies

- P13.1 Prohibit sensitive receptors, such as residential uses, schools and hospitals, from locating in the vicinity of industrial and commercial uses known to emit toxic, hazardous or odoriferous air pollutants, and prohibit the establishment of such uses in the vicinity of sensitive receptors.
- P13.2 Reduce automobile dependence, thereby reducing greenhouse gas emissions, by encouraging mixed land use patterns that locate services such as banks, child care facilities, schools, neighborhood shopping centers and restaurants in close proximity to employment centers and residential neighborhoods.
- P13.3 Promote expansion of employment opportunities within Oroville to reduce commuting to areas outside Oroville.
- P13.4 Encourage the use of alternative fuels in vehicle fleets and the use of alternative forms of transportation for City staff and other public agencies.
- P13.5 Work with the Butte County Air Quality Management District (BCAQMD) to accurately monitor PM₁₀, carbon monoxide, and other regulated air pollutants in Oroville, and to upgrade its facilities as needed in the future to ensure that accurate monitoring is maintained.

- P13.6 Coordinate development project reviews with the BCAQMD in order to minimize future increases in vehicle travel and to assist in implementing appropriate indirect source regulations adopted by the Air Pollution Control District.
- P13.7 Design new intersections to function in a manner that reduces air pollutant emissions from stop-start and idling traffic conditions. Possible techniques include the use of roundabouts and/or using integrated signalization to improve traffic flow.
- P13.8 Require the use of EPA-certified wood stoves, fireplaces, pellet stoves or natural gas fireplaces in new development and require retrofit or replacement of non-certified appliances for renovation projects.
- P13.9 Control measures shall be implemented at all construction sites, such as alternative fuels, after-market add-ons, and other measures to further minimize exhaust emissions from construction equipment.
- P13.10 New development served by bus transit will be evaluated by the City to determine if the development project should include bus shelters to increase access to transit and decrease automobile dependence. The provision of bus shelters shall be reviewed by transit authorities to determine feasibility.

Actions

- A13.1 Establish targets for replacement of City-owned vehicles, as appropriate, with alternative-fuel models, and aggressively pursue funding sources to facilitate a replacement program.
- A13.2 Offer “Fast Track Processing” for mixed-use development and development that reduces automobile dependence. Under fast Track Processing, the City will offer expedited permitting as incentive for mixed land use patterns and development that increases opportunities for walking, biking, and transit use.

- A13.3 Support and recognize businesses that participate in programs that supply their employees with contributions toward transit fares or employer-subsidized transit passes.

H. Cultural Resources

1. Background Information

Cultural resources in Oroville include both prehistoric and historic resources in the realms of archaeology, paleontology and historic structures, sites and areas that played important roles in local history.

a. Prehistoric Archaeological and Historic Resources

Prehistoric and historic archaeological resources in the Planning Area include: Native American habitation sites, temporary campsites, lithic reduction stations (stone tool making locations), milling stations, rock features and burial locations. To prevent possible looting and/or disturbance, the location of archaeological resources are not mapped.

A total of 33 sites with prehistoric components have been recorded within the City of Oroville SOI. Six of these sites contain historic components as well. The most common type of prehistoric site found in the City of Oroville SOI are milling stations at locations such as the Feather River Nature Center, followed by temporary campsites, habitation sites, burial locations and rock features. Two sites have known Native American burials.

Prehistoric sites are often found along major rivers in the Sacramento Valley, with their associated areas of high ground and natural levees. Prehistoric sites are also often found along the various creeks and minor drainages in the foothills of the Sierra Nevada Mountains and their adjacent interior valleys and grasslands. This pattern applies to the City of Oroville SOI, where prehistoric sites tend to be located along the Feather River, its tributaries and smaller drainages. In particular, the banks of the Feather River and its tributaries in the Historic Downtown, Hammon, Western Pacific, Canyon Highlands, northern Oakvale and Kelly Ridge areas are very sensitive for prehistoric archaeological resources.

Historic archaeological site types in the SOI include abandoned transportation corridors and alignments, and remnants of activities associated with historic mining, settlement and agriculture. For the purposes of this General Plan, historic archaeological resources are distinguished from historic resources (the built environment) largely by condition. That is, resources that are still functional (roads that are trav-

eled, ditches carrying water, standing structures) are considered part of the built environment. The remnants of these structures are considered archaeological resources.

Historic archaeological sensitivity is considered particularly high along the banks of the Feather River in the Historic Downtown, Hammon, Western Pacific, Kelly Ridge, Oroville Dam Area, Oro Bangor, Foothills and Oakvale areas.

b. Historic Resources

Historic resources generally include buildings, roads, trails, bridges, canals and railroads usually associated with the time period beginning with the first Euro-American contact. Because non-Native American settlement of the City of Oroville area dates to the 1840s, the city is rich in historic cultural resources. In general, concentrations of historic resources in the city are expected to occur:

- ◆ Adjacent to transportation corridors (historic highways, railroads, navigable sloughs);
- ◆ On historic ranches;
- ◆ In areas of historic rock, soil and mineral extraction; and
- ◆ Within historic neighborhoods and business districts.

Based on records searches, the largest concentration of historic buildings and structures occurs in the Historic Downtown Oroville area. Table OPS-3 lists known historic resources in the Historic Downtown area that are listed on or eligible for listing on national, state and local registers that could be located via readily available sources. The corresponding map, Figure OPS-4, indicates historic resources in the vicinity of Historic Downtown Oroville. A number of resources are of indeterminate location and/or outside of the downtown area, and, therefore, are not indicated on the map but are still identified in Table OPS-3. The map and table are the most comprehensive listing of resources in the Historic Downtown area currently available, but new resources are continuously located.

i. *Historic Properties in the State Database*

The Historic Property Data File Historic Resources Inventory (HRI), which is maintained by the State Office of Historic Preservation (SHPO), identifies properties that have been recorded and whether those properties are considered eligible or ineligible for listing in the National Register of Historic Places (NRHP). The listing for the City of Oroville indicates that over 150 properties within the City have been



Source Data: Jones and Stokes, 2006. City of Oroville GIS, 2005

FIGURE OPS-4
HISTORIC STRUCTURES IN HISTORIC DOWNTOWN OROVILLE

CITY OF OROVILLE
2030 GENERAL PLAN
OPEN SPACE, NATURAL RESOURCES, AND
CONSERVATION ELEMENT

TABLE OPS-3 **HISTORIC RESOURCES**

Map Ref. No.	Name of Resource	Address	Register
1	The Oroville Inn	2066 Bird Street	NRHP, CRHR
2	State Theater	1453 Myers Street	NRHP, CRHR
3	Oroville Public Library	1675 Montgomery Street	NRHP, CRHR
4	Gov Perkins Building	1864 Montgomery Street	NRHP, CRHR
5	Gardella Reece Building	1877 Montgomery Street	NRHP, CRHR
6	Fong Lee Co	1215 Lincoln Street	NRHP, CRHR
7	Hendee & Gaskill building	1347 Huntoon Street	NRHP, CRHR
8	Western Pacific Railroad Depot	2191 High Street	NRHP, CRHR
9	Oroville Chinese Temple	1500 Broderick Street	NRHP, CRHR, SHL
10	U.S. Post Office	1735 Robinson Street	NRHP, CRHR
11	Lott Museum-Sank Park	1067 Montgomery Street	PHI
12	Garrott's Saw Mill	2310 Montgomery Street	PHI
13	(No name provided)	1850 Montgomery Street	NRHP, CRHR
14	(No name provided)	1858 Montgomery Street	NRHP, CRHR
15	(No name provided)	1346 Myers Street	NRHP, CRHR
16	Old Oroville Commercial District (Historic District with 16 structures)	Montgomery Street	NRHP, CRHR
N/A	Mother Orange Tree of Butte County	400 Glenn Drive	SHL
N/A	Table Mountain Blvd Bridge	Table Mountain Boulevard	NRHP, CRHR
N/A	Discovery site of the last Yahi Indian	2547 Oroville Highway at Oak Avenue	SHL
N/A	Robinson's Corner	1617 Oroville Highway	NRHP, CRHR
N/A	Old Chinese Cemetery		PHI

TABLE OPS-3 HISTORIC RESOURCES (CONTINUED)

Map Ref.	Name of Resource	Address	Register
N/A	Oroville Cemetery	Lincoln Boulevard	PHI
N/A	Jewish Cemetery	1934 Feather River Boulevard	PHI
N/A	Chinese Cemetery		PHI
N/A	Bidwell Bar Bridge & Tollhouse		SHL
N/A	Oroville Ranger Unit HQ, #1	176 Nelson Avenue	NRHP, CRHR
N/A	Oroville Ranger Unit HQ, #2	176 Nelson Avenue	NRHP, CRHR
N/A	Oroville Odd Fellows Home Site	6 th Street	PHI
N/A	Bidwell's Bar	Bidwell Canyon Road	SHL
N/A	Long's Bar	Feather River	PHI
N/A	Briggs House/Ranch Complex (Historic District with nine structures)	1359 Oroville Highway	NRHP, CRHR

Notes:

N/A: Historic resources outside of Historic Downtown Oroville

NRHP = National Register of Historic Places

CRHR = California Register of Historical Resources

PHI = California Points of Historical Interest

SHL = California State Historic Landmark

Source: Jones & Stokes, 2007.

inventoried at some level. This includes a total of 54 properties or structures that are listed or appear to meet the criteria for listing in the NRHP and/or CRHR. The HRI also includes buildings identified as historically significant by local government agencies.

Most of the historic properties in Oroville are residential and commercial buildings. Oroville's historic resources include both individual resources such as the Oroville Inn as well as historic districts such as the Old Oroville Commercial District, which dates to the mid-1800s. Bridges (Table Mountain Boulevard Bridge), railroad features (Western Pacific Railroad Depot) and ranching structures (Granary for Biggs Ranch) are examples of engineering features that are located in the City of Oroville

in part or whole and are noted within the HRI as meeting significance criteria or specifically awaiting future formal determination. Sites, such as the location of the discovery of the last Yahi Indian, are listed in the HRI only when deemed prudent by the Office of Historic Preservation because of the low potential for vandalism.

ii. California State Historical Landmarks

California Historical Landmarks include sites that are of statewide historical importance and must be the first, last, only, or most significant of a type in a large geographical area. There are five resources in the City of Oroville that the State has designated as California Historical Landmarks. The first is the Chinese Temple (Landmark No. 770). Located in downtown Oroville, this landmark commemorates the temple of worship for 10,000 Chinese, then living in the area, at the time of the building's dedication in 1863. The second is the Discovery Site of the Last Yahi Indian (Landmark No. 809), located at 2547 Oroville-Quincy Highway, at Oak Avenue. The third is the Mother Orange Tree of Butte County (Landmark No. 1043). The fourth is the Bidwell Bar Bridge and Tollhouse (Landmark No. 314) and the fifth, currently located under Lake Oroville, is Bidwell's Bar (Landmark No. 330).

iii. California Points of Historical Interest

California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. To be eligible for designation as a Point of Historical Interest, a resource must meet at least one of the following criteria:

- ◆ The first, last, only, or most significant of its type in the state or within the local geographic region (city or county);
- ◆ Associated with an individual or group having a profound influence on the history of the local area; or
- ◆ A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer or master builder.

There are eight California Points of Historical Interest in the City of Oroville. They are:

- ◆ Lott Museum, Sank Park at 1067 Montgomery Street

- ◆ Garrott's Saw Mill, on the south side of the Feather River at Ophir City (now Oroville)
- ◆ The Old Chinese Cemetery
- ◆ The Oroville Cemetery
- ◆ The Chinese Cemetery
- ◆ The Jewish Cemetery
- ◆ Oroville Odd Fellows Home Site
- ◆ Long's Bar

c. Native American Sacred Sites

This section seeks to facilitate the preservation of the physical integrity of Native American sacred sites, as well as access to these sites, within Oroville.

The City of Oroville is required to conduct consultation with Native American tribes to aid in the protection of traditional and cultural places, or sacred sites, as required by Senate Bill 18 (SB 18) in Chapter 3 of the California Government Code. For the purposes of this Element, the term "sacred site" refers to any specific, discrete, narrowly delineated location that is identified by a Native American tribe, or Native American individual determined to be an appropriately authoritative representative of a Native American religion, as sacred by virtue of its established religious significance to, or ceremonial use by, a Native American religion.

Under the guidance of SB 18, the City's cultural resources consultant requested contact information from the Native American Heritage Commission on January 26, 2006. The NAHC responded by fax on February 16, 2006 providing contact information for six Maidu tribes: Berry Creek Rancheria of Maidu Indians, Enterprise Rancheria of Maidu Indians, Greenville Rancheria of Maidu Indians, Maidu Nation, Mechoopda Indian Tribe of Chico Rancheria, and Mooretown Rancheria of Maidu Indians.

On March 17, 2006, contact letters illustrating the project area, describing the results of the cultural resources records search, and inviting the tribes to consult with the City of Oroville regarding the General Plan Update were sent to all six contacts. Three tribes responded.

A representative from the Mechoopda Indian Tribe of Chico Rancheria responded in a letter dated May 9, 2006 withdrawing from consultation with the City regarding changes to the Oroville General Plan.

In a letter dated April 25, 2006, a representative of the Greenville Rancheria indicated that they were interested in consulting with the City regarding changes to the General Plan. The City of Oroville planning staff contacted the Greenville Rancheria in late December of 2007. A meeting was scheduled and held with Michael DeSpain, the representative of the Greenville Rancheria on January 4, 2008. City staff provided a summary review of the changes to the General Plan including sphere expansion and contraction area as well as land uses and densities. Mr. DeSpain indicated that the tribe was interested in promoting the overall stewardship of the land in terms of resource conservation. A concern over development in the Oroville area was the disturbance of mine tailings which could release residual mercury deposits left over from mining activities into the Feather River. Mr. DeSpain expressed a desire to see more public facilities, interpretive centers, or interpretive kiosks that provide information about the tribal history of the area. A copy of the Steering Committee Draft General Plan was provided to Mr. DeSpain with the expectation that additional written comments may be submitted.

A representative from the Enterprise Rancheria responded in a letter dated August 14, 2006, stating their interest in consultation with the City regarding changes to the General Plan. On December 19, 2007 the City of Oroville contacted Ren Reynolds of the Enterprise Rancheria to set up a meeting with the tribe to provide consultation on the City's General Plan. Mr. Reynolds needed to check with other tribal members before scheduling a meeting and would get back to the City. After the initial contact two additional attempts were made to schedule a meeting with Mr. Reynolds and representatives of Enterprise Rancheria. However, at the time of publishing the 2030 General Plan Public Review Draft, the City and Mr. Reynolds have not been able to meet. The City will continue its due diligence in attempting to meet with Mr. Reynolds and representatives of Enterprise Rancheria.

The City of Oroville values its Native American heritage and will continue to make City staff and representatives available for consultation with all Native American tribes in the Greater Oroville Area.

2. Goals, Policies, and Actions

Goal OPS-14 Preserve Oroville’s cultural resources, including archaeological, historic and paleontological resources, for their aesthetic, scientific, educational and cultural values.

Policies

- P14.1 Require consultation with the Northeast Information Center of the California Historical Resources Information System and completion of a records search as part of review of proposed development projects to determine whether the project site contains known prehistoric or historic cultural resources and/or to determine the potential for discovery of additional cultural resources and the necessity of further investigation.
- P14.2 Require applicants for projects identified by the Northeast Information Center as potentially affecting cultural resource sites or in need of further investigation to hire a consulting archaeologist or historian (as applicable) to conduct inventory and evaluation studies and develop a cultural resources mitigation plan and monitor the project to ensure that mitigation measures are implemented, as necessary.
- P14.3 Require that areas found during construction to contain significant historic or prehistoric archaeological artifacts be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation. Require that historic or prehistoric artifacts found during construction be examined by a qualified consulting archaeologist or historian to determine their significance and develop appropriate protection and preservation measures as necessary.
- P14.4 For projects involving federal land, or requiring federal permission (including review by the U.S. Army Corps of Engineers) or funding, work with applicants to meet appropriate criteria for cultural resources review, prior to commencement of work.

- P14.5 Consult with qualified paleontologists to identify and protect Oroville’s significant paleontological resources.
- P14.6 Support the City of Oroville Park Commission/City Council in providing direction for the Butte County Pioneer Memorial Museum, which helps preserve Oroville’s past and educate citizens.
- P14.7 If cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.
- P14.8 If human remains are located during any ground disturbing activity, work shall stop until the County Coroner has been contacted, and, if the human remains are determined to be of Native American origin, the NAHC and most likely descendant have been consulted.
- P14.9 Encourage development to avoid impacts to burial sites including:
- ◆ Designing or clustering development to avoid archaeological deposits that typically contain human remains and to avoid any known cemeteries or other concentrations of human remains.
 - ◆ Dedicating permanent conservation easements if subdivisions and other developments can be planned to provide for such protective easements.

Actions

- A14.1 Work with the State Office of Historic Preservation to conduct a formal, comprehensive inventory of historic resources in the built environment; if warranted, expand the existing Historic District to include newly identified historic resources.
- A14.2 Conduct a survey of structures in the Oroville area to determine any of historical or architectural significance to the City.

- A14.3 Develop guidelines for project review to ensure that potential impacts to cultural resources are minimized.

Goal OPS-15 Protect the City of Oroville’s Native American heritage.

Policies

- P15.1 Treat with respect and dignity any human remains discovered during implementation of public and private projects within the Planning Area and fully comply with the California Native American Graves Protection and Repatriation Act and other appropriate laws.
- P15.2 Support access to and ceremonial use by Native American religious practitioners of Native American sacred sites located in Oroville.
- P15.3 Consistent with California Senate Bill 18, the City shall consult with the California Native American Heritage Association to identify Native American tribes that may be interested in proposed new development and land use policy changes in the Planning Area.
- P15.4 The City and the Advisory Committee on Tribal Matters shall consult with concerned tribes regarding appropriate procedures to accommodate tribal concerns when a tribe has a religious prohibition against revealing precise information about the location or practice at a particular sacred site.
- P15.5 Support Tribal governments holding conservation easements over land voluntarily set aside for the protection of cultural places.
- P15.6 Encourage voluntary landowner efforts to protect cultural resource and tribal sacred sites consistent with State requirements.

Actions

- A15.1 In cooperation with the Advisory Committee of Tribal Matters (ACTM), create a confidential list of the locations of any Native American Sacred Sites in the Planning Area, and develop a plan to protect these sites from development.
- A15.2 Establish a management plan for any lands identified as having Native American Sacred Sites.
- A15.3 In collaboration with the Advisory Committee on Tribal Matters, develop a memorandum of understanding, setting forth the mutual understanding of the tribe and the City with regard to access and use of sacred sites on City land, confidentiality, and mutually acceptable procedures for notice when sacred site(s) may be potentially affected by its proposed actions, decisions, projects, or activities.

I. Energy Use and Greenhouse Gases

1. Background Information

Leading scientists around the world now agree that climate change is a reality and that human activities are disrupting the earth's climate by intensifying the greenhouse effect. A balance of naturally occurring gases in the atmosphere determines the Earth's climate by trapping solar heat through a phenomenon known as the greenhouse effect. Greenhouse gases like (CO₂), methane, nitrous oxide (N₂O), chlorofluorocarbons, and water vapor keep solar radiation from exiting our atmosphere. In a process very similar to the windows on a greenhouse, greenhouse gases trap so much heat that the temperature within Earth's atmosphere is rising.

Greenhouse gases are emitted by natural processes and human activities. Emissions from human activities, such as electricity production, motor vehicle use and agriculture, are elevating the concentration of greenhouse gases in the atmosphere, and have led to a trend of unnatural warming of the earth's climate, which is known as global warming or climate change. Emissions of CO₂ and N₂O are by-products of fossil fuel combustion from motor vehicle and electricity generation. N₂O is also associated with agricultural operations such as fertilization of crops. Methane is commonly created by off-gassing from agricultural practices (e.g. de-

composition of agricultural waste, keeping livestock) and landfill operation. Methane is over 21 times more potent than CO₂ as a greenhouse gas.

It is now apparent that the increasing atmospheric concentration of green-house gasses resulting from human activities is changing the climate in ways that pose serious risks to Oroville's health, economy and environment. Increased precipitation and rising sea levels could lead to increased flooding and more pressure on levee and flood control systems. Mass migration and/or loss of plant and animal species could also occur. Global climate change could also lead to more extreme heat waves and heat-related stress in Oroville; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding and drought; and increased levels of air pollution.

Addressing climate change will require the participation of all levels of government, all sectors of society and every individual. The State of California has taken steps, including Assembly Bill (AB) 32, the California Climate Solutions Act of 2006, which directs the California Air Resources Board to determine what the state-wide greenhouse gas emissions level was in 1990, and to develop and implement regulations that, by 2020, would achieve State-wide greenhouse gas emissions equivalent to 1990 levels. The emissions inventories and regulations required by AB 32 are currently being developed by the State.

Coping with climate change is ultimately part of the larger challenge of fostering sustainable communities. Climate change goals are more effectively accomplished when efforts are focused on integrating principles of sustainability within sectors such as transportation, buildings, ecosystems and water systems.

Using "green building" techniques, which incorporate energy-efficient design, recycled and non-toxic building materials, siting and landscaping to maximize passive heating and cooling opportunities, and incorporating water efficient systems and landscaping, can significantly reduce the environmental impacts of new development. On a wider scale, a sustainable community can be fostered by development patterns that reflect compact, neighborhood-oriented infill and clustered development that decreases urban sprawl, minimizes loss of open space and natural resource impacts, and encourages alternative modes of transportation.

