OROVILLE

BALANCED MODE CIRCULATION PLAN

PLACEWORKS

ADOPTED 3/31/15

ACKNOWLEDGEMENT

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DISCLAIMER

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INTRODUCTION 1


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1 INTRODUCTION

The Balanced Mode Circulation Plan guides the development of bicycle and pedestrian facilities in Oroville. The City is dedicated to the health and happiness of its residents and the environment; this Plan supports that goal by making Oroville a more pleasant, convenient, and safe place for people to walk and bike. By encouraging and supporting walking and bicycling for both recreation and transportation, the Plan promotes healthy lifestyles and supports the City's sustainability goals.

The Plan integrates existing City and regional planning and policies related to bicycling, walking, and public transit, including:

- **2010 City of Oroville Bicycle Transportation Plan**
- **City of Oroville General Plan (2014 Circulation Element Update)**
- **Butte County General Plan 2030**

This Plan includes bicycle and pedestrian design guidelines that will supplement general practice bikeway and pedestrian design guidelines from Caltrans, the American Association of State Highway and Transportation Officials (AASHTO), the Manual on Uniform Traffic Control Devices (MUTCD), and the US Access Board (for Americans with Disabilities Act (ADA) requirements).

Developing a pleasant, safe, and convenient multi-modal transportation system in Oroville will help the City achieve the following goals:

- **Safety:** Improve pedestrian and bicyclist safety.
- **Accessibility:** Provide accessibility for all non-motorized user groups, including pedestrians, bicyclists, and the physically disabled.
- **Connectivity:** Create a cohesive pedestrian, bicycle, and public transit network that meets the needs of Oroville residents, and encourages biking and walking as a means of transportation and recreation.

- **Community Design:** Implement Oroville General Plan community design policies to create an enjoyable environment that promotes walking and bicycling.
- **Education and Encouragement:** Educate the residents of Oroville on the benefits of bicycling and walking, and encourage them to use these alternative modes of transportation.
- **Maintenance:** Maintain the multi-modal transportation network in Oroville.
- **Implementation:** Implement the Balanced Mode Circulation Plan.

The content and organization of the Balanced Mode Circulation Plan is as follows:

- **Chapter 1: Introduction.** This chapter provides an overview of the Plan and its organization.
- **Chapter 2: Existing Conditions.** This chapter provides an overview of the existing pedestrian and bicycle conditions for each of the City's roadway types: arterials, collectors, and local streets.
- **Chapter 3: Design Guidelines.** This chapter contains design guidelines and best practices for pedestrian and bicycle facilities, recreational trails, and public transit infrastructure.
- **Chapter 4: Design Solutions.** This chapter includes specific recommendations for the City's roadways that will enhance pedestrian and bicycle environments, and improve safety and accessibility.
- **Chapter 5: Implementation and Funding.** This chapter outlines recommendations for support programs that promote walking and biking, describes processes and strategies for implementation of the recommended projects, and identifies potential funding sources that could help fund the implementation of the Plan.

EXISTING CONDITIONS 2


STOP
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2 EXISTING CONDITIONS

This existing conditions and needs assessment is an introduction to the pedestrian and bicycle conditions in Oroville. This chapter covers the regional context, City standards, and existing facilities. Information in this chapter is based on a review of existing documentation from City, regional, and State sources, and on field visits in and around Oroville.