The effects of climate change will be felt throughout all aspects of life in the city. While local action alone cannot solve the problem, the City of Oroville is committed at the local level to reduce its contribution to climate change. Because of the wide-ranging causes and effects of climate change, this General Plan addresses the

issue in several elements. While the aim is to provide a framework for addressing atmosphere and climate change, the detailed policies and programs that address climate protection are located throughout the Oroville General Plan.

Policies related to energy use and climate change are identified below and can also be found in the following elements:

- ◆ Land Use
- ◆ Circulation and Transportation
- ◆ Community Design
- ◆ Public Facilities

2. Climate Action Plan

The City of Oroville adopted a Climate Action Plan (CAP) in 2015 that focuses on reducing greenhouse gas emissions in Oroville. The CAP includes an inventory of 2010 greenhouse gas emissions and models 2020 business as usual forecasts of greenhouse gas emissions. The CAP also includes a target for reducing greenhouse gas emissions, strategies that will enable the City to meet that target, and a monitoring and implementation plan for those strategies.

3. Goals, Policies, and Actions

Goal OPS-16 Reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Oroville.

Policies

- P16.1 Implement the Climate Action Plan strategies, as feasible.
- P16.2 Promote land use patterns that reduce the number and length of motor vehicle trips.
- P16.3 Encourage a balance between jobs and housing, to the extent feasible.
- P16.4 Encourage higher density residential and mixed-use development adjacent to commercial centers and transit corridors.

- P16.5 Encourage employment areas to include a mix of supportive commercial services to minimize the number of employee trips.
- P16.6 Encourage retail and office areas to be located within walking and biking distance of existing and proposed residential developments.
- P16.7 Encourage new development to use construction materials that have been recycled or contain recycled content.
- P16.8 Encourage new development to provide above-ground and natural stormwater facilities, and to use building designs and materials that promote groundwater recharge.
- P16.9 Encourage new developments to have street systems that support the use of Neighborhood Electric Vehicles (NEV).
- P16.10 Require that new commercial and institutional development projects provide priority parking for electric vehicles, hybrid vehicles, alternative-fuel vehicles, and carpools.
- P16.11 Encourage businesses to install alternative-fuel infrastructure in parking lots.
- P16.12 Encourage energy conservation, waste reduction, and environmental sustainability in all City activities.
- P16.13 Promote and reward the energy efficiency efforts of local businesses through recognition on the City's website and other publicity.

Actions

- A16.1 Implement the Climate Action Plan and regularly monitor its effectiveness by conducting a recurring greenhouse gas emissions inventory. Adjust the Climate Action Plan as needed based on these calculations to ensure that the City is on track to meet its greenhouse gas emissions reduction target.

- A16.2 Install alternative-fuel infrastructure throughout the city, such as electric vehicle charging stations, and conduct periodic studies to ensure that facilities are appropriately responding to demand and technological change.
- A16.3 Purchase alternative-fuel, low-emission vehicles for the City's vehicle fleet.
- A16.4 Coordinate with the Butte County Air Quality Management District (BCAQMD) to prepare an anti-idling ordinance that will reduce idling by heavy duty vehicles.
- A16.5 Cooperate with the school districts to develop school access plans that substantially reduce automobile trips and congestion associated with schools. Plans could address necessary infrastructure improvements, expanded school bus service, replacement of older diesel buses with low or zero-emission vehicles, and funding sources, such as mitigation fees.

Goal OPS-17 Encourage conservation of energy resources and promote green building.

Policies

- P17.1 Conserve scarce or non-renewable energy resources and encourage the use of alternative energy sources.
- P17.2 Consider energy efficiency in architectural design when reviewing projects.
- P17.3 Encourage the development and expansion of alternative energy resources and industries such as solar and hydroelectric power.
- P17.4 Encourage new private and public development to maximize opportunities for use of passive or natural heating and cooling and encourage sites with solar opportunities to be designed with natural heating and cooling principles.

- P17.5 Encourage new residential development to meet the guidelines of the California Energy Star New Homes Program and be designed and constructed to exceed the 2013 State standards for energy efficiency (Title 24) by at least 15 percent; encourage new commercial development and civic buildings to exceed the 2013 State standards for energy efficiency (Title 24) by at least 15 percent.
- P17.6 Encourage solar-oriented and renewable design, as well as grid-neutral development (i.e. development that generates enough energy to offset its demands), by establishing standards for streets that are directionally oriented to facilitate roof faces that best accommodate solar panels and maximize their efficiency, based on the best available research.
- P17.7 New development shall comply with Green Building Standards adopted by the California Building Standards Commission at the time of building permit application.
- P17.8 Require all new municipal buildings of over 10,000 square feet in area to be constructed to achieve LEED Silver level certification at a minimum.
- P17.9 Use alternative energy sources, such as solar, for City facilities to set an example for others to follow.
- P17.10 Provide incentives for projects that include solar water heating and electricity generation.
- P17.11 All new residences sold with appliances shall be required to install all Energy Star-rated appliances. All new residences shall use compact florescent lights in all standard light installations. Installation of these measures shall be confirmed prior to the issuance of the building final occupancy.
- P17.12 Consider adopting additional measures that achieve a greater reduction in energy and water use reduction than required by State law, which may include, but not be limited to:
- ◆ Cool roofs.
 - ◆ Higher thermal insulation standards.

- ◆ Lower-flow fixtures.
- ◆ Tankless water heaters.
- ◆ High efficiency space cooling and heating systems.

P17.13 Encourage the use of passive solar design, renewable energy systems, including solar energy, and green building techniques to improve energy conservation and comfort in residential, commercial, and civic buildings.

Actions

- A17.1 Prepare and adopt a Green Building Strategy for Oroville. The Strategy should identify the best ways to encourage, incentivize and promote all aspects of “green building,” and include goals, policies and actions that seek to actively increase green building practices into development in Oroville. The strategy may consider and recommend standards for green building practices.
- A17.2 As an interim action, prior to completion of the Green Building Strategy, compile informational resources on green building techniques, and make that information available at the Planning Division and local library. As part of this effort, create a “green building” page on the City website, and provide information and links to internet resources, such as the U.S. Green Building Council and U.S. Department of Energy’s Building Technologies Program.
- A17.3 In cooperation with local utility providers, conduct an energy audit of City-owned facilities, and implement feasible energy-saving measures wherever possible. Such alterations may include automatic heating and cooling systems, insulation, energy-efficient lighting and natural ventilation.
- A17.4 Work with energy providers to encourage community-wide reductions in energy consumption through conservation practices.
- A17.5 Train all plan review and inspection staff in green building material options, techniques, and practices.

- A17.6 Develop streamlined permit processes for approval of small-scale wind and solar energy systems for on-site residential and commercial use.
- A17.7 Review and update the Zoning Code and building codes to allow for innovative energy-efficient technologies, provided they do not conflict with other goals in the General Plan.
- A17.8 Institute City purchasing policies that give preference, when feasible, to the purchase of energy-efficient products, products that contain recycled materials, and products that reduce waste generated.
- A17.9 Institute City purchasing policies that give preference to renewable energy, when feasible.

J. Military Installations

1. Background Information

Military installations include military bases and adjacent areas, equipment facilities, armories, depots, training routes and restricted airspaces. The National Guard has two operations at this facility in the Oroville Planning Area. The first is the California State – National Guard, Army, ORG Maintenance Shop 31. The second is the armory which supports Company A-297. Company A-297 does have a post for an on-site recruiter however this position is currently vacant.

2. Goals, Policies, and Actions

Goal OPS-18 Support military installations in the City of Oroville's Planning Area.
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Action

- A18.1 Work with the Department of Defense to understand how the City can best support the mission of the National Guard equipment facility and Doppler Radar unit.

8 PUBLIC FACILITIES AND SERVICES ELEMENT

The City of Oroville is committed to providing a high quality of life for its residents. The Public Facilities Element addresses the changing public services and infrastructure needs in Oroville and presents information and policy guidance to ensure adequate provision and maintenance of facilities and services in the City of Oroville.

Although the Public Facilities and Services section is not explicitly required by State law, the topics addressed here are an integral part of the City's overall planning strategy and a basic consideration in setting growth and development policy. Additionally, State law requires the Land Use Element to include "the proposed general distribution and general location and extent of the uses of the land for...solid and liquid waste disposal facilities" and it requires the Circulation Element to include information on "the general location and extent of existing and proposed...public utilities and facilities."

These required components are included in this Element, which is divided into the following ten sections:

- ◆ Police
- ◆ Fire
- ◆ Schools
- ◆ Libraries
- ◆ Government and Civic Facilities
- ◆ Water Supply
- ◆ Wastewater
- ◆ Stormwater Drainage
- ◆ Solid Waste
- ◆ Gas, Electric, and Communication Utilities

Each section is divided into two sub-sections, as follows:

- ◆ **Background Information:** Contains information on current facilities and public services in the City of Oroville.
- ◆ **Goals, Policies, and Actions:** Provides guidance to the City regarding public facilities and services decisions.

A. Police

1. Background Information

The Oroville Police Department (OPD) is a small but innovative organization that is fully committed to the community-oriented policing concept. Currently, the OPD provides service to a 13-square-mile area. It operates a single central police station located at 2055 Lincoln Street, and has 21 full-time sworn personnel, including a K-9 officer, and 14 full-time non-sworn positions. Additionally, the police department has three part-time sworn personnel, two part-time non-sworn positions and three volunteers. The location of the police station can be found on Figure PUB-1.

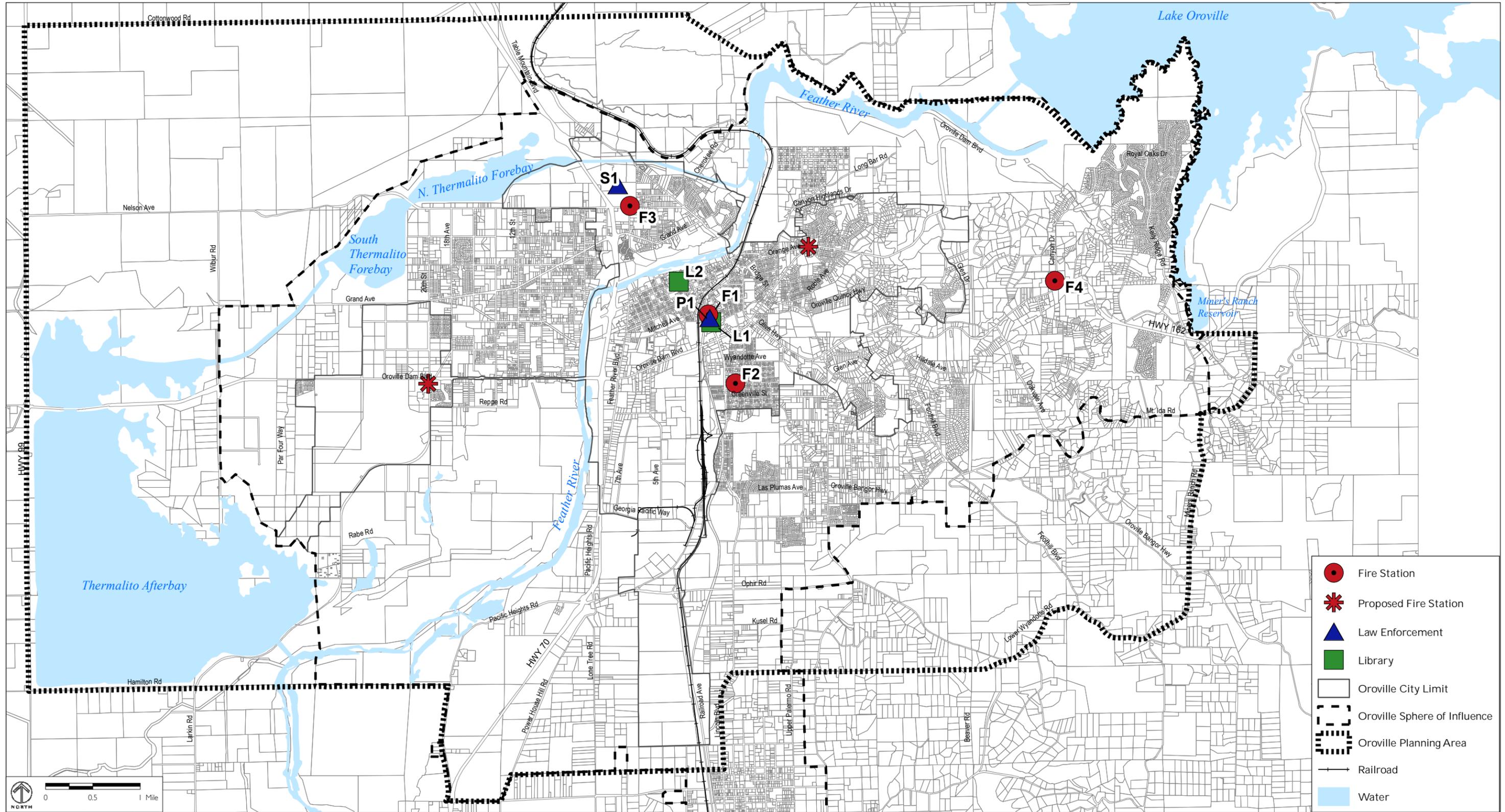
Currently, the OPD is meeting its goal of a response time of less than 4 minutes for all emergency responses and 20 minutes for non-emergencies. However, in 2004, Oroville's crime averaged 9.84 incidents per 100 persons compared to the national average of 3.98 crimes per 100 persons. Most of the crime in Oroville is theft related. The total amount of vehicle thefts, larceny thefts and burglaries in Oroville results in 8.3 crimes per 100 people of the City's total crime rate of 9.8 crimes per 100 people. As a result, there is discussion in the OPD, and in the City generally, as to possible causes of this elevated crime rate.

The OPD does not have any planned facility expansions. However, the OPD has not been fully staffed in nearly a decade, so there is a need to hire additional trained officers. The OPD began recruiting new hires in December 2007.

The area within the County, but outside the City of Oroville is within the jurisdiction of the Butte County Sheriff's Office. The Butte County Sheriff's Office and the Oroville Police Department work together on occasion but generally do not police the other's jurisdiction.

2. Goals, Policies, and Actions

Goal PUB-1	Maintain a safe environment in Oroville through the provision of law enforcement services, crime prevention and the creation of community partnerships for public safety.
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Source: City of Oroville GIS, 2005.

LAW ENFORCEMENT

- P1: Oroville Police Department
 - S1: Butte County Sheriff Department
- LIBRARY**
- L1: Butte County Library, Oroville Branch
 - L2: Butte County Public Law Library

FIRE STATION

- F1: Oroville Fire Department
- F2: El Medio Fire Department
- F3: Butte County Fire Department Station #63
- F4: Butte County Fire Department Station #64

FIGURE PUB-1

PUBLIC SERVICES

Policies

- P1.1 Provide law enforcement services that help to maintain a low occurrence of criminal activity within the community.
- P1.2 Cooperate with other federal and State law enforcement agencies and the Butte County Sherriff's Department to enhance public safety.
- P1.3 Support crime prevention efforts of community groups, such as neighborhood watch.
- P1.4 Endorse and support drug and gang prevention programs for youths.
- P1.5 Development proposals should be designed consistent with the principles of Crime Prevention through Environmental Design, including delineating private and public spaces, enhancing visibility, controlling property access, and ensuring adequate property maintenance.
- P1.6 Maintain crime prevention and community awareness education programs to serve Oroville's existing population and businesses as well as any future growth.

Actions

- A1.1 Regularly review staffing levels and response times relative to development trends to determine whether additional law enforcement staffing or facilities are needed.
- A1.2 Consider creating citywide Community Facilities Districts (CFDs) to fund police and other services.

B. Fire

The City of Oroville and the surrounding area are served by two separate fire departments, the City of Oroville Fire Department, the Department of Forestry and Fire Protection/Butte County Fire Department and the El Medio Fire

Protection District. Figure PUB-1 shows the location of the fire stations within the Planning Area.

a. City of Oroville Fire Department

The City of Oroville Fire Department (OFD) was established in 1856, and today consists of 18 full time sworn officers, one full-time administrative assistant and 10 part-time fire interns. The OFD provides all emergency services and customer services for Oroville. In 2003, the OFD responded to 3,301 emergencies and public service calls.¹

The OFD is committed to meeting Oroville citizens' needs by maintaining service levels that include:

- ◆ Place a first-due unit at scene within five minutes travel time for 90 percent of the city's population.
- ◆ Locate and staff department units such that an effective response force of four units with eight personnel minimum shall be available to all areas of the City within a maximum of ten minutes travel time for 90 percent of all structure fires.
- ◆ Continue to explore methods that improve fire-based emergency medical care including Advanced Life Support/Paramedic services.
- ◆ Enhance strategies to ensure the efficient and effective delivery of Fire and Life Safety education to help improve the overall health and safety of the community.

b. California Department of Forestry and Fire Protection/Butte County Fire Department

Butte County Fire Department (BCFD) is made up of a combination of career and citizen volunteer firefighters. Butte County Fire Department serves the City of Oroville and its surroundings through an automatic and mutual aid agreement.

The Butte County Fire Department (BCFD) contracts for staff with the California Department of Forestry and Fire Protection (CAL FIRE). Under this contract the County pays CAL FIRE salaries and benefits, as well as other related costs, to staff County-owned fire stations and apparatus. CAL FIRE/BCFD provides service to

¹ City of Oroville's website. <http://www.cityoforoville.org/fire.html>, accessed June 6, 2006.

the entire county, with the exception of Chico, Oroville, Paradise, and the El Medio Fire Protection District located in Oroville.

CAL FIRE/BCFD services include fire control; emergency medical service, technical rescue response; hazardous materials response; flood control assistance; fire prevention and public safety education; fire law enforcement/arson investigation; and vegetation management. In addition, the CAL FIRE/BCFD operates county-wide dispatch services, coordinates major emergency response within the county as the mutual aid coordinator, and provides training for career and volunteer fire fighters.

CAL FIRE/BCFD has 42 fire stations, 64 fire engines, one ladder truck, two heavy rescues, 16 water tenders, and two bulldozers. The CAL FIRE/BCFD also has a range of other apparatus including air tankers, fire suppression plane, rescue squads, breathing support units and hazardous materials units.² CAL FIRE/BCFD stations #63 and #64 are located within the Planning Area and serve the unincorporated areas. CAL FIRE/BCFD stations #71 and #72 are located outside the Planning Area, but do serve areas within the Planning Area due to their close proximity.

c. El Medio Fire Protection District

The El Medio Fire Protection District operates a single station located in South Oroville. Six full-time fire fighters and 20 volunteers staff the station. The El Medio Fire Protection District covers approximately 2 square miles. The District provides response to structural, vegetation, vehicle and other unwanted fires, medical aid and other rescue services to over 4,000 people in their district. The CAL FIRE/BCFD ECC provides dispatch services for the El Medio Fire Protection District.

² Butte County Fire Department's website. <http://buttefire.org/>, accessed on July 27, 2006.

2. Goals, Policies, and Actions

Goal PUB-2 Provide adequate fire protection and emergency response services.

Policies

- P2.1 Maintain and enhance strategies to ensure adequate first response travel time of three to five minutes to incidents and travel time of ten minutes or less for additional resources within 90 percent of the call volume.
- P2.2 Support existing established mutual aid agreements between the City and Butte County Fire Department, El Medio Fire District, and Butte County Fire Department/California Department of Forestry and Fire Protection.
- P2.3 Enforce all relevant fire codes and ordinances.
- P2.4 Require all new development to use fire-safe building materials and early warning systems, and install sufficient water supply systems for fire suppression, consistent with State Building Code.
- P2.5 Strive to comply with Insurance Services Office (ISO) recommendations for fire engine response within the built areas of the City.
- P2.6 Ensure that new development incorporates adequate emergency water flow, fire resistant design and materials, and evacuation routes; is accessible to emergency vehicles; and does not affect the ability of service providers to provide adequate emergency response.
- P2.7 No new development or redevelopment will be occupied until the water flow capacity and pressure systems conform to current standards.
- P2.8 Support all efforts to improve water availability at all locations that have flows considered inadequate for fire protection.

- P2.9 Encourage the Oroville Fire Department to regularly review and update the five-minute response time map regularly.
- P2.10 Pursue the most effective and cost conservative methods of providing fire protection, including the exploration of contract services with adjoining departments.
- P2.11 Ensure that new development incorporates adequate emergency water flow.

Actions

- A2.1 Consider creating citywide Community Facilities Districts (CFDs) to fund fire and other services.
- A2.2 Regularly review building codes to ensure that all changes have been adopted.
- A2.3 Conduct a study of fire-flow capacity and pressure of the water systems throughout the Planning Area to identify areas where improvements are needed.

C. Schools

1. Background Information

The City of Oroville and its Planning Area are served by five separate school districts for both elementary and high school aged students. These are the Oroville City Elementary School District, the Oroville Union High School District, Palermo Union School District, Thermalito Union School District and Biggs Unified School District. The location of school districts and schools can be found in Figure PUB-2. In recent years some of these school districts have experienced declining enrollment. However, it is anticipated that number of school age children will eventually increase over the next 25 years.

a. Oroville City Elementary School District

The Oroville City Elementary School District (OCESD) operates eight schools that serve students in preschool through eighth grade.

- ◆ Sierra Del Oro Preschool
- ◆ Bird Street School

- ◆ Oakdale Heights Elementary School
- ◆ Ophir Elementary School
- ◆ Stanford Avenue Elementary School
- ◆ Wyandotte Avenue Elementary School
- ◆ Central Middle School
- ◆ Ishi Hills Middle School

Currently, the OCESD's enrollment is in decline. Enrollment has dropped by approximately 100 students per year for the past ten years. In 2006, the OCESD closed Eastside Elementary School, a school of approximately 100 students, due to declining enrollment. For the 2007-2008 school year, all the schools in the OCESD were enrolled below capacity with the exception of Oakdale Heights Elementary School and Wyandotte Avenue Elementary School. The OCESD anticipates that the number of school age children will eventually increase at an annual rate of 1.12 percent.³ It is expected that there will be 669 additional elementary school students and 250 additional middle school students in the OCESD by 2025. In general, students in the district make up a diverse population.

b. Palermo Union School District

Palermo Union School District (PUSD) is located in Palermo, just south of Oroville. It is a "School of Choice District," which means that it has an open enrollment policy within the PUSD boundaries.

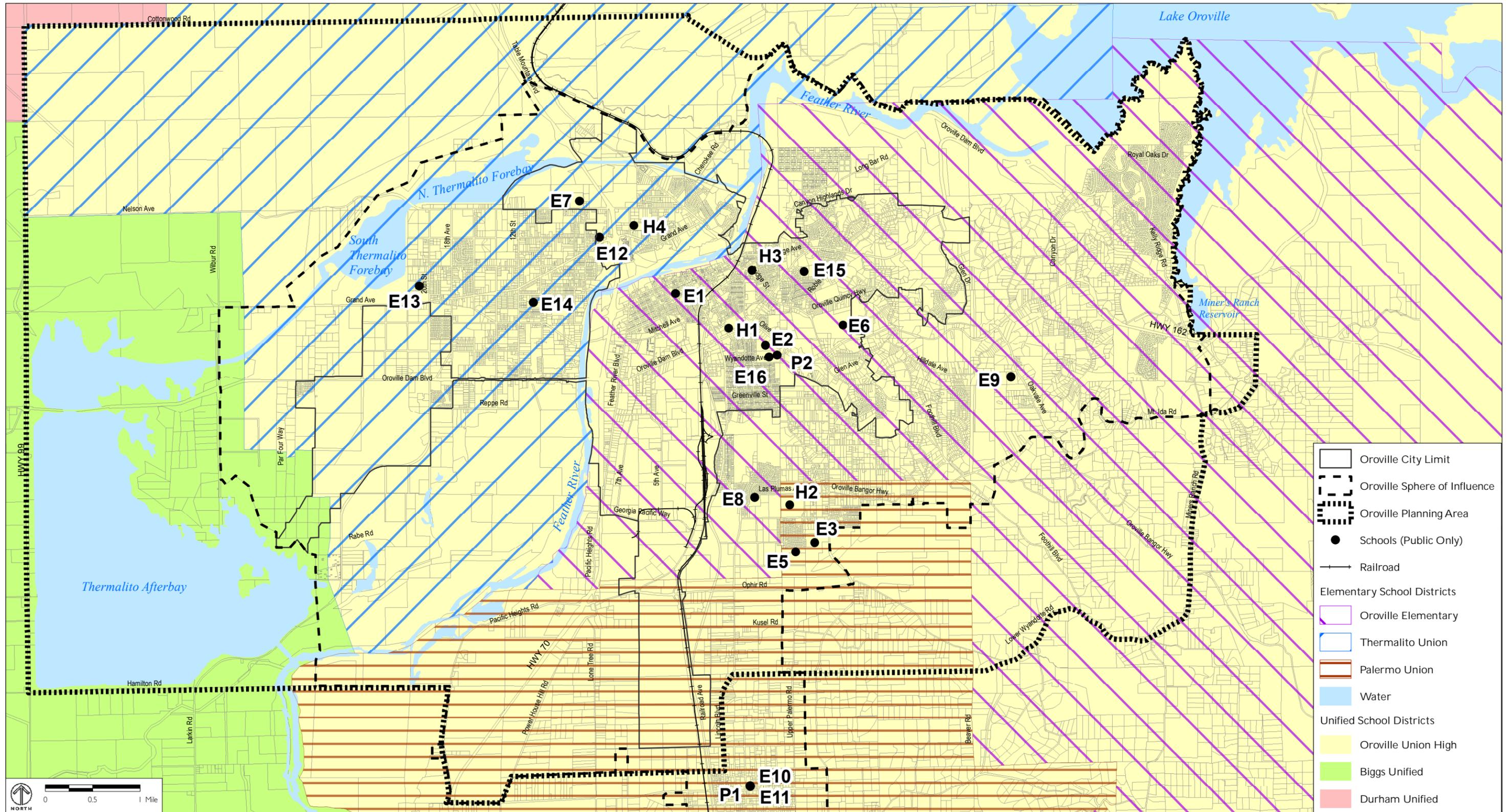
The PUSD operates six schools which include:

- ◆ Palermo Pre-School
- ◆ Helen M. Wilcox Elementary
- ◆ Honcut Elementary
- ◆ Golden Hills Elementary School
- ◆ Palermo Middle School
- ◆ Palermo Community Day School

Total enrollment during the 2007-2008 school year was 1,347 students.⁴ In addition, the PUSD runs independent/home study programs, the Palermo

³ Andy Dunn, Associate Superintendent, Oroville City Elementary School District. Personal E-mail communication with Carey Stone, DC&E, December 7, 2007.

⁴ Gail Shirley, Business Manager, Palermo Union School District. Personal e-mail communication with Carey Stone, DC&E, December 4, 2007.



Source: City of Oroville GIS, 2005.

*denotes school outside of the map

PRE-SCHOOLS

- P1 Palermo Pre-school
- P2 Sierra del Oro Center

ELEMENTARY/MIDDLE SCHOOLS

- E1 Bird Street School
- E2 Central Middle School
- E3 Helen Wilcox School
- E4 Honcut Elementary School*
- E5 Golden Hills Elementary School
- E6 Ishi Hills Middle School
- E7 Nelson Middle School
- E8 Oakdale Heights School

HIGH SCHOOLS

- E9 Ophir Elementary School
- E10 Palermo Community Day School
- E11 Palermo Middle School
- E12 Plumas Avenue School
- E13 Poplar Avenue School
- E14 Sierra Avenue School
- E15 Stanford Avenue Elementary School
- E16 Wyandotte Avenue Elementary School

HIGH SCHOOLS

- H1 Challenge Charter High School
- H2 Las Plumas High School
- H3 Oroville High School
- H4 Prospect High School/OUHSD Community Day School

FIGURE PUB-2

SCHOOLS AND SCHOOL DISTRICTS

Pre-School Program and the Palermo Children's Center.⁵ Of the schools in the district, only Helen M. Wilcox currently exceeds the capacity of the school with 592 students enrolled and a capacity of 460 students. Future enrollment in the PUSD is expected to increase annually and is projected to reach 1,918 students by the 2015-2016 school year.

c. Thermalito Union School District

The Thermalito Union School District (TUSD) is located west of the Feather River above the Oroville State Wildlife Area. The TUSD serves approximately 1,450 students from kindergarten to eighth grade at four conventional schools, two day-schools, and a home study program.⁶ Total enrollment during the 2007-2008 school year was 1,445 students.⁷ Enrollment projections and capacity information for the TUSD were not available at the time of publication of this report. The four conventional schools operated by the TUSD are:

- ◆ Poplar Avenue Elementary School
- ◆ Sierra Avenue Elementary School
- ◆ Plumas Avenue School
- ◆ Nelson Avenue Middle School
- ◆ Heritage Community Day School

d. Oroville Union High School District

Oroville Union High School District (OUHSD) contains two comprehensive high schools, one charter high school, a community day school, and a continuation high school. The OUHSD draws from an area of approximately 670 square miles and from five different elementary school districts. In 2007-2008, the District enrolled approximately 3,000 students from ninth to twelfth grades.⁸ Currently, all the schools are operating below capacity and the District projects future enrollment to decline through 2015. The following is a list of the District's existing schools:

- ◆ Challenge Charter High School
- ◆ Las Plumas High School

⁵ Palermo Union School District's website. http://www.palermoschools.org/Schools/General_Information/index.html, accessed June 12, 2006.

⁶ Thermalito Union School District's website. <http://www.thermalito.org/default.htm>, accessed June 13, 2006.

⁷ David McCready, Director of Finance, Thermalito Union School District. Personal e-mail communication with Carey Stone, DC&E, December 18, 2007.

⁸ Dwayne Robinson, Superintendent of Oroville Union High School District. Personal e-mail communication with Carey Stone, DC&E, December 4, 2007.

- ◆ Oroville Adult Education Career and Technical Center
- ◆ Oroville High School
- ◆ OUHSD Community Day School
- ◆ Prospect High School

e. Biggs Unified School District

The Biggs Unified School District (BUSD) serves a small portion of the southwestern corner of the SOI and Planning Area. Currently, the BUSD serves 850 students from kindergarten through twelfth grade in six schools.⁹ Enrollment projections and capacity information for the BUSD were not available at the time of publication of this report. The six schools that make up the District are:

- ◆ Biggs Elementary School
- ◆ Biggs Middle School
- ◆ Biggs High School
- ◆ Biggs Intermediate and Secondary Community Day Schools
- ◆ Richvale Elementary School

2. Goals, Policies, and Actions

Goal PUB-3 Provide educational facilities in Oroville sufficient to meet the demands of existing and new development.
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Policies

- P3.1 Collaborate with all area school districts in their efforts to provide quality public education services to Oroville residents.
- P3.2 Support and cooperate with the Oroville Planning Area school districts in planning for and providing educational services, school facilities with sufficient capacity, and District-wide support facilities to meet the needs of current and projected future student enrollments and employees.
- P3.3 New development shall be responsible for payment of fees or the construction of school facilities to meet the school facility

⁹ Biggs Unified School District's website. <http://www.biggs.org/>, accessed July 28, 2006.

needs generated by the project, to the extent permitted by State law.

- P3.4 To the extent allowed by State law, the City shall ensure that school facilities to serve new development are available concurrently with need.
- P3.5 In consultation with the school districts, continue to monitor student enrollment projections and projected school capacities for use in determining whether mitigation measures are appropriate. The City and school districts shall identify, establish and implement additional measures to fully mitigate the impacts of new development on the school system.
- P3.6 Ensure that access to all utilities and services, including sewer, water, gas, electricity, and drainage, are provided to school sites at the time new schools are to commence operations.
- P3.7 Continue to forward all development proposals, rezoning requests, and/or General Plan amendments to the appropriate school district for review and response. When such information is available, notify the appropriate school district of proposed development on federal property not under the City's jurisdiction.
- P3.8 Require that all subdivision and parcel maps address the need for dedication and reservation of school sites where a future site is identified in this General Plan.
- P3.9 Locate schools centrally to student populations through physical and functional integration of schools into their surrounding neighborhoods. School locations should be:
- ◆ Centrally located within residential neighborhoods;
 - ◆ Central to the anticipated attendance area to minimize walking distances;
 - ◆ Located to minimize the number of students having to cross major natural or artificial barriers to reach the school; and

- ◆ Located with direct access to an existing or planned collector or minor arterial street, with additional access to a second road.

P3.10 Use as general guidelines the following acreages for planned schools:

Approximate School Site Sizes

Elementary Schools	5-10 Acres
Middle Schools	20 Acres
High Schools	40 Acres
Continuation High Schools	8 Acres

P3.11 Work with the school districts to ensure that all school sites meet State Department of Education site review requirements. (7.20g)

P3.12 Wherever possible, school sites should be cooperatively developed with parks, recreation and open space facilities to promote a diverse array of experiences as part of the educational process and provide additional recreational opportunities for the community at large.

P3.13 The City shall coordinate with local school districts on the siting and design of school sites in order to facilitate private and public transportation vehicle access and pedestrian and bicycle routes that promote safe and hazard-free access and egress to schools. The City shall continue to apply for funds from the Safe Routes to School program.

P3.14 Allow private schools in areas designated for land uses that allow public and semi-public uses. The general locational criteria for schools in Policy P3.7, P3.9, P3.12, and P3.13 should be applied to private as well as public schools.

P3.15 Support the Oroville school districts' efforts to secure funding for education and the construction of facilities from State and local agencies.

Actions

- A3.1 Work with the local school districts to establish a school impact mitigation program that is coordinated with the City and designed so that funding requests from Oroville Planning Area school districts receive highest priority under the State Lease-Purchase Program.

D. Libraries

1. Background Information

Butte County Library System operates the main library branch in Oroville. Additionally, there is the Butte County Public Law Library which was established by state legislation and is funded by civil filing fees.

a. Butte County Library System

The Butte County Library System is made up of six branch locations, including the Oroville Branch Library (OBL). As shown in figure PUB-1, the OBL is located on the corner of Lincoln Boulevard and Mitchell Avenue and houses the administrative offices for the entire County System as well as the literacy department.¹⁰

The OBL is open Tuesday through Sunday and offers services including internet access, inter-library and branch-to-branch loans, videos, CDs and tapes, books by mail, research search engines, children's programs, online book clubs and monthly book discussions.¹¹ The OBL is funded by the County and through property tax it receives as a county special district. Monies are also received from a State public library fund.

Recent population growth in Oroville has translated to a 14 percent increase in circulation rates since 2005. However, while use of the OBL has increased, expanded usage is constrained because of limited funding and space.

¹⁰ Butte County Library, Oroville Branch's website. <http://www.buttecounty.net/belibrary/Oroville.htm>, accessed June 8, 2006.

¹¹ Butte County Library, Oroville Branch's website. <http://www.buttecounty.net/belibrary/Oroville.htm>, accessed June 8, 2006..

b. Butte County Public Law Library

The Butte County Public Law Library, located in downtown Oroville at the southwest corner of Montgomery Street and Oak Avenue, is one of two county public law libraries north of Sacramento. Public law libraries, established by state legislation, are mainly funded by civil filing fees and are administered by counties. The mission of public law libraries is to provide free access to legal materials to all persons interested in the law. The Butte County Public Law Library has two staff members, three public computers, and a small conference room. About 18 people visit the library daily.¹²

2. Goals, Policies, and Actions

Goal PUB-4 Provide sufficient library service to meet the informational, cultural, and educational needs of the population of Oroville.

Policies

- P4.1 Work with the Butte County Library system to ensure that adequate funding is available to continue the level of services currently provided by the Oroville Public Library.
- P4.2 Partner with the County, other agencies, and library support organizations to provide high-quality library facilities and services.
- P4.3 Support the Butte County Library efforts in renewing county-wide sales tax library financing.
- P4.4 Maintain or expand City funding of library operations as the City budget allows.
- P4.5 Promote the multi-functional use of Oroville's Public Library as an information and technology center for lifelong learning, as well as its use as a community center.

¹² John Zorbas, Law Library Director, Butte County Public Law Library. Personal communication with Carey Stone, DC&E, February 1, 2008.

E. Government and Civic Facilities

1. Background Information

Oroville City Hall, located at 1735 Montgomery Street, houses the majority of City departments and is the primary place where residents and business owners address City-related business. The following departments are located at City Hall: Administration, City Clerk, Personnel, Community Development & Public Works, Finance, Parks and Trees, and Business Assistance/Housing Development. Although the majority of City departments are located at City Hall, only 24 of the 107 City employees work there. Civic facilities outside of City Hall include the police and fire stations (both located at 2055 Lincoln Street) and public works corporation yard.

In order to streamline government services and create a one-stop service counter for development, the front counter at City Hall is consolidated and managed under the guidance of the City's Building Official. Community members may also attend the twice monthly City Council meetings at City Hall, the first and third Tuesday of each month.

2. Goals, Policies, and Actions

<p>Goal PUB-5 Maintain facilities and staff adequate to provide a high level of government services and administration for the residents of Oroville.</p>

Policies

P5.1 Ensure a high level of responsiveness, customer service, and continuous improvement of services to City residents.

Actions

A5.1 Conduct a study for the development of a new City Hall complex that provides adequate space for all administrative, public safety and law enforcement functions of Oroville.

A5.2 Periodically review and update space requirements and staffing for City government services to assess the need for additional services or facilities.

F. Water Supply

1. Background Information

The City of Oroville does not provide water service directly. Oroville is served by three local domestic water providers: the California Water Service Company, South Feather Power and Water, and the Thermalito Water and Sewer.

a. California Water Service Company – Oroville District¹³

The California Water Service Company – Oroville District (Cal Water Oroville) supplies water to a large extent of Oroville south of the Feather River, including the Historic Downtown, the closest portion of the eastern foothills and South Oroville. In 2005, the population served by Cal Water Oroville was estimated at 10,000 individuals and is projected to increase to approximately 16,700 individuals by the year 2025. Although the district's boundaries are fixed, there are a significant number of vacant and undeveloped lots where growth would occur in the future.

In 2004, Cal Water Oroville treated and distributed just over 1.1 billion gallons of water. Approximately 30 percent of their water supply is drawn from groundwater pumped from four wells, with the rest coming from surface water sources including the west fork of the Feather River.¹⁴ The surface water resources are purchased from PG&E and are then processed through a conventional treatment plant. Currently, there is no set limit on the amount of water that may be purchased. Cal Water Oroville operates four wells, a treatment facility, and distribution pipeline. Currently, there are no plans for expansion of the water treatment facility.

Currently, Cal Water Oroville has a production potential of 10.7 million gallons per day (MGD), an amount more than adequate to meet the current maximum daily water demand of 6.3 MGD for the Cal Water Oroville area. It is projected that maximum daily water demand in the Cal Water Oroville will reach 10.5 MGD by the year 2025, which will approach the combined production potential for ground and surface water.

¹³ Unless otherwise noted, all information presented in this section comes from Butte County LAFCO Municipal Service Review, Domestic Water and Wastewater Services, February 2006.

¹⁴ City of Oroville, 2004, *Housing Element of the General Plan 2003-2008*.

b. South Feather Water and Power Agency

South Feather Water and Power Agency supplies water to the eastern and southern portions of the City and SOI.¹⁵ Formerly called the Oroville-Wyandotte Irrigation District, South Feather Water and Power Agency serves a district of approximately 17,000 residents, the majority of whom reside in the SOI and Planning Area. The Agency has approximately 6,700 domestic accounts and 600 irrigation accounts, supplying water for agricultural, residential, industrial and commercial purposes. Water is sourced from the South Fork of the Feather River and from the Yuba River system, and is stored in reservoirs at Little Grass Valley, Sly Creek, Lost Creek, Ponderosa, Miner's Ranch, and Lake Wyandotte comprising approximately 171,500 thousand acre feet (TAF) of storage capacity.¹⁶ The Agency also has four treated water storage tanks with a combined capacity of 5.2 million gallons.

South Feather Water and Power Agency delivers approximately 28,000 TAF of water annually, and has the capacity to treat approximately 14.5 MGD. The Agency has begun a strategic planning process to accommodate growth within the Agency's SOI, including a strategic financial plan for funding rehabilitation, improvement and expansion of infrastructure.

c. Thermalito Water and Sewer District¹⁷

Thermalito Water and Sewer District (TWSD) serves areas of the City of Oroville to the north and west of the Feather River as well as adjacent unincorporated areas of Butte County. The TWSD serves approximately 9,500 individuals and anticipates this number to increase to 15,272 by the year 2025, based on growth rates given by the Butte County Association of Governments (BCAG). Currently, multiple large subdivision developments are proposed and under construction on the west side of the Oroville Municipal Airport, part of which is within the TWSD's service area. Additionally, significant growth is anticipated in the TWSD's service area north of the Thermalito Diversion Canal within unincorporated Butte County.

¹⁵ Glaze, Mike, General Manager, South Feather Water and Power Agency. Email communication with Brian Holland, DC&E, January 5, 2007.

¹⁶ Butte County LAFCO Municipal Service Review, Domestic Water and Wastewater Services, February 2006.

¹⁷ Unless otherwise noted, all information presented in this section comes from Edwards, Mike, Compliance Officer, Thermalito Water and Sewer. Personal phone communication with Joanna Jansen and Chad Markell, February 14, 2008.

TWSD has rights to approximately 8,200 acre feet of surface water from Concow Lake/Wilmore Reservoir with a 3.0 MGD backup supply coming from four wells, as needed. Total water consumption is currently 2.5 MGD annually for the TWSD and is expected to grow to just over 5.0 MGD by 2025. The District's water supply is sufficient to meet this future demand as it has secured water rights to 7.3 MGD annually. The capacity of the water treatment plant was recently expanded to 10 MGD. This is sufficient to meet current demand.

In addition to a water treatment plant and four wells, the District has approximately 50 miles of water distribution pipe that range in age from 27 to 65 years. Aging pipelines are being replaced in phases. Although TWSD has sufficient water supply, limited infrastructure outside TWSD may have insufficient flow capacity to support new development. Impact fees are collected to improve the water treatment plant, but are not collected to install new pipelines. Developers are required to either upgrade existing infrastructure or dig wells to supply new development within TWSD's SOI.

2. Goals, Policies, and Actions

Goal PUB-6	Provide sufficient supplies of high quality water to City residents and businesses to serve the City in the most efficient and financially-sound manner.
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Policies

- P6.1 Ensure that Oroville's potable water distribution and storage system is adequately sized to serve development allowed by the General Plan, without providing excess capacity.
- P6.2 Encourage Cal Water, South Feather Water and Power, and Thermalito Water and Sewer District to focus water system planning to that area which is contained within the city limit, the City's Sphere of Influence and areas that expected to be annexed by the City.
- P6.3 Encourage Cal Water, South Feather Water and Power, and Thermalito Water and Sewer District to begin planning and implementing additional water systems and supply improvements needed to meet future demand generated by this

General Plan at least four years prior to reaching the capacity of existing facilities.