PHYSICAL CONTEXT

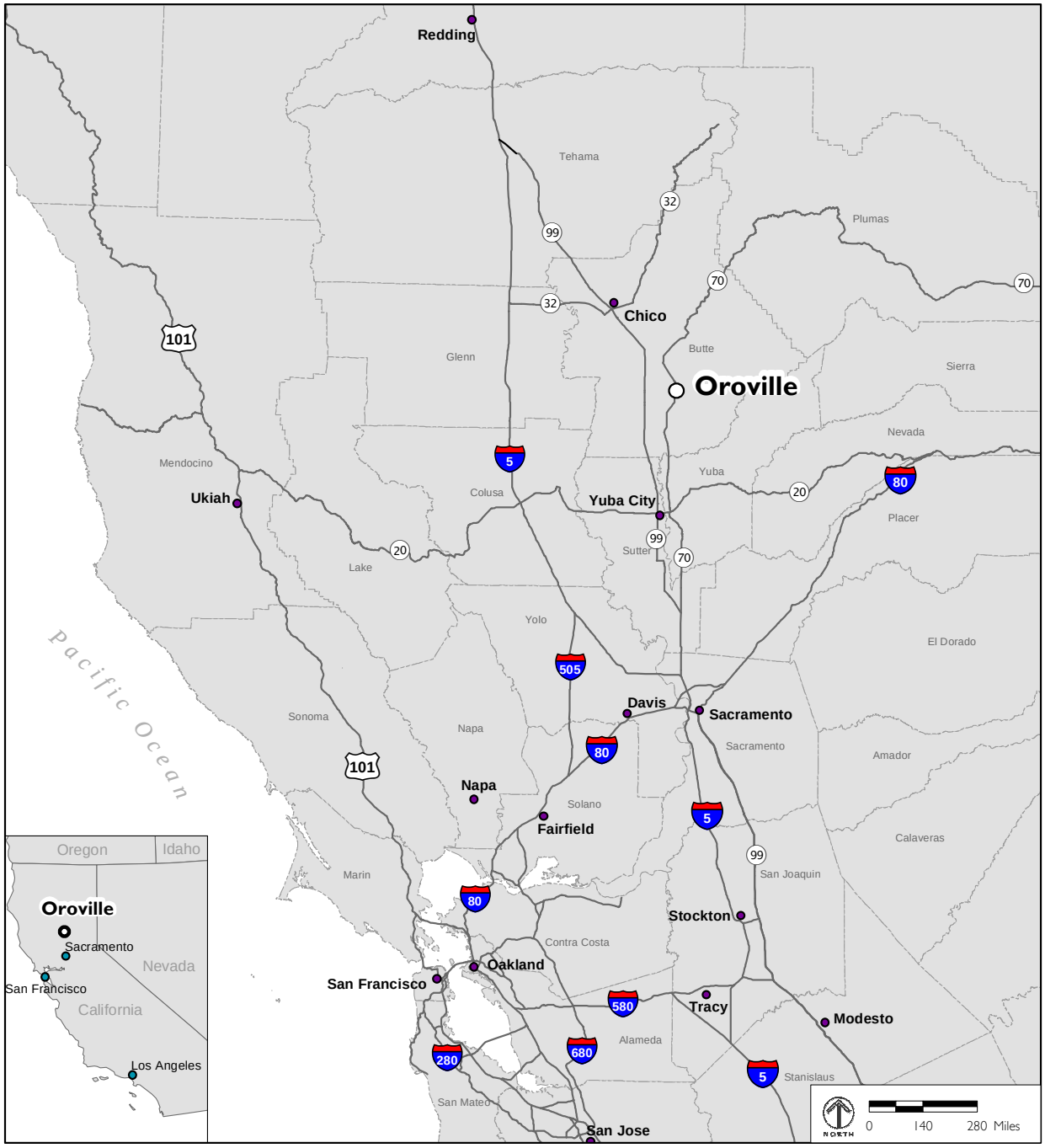
REGIONAL SETTING

The City of Oroville is one of five incorporated municipalities in Butte County and is the County seat. With a population of 15,500,[1] the incorporated city limits consist of a 13-square-mile area located 65 miles north of Sacramento, where the Sacramento Valley meets the Sierra Nevada foothills. Oroville lies 5 miles west of Highway 99 along Highway 70, a primary transportation route connecting Oroville with Sacramento to the south and Plumas County to the north.

GENERAL CHARACTER

Oroville is a small city surrounded by agriculture and open space, and is comprised of predominately single-family residential neighborhoods. Many of these single-family homes are found in the Historic Downtown, the Table Mountain Boulevard area, the Hammon Road area, and the Canyon Highlands area off of Oroville Dam Boulevard. Multi-family homes are scattered throughout the single-family neighborhoods, with a concentration of higher-density, multi-family buildings along the Table Mountain Boulevard corridor and the Oroville Dam Boulevard corridor.

1 US Census Bureau, 2010 Census, 2010 Demographic Profile.



Regional Location

The Historic Downtown district has traditionally been the commercial core of the City, although the Oroville Dam Boulevard corridor has taken away some retail presence from the Historic Downtown. The City is implementing revitalization programs reinvigorate to the Historic Downtown district. The Table Mountain Boulevard corridor contains newer office spaces and office complexes that house a variety of professional functions, while the Feather River Boulevard corridor has hospitality commercial located on the north end and service commercial and Oroville's only movie theater on the south end. Oroville Dam Boulevard and Olive Highway contain the remaining concentration of commercial uses, including the Oro Dam Auto Center. Beginning at the Highway 70 interchange, strip retail uses, including several big box retailers, line the corridor east to Olive Highway. The retail concentrations along Olive Highway are generally located from Oroville Dam Boulevard southeast to Foothill Boulevard.