- P6.4 Require the installation of water lines concurrently with construction of new roadways to maximize efficiency and minimize disturbance due to construction activity.
- P6.5 Work with LAFCo to support the coordination of special districts providing water service to adjust service area boundaries where beneficial.
- P6.6 Ensure that all proposed developments can be adequately served by available water supplies.
- P6.7 Ensure that all new development is consistent with and meets the requirements of Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) prior to approval of City Council.
- P6.8 Condition new development on the availability of sufficient water supply, storage, and pressure requirements for the City.
- P6.9 Support water conservation measures by working with the water districts and water companies to implement water conservation policies and measures.
- P6.10 Encourage the use of drought-resistant landscaping and the use of reclaimed wastewater for agriculture and landscape irrigation supply water. Ensure that all reclaimed wastewater complies with State wastewater treatment and reclamation regulations and standards.
- P6.11 Support all efforts to encourage water conservation by Oroville residents and businesses, and public agencies, including working with water providers, to implement water conservation programs and incentives that facilitate conservation efforts.
- P6.12 Continue to participate in regional groundwater basin planning efforts to determine the carrying capacity of the groundwater aquifer and ensure that future demand for water does not overdraft the groundwater supply.

Actions

- A6.1 Conduct a study of using reclaimed wastewater for irrigation of public landscaping and for agriculture.
- A6.2 Coordinate with water providers to develop a list of feasible water conservation programs and incentives that might be offered to the City's customers, and develop related strategies for how the City might support providers' efforts in implementing these programs.
- A6.3 Update city landscaping requirements to implement the water conservation policies and measures in this General Plan.

G. Wastewater

1. Background Information

The City of Oroville and the Planning Area are served by three wastewater collection agencies: the City of Oroville, Thermalito Water and Sewer District, and the Lake Oroville Area Public Utility District. These three agencies have a Joint Powers Agreement with the Sewerage Commission-Oroville Region to handle wastewater treatment and disposal.

a. City of Oroville

The City of Oroville currently provides wastewater collection services to individuals within the city limits. Average dry wastewater flows were 1.7 MGD in 2007 and are expected to grow to approximately 6.5 MGD by 2030 as residential, commercial and industrial development occurs throughout the City's planning area. Peak Wet Weather Flow (PWWF), defined as a peak instantaneous flow rate occurring during a 10-year reoccurrence interval storm event, was 11.3 MGD in 2007 and is expected to grow to 20.7 by 2030.¹⁸

The City's Engineering Division of the Community Development/Public Works Department is responsible for the City's system and operates approximately 66 miles of sanitary sewer line with approximately 1,350 manholes and over 11,000 feet of force main. The City also maintains seven sewer lift stations.¹⁹ Figure

¹⁸ City of Oroville, January 2013, *Final Draft Sanitary Sewer Master Plan*.

¹⁹ City of Oroville, January 2013, *Final Draft Sanitary Sewer Master Plan*.

PUB-3 illustrates the locations of sewer collection infrastructure, including pipes and lift stations.

The City's collection system discharges into the SCOR main interceptor pipe for treatment at SCOR's plant. Generally, the City's collection system is in good condition, except for isolated areas of older pipe. Any discovered problems are rehabilitated through the ongoing repair and upgrade program. In 1996, the City repaired 9,160 linear feet of sanitary sewer pipe that contained 2,300 defects.²⁰ The City's collection system is generally sufficient to meet current demands. However, these pipelines are not large enough to support additional growth. A capacity analysis conducted for the City's collection system as part of the City's Sanitary Sewer Master Plan update found that 35 percent of the manholes and 11 percent of the sewer pipes are undersized to convey anticipated flows in 2030. The Sanitary Sewer Master Plan update considers funding sources for the improvement projects needed to address these deficiencies.²¹

Some portions of the City's wastewater collection system that are over 100 years old and have not been rehabilitated may be subject to inflow and infiltration. Inflow and infiltration (I/I) can affect the level of service of sewer systems. Inflow is when stormwater enters the sewer system from such sources as roof drains, sump pumps, downspouts, etc. Infiltration occurs when groundwater enters the sewer system through cracks and or leaks in the sewer pipes. I/I increases the load on the sewer system and can back-up the sewer system or cause treatment plants to release untreated water into water bodies. In an effort to begin addressing these I/I issues, the City has conducted two Sanitary Sewer Reline Projects to rehabilitate and reline 17,500 linear feet of sanitary sewer pipe over the past ten years.²²

b. Thermalito Water and Sewer District²³

TWSD provides wastewater collection services to approximately 1,985 customers or approximately 2,650 Equivalent Dwelling Units (EDUs). Wastewater dry weather flows average 0.41 MGD presently and are expected to grow to 0.67 MGD

²⁰ Rick Walls, Senior Civil Engineer, City of Oroville Public Works Department. Personal e-mail communication with Chad Markell, February 4, 2008.

²¹ City of Oroville, January 2013, *Final Draft Sanitary Sewer Master Plan*.

²² Rick Walls, Senior Civil Engineer, City of Oroville Public Works Department. Personal e-mail communication with Chad Markell, March 20, 2008.

²³ Unless otherwise noted, all information presented in this section comes from Mike Edwards, Compliance Officer, Thermalito Water and Sewer District. Personal phone communication with Joanna Jansen, DC&E. February 14, 2008.

within the next 20 years. Monthly instantaneous peak wet weather flows (PWWFs) are 4 MGD.²⁴

TWSD's collection system consists of 40 miles of sanitary sewer line with approximately 560 manholes and is generally in adequate condition. TWSD's collection system discharges into the SCOR west interceptor pipe for treatment at their plant. On average, dry weather flows are at approximately 30 percent capacity and wet weather flows are at approximately 70 to 80 percent capacity. During extreme wet weather events, the system experiences the highest level of I&I impact at the east trunk line. During major storm events the east trunk line has almost overflowed during rainy days.

Currently, TWSD has issued "will serve" letters that commit to serving approximately 30 additional EDUs. Although TWSD has issued these letters, there are no plans for future infrastructure capacity expansion. Developers are required to either upgrade existing infrastructure or install new infrastructure for new development within TWSD's SOI.

c. Lake Oroville Area Public Utility District

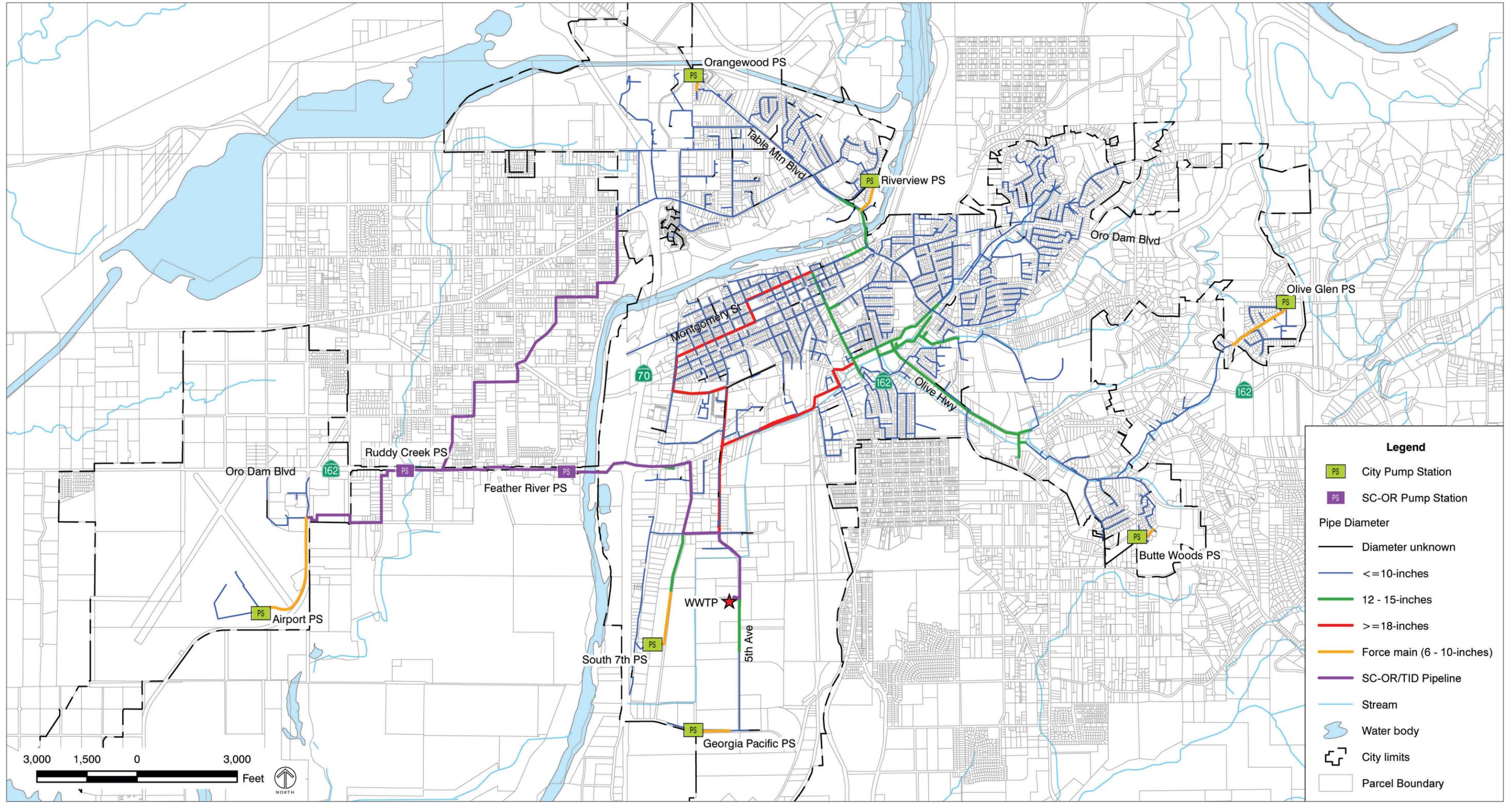
The Lake Oroville Area Public Utility District (LOAPUD) provides sanitary sewer collection services to approximately 12,000 individuals, mainly in unincorporated areas east and south of the City of Oroville. As of January 2008, LOAPUD provides service for approximately 5,900 EDUs. Population growth in the service area is expected to reach over 20,000 individuals by 2025 as significant development is expected throughout the service area. LOAPUD will likely annex 4,400 acres of the State Water Project area which has been approved by LAFCO and is pending State Board of Equalization approval.²⁵

On average, LOAPUD collects 384 million gallons of wastewater annually. Current dry weather flow is 0.81 MGD and is expected to increase to 1.35 MGD over the next 20 years. A PWWF was measured in December 2005 at 9.8 MGD.²⁶

²⁴ Rich Walls, Senior Civil Engineer, City of Oroville Public Works Department. Personal communication with Joanna Jansen, DC&E, March 20, 2009.

²⁵ Brown, Alan, General Manager, LOAPUD. Personal letter communication with Jared Hancock, City of Oroville, January 23, 2008.

²⁶ Alan Brown, General Manager, Lake Oroville Area Public Utilities District. Personal email communication with Alexis Lynch, DC&E, December 16, 2008.



Source: City of Oroville Sanitary Sewer Master Plan 2013.

FIGURE PUB-3
 SEWER COLLECTION SYSTEM FACILITIES

LOAPUD has approximately 75 miles of sanitary sewer line, 1,547 manholes and six pump stations, with approximately 80 percent of the system constructed in the last 35 years.²⁷

In general, the collection system is in good condition and lines requiring service are maintained by LOAPUD. LOAPUD's Master Plan from 2000 outlines several capital improvements, including pipeline replacement, new pipeline installation and facility construction to be complete by 2020. LOAPUD's collection system discharges into the SCOR east interceptor pipe for treatment at the SCOR plant.

Currently, there are no collection capacity issues and no plans for capacity expansion. Within the LOAPUD system, new development may be required to upgrade the existing collection system if additional capacity is required. LOAPUD is currently on track for meeting its construction goals outlined in the 2000 Master Sewer Plan, having completed all but three of the recommended improvements in the Plan.

d. Sewerage Commission – Oroville Region, Regional Wastewater Treatment Plant²⁸

The Sewerage Commission – Oroville Region (SCOR) system and Regional Wastewater Treatment Plant is the single regional wastewater treatment facility for City of Oroville and the Planning Area. The SCOR treatment plant is located at 2880 South 5th Avenue, between Oroville Dam Boulevard and Georgia Pacific Way, as illustrated on Figure PUB-3.

As previously mentioned, SCOR operates under a Joint Powers Agreement with its member entities: the City of Oroville, Thermalito Water and Sewer District and Lake Oroville Area Public Utility District. SCOR is responsible for the operation and maintenance of the wastewater treatment plant and three interceptor lines (or trunk lines) that collect wastewater discharges from the three member entities. The treatment plant and interceptor lines are less than 30 years old and are generally in good condition. Additionally, SCOR is responsible for meeting the pollution discharge and water quality standard defined by the federal National Pollutant

²⁷ Butte County LAFCO Municipal Service Review, Domestic Water and Wastewater Services, February 2006.

²⁸ Ray Sousa, Manager and Bill Lampkin, Environmental Compliance Manager, Sewerage Commission – Oroville Region (SCOR). Personal communication with David Early and Chad Markell, DC&E, February 1, 2008.

Discharge Elimination System (NPDES) permit and State Regional Water Quality Waste Discharge Requirements.

Currently, SCOR serves approximately 17,500 EDU's in the City of Oroville and its Planning Area and has additional dry weather flow capacity to add an additional 2,800 EDU's. Historically, connection rates to the SCOR facility have grown at a rate of roughly one percent or 175 EDU's a year.

As of 2006-2007, the SCOR treatment plant currently receives an average dry weather flow of 2.9 MGD and an average wet weather flow of 3.3 MGD.²⁹ Effluent discharge from the plant is expected to increase to approximately 5.2 MGD by 2025. Currently, the treatment facility is capable of treating 6.5 MGD of dry weather flow wastewater and is therefore adequate to accommodate increased dry weather flow from expected growth in its service area over the next 20 years.

The treatment plan is permitted by the Central Valley RWQCB to receive, treat and discharge a maximum of 6.5 MGD daily dry weather flow (July through September). The RWQCB has no limitation of wet weather flow discharges from the plant (October through June). SCOR has reported to the RWQCB that the plant has the capacity to process, treat and discharge a maximum of 15.5 MGD of wet weather flow.³⁰

Historical operational data provided to the RWQCB by SCOR show that over the last 10 years the highest average wet weather flows received by the plant occur annually in the calendar months of January and February, with average daily flows based on monthly throughput to the plant of 4.2 MGD. Since 1997, the average instantaneous PWWF's during the months of January and February (wettest historical months) are 12.3 and 12.0 MGD. The highest individual instantaneous PWWF's range from 16.0 (January 2004) to 23.2 MGD (January 1997). These instantaneous PWWF's represent the highest sewage flowrate into the plant during a 24-hour-day during a wet weather event. In the last 10 years there have been eight occurrences of instantaneous PWWF's exceeding the treatment plant's

²⁹ Bill Lampkin, Environmental Compliance Manager, Sewerage Commission-Oroville Region. Personal email communication with Alexis Lynch, DC&E. December 10, 2008.

³⁰ Central Valley Regional Water Quality Control Board, letter to SCOR dated April 9, 2008 regarding "Order to Submit Information Pursuant to California Water Code Section 13267, Sewerage Commission Oroville Regional Wastewater Treatment Plant."

maximum daily wet weather throughput flowrate of 15.5 MGD. During these timeframes, excess flow is diverted to one or two equalization basins (storage ponds) with a reported total temporary storage capacity of 26.5 million gallons. The basins temporarily store peak flows during the time necessary for the storm event and peak flows to drop below the plant's maximum throughput level. The temporarily stored wastewater is then processed through the plant. Data shows that since 1997 the plant has successfully processed all peak wet weather flows by using the storage ponds to temporarily store peak flows. SCOR has reported that the higher historical peak flow events do challenge the plant's capacity limits. Continued I&I reduction efforts to be completed by the collection entities in the upcoming years are expected to reduce peak wet weather flows to the plant in the future.

In December 2005, SCOR experienced a sanitary sewer overflow in their east interceptor line outside the plant. SCOR's east interceptor line conveys the combined flows from all three collection entities into the plant. This overflow was of a limited duration, and was caused by excessive I&I contributed by the three collection entities. As discussed above, continued I&I reduction efforts to be completed by the collection entities in the upcoming years should have the effect of reducing peak wet weather flows to the east interceptor line in the future.

SCOR is currently conducting a capacity study, updating its Master Plan and adjusting its connection fee structure to plan and fund additional improvements that will address increase capacity needs in both the interceptor lines and treatment plant capacity. Once the capacity study and Master Plan updates are completed, SCOR will have an improvement and funding plan in place that will enable SCOR to accommodate an additional 13,000 EDU's. SCOR anticipates that this study will be complete in mid-2008. SCOR will implement the needed improvements incrementally to meet increased capacity needs.

2. Goals, Policies, and Actions

Goal PUB-7	Collect, treat and dispose of wastewater in ways that are safe, sanitary, environmentally acceptable, and financially sound.
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Policies

- P7.1 Ensure that adequate wastewater collection and wastewater treatment services continue to be available to developed properties throughout the Planning Area.
- P7.2 Coordinate with each sewer service entity to ensure that adequate advance planning is accomplished to ensure adequate service will remain available to serve the existing and projected population.
- P7.3 Require all development that is in areas that are currently served or could be feasibly served by sewers to be connected to a sewer conveying wastewater to the Sewerage Commission – Oroville Region’s (SCOR) treatment plant.
- P7.4 The approval of new urban development shall be conditioned on the availability of adequate long-term capacity for wastewater conveyance, treatment and disposal sufficient to service the proposed development. The agencies that provide services to new development will be primarily responsible for making determinations regarding adequate availability.
- P7.5 If downstream lines are determined by the City to be inadequate, the developer shall provide facilities to convey the additional sewage expected to be generated by the development. New development shall not be permitted until adequate facilities are available to convey the additional sewage associated with the development. The developer must demonstrate that adequate facilities will be available at the time of Final Map approval.
- P7.6 Continue to support the SCOR requirements that, if necessary, industrial water users pretreat wastewater on-site prior to discharging into the sewer system, or into any permeable conduit or basin that ultimately could lead to groundwater contamination.
- P7.7 Encourage consolidation of sewer and water infrastructure provision under a single agency

- P7.8 Work with LAFCo to support the coordination of special districts providing sewer service to adjust service area boundaries where beneficial.
- P7.9 Encourage SCOR to begin planning and implementing expansions to the existing Regional Wastewater Treatment Master Plan to meet future demand for wastewater treatment generated by this General Plan at least four years prior to reaching the capacity of existing facilities.
- P7.10 Ensure that all new and repaired sewer collection and transmission systems are designed and constructed in such a manner as to minimize potential inflow and infiltration.
- P7.11 Installation of sewer lines should occur concurrently with construction of new roadways to maximize efficiency and minimize disturbance from construction activity.
- P7.12 Ensure that on-site wastewater disposal, particularly septic systems, for areas that are not served by sewers connected to the SCOR treatment plant is in compliance with Chapter 4.5 (commencing with Section 13290) to Division 7 of the California Water Code (AB 885), the requirements of the Regional Water Quality Control Board, Region 5, and Butte County's sewage disposal codes.
- P7.13 Monitor the effectiveness, cooperation and functions of SCOR through and by its member agencies for the interest of the public and implementation of this General Plan.
- P7.14 Support SCOR's actions to fund the expansion of its treatment plant.

Actions

- A7.1 Develop informational materials to notify project developers of the waste discharge requirements into surface water in conformance with guidelines set forth in the latest revision of the Regional Water Quality Control Board, Region 5 Plan.

- A7.2 Work with SCOR to develop a plan to construct and/or operate an industrial wastewater system(s) separately from the domestic sewerage facilities.
- A7.3 Collaborate with local wastewater service providers to update the City's Infrastructure and Improvements Plan.
- A7.4 Ensure the Sanitary Sewer Master Plan analyzes inflow and infiltration and effective ways to minimize inflow and infiltration while also minimizing infrastructure and improvements.
- A7.5 Implement the City's Sanitary Sewer Master Plan and update it at least every ten to fifteen years, or more frequently if necessary.
- A7.6 Investigate the potential for and implement, as appropriate, innovative recycled water use systems in Oroville, and identify sources of funding for implementation of such a system.
- A7.7 Continue to explore options for implementing and funding a program to reduce inflow and infiltration into the wastewater collection systems utilizing the SCOR treatment plant.

H. Stormwater Drainage

1. Background Information

The City of Oroville currently maintains six regional detention basins. These were constructed along different branches of Dry Creek to retain peak stormwater events.³¹ To accommodate the impacts of increased impervious surfaces from new development, the City of Oroville requires installation of stormwater detention ponds or underground storage tanks to retain the peak stormwater runoff.³²

Butte County's Stormwater Management Program is a requirement of Phase II of the National Pollutant Discharge Elimination System (NPDES) Program as ordered by the US Environmental Protection Agency (EPA). The County's

³¹ City of Oroville's website. <http://www.cityoforoville.org/stormwater.html>, accessed June 6, 2006.

³² City of Oroville's website. <http://www.cityoforoville.org/stormwater.html>, accessed June 6, 2006.

Program is required by federal law to be fully implemented by April 30, 2008. Part of this implementation is to mark all storm drains.³³

The City of Oroville is subject to the NPDES General Permit for Small Municipal Separate Storm Sewer Systems (MS4). Under this program, Oroville is required to develop and implement a comprehensive storm water management program to promote storm water pollutant load reduction.

Oroville's Grading Ordinance ensures erosion control measures are in place during land disturbance activities so as to comply with State and federal water quality regulations intended to reduce the amount of sediment in stormwater discharge.³⁴

2. Goals, Policies, and Actions

Goal PUB-8	Collect, store, and dispose of stormwater in ways that are safe, sanitary, environmentally acceptable, and financially sound.
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Policies

- P8.1 Use a site-specific stormwater drainage plan or the stormwater drainage master plan to be prepared under A8.1 to determine whether to require storm drainage analysis for projects within the Planning Area, and, if necessary, make storm drainage improvements a condition of development approval.
- P8.2 Encourage project design that minimizes the potential for wind and water erosion to occur. Where necessary, require the preparation and implementation of a soil erosion plan, including soil erosion mitigation during construction.
- P8.3 Encourage the utilization of Best Engineering Practices for stormwater collection and disposal.

³³ Butte County Department of Public Works' website. <http://www.butte-county.net/publicworks/stormwater.html>, accessed February 2006.

³⁴ City of Oroville, 2006. *City of Oroville Development Code, Chapter 9B (Grading)*.

- P8.4 Require local storm drainage improvements be built to carry appropriate design-year flows resulting from buildout of the General Plan. Design storm drainage facilities for 2-, 10-, and 100-year discharges.
- P8.5 Require that developers pay their fair share for construction of off-site drainage improvements, as determined by a site-specific stormwater drainage plan or the stormwater drainage master plan to be prepared under A8.1.
- P8.6 Implement all necessary measures to regulate runoff from urban uses to protect the quality of surface and groundwater.
- P8.7 Require new development to identify and adequately mitigate its stormwater impacts.
- P8.8 Offer site-specific drainage plans prepared by applicants for peer review prior to review and approval by City Council.
- P8.9 Require installation of temporary drainage facilities as necessary during construction activities in order to adequately mitigate stormwater impacts.
- P8.10 Require the installation of stormwater collection systems concurrently with construction of new roadways to maximize efficiency and minimize disturbance due to construction activity.

Actions

- A8.1 Develop, adopt and maintain a stormwater drainage master plan. The plan should be organized by drainage basin, rather than by project or jurisdiction, and should cover the entire Planning Area based on buildout of the General Plan.
- A8.2 Develop adequate financial resources to implement the master plan.
- A8.3 The stormwater drainage master plan should include a study of drainage basins.

- A8.4 Update the Dry Creek Drainage Study to determine the feasibility of increasing stormwater detention opportunities.
- A8.5 Develop and adopt design standards for detention facilities that provide for both stormwater detention and other beneficial uses such as recreation or habitat.
- A8.6 Prepare a stormwater management plan for the City to improve the quality of surface and groundwater. The Plan should include, but not be limited to, well-defined goals, policies, and actions to:
- ◆ Create effective partnerships with special districts, County, State and federal agencies, as well as non-profit organizations, in all aspects of plan development and implementation.
 - ◆ Ensure the long term financial viability of the plan through appropriate budgeting and allocation of financial and staff resources towards implementation of the plan.
 - ◆ Identify clear criteria and an effective process to periodically review and evaluate the achievements of the plan, and make amendments to it as needed.

I. Solid Waste

1. Background Information

The City of Oroville contracts all solid waste collection and recycling services with Norcal Waste Systems of Butte County, Inc. Norcal has 600 vehicles operating 24 hours per day and provides commercial and residential garbage and recycling collection, debris box service and compactor service for residents and businesses of Butte County. In addition, the company operates a materials recovery facility, a transfer station, a household hazardous waste facility, a scrap metal public drop-off center, a recycling buyback center, green waste recycling, and construction and demolition service.³⁵ The City also operates a hazardous household waste facility and a buyback center in an effort to reduce the amount and toxicity of waste generated in Oroville.

³⁵ Norcal Waste Systems of Butte County, Inc.'s website.
<http://www.norcalwastesystemsofbuttecounty.com/>, accessed June 7, 2006.

Waste generated within the city is collected and processed at the Oroville Transfer Station, which receives an average of over 200 tons of material per day. This facility is permitted to receive 975 tons per day. This existing permit volume exceeds the service area's needs for the foreseeable future, so there are no current plans for expansion of this facility. Once processed, waste that cannot be recycled is transported to the Ostrom Road Landfill, which is located in Wheatland, California and operated by Norcal. The landfill receives approximately 26,000 tons of waste annually and its expected capacity of 41.8 million cubic yards is expected to be reached in 2066. There are no planned expansions or deficiencies at the Ostrom Road Landfill at this time.³⁶

2. Goals, Policies, and Actions

Goal PUB-9 Collect, store, transport, recycle and dispose of solid waste in ways that are safe, sanitary, and environmentally acceptable, while striving to reduce the overall generation of solid waste.

Policies

- P9.1 Require mandatory trash pick-up throughout the City as a means to ensure a safe, sanitary environment.
- P9.2 Support continued operation of household hazardous material waste drop-off facilities.
- P9.3 Reduce the use of non-biodegradable and non-recyclable materials by encouraging Oroville residents, businesses, and industries to seek waste reduction at the source, including reduced use of packaging and use of reusable, rather than disposable products.
- P9.4 Support innovative programs that recognize local businesses', agencies' and organizations' efforts to reduce waste.

³⁶ Matz, J., General Manager, Norcal Waste Systems of Butte County Inc. Email communication with Shay Boutillier, DC&E, June 12, 2006.

Actions

- A9.1 Conduct a study to explore the development of a compost and green-cycling program.
- A9.2 Periodically review the Source Reduction and Recycling Ordinance to ensure it adequately reflects community goals for solid waste reduction and recycling, and update the ordinance as necessary and as required by State Law, to address these aspects.
- A9.3 Work with the County and private solid waste handlers to distribute public education materials on solid waste source reduction, recycling and composting, and the proper handling of household hazardous waste.
- A9.4 Develop a program to educate the public on the importance of disposing of household wastes at appropriate collection sites to reduce the amount of improperly disposed of hazardous waste.
- A9.5 Study the potential adoption of an ordinance to prohibit the sale of non-biodegradable and non-recyclable materials if reasonable alternative materials are available.
- A9.6 Adopt a construction and demolition debris recycling ordinance consistent with the model ordinance promulgated by the California Integrated Waste Management Board.

J. Gas, Electric, and Communication Utilities

1. Background Information

The Pacific Gas and Electric Company (PG&E) provides Butte County with most of its electricity. Electricity purchased from PG&E by local customers in Oroville is generated and transmitted by a statewide network of power plants and transmission lines.

Most of the electrical service in the county is carried through above-ground lines. This is beginning to change, however, as many new developments have started to run lines underground. Public Utility Commission Rule 28 mandates an annual

allocation from PG&E to fund an ongoing program to place service lines throughout the county underground.

Butte County is crossed and served by two general types of transmission lines: a 500 kilovolts (kV) line that is part of the Pacific Intertie System and the 60-230 kV lines that serve the specific needs in the county. The 500 kV line consists of four transmission lines that cross the county from north to south. These four lines appear as a unified structure that runs through a wide right-of-way to a major substation on Cottonwood Road west of Table Mountain. The 60-230 kV lines conduct electricity from the 500 kV lines and local substations to serve the users in the county. The siting of transmission lines is evaluated on a case-by-case basis as there are no designated transmission line corridors identified in the county.

PG&E also supplies most of the natural gas used within Oroville. Much of this supply comes from Canada and is supplied to the region through the Hershey station in Colusa County.

AT&T provides telephone service for the City of Oroville. The main office is located in Chico, with district offices in Oroville, Paradise, Paradise Pines, and Biggs. At present, most of the AT&T service lines within Oroville are above ground. Underground service has become more common for new development projects, however, and each project is evaluated to determine the economic feasibility of underground service. AT&T participates in a joint undergrounding program with PG&E and has been incrementally placing service lines underground in designated areas of the county.

2. Goals, Policies and Actions

The goals, policies, and actions in the sections below are organized to enhance existing public facilities and services.

<p>Goal PUB-10 Provide telecommunications and energy utilities in ways that are safe, environmentally acceptable, and financially sound.</p>

Policies

P10.1 Ensure that utilities, including electricity, natural gas, telecommunications, and cable television, are available or can be provided to serve the projected population within the City in a

manner which is fiscally and environmentally responsible, aesthetically acceptable and safe.

- P10.2 Review proposed utility projects, including power line, substations, and other facilities, to ensure their compatibility with surrounding land uses.
- P10.3 Encourage utility agencies to use existing transmission corridors for future power transmission line development.
- P10.4 Encourage future construction of power transmission lines underground, where technologically feasible.
- P10.5 Locate wireless communications facilities in a manner that minimizes adverse impacts on adjacent land uses. Where feasible, new telecommunication facilities should be located on existing structures, such as the water tower and existing buildings, in order to minimize the visual impact of the new facilities and avoid the need for dedicated telecommunication towers. New freestanding towers and structures should only be considered when no feasible alternative exists or when visual intrusion would be less than that associated with placement on an existing structure or building.
- P10.6 Require new freestanding wireless communications facilities to be designed to fit into the existing surroundings or camouflaged to reduce any negative aesthetic impacts.

Actions

- A10.1 Coordinate with PG&E to educate the public about the need to conserve the scarce energy resources.

CITY OF OROVILLE
2030 GENERAL PLAN
PUBLIC FACILITIES AND SERVICES ELEMENT

9 SAFETY ELEMENT

The Safety Element provides information about risks in Oroville due to natural and man-made hazards and contains goals, policies, and actions designed to protect the community and its property as much as possible from seismic hazards, flooding, fire, hazardous materials and electromagnetic fields.

As required by State law, the Safety Element addresses the protection of the community from unreasonable risks associated with the impacts of:

- ◆ Geologic hazards, including earthquakes, groundshaking, liquefaction, and landslides.
- ◆ Flooding, including dam failures and inundation.
- ◆ Wildland and urban fires.
- ◆ Hazardous materials.
- ◆ Airport operations.
- ◆ Electromagnetic fields.

This Element also contains information and policies regarding general emergency response.

Each section is divided into two sub-sections, as follows:

- ◆ **Background Information:** Contains information on current risks due to natural and man-made hazards.
- ◆ **Goals, Policies and Actions:** Provides goals and policies that are designed to reduce the risks to health and property due to naturally and man-made hazards. Actions are also provided which are to be pursued during the lifetime of the General Plan.

A. Geologic and Seismic Hazards

1. Background Information

This section provides background information on potential public safety issues, relating to geologic and seismic hazards, earthquakes, landslides, and expansive soils.

a. Earthquakes

Geologic hazards in the Oroville area are related both to the influence of seismic activity and to soils conditions. The following section discusses Oroville's location and how it relates to the threat of seismic activity and unstable soils. Figure SAF-1

illustrates several geologic hazards, including potential for landslides or liquefaction and the location of faults and steep slopes.

i. Earthquake Faults

While less seismically active than some areas of the state, Oroville is subject to hazards associated with earthquake fault activity. One known active fault is found within the Planning Area; other active faults outside the Oroville Planning Area but in the region have the potential to affect the City of Oroville.

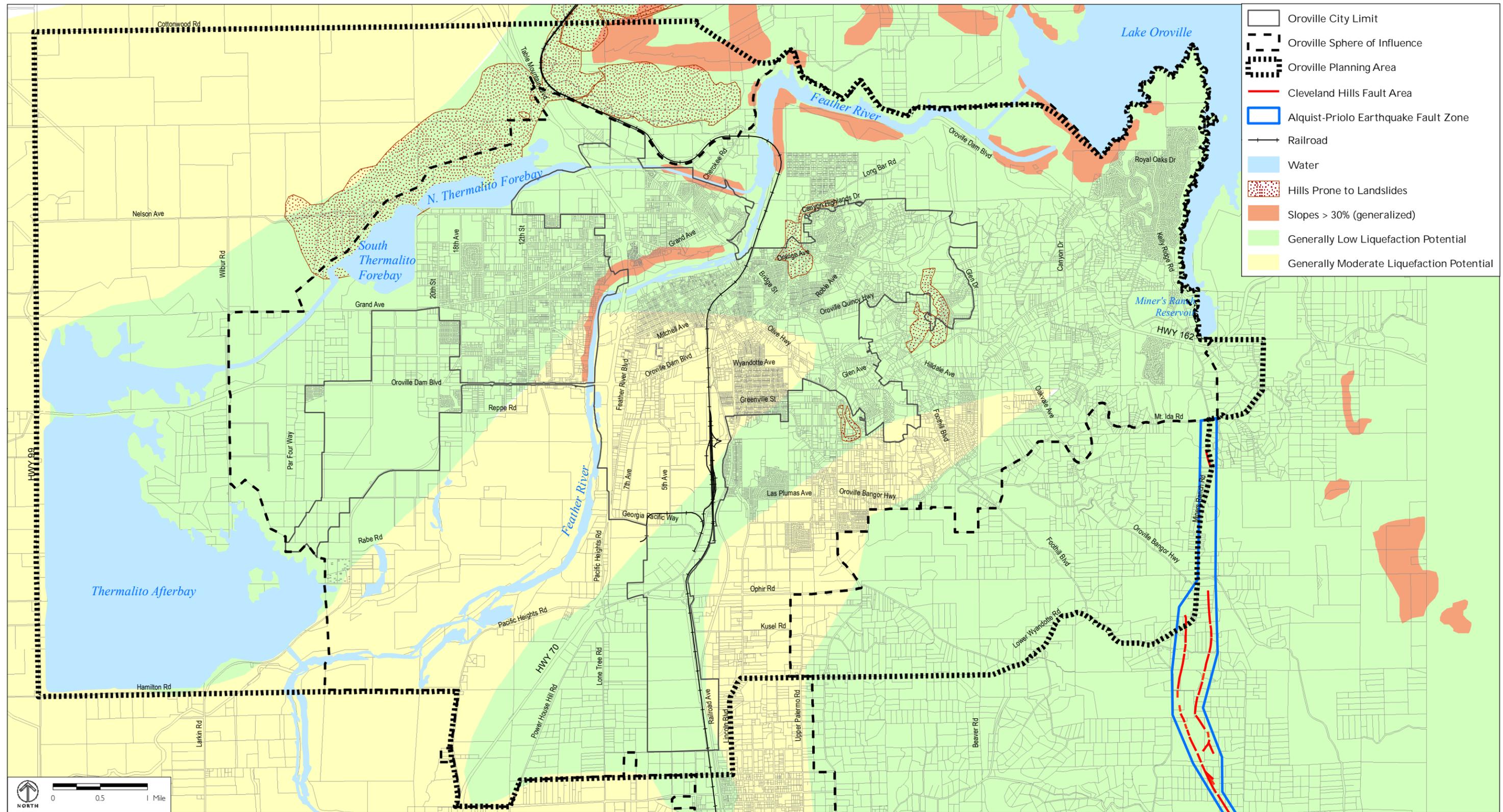
Figure SAF-1 illustrates mapped known faults in the Oroville area. One seismically active fault, the Cleveland Hills Fault, is located within the Oroville Planning Area, about six miles southeast of Oroville. This fault is classified as an Alquist-Priolo Special Studies Zone, to which special development regulations apply.¹ Seismic activity associated with the Cleveland Hills Fault resulted in a 5.7 magnitude earthquake in August 1975; studies estimate a maximum credible earthquake of 6.5 to 6.7 on the Richter Scale could occur on this fault in the future.²

Other mapped, active faults in the wider region, outside of Butte County, have the potential to generate seismic activity that could be felt in Oroville. These include:

- ◆ The Midland-Schweitzer Fault, an approximately 80 mile long fault found about 60 miles southwest of Oroville.
- ◆ The northern section of the 350-mile long San Andreas Fault, located about 115 miles west of Oroville.
- ◆ The Hayward-Calaveras Fault complex in the San Francisco Bay Area, located approximately 120 miles southwest of Oroville.
- ◆ The Russell Fault, located about 70 miles east of Oroville, which was associated with a major earthquake of up to magnitude 6.5 in 1966.
- ◆ The Last Chance-Honey Lake Fault, located along the California/Nevada border to the east of Oroville.
- ◆ The Willows fault is located about 30 miles west of the Oroville, and the Coast Ranges thrust zone is located about 60 miles west of the City.

¹ The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972. Its main purpose is to prevent the construction of buildings used for human occupancy on top of active faults.

² Butte County General Plan, Seismic Safety Element, 1977.



Source: City of Oroville GIS, 2005. Liquefaction layer from Butte County GIS. Slope Data from generalized USGS data. Landslide data from Oroville General Plan (1995) Figure 8.10-A. Alquist-Priolo Fault data from California Dept. of Conservation, 2002.

FIGURE SAF-1
GEOLOGIC HAZARDS

In addition to mapped known faults, there are a large number of other faults within Butte County and in neighboring areas that could be considered potentially active, based on criteria developed by the California Department of Mines and Geology. Within Butte County, faults that are considered by some geologists to be potentially active include the Big Bend fault, which is thought to be capable of generating an earthquake of up to magnitude 7.0 in Butte County; the Foothill shear zone, which extends into southern Butte County, and the Chico monocline fault, which could produce an earthquake of up to magnitude 7.0, having the most significant impacts in the Chico area but which could also severely affect other parts of the county, including Oroville.

Outside of Butte County a number of potentially active faults exist; those with the greatest potential to cause damage within Butte County include the Willows fault and the Coast Ranges thrust zone, to the west. There may also be seismic risk presented by the numerous faults present in the Sierra Foothills to the east and southeast, but their status is uncertain and subject to debate among geologists.³

ii. Earthquake-related Effects

Earthquake-related effects include groundshaking and liquefaction. Groundshaking can be of varying intensity depending on the intensity of earthquake activity. Oroville is classified as being within Seismic Zone 3 (on a scale of 1 to 4, where 1 is least hazardous and 4 is most hazardous) of the Uniform Building Code's (UBC) Seismic Hazard Map. This designation is based on probability of significant ground shaking in a seismic event.

Liquefaction is a phenomenon primarily associated with saturated, cohesionless soil layers located close to the ground surface. During liquefaction, soils lose strength and ground failure may occur. Mapping developed by Butte County for its 2006 Flood Mitigation Plan indicates that much of the west and southwestern part of the Planning Area is considered to have a high potential for liquefaction. Where older alluvial sediments underlie the Planning Area, liquefaction potential is considered to be low. Since soils must be saturated to be at risk of liquefaction, the areas in Oroville most susceptible to liquefaction include areas within the Federal Emergency Management Agency (FEMA) 100-year flood zone along the Feather River and other drainages, and where there are high groundwater levels.⁴ Figure SAF-1 shows low/moderate potential areas for liquefaction in the Planning Area.

³ *Setting and Trends Report, Butte County General Plan Background Report*, 2007, page 17-66.

⁴ Butte County Flood Mitigation Plan, Appendix D, 2006.

b. Steep Slopes and Landslides

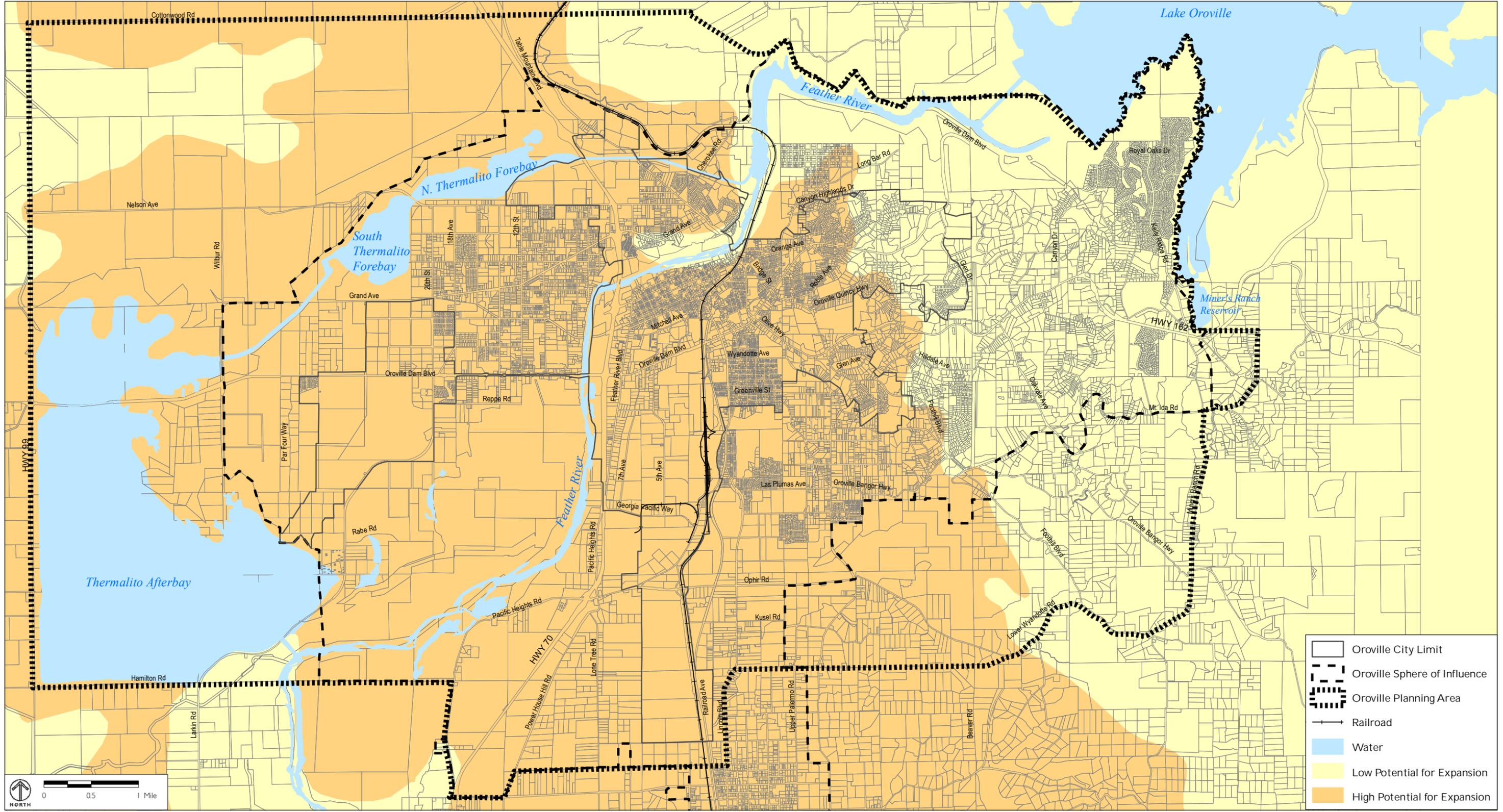
Steep slopes, in conjunction with certain soil types, can be prone to soil erosion and landslides. Landslides occur as a result of topographical and soil conditions, where loose soils move down steep slopes. Some of the natural causes of this instability are earthquakes, weak soils, erosion, and heavy rainfall. Human activities such as poor grading that undercuts steep slopes or overloads them with fill, excessive irrigation, and removal of vegetation can also contribute to ground failure. Earthquakes can also induce landslides by initiating strong ground motion. Several areas of steep slopes (greater than 30 percent), and hills prone to landslides are found within the Oroville Planning Area. These are primarily concentrated on hillsides and bluffs in the northern part of the Planning Area as illustrated in Figure SAF-1.

c. Expansive Soils

Soil mapping is used to help identify potential geotechnical concerns, such as erosion and expansion that are more common with certain soils types. Expansive soils contain higher levels of clay and present problems for development since these soils expand and shrink depending on water content. The shrinking and swelling of soils can damage structures that were not appropriately engineered. Expansion potential is related to factors including the amount of moisture present and the proportion and percentage and type of clay minerals present in the soil. Sands and silts with low amount of clay minerals have a low expansion potential. Different soil types can be classified based on their expansive properties.⁵ These properties are described below and are illustrated in Figure SAF-2.