Parks and recreational facilities, such as playing fields and neighborhood parks, are fairly well distributed around the city. A few of the largest parks include Riverbend Park (on the Feather River), Mitchell Park (south of the Downtown), and Nelson Park and Recreational Center (north of Thermalito). Parks in Oroville provide a number of recreational opportunities for local residents and regional visitors ranging from fishing, hiking, and river-rafting to sports fields and a skate park near the Historic Downtown. However, pedestrian and bicycle connectivity to existing parks and green space is limited.

Walking and bicycling are important in Oroville, particularly because the rate of car ownership is low; approximately 24 percent of renter-occupied households in Oroville do not own a car.[2] Because local bus service is infrequent, many of these residents walk or ride bicycles as their main mode of transportation. Meanwhile, in the summer, the City experiences arid air conditions and high temperatures, sometimes well over 100 degrees (F). Shade is needed for outdoor activity, especially along pedestrian and bicycle routes.

ROADWAY NETWORK

State Highway 70 runs through Oroville; it is considered a freeway to the north and a highway to the south. All other roadways in the City are characterized as arterials, collectors, or local streets. Arterials provide primary routes across Oroville and connect the City with surrounding areas, collectors link streets to arterials, and local streets provide access to properties.

Arterials are designed to move large volumes of traffic and are intended to serve all modes of transportation, including motor vehicles, bicycles, and pedestrians. Therefore, they should not only be designed to facilitate motor vehicle travel, but also to accommodate bicycle and pedestrian circulation. As appropriate to the terrain and character of neighborhoods, the General Plan Circulation Element requires that arterials include sidewalks of sufficient width to allow two pedestrians to walk side-by-side and a planting strip wide enough to accommo-

2 American Community Survey 2005-2009.

date large canopy shade street trees between the sidewalk and the curb and gutter. Arterials must also include on-street, Class III bicycle routes Class II bicycle lanes, or Class I off-street bicycle paths. In addition, arterials may require a raised median or center turn lane for safe and efficient movement of vehicles to and from adjacent development.

Examples of four-lane arterials in Oroville include:

- Lincoln Boulevard
- Nelson Avenue
- Olive Highway
- Oroville Dam Boulevard

Examples of two-lane arterials in Oroville include:

- Montgomery Street
- Myers Street
- Oroville-Quincy Highway
- Washington Avenue

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.

Collectors in Oroville include:

- Cherokee Road
- Mitchell Avenue
- Orange Avenue
- Oroville Bangor Highway
- Palermo Road
- South 5th Street
- Spencer Avenue

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 are set at 25 mph pursuant to the California Vehicle Code.

MAJOR DESTINATIONS

The locations of major destinations are important in determining areas and routes of potential heavy use. The following describes the major destinations in the Oroville city limits.

- **Schools:** The Oroville City Elementary School District operates four primary schools (Sierra Del Oro Preschool, Bird Street School, Stanford Avenue Elementary School, and Wyandotte Avenue Elementary School) and two middle schools (Central Middle School and Ishi Hills Middle School). The Thermalito Union School District operates one elementary school (Plumas Avenue School) and one middle school (Nelson Middle School). The Oroville Union High School District serves the greater Oroville area and includes a traditional high school (Oroville High School), a charter high school (Challenge Charter High School), and a continuation school (Prospect High School). The City also includes the Oroville Adult Education Career and Technical Center.
- **Parks and Recreational Areas:** The City is home to the Brad Freeman Trail, a bicycle and pedestrian path that runs along the Feather River and extends around the Thermalito Afterbay and Forebay. Lake Oroville, located northeast of the City, attracts boaters, water-skiers, picnickers, and tourists from the surrounding area.
- **Historic Downtown:** Downtown Oroville hosts a number of museums and the State Theater, along with restaurants and small retail shops.
- **Libraries:** The main library branch for the Butte County Library System is located in Oroville, along with the Butte County Public Law Library.
- **Hospital:** The Oroville Hospital serves Butte County and is located in the City on Olive Highway.
- **Retail Corridor:** The Oroville Dam Boulevard corridor is a major commercial district, which includes large discount stores, major grocery chains, automobile services, and restaurants. The arterial, which connects tourists from State Highway 70 to Lake Oroville, also provides many visitor services.
- **County Government Facilities:** Many County services, including courts, welfare, health, administration and jail facilities, are located in the city on County Center Drive, off of Nelson Avenue.