- ◆ **Low Potential for Expansion:** This soils class includes sands and silts with relatively low amounts of clay minerals. Sandy clays may also have low expansion potential.
- ◆ **Moderate Potential for Expansion:** This class includes silty clay and clay textured soils, heavy silts, light sandy clays, and silty clays with mixed clay minerals. These types of soils are not found in the Oroville Planning Area. This description is included for informational purposes only.
- ◆ **High Potential for Expansion:** This class includes clays that expand and contract more than the types of soils described above.

⁵ 2005 Butte County General Plan Background Report.



Source: City of Oroville GIS, 2005 and USDA Natural Resources Conservation Service, 2006.

FIGURE SAF-2
EXPANSIVE SOILS

2. Goals, Policies, and Actions

Goal SAF-1	Reduce the risk of injury, loss of life, and property damage from earthquakes, landslides, and other geologic hazards.
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Policies

- P1.1 Group and locate new residential development in such a way as to avoid areas of geologic hazard, including steep slopes and areas of unstable soils.
- P1.2 Require all new developments to be subjected to a geotechnical study prior to development approval and to mitigate any identified hazards to a level of insignificance. If mitigation is not possible, do not approve the development.
- P1.3 Encourage retrofitting of structures, particularly older buildings, to withstand earthquake shaking and landslides, consistent with state Building Codes and Historic Building Codes.
- P1.4 Ensure that new development incorporates design and engineering that minimizes the risk of damage from seismic events and landsliding, consistent with state Building Codes and Historic Building Codes.

Actions

- A1.1 Develop a City-based public awareness and preparedness program to educate the public of the potential for earthquakes and other natural disasters within the Planning Area, and what to do in the event of an earthquake or other disaster.

B. Flooding

1. Background Information

Flooding is an important concern throughout the entire Oroville Planning Area, with flooding hazards associated with dam failure and release of water, and flooding associated with major waterways.

a. Dam Inundation

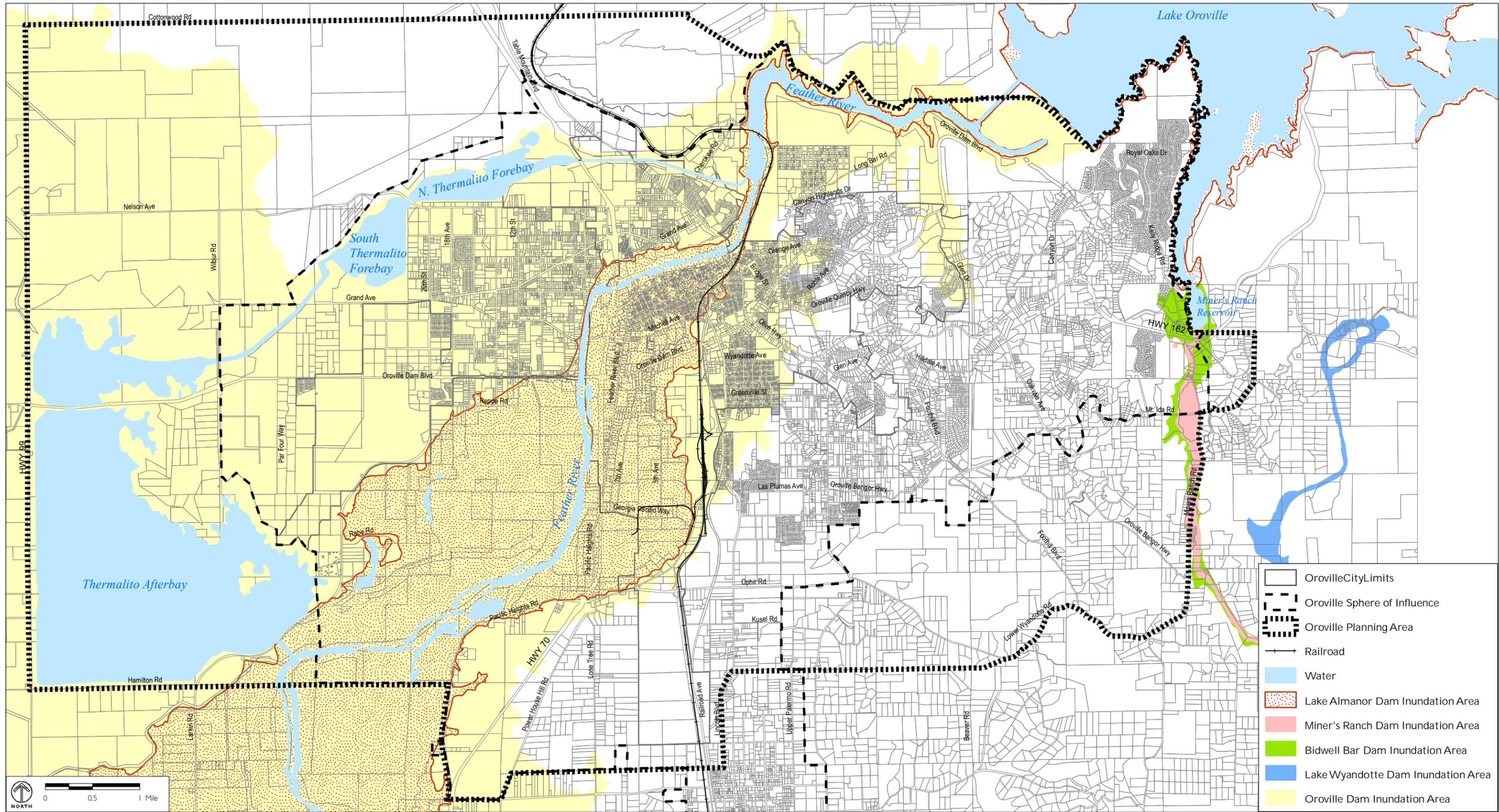
Figure SAF-3 maps the approximate areas that would be subject to inundation as a result of failure of dams in the Oroville Area. Most substantial among these is the Oroville Dam, located northeast of the city. Other smaller dams, upstream of the Oroville Dam, also pose a risk of flooding to the city. As shown in Figure SAF-3, there is also a dam inundation risk from smaller dams in the area, including from Lake Wyandotte, Bidwell Bar, and Miner's Ranch dams and Lake Almanor, which are located further up the Feather River Canyon.

The Oroville Dam sits east of Oroville's City Center, nestled at the mouth of the Feather River Canyon. At 770 feet tall and 6,920 feet long, the Oroville Dam is one of the 20 largest dams in the world and impounds the second largest reservoir in California. Lake Oroville has a capacity of 3.5 million acre feet and is the principal water storage facility of the State Water Project (SWP). Currently, the Department of Water Resources is undergoing contract renewal for the Oroville Dam facility with the Federal Energy Regulatory Commission (FERC), the City of Oroville and Butte County.⁶

Failure of the Oroville Dam could result in release of water held behind the dam, and inundation of much of the city and surrounding area. A major seismic event would be the most likely cause of dam failure. A number of geologic faults have been mapped in the Oroville area which could cause a seismic event. However, based on studies of the dam completed following the 1975 Oroville earthquake, the dam could withstand a 6.5 magnitude earthquake, which is considered to be the largest credible event projected for the region.⁷ Landslides around the reservoir rim have occurred since Lake Oroville has been in operation. These landslides are

⁶ Department of Water Resources: <http://orovillerecensing.water.ca.gov/project.html>, accessed May 26, 2006.

⁷ 1995 City of Oroville General Plan, Safety Element, page 8-9.



Source: City of Oroville GIS, 2005. Dam inundation areas from California Office of Emergency Services, 2005.

FIGURE SAF-3

DAM INUNDATION AREAS

not considered to pose a threat to the freeboard of the dam or the safety of the public.⁸

b. Levees

Figure SAF-4 shows the location of levee centerlines for federal and non-federal levees in the Oroville Planning Area. The majority of levees in the Planning Area are non-federal levees, and they are concentrated along the Feather River, the western and southern fringes of the Thermalito Afterbay, and the southern fringes of the Thermalito Forebay. Federal levees are located in the southwest portion of the Planning Area, between the Feather River and the Thermalito Afterbay.

Levee inundation area maps are not available for the Oroville Planning Area. However, the California Department of Water Resources mapped Levee Flood Protection Zones for State Water Project levees in the Sacramento River Basin in August 2011, and only a small portion of the Planning Area is included in the Levee Flood Protection Zone: approximately 150 acres adjacent to the southeast corner of the Thermalito Afterbay, which is currently used for open space and designated State Water Project in this General Plan.⁹

c. Floodplains

The Oroville area has historically been subject to flooding from various rivers and creeks found within the Planning Area, most particularly from the Feather River and its tributaries. Local flooding was much more prevalent prior to the construction of the Oroville Dam and its related flood control projects, which have helped to protect Oroville and many other areas of the County from serious flooding in recent years.

However, flooding remains an issue which regulatory agencies, the City and Butte County are seeking to address, in part through mapping of flood hazard areas and study of flooding hazards. Locally, Butte County, in consultation with the City of Oroville, has completed an assessment of flooding hazards as part of the Flood Mitigation Plan. This includes the Feather River and Lower Honcut Creek Watersheds.

⁸ University of California, Davis Civil and Environmental Engineering: <http://cee.engr.ucdavis.edu/faculty/lund/dams/Oroville/OrovilleDam.html>, accessed May 17, 2006.

⁹ California Department of Water Resources, August 19, 2011, *Levee Flood Protection Zones Sacramento River Basin*, available at http://www.water.ca.gov/floodmgmt/lrafmo/fmb/docs/SacramentoRiver_LFPZ_Map.pdf.

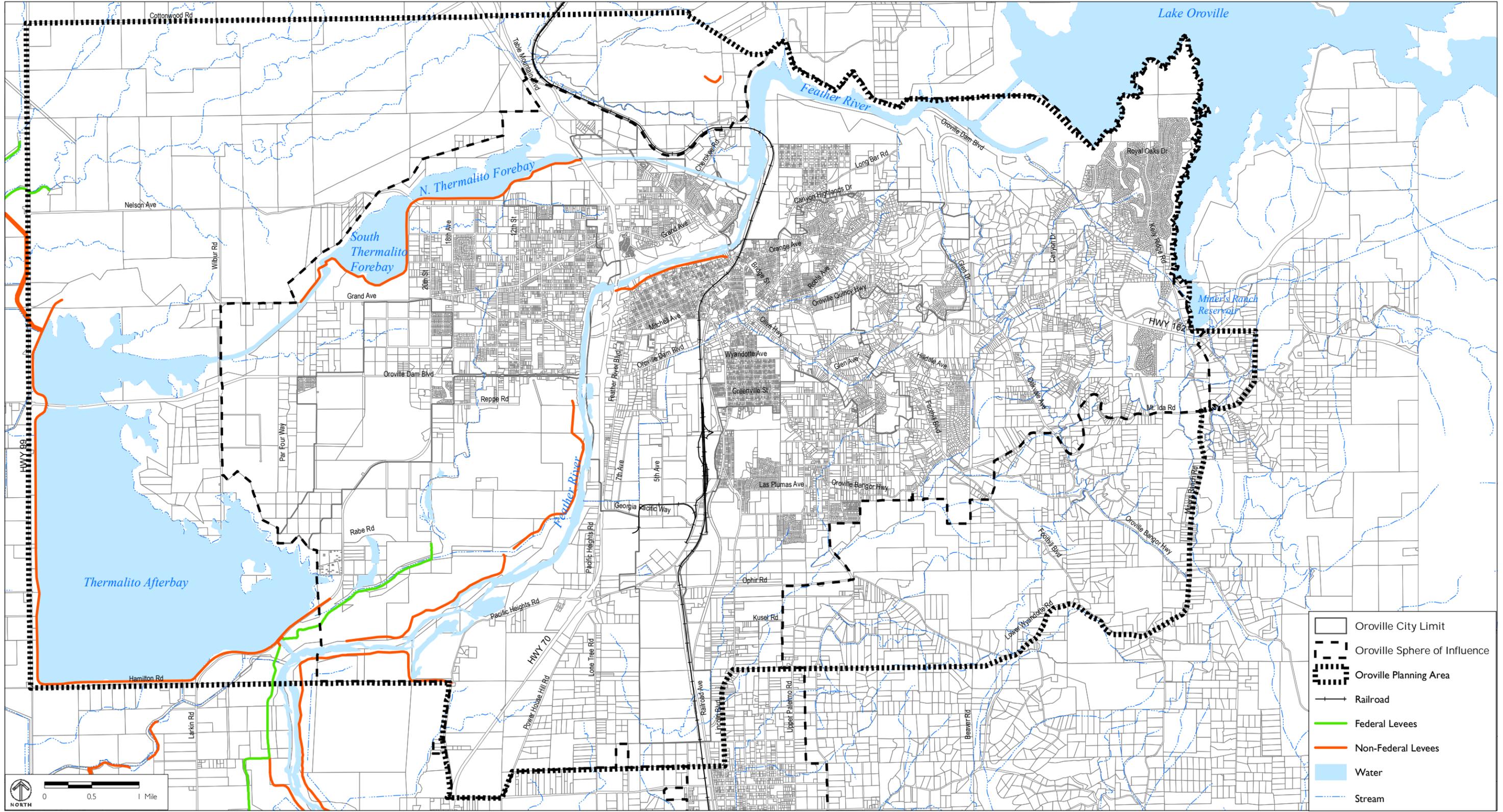
Nationally, FEMA provides guidance for floodplain management. FEMA manages the National Flood Insurance Program (NFIP), which provides insurance to communities that participate in the program, and works with State and local agencies to adopt floodplain management policies and flood mitigation measures. Property owners participating following FEMA regulations intended to reduce or mitigate losses from flooding are eligible for federal flood insurance coverage.

A key component in the NFIP is the identification of floodplain boundaries, which are depicted on FEMA Flood Insurance Rate Maps (FIRM). The concept of the 100-year flood (also termed the “base flood”) is a central component in FIRM mapping. The 100-year flood represents a flood event that is likely to occur once every 100 years, or, stated differently, that which has a one percent chance of occurring in any given year. FEMA mapping of flood hazards for all of Butte County, including Oroville, has been completed, with the most accurate and up-to-date information derived from the January 6, 2011 FIRM mapping.

Figure SAF-5 shows FEMA flood hazard mapping for the Oroville Planning Area. FEMA flood maps show areas that are likely to flood, though areas not included in the map may flood as well. Areas at risk for flooding include those along much of the Feather River, particularly south of Oroville Dam Boulevard, in the southern part of the Planning Area. Also, areas along Wyman Ravine, Ruddy Creek in Thermalito, and Cottonwood Creek in the far northwest of the Planning Area are at risk for flooding.

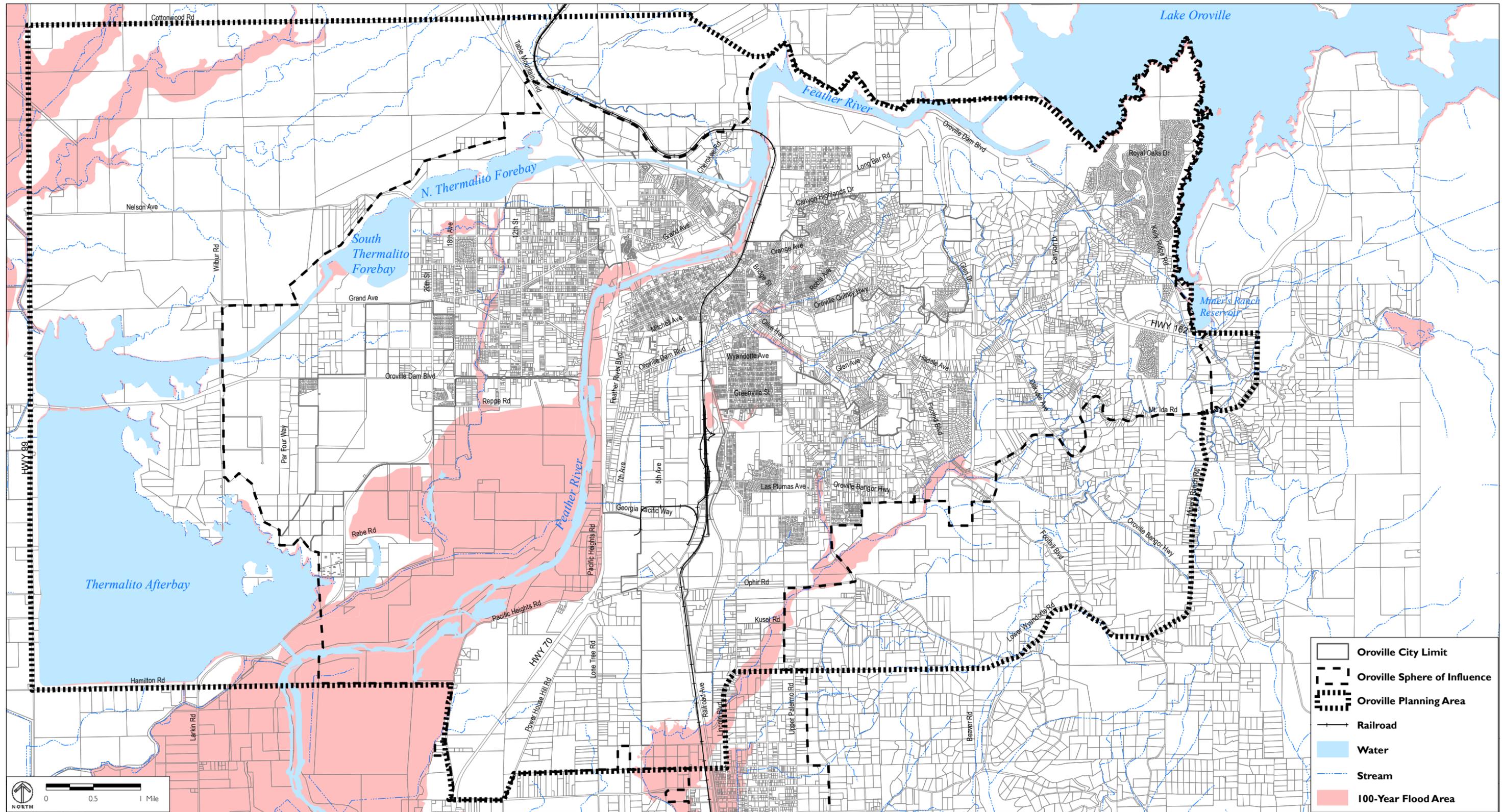
Pursuant to Assembly Bill (AB) 162 (2007), the California Department of Water Resources (DWR) and Central Valley Flood Protection Board (formerly State Reclamation Board) adopted the Central Valley Flood Protection Plan (CVFPP) in 2012. Every jurisdiction located within the Sacramento-San Joaquin Valley area, which includes Oroville, is required to update its General Plan and Zoning Ordinance in a manner consistent with the CVFPP. In addition, the locations of the State and local flood management facilities, locations of flood hazard zones, and the properties located in these areas must be mapped and consistent with the CVFPP. This General Plan maps this information in Figures SAF-3, SAF-4, and SAF-5, which are described above.

AB 162 and the CVFPP also set a higher standard for flood protection for the Sacramento-San Joaquin Valley area by requiring an urban level of flood protection necessary to withstand a 1 in 200 chance of occurring in any given year (200-year flood) for areas developed or planned to have a population of at least 10,000.



Source: California Department of Water Resources, 2013.

FIGURE SAF-4
 LEVELS



Source: FEMA, 2011.

FIGURE SAF-5
 100-YEAR FEMA FLOOD ZONES

However, based on DWR mapping, the City of Oroville and the Planning Area are not located within the 200-year floodplain.¹⁰

2. Goals, Policies, and Actions

Goal SAF-2 Reduce hazards associated with flooding, including flooding caused by failure of Oroville Dam.