PEDESTRIAN CONDITIONS

This section describes the existing conditions of the pedestrian environment and facilities in Oroville, and identifies pedestrian improvement needs.

WALKABILITY AND PEDESTRIAN FACILITIES

Walkability is a qualitative measure of the degree to which a pedestrian network encourages walking. Walkability is influenced by all aspects of the built environment, including availability of pedestrian facilities and amenities, such as benches, store frontage, and wayfinding signage. Pedestrian facilities are critical elements to create a safe and functional pedestrian environment.

Pedestrian facilities include sidewalks and pathways, which form a connected network, as well as crosswalks, pedestrian crosswalk signals, lighting, street trees, and curb ramps. To achieve an enjoyable pedestrian environment, pedestrian facilities need to be designed with consideration of the surrounding context. Sidewalks and pathways should be wide enough to comfortably accommodate the existing or the expected pedestrian volume, and be safe and accessible to pedestrians of all abilities. Sidewalk surfaces should be kept smooth enough to accommodate wheelchairs and strollers. All corners of intersections should have well-designed curb ramps. At signalized intersections, all crosswalks should be marked with highly visible painting and signage. Traffic signal phasing should allow adequate crossing time for pedestrians. The connected network must provide access to destinations that attract pedestrian travel, such as schools, parks, and stores. Additionally, the Americans with Disabilities Act (ADA) requires other treatments, such as audible signals and curb ramps with truncated domes, to promote safety and accessibility for disabled users.

EXISTING PEDESTRIAN FACILITIES AND NETWORK

The state of Oroville's pedestrian network varies greatly based on the age of a neighborhood or area. There are distinct differences in the quality and convenience for users of the pedestrian system in different areas of the City:

- Downtown Oroville is very pedestrian friendly, with newly added bulb-outs, curb ramps, bollards, planters, pedestrian-scale lighting, special crosswalk paving to slow vehicles, and street furniture to allow visitors to sit and spend time along the street.
- Some residential neighborhoods, especially adjacent to the Historic Downtown, are laid out in a traditional grid pattern with relatively small blocks, complete sidewalks, and street trees. These neighborhoods provide pedestrians with a high level of accessibility to destinations, often providing direct or nearly direct walking routes.

- The neighborhood south of Oroville Dam Boulevard and east of Lincoln Boulevard is also comprised of a grid street network with relatively short block lengths that are good for walking; however, on Pearl Street and Barnes Way, the sidewalks are missing and the narrow streets pose conflicts between parked cars and pedestrians.
- Other residential neighborhoods are built with few through streets and multiple cul-de-sacs that do not provide through pedestrian connections. This circulation pattern creates long and indirect walks to destinations, which discourages walking.

The following sections describe the existing pedestrian facilities in Oroville.

SIDEWALKS

Oroville has a fairly complete sidewalk network. Many streets within the city have sidewalks on both sides. There are, however, locations where there are gaps in the sidewalk system, and sidewalks end abruptly, such as along Oro Dam between Feather River Boulevard and Lincoln Street. Additionally, there are rolled-edge curbs in some sections of the city. Rolled-edge curbs allow and encourage drivers to park on sidewalks, which obstructs pedestrians.

CROSSINGS

Crossing major roads poses a challenge to pedestrians. Most major roads in the city are wide with significant amounts of traffic, and do not provide proper crosswalks. There are often two-way stop signs along major roads, forcing pedestrians, including seniors and children, to negotiate with drivers, cross wide intersections, and/or make a long detour to use a safer crossing.

TREES AND LANDSCAPING

The streetscape environment varies greatly between neighborhoods within Oroville. Some neighborhoods have separated sidewalks, with landscaped parking strips between the curb and the sidewalk. These parking strips often contain street trees that provide shade for pedestrians. However, some of the streets have solid curbs and sidewalks, with no parking strip to provide a buffer between pedestrians and vehicle traffic.