Policies

- P2.1 Discourage development within the Feather River floodplain and other flood-prone areas, in order to minimize risks associated with flooding.
- P2.2 If development occurs within flood plains, ensure that existing and proposed structures are provided adequate protection from flood damage and hazards.
- P2.3 Continue to work with appropriate local, State, and federal agencies (particularly the Federal Emergency Management Agency) to maintain the most current flood hazard and floodplain information and use it as a basis for project review and to guide development in accordance with federal, State, and local standards.
- P2.4 Continue to participate in the Federal Emergency Management Agency National Flood Insurance Program – Community Rating System.
- P2.5 Where feasible, given flood control requirements, maintain the natural condition of waterways and flood plains to ensure adequate groundwater recharge and water quality, preservation of habitat, and access to mineral resources.
- P2.6 Support a multi-use concept of flood plains, flood-related facilities, and waterways, including, where appropriate, the following uses:

¹⁰ California Department of Water Resources, *Best Available Map (BAM) Web Viewer*, available at <http://gis.bam.water.ca.gov/bam/>, accessed on July 30, 2013.

- ◆ flood control;
- ◆ groundwater recharge;
- ◆ water quality preservation;
- ◆ open space;
- ◆ agriculture;
- ◆ nature study;
- ◆ habitat preservation;
- ◆ pedestrian, equestrian, and bicycle circulation;
- ◆ outdoor sports and recreation.

- P2.7 Cooperate with all affected or interested public and private agencies involved to ensure that flood control improvements do not result in unacceptable degradation of environmentally sensitive areas.
- P2.8 Incorporate stormwater drainage systems in development projects to effectively control the rate and amount of runoff, so as to prevent increases in downstream flooding potential.
- P2.9 Explore the possibility of creating an additional stormwater detention area in Dry Creek.
- P2.10 If future studies establish a conclusive relationship between reservoir drawdown, refilling, and seismic activity, encourage the Department of Water Resources to manage the Oroville Dam water regime to reduce risk.
- P2.11 Prior to project approval, consult Flood Insurance Rate Maps on file with the Planning Department to identify areas in the vicinity of a waterway or drainage course that have not been subject to detailed study. If the project falls within an area that has not been studied, perform studies and, if necessary, require mitigation or restrictions on development.

Actions

- A2.1 Incorporate Federal Emergency Management Agency map changes and incorporate mapped revisions to the 100-year flood zone into City hazards maps.

- A2.2 Update the General Plan and Zoning Code to incorporate Department of Water Resources 200-year floodplain mapping and the Central Valley Flood Protection Plan measures once they are available.
- A2.3 Annually review all areas subject to flooding, as required by AB 162 and identified by the Federal Emergency Management Agency or the Department of Water Resources.
- A2.4 Conduct a study to identify critical facilities, such as levees, in flood hazard areas and within the Oroville Dam inundation area, and seek ways to improve their level of protection, if possible.
- A2.5 Develop and support implementation of policies and educational programs relating to flooding hazards.
- A2.6 Continue the Levee Certification Study and adopt the findings and recommendations upon completion.

C. Wildland and Urban Fire

1. Background Information

Both wildland and urban fires pose a risk to Oroville and its Planning Area.

a. Wildland Fire

Wildland fire hazards are most pronounced in rural-urban interface areas, or where urban development is located close to open space areas where vegetation serves as fuel. Calculation of threat from wildfire hazard is based on a number of factors including fuel loading (vegetation), topography, and climatic conditions such as winds, humidity and temperature, as well as the proximity of structures and urban development to fire hazards. Generally speaking, the late summer and early fall, when vegetation is at its driest, are the periods of greatest risk for wildland fire. Human activity, including residential and agricultural burning, careless disposal of cigarettes, campfires, arson and use of fireworks can all trigger fires; natural causes such as lightning strikes may also be a cause.

Figure SAF-6 maps the wildland fire risk in Oroville, based on data from the California Department of Forestry and Fire Protection (CAL FIRE), based on the proximity of population density to those areas most likely to be at risk due to pre-

vailing physical and climatic conditions. Most areas of Oroville face some level of threat from wildland fire. The eastern part of the Oroville Planning Area is at the greatest risk and is designated as a High Fire Hazard Severity Zone by CAL FIRE. This is due to the location of homes within areas of denser vegetation, and where steep slopes and other similar conditions exist. The risk of losses as a result of wildland fire can be amplified by the relatively poor access provided by rural roads and the lack of fire hydrants.

Historical wildfire perimeters dating back to 1950 in the Oroville Planning Area are mapped in Figure SAF-7. The map clearly illustrates that the majority of wildfires in the Oroville Planning Area since 1990 occurred in the areas west of the railroad tracks, including large areas north of the Thermalito Forebay during the 1990-1999 period, and near the Feather River south of Thermalito and west of Palermo since 2000. Wildfires during the 1950s and 1960s primarily occurred in areas east of the railroad tracks, including in the foothills north and east of the city and in the area north of Palermo.

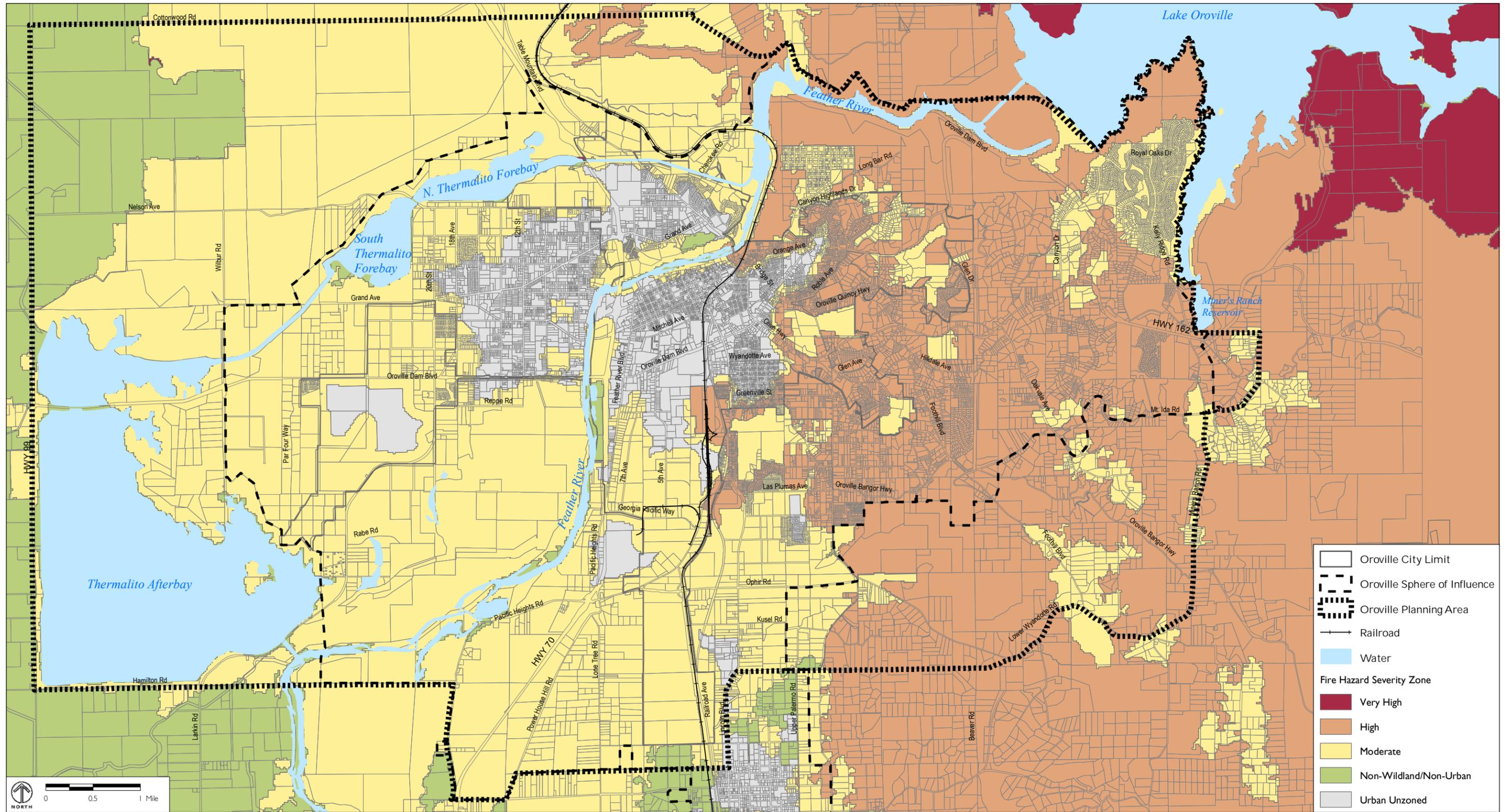
b. Urban Fire

Urban fire risk is greatest in older structures and neighborhoods built before modern building codes for fire safety and building systems were in place. Other factors affecting urban fire risk and relative likelihood of loss of life or property include building age, height, and use; storage of flammable material; building construction materials; availability of sprinkler systems; and proximity to a fire station and hydrants.

c. Fire Protection and Response

Responsibility for prevention and response to wildland fire is provided by the Oroville Fire Department (OFD), while unincorporated portions of the Planning Area are served by the California Department of Forestry & Fire Protection/Butte County Fire Department (CAL FIRE/BCFD) and the El Medio Fire Department. The OFD, CAL FIRE/BCFD and El Medio Fire Department have an automatic aid agreement, in which personnel and equipment are shared in the event of an emergency. More information on these agencies is provided in the Public Facilities and Service Element.

In State Board of Forestry-designated State Responsibility Areas (SRAs), shown in Figure SAF-8, the State has fiscal responsibility for preventing and suppressing wildfires. Due to the heightened risk of wildfire and increased potential for damage or loss in SRAs, development within these areas must comply with special building

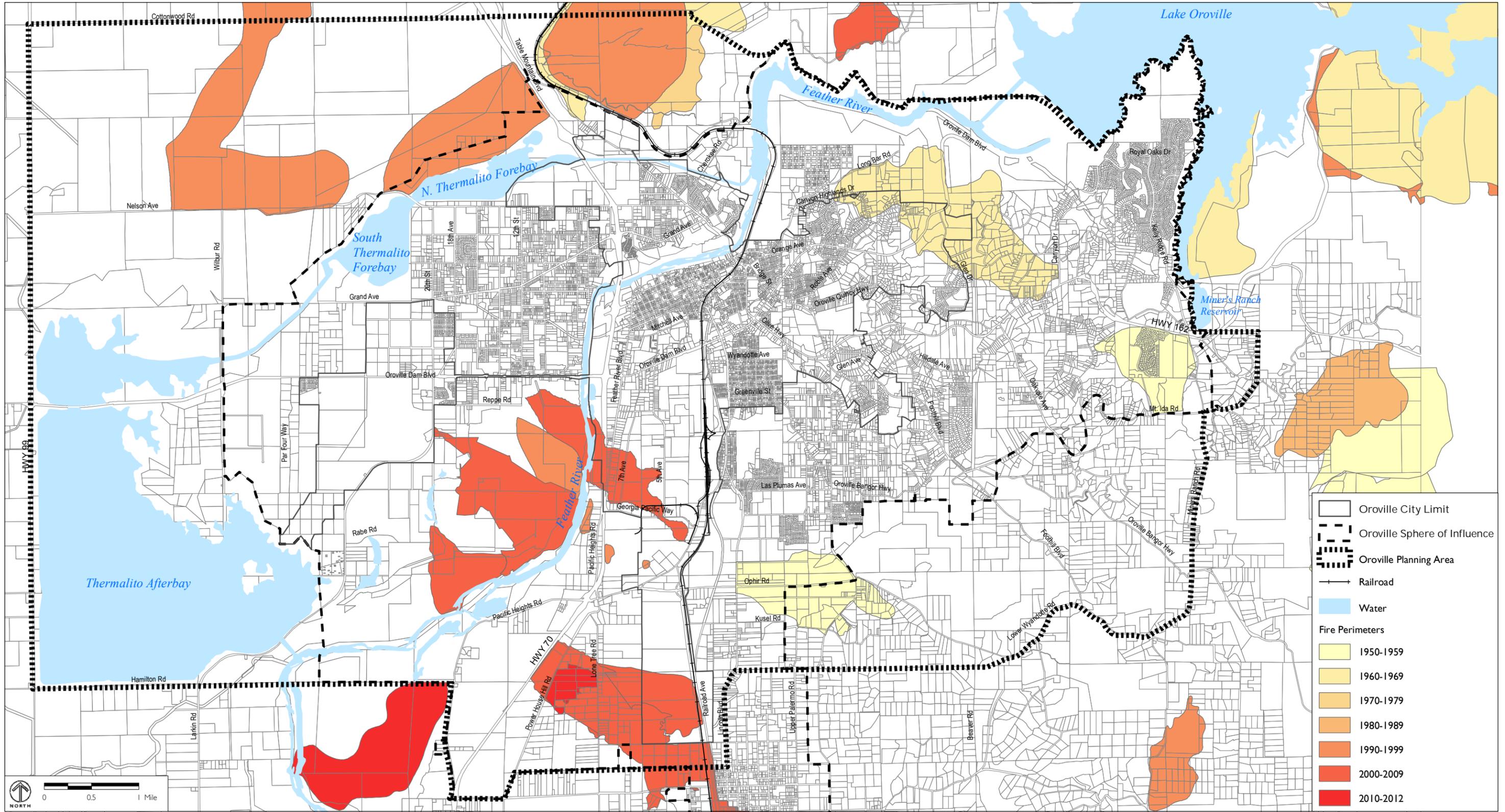


Source: California Department of Forestry and Fire Protection (CAL FIRE), 2007.

Notes: CAL FIRE is remapping Fire Hazard Severity Zones (FHSZ) for State Responsibility Areas (SRA) and Very High Fire Hazard Severity Zones (VHFHSZ) in Local Responsibility Areas (LRA) to provide updated map zones, based on new data, science, and technology. The data provided in this map is from the SRA map adopted November 7, 2007, and the DRAFT LRA map is still under review and pending adoption by CAL FIRE.

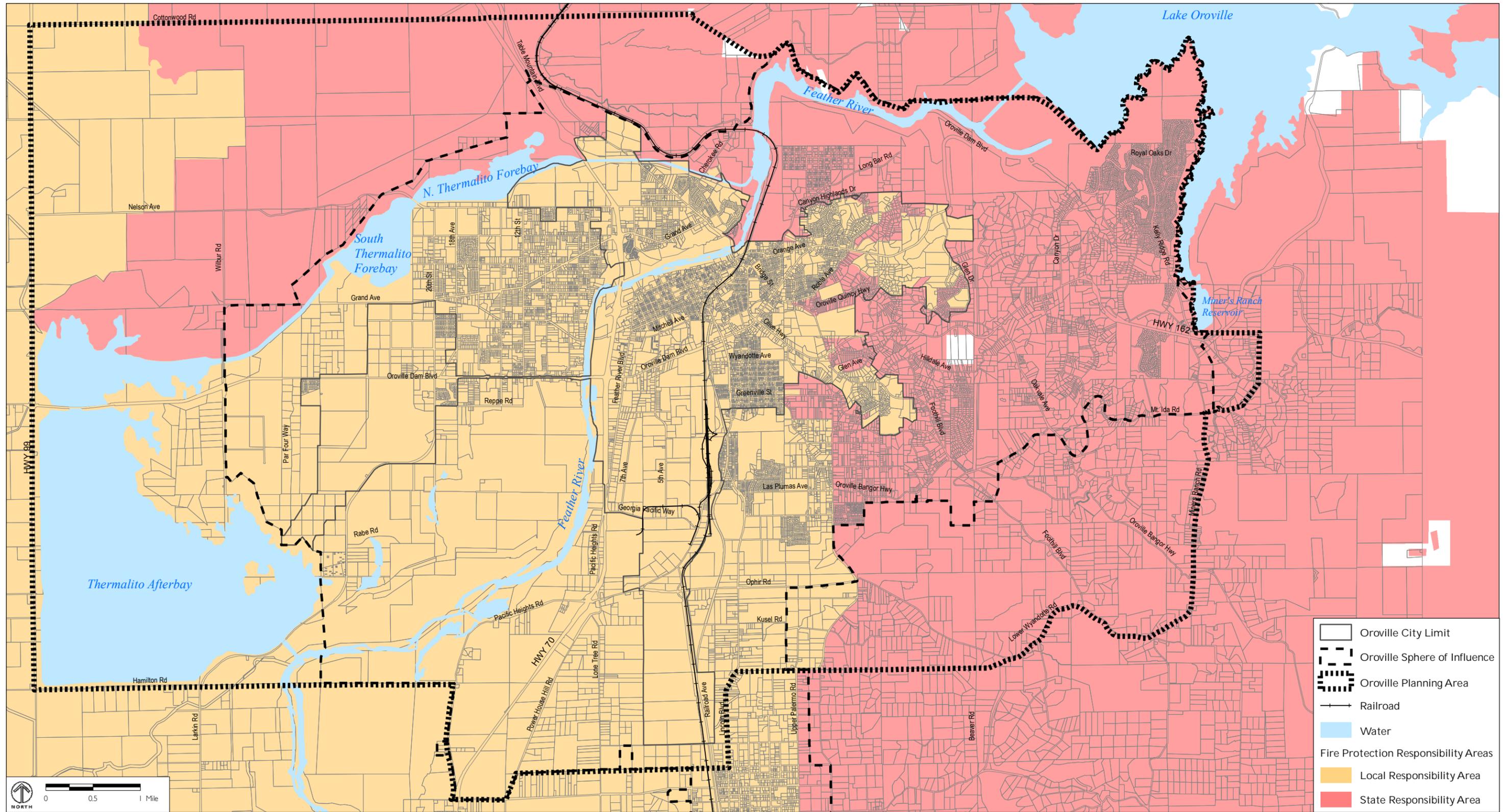
FIGURE SAF-6

FIRE HAZARD SEVERITY ZONES



Source: California Department of Forestry and Fire Protection Fire and Resource Assessment Program (CAL FIRE FRAP), April 2012.

FIGURE SAF-7
WILDFIRE HISTORY



Source: California Department of Forestry and Fire Protection (CAL FIRE), 2007.

FIGURE SAF-8
RESPONSIBILITY AREAS FOR FIRE PROTECTION

requirements established in Chapter 7A of the California Building Code and Chapter 47 of the California Fire Code. SRAs are also regulated by Public Resources Code 4290 and 4291, which establish requirements for maintenance of defensible space and vegetation management.

2. Goals, Policies, and Actions

Goal SAF-3	Protect lives and property from risks associated with wildland and urban fire.
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Policies

- P3.1 Enforce fire protection standards as specified by the City of Oroville Fire Department, Butte County Fire Department, and California Department of Forestry and Fire Protection within rural and undeveloped portions of the Planning Area and in the urban-wildland interface, including implementation of fire safety ordinances to minimize wildland fire hazards, including incorporation of fire resistant building and roofing materials, and attainment and maintenance of “defensible space.” Defensible space may include revegetation with less flammable species, such as fire resistant native and adapted species, and the use of mulch to prevent erosion on bare soil.
- P3.2 Ensure that the development review process addresses wildland fire risk, including assessment of both construction- and project-related fire risks particularly in areas of the City most susceptible to fire hazards. Review fire safety plans and provisions, consistent with California Public Resources Code (PRC) 4290 and 4291, for new development, including aspects such as emergency access, site design for maintenance of defensible space, and use of non-combustible materials.
- P3.3 Require that all development in areas of potential wildland fire hazards, including areas designated by CAL FIRE as High Fire Hazard Severity Zones, include the following:
- ◆ Fire breaks adjoining open space areas.
 - ◆ Adequate access to adjoining open space areas.
 - ◆ Adequate clearance around structures.

- ◆ Fire-resistant ground cover.
- ◆ Fire-resistant roofing materials.
- ◆ Adequate emergency water flow.

P3.4 Incorporate drought-resistant and fire-resistant plants in public works projects in areas subject to wildland fires.

P3.5 Regularly train Oroville Fire Department staff for wildland fire-fighting conditions.

Actions

A3.1 Revise the Fire Sprinkler Ordinance to provide protection in remote areas that cannot achieve adequate fire flows in the water systems.

D. Hazardous Materials

1. Background Information

Historical gold mining operations along the Feather River and local creeks created large deposits of mine tailings, most of which have been dispersed or carried downstream over the past century. However, some in areas adjacent to the Feather River and local creeks, undisturbed deposits may remain. Although these deposits have not been extensively analyzed, there is a potential that concentrations of heavy metals may exist within these undisturbed deposits as a result of the nineteenth-century mining practices.

In more recent times, hazardous materials include a wide variety of substances commonly used in households and businesses. Used motor oil, paint, solvents, lawn care and gardening products, household cleaners, gasoline, and refrigerants are among the diverse range of substances classified as hazardous materials. Nearly all businesses and residences generate some amount of hazardous waste; certain businesses and industries generate larger amounts of such substances, including gas stations, automotive service and repair shops, printers, dry cleaners, and photo processors. Hospitals, clinics, and laboratories generate medical waste, much of which is also potentially hazardous.

In addition to these sources, material that is toxic or hazardous is routinely transported through Oroville on local roads and railway lines, and could be subject to accidental release.

a. Hazardous Materials Regulation

Use, storage and transportation of hazardous wastes is heavily regulated by federal, State and local agencies, including the California Department of Toxic Substances Control (DTSC), which is authorized to implement the regulations of the EPA.

b. Hazardous Material Response

In Butte County, there is a unified team that serves as first responders to hazardous materials incidents or emergencies. The team was first organized by the Butte County Fire Chiefs Association beginning in 1989 through the use of a Joint Powers Agreement. Team members are from the fire departments of Chico, Oroville, Paradise, Biggs, Gridley, and Butte County, and CAL FIRE. The team staffs two units and is composed of specialists and technicians. Haz Mat 64 is stationed at the Kelly Ridge Fire/Butte County Station, and Haz Mat 1 is stationed at Chico Station 1.

Hazardous materials incidents result from cleanup of waste, especially drug labs, highway collisions involving tankers or other hazardous transporters, industrial accidents, accidental rupture of a pipeline or tank during construction or demolition, or from a natural disaster such as a flood or landslide which damages a hazardous materials container or pipeline. Handling of such emergencies is regulated under both federal and State laws, which are designed primarily to protect human health and, secondarily, to safeguard the environment.

c. Hazardous Waste Collection

There is no landfill facility in the county equipped to handle hazardous waste disposal. Norcal Waste Systems of Butte County operates a household hazardous waste collection and transfer service in Oroville, which is open two days per month to Oroville residents and customers of Norcal Waste. Butte County also operates a Permanent Household Hazardous Waste Collection Facility (PHHWCF), which is located outside of Chico, near the airport, and is open to all county residents. Both facilities receive small quantities of household hazardous waste from domestic sources and from some designated Small Quantity Generators.

d. Hazardous Materials Sites

The DTSC oversees designation, monitoring and cleanup of contaminated sites in the State. The DTSC maintains a database of such sites. These sites are identified in Figure SAF-9 and are described below:

- ◆ **Koppers Industries Site, Baggett-Marysville Road.** This site is designated as a Federal Superfund Site, with contamination detected in both soils and off-site groundwater. Cleanup began in 1993, and although soils cleanup to industrial standards has been completed, groundwater contamination remains.
- ◆ **Louisiana Pacific Corporation Site.** Located at Highway 70 and Georgia Pacific Way, the site consists of a sawmill and lumber treatment facility and a 115-acre landfill. Prior to 1988, LP used a fungicide spray containing pentachlorophenol (PCP) to prevent discoloration of cut lumber. In 1973, the California Department of Water Resources discovered PCP contamination in local groundwater. Since 1973, state agencies have monitored the LP site and have detected PCP contamination in surface water, sawdust, and wood waste. In 1986, the site was added to the U.S. Environmental Protection Agency's (EPA) National Priority List. EPA determined that pentachlorophenol (PCP) contaminated groundwater is the responsibility of the adjacent Koppers facility.
- ◆ **Ophir Road Property.** The site is located in the City of Oroville in a mixed agricultural and industrial area, and has been used for the accumulation of materials related to salvage and metal recycling. Hazardous wastes including arsenic, copper, chromium, lead, zinc, and a group of compounds known as polychlorinated biphenyls (PCBs) were detected in the surface soil and waste piles at the Site.
- ◆ **Oroville Municipal Airfield.** This 804-acre site is currently the site of the Oroville Municipal Airport and Airport Business Park. Several underground storage tanks were located on the site, but have been removed. The site is designated as a State Response site, which identifies a confirmed release site where DTSC is involved in remediation, either in a lead or oversight capacity. Since 1997, the Central Valley Regional Water Quality Control Board has been in charge of the remediation for the site.

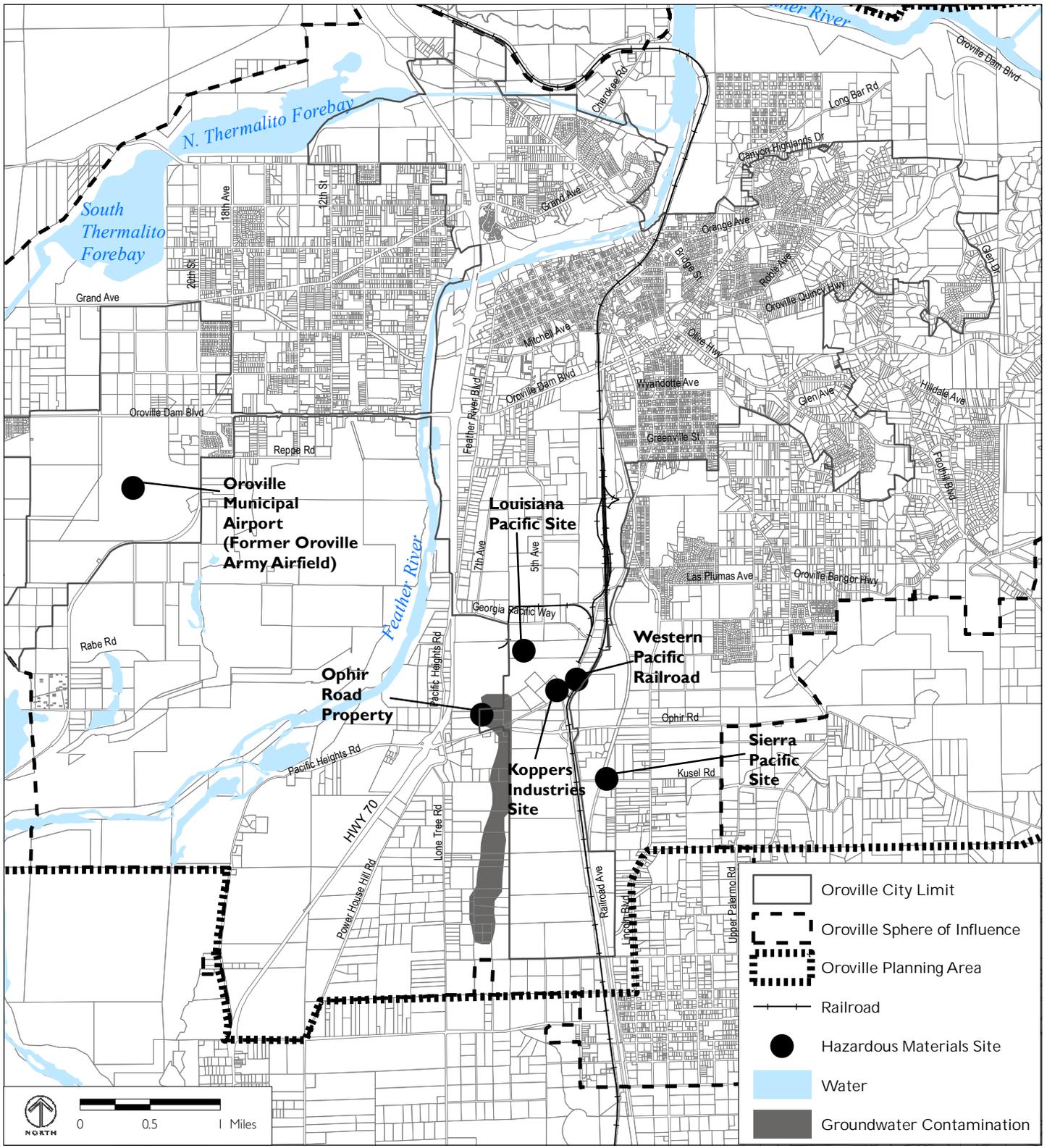


FIGURE SAF-9

HAZARDOUS MATERIALS SITES

- ◆ **Sierra Pacific Site.** This site, located at 1980 Kusel Road, is also designated a State Response site. The facility has been used primarily as a plywood manufacturing plant and wood molding facility, and is currently in operation. On-site soils are contaminated with polychlorinated biphenyls (PCBs) and dioxin. Although present levels are considered acceptable for the current industrial use, restrictive actions may be necessary to prohibit development of the property for future uses that present an unacceptable risk.
- ◆ **Western Pacific Railroad Company.** Located approximately one mile southwest of Oroville between Lincoln Road and Baggett Marysville Road, The site encompasses an area of approximately 90 acres which is cut by the still active north-south oriented main rail line and switching yard. The contamination site is not currently active, is fenced and dust control has been implemented. Land use restrictions for the site include no groundwater or oil extraction at any depth without approval. Residential and agricultural uses, as well as hospital, school, day care, and elder care facilities are prohibited.

In addition to these three sites, the Foothill Boulevard Middle School site, which is located on a former agricultural field where spray residues were detected, was subject to voluntary cleanup and was certified by DTSC as having been remediated satisfactorily in 2004. Two other federal Superfund sites in Oroville, the Louisiana Pacific Facility and Western Pacific Railroad site, have been delisted.¹¹

2. Goals, Policies, and Actions

Goal SAF-4 Protect the community from the harmful effects of hazardous materials.

Policies

- P4.1 Prohibit development in areas of known toxic contamination until such contamination has been remediated or mitigated to acceptable levels.
- P4.2 Require applicants to take and analyze soil samples prior to grading or construction in areas with a historical or suspected presence of toxic materials, including areas with known mine tailings,

¹¹ California Department of Toxic Substances Control. Envirostor Database. Accessed on-line at <http://www.envirostor.dtsc.ca.gov/public/default.asp>, on August 11, 2006.

Superfund sites or other sites identified by the City or concerned agencies. If contamination is discovered prior to development, consult with the appropriate agencies and commence the proper clean-up measures.

- P4.3 Rely on the Butte County Local Hazard Mitigation Plan in the event of a hazardous materials accident.
- P4.4 Continue to participate in the Hazardous Materials Response Team authorized by the Joint Powers Agreement.
- P4.5 Support efforts to identify and remediate soils and groundwater contaminated with toxic materials, and to identify and eliminate sources contributing to such contamination.
- P4.6 Continue to coordinate with the Butte County Environmental Health Division and Oroville Fire Department in the review of all projects which require the use, storage or transport of hazardous waste to ensure necessary measures are taken to protect public health and safety.
- P4.7 Coordinate with Butte County to prepare and update the County-wide Integrated Waste Management Plan and Hazardous Waste Management Plan.
- P4.8 Continue to cooperate with waste disposal companies to facilitate opportunities for safe disposal of household hazardous waste.
- P4.9 Provide on-going training for appropriate city personnel in hazardous materials, response and handling.
- P4.10 Support the continued operation of a local household hazardous materials collection facility.

E. Airport Operations

1. Background Information

The Oroville Municipal Airport is located in the far western part of the City. The airport has been in operation since the 1930s, and has undergone a series of improvements since then. The most recent Airport Master Plan was adopted in 1990.

The airport is managed by the City of Oroville, although the Butte County Airport Land Use Commission is charged with promoting land use compatibility around the County's airports in order to minimize public exposure to excessive noise and safety hazards. The primary means by which this is accomplished is through the preparation and periodic update of an Airport Land Use Compatibility Plan (ALUCP), the most recent of which was adopted in 2000. Public Utilities Code Section 21676 requires Oroville's, and the County's, General Plan land use designations to be in conformance with the land use plans and policies of the adopted ALUCP.

The ALUCP identifies a series of "Compatibility Zones" related to proximity to aircraft overflight paths. Zone A, the Runway Protection Area, has the greatest restrictions on land uses, with Zones B1, B2, C and D providing progressively fewer restrictions. Table SAF-1 describes the allowed uses within the Airport Compatibility Zones. Figure SAF-10 shows the location of the airport compatibility zones. Additionally, certain uses are not permitted within the Airport Compatibility Zones regardless of whether they meet the intensity criteria, including

- ◆ All structures except facilities with location set by FAA criteria.
- ◆ Assemblages of people.
- ◆ Objects exceeding FAR Part 77 height limits.
- ◆ Above ground bulk storage of hazardous materials, except as described in Chapter 26 of the City of Oroville's Zoning Code.
- ◆ Hazards to flights including physical, visual and electronic interference.
- ◆ Children's schools (K-12), libraries, hospitals and nursing homes.

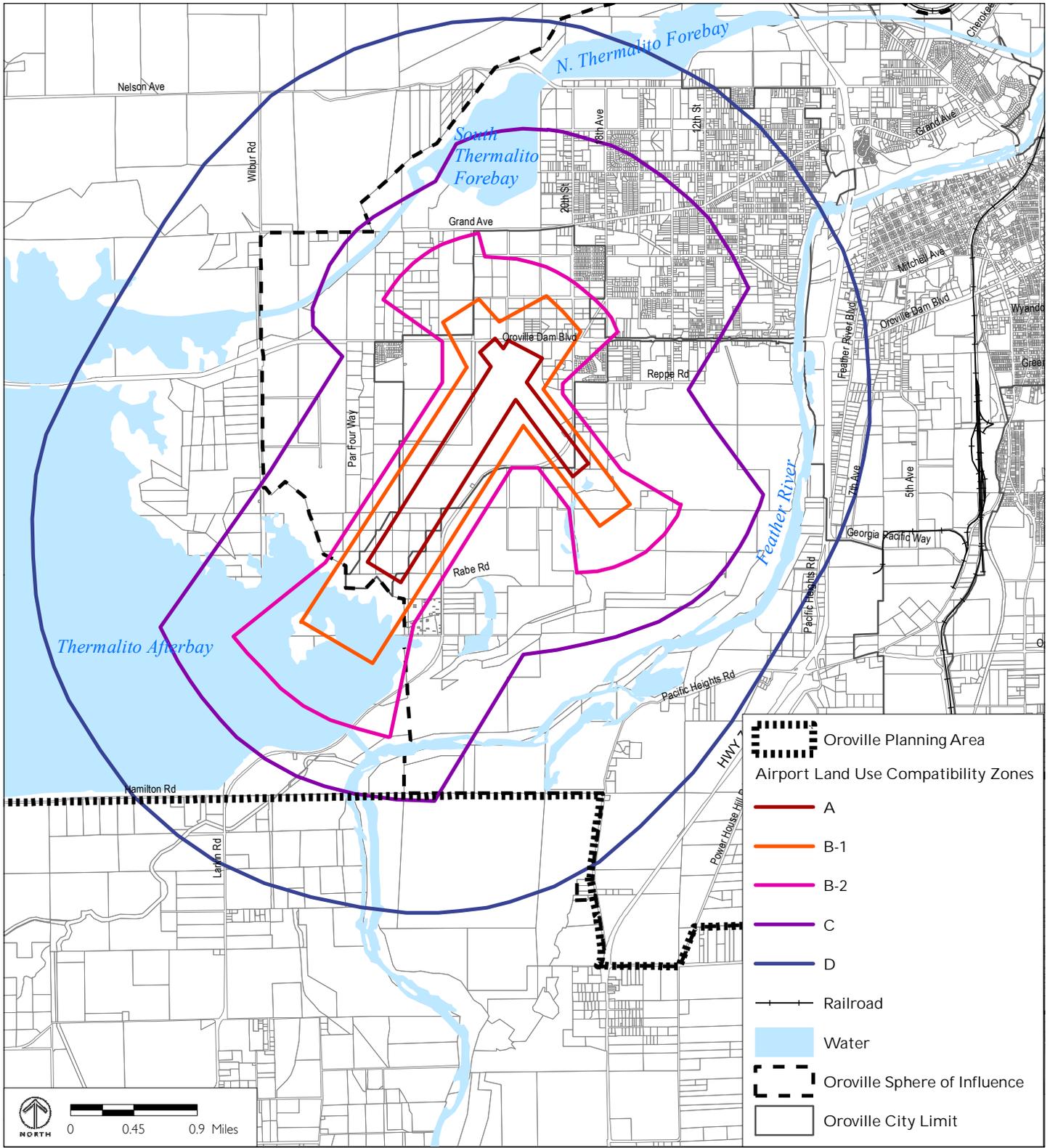


FIGURE SAF-10

AIRPORT COMPATIBILITY ZONES

TABLE SAF-1 **ALLOWED USES WITHIN AIRPORT COMPATIBILITY ZONES**

Zone	Allowed Residential Density	Non-Residential Uses (People/Acre)
A	Not allowed	N/A
B1	Minimum 10-acre lot	Up to 50
B2	Minimum 5-acre lot	Up to 100
C	5-acre lot or 4.0 dwelling units per acre	Up to 300
D	No limit	No limit

Source: Oroville Zoning Code: Chapter 26. Article II. Use Districts. 26-68B Airport Influence Area Overlay Zone.

All but the lowest density residential uses are considered “Normally Incompatible” with Zones A, B1, and B2. Zone C would allow residential uses under some circumstances, but would prohibit most institutional uses such as schools and hospitals. Most industrial and commercial uses are considered compatible, or compatible with restrictions (e.g. on building heights) within Zones B1, B2, C, and D.

Other aspects related to airport safety, in particular, how and where aircraft operate on and around an airport are regulated by other agencies, notably the Federal Aviation Administration (FAA). The FAA stipulates operating procedures for aircraft operations and air traffic control, and is responsible to navigable airspace and flight procedures, as well as oversight of pilot licensing.

2. Goals, Policies, and Actions

Goal SAF-5 Minimize risks associated with operations at the Oroville Municipal Airport.

Policies

- P5.1 Maintain land use and development patterns in the vicinity of the Oroville Municipal Airport that are consistent with the adopted Airport Land Use Compatibility Plan, including setbacks and height requirements.

- P5.2 Protect the Overflight Zone by limiting residential densities to a maximum of six units per gross acre, with proposals consisting of four units per gross acre or more subject to Airport Land Use Commission (ALUC) review. Schools and other uses resulting in “large concentrations” of people shall be prohibited.
- P5.3 Work with Butte County ALUC to establish an Extended Runway Centerline (EERC) area.

Actions

- A5.1 Implement Zoning Classifications and Development Code provisions to reflect airport safety areas established in the adopted Airport Land Use Compatibility Plan for the Oroville Municipal Airport.

F. Electromagnetic Fields

1. Background Information

Electric and magnetic fields (EMF) are associated with the flow of electricity. In nature, phenomena such as lightning and static electricity generate EMF; human-made fields are generated by sources such as powerlines and electrical devices. Electric and magnetic fields are analogous to sound, in that they have wave-like properties related to strength and frequency. Powerlines and typical electrical wiring in building and appliance generate low-frequency fields of 50 or 60 Hertz. Some studies have linked health risks, including cancer, to certain kinds of powerlines that generate strong magnetic fields. However, a wide range of studies, most of which have focused on exposure to magnetic fields,¹² have not shown any clear or definitive link between health hazards and EMF exposure. Nonetheless, there continues to be concern about EMF exposure. There are a large number of high voltage transmission lines in the Oroville Planning Area, mostly associated with transmission of electricity from Lake Oroville’s power generation facilities. These lines include a 500 kV line that crosses the northwest corner of the Planning Area, two 230 kV lines running north-south in the eastern part of the planning area, and several 115kV lines.

¹² Magnetic fields have been the focus of most studies because they are harder to shield and easier to measure than electric fields.

EMF comes from both point sources (e.g. appliances) and line sources, such as powerlines. The strength of the fields from these sources decreases with distance, diminishing more rapidly from point than from line sources. A fact sheet published by the State of California Department of Health Services notes that the magnetic field diminishes to background levels within 3 to 4 feet of an appliance, about 60 to 200 feet from a distribution line, and 300 to 1,000 feet from a transmission line.¹³

There are no federal regulations concerning siting of land uses in proximity to high voltage power lines. The California Department of Education has established regulations that require minimum setbacks from new school facilities and the edge of a transmission “right-of-way.” These distances are 100 feet for 50-133 kV lines, 150 feet for 220-230 kV lines, and 350 feet for 500-550 kV lines, based on diminution of the strength of EMF fields at those distances. Existing schools facilities and other land uses are not regulated at the State level.

2. Goals, Policies, and Actions

Goal SAF-6	Protect residents from any hazards that may be documented related to electromagnetic fields generated by power transmission lines and other sources.
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Policies

- P6.1 Comply with the setback standards established by the State Department of Education, School Facilities Planning Division, when locating schools, child care facilities, and other non-residential uses where sensitive members of the population, such as children, are present for extended periods.
- P6.2 Continue to monitor research on the health effects of electromagnetic fields generated by power transmission lines, substations, and other sources, and take additional appropriate action, if warranted, to reduce hazardous exposure.

¹³ Short Factsheet on EMF, California Department of Health Services, California Magnetic Fields Program, 1999.

G. Emergency Response

1. Background Information

Butte County adopted a Local Hazard Mitigation Plan in June 2014. The Mitigation Plan represents a cooperative effort between the County and the incorporated cities, including Oroville, to document and plan for mitigation of natural and man-made hazards. According to the document, the overall intent of the Mitigation Plan is to “reduce or eliminate long-term risk to people and property from hazards.” It identifies past and present mitigation activities, current policies and programs, and mitigation strategies for the future. The Mitigation Plan also guides hazard mitigation activities by establishing hazard mitigation goals and objectives.

2. Goals, Policies, and Actions

Goal SAF-7	Prepare Oroville residents to respond to emergency situations.
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Policies

- P7.1 Encourage a high degree of city-level self-sufficiency in emergency response, but coordinate with surrounding jurisdictions to the extent possible.
- P7.2 Work with Caltrans to coordinate establishment of appropriate emergency access routes through the City when closure of State highways is necessitated by weather-related or other emergencies.
- P7.3 Support the efforts of the Department of Homeland Security, Oroville Fire Department, Butte County Office of Emergency Services, and other agencies to educate the public about emergency preparedness and response.
- P7.4 Use the Butte County Local Hazard Mitigation Plan as the guide for disaster planning in the Oroville Planning Area.

Actions

- A7.1 Update the MHFDP to include both the incorporated and unincorporated portions of the Planning Area, and to provide continuing access to all emergency facilities.
- A7.2 Establish community programs to train volunteers to assist police, fire, and civil defense personnel during and after a major earthquake, fire, flood, tornado, or other major disaster.
- A7.3 Create and maintain a web page on the City website that includes a list of agencies and contacts for emergency situations, information about emergency preparedness, and links to useful emergency response resources.