PEDESTRIAN AMENITIES

Pedestrian amenities, such as benches, pedestrian-scaled lighting, and transparent store frontage, can provide a comfortable and enjoyable environment for people to walk. Downtown Oroville provides a range of pedestrian amenities; however, there is a lack of pedestrian amenities outside of the Downtown. In particular, pedestrian-scaled lighting, which provides adequate lighting levels and ensures public nighttime safety, is missing in most residential areas, near schools, and in parks.

WAYFINDING AND SIGNAGE

An effective signage and wayfinding system also contributes to a pedestrian-friendly environment. Uniform and complementary signs throughout a city help tourists or residents effectively navigate while avoiding the frustration of getting lost and wasting time. Since smartphone technology has spread, getting lost can be less of a concern than in the past, but memorable signage can serve as public art, enhance the pedestrian experience, and reinforce a unique local character and identity. Although Downtown Oroville provides a uniform signage system, it is easy to get lost outside of the Downtown because of a lack of a wayfinding system, dead ends, and cul-de-sacs.

BICYCLE CONDITIONS

This section describes the existing conditions of bicycle facilities and routes in Oroville, and identifies existing bicycle needs.

TYPE OF BIKEWAYS

Based on the California Streets and Highways Code, Caltrans identifies three types of bikeways, as described below and illustrated in Chapter 3.

- **Class I bikeways (Bike Path)**, also known as multi-use paths, are separated completely from motor vehicle traffic but may be shared with pedestrians.
- **Class II bikeways (Bike Lane)** are striped in the roadway for the exclusive use of bicycles. Vehicle and pedestrian cross-flow are permitted. The striping is supported by pavement markings and signage.
- **Class III bikeways (Bike Route)** are located on roadways shared with motor vehicles. Bike routes are designated by signage and/or shared roadway bicycle markings (sharrows).

EXISTING BIKEWAYS

A number of bikeways have been constructed or designated in Oroville. These existing bikeways include the Class I bike path along the south side of the Feather River (Brad Freeman Trail) and Class II bike lanes on:

- Orange Avenue (between Montgomery Street and Oro Dam Boulevard)
- Foothill Boulevard (between Pinedale Avenue and Olive Highway)
- Grand Avenue (between 2nd Street and Table Mountain Boulevard)
- Nelson Avenue (between County Center Drive and Table Mountain Boulevard)

These bike lanes are adjacent to a parking lane, generally range from 5 to 6 feet in width, and are typically striped on both sides.

PLANNED BIKEWAYS

Planned bikeways are outlined in the 2010 Oroville Bike Plan. The document lists bikeways in two groups: first priority and second priority. First priority bikeways are considered necessary to facilitate bicycle transportation within the City and second priority bikeways will provide added connectivity for the region. Most planned bikeways are either Class I or Class II. Other potential projects outlined in the document include obtaining easements along powerline corridors for bicycle and pedestrian paths, and upgrading nine traffic signals to include video or other detection devices for bicycles.

BICYCLE SUPPORT FACILITIES

Bicycle facilities, including bike parking and other support facilities such as showers and restrooms, encourage bicycling. Bicycle parking is located at most destinations in the City, including some of the schools and parks, the Oroville Hospital, the County government offices, and many shopping centers. Additionally, each junior and senior high school has shower facilities for their students, faculty, and staff. Health clubs and other athletic facilities are also potential locations for shower facilities. Public restrooms for bicyclists are located in Downtown Oroville, at the County government offices, and in shopping areas.

RECREATIONAL TRAIL CONDITIONS

Outside of public street right-of-ways, there is one major recreational trail in the city, the Brad Freeman Trail, which runs along the Feather River. The multi-use path is shared by pedestrians and bicyclists, approximately 12 feet wide, and buffered with landscaping.

While the majority of the trail is formalized and in good condition, there are gaps in the trail that should be addressed. For example, there is a gap in the Brad Freeman Trail as it runs under the pedestrian and bicycle bridge adjacent to Table Mountain Boulevard (known as the "Green Bridge"). In addition, the trail runs under Oroville Dam Boulevard without a formal connection that allows pedestrians and bicyclists to directly access the trail from this major roadway. There is currently an informal trail in this location, but it is unpaved, unmaintained, and unmonitored with homeless encampments that discourage people from using it.

MULTIMODAL CONNECTIONS

"Multimodal" refers to the use of two or more modes of transportation in a single trip. Improving non-motorized access to transit is an important part of making walking and bicycling a part of daily life in Oroville. Linking bicycles with public transit allows bicyclists to reach more distant areas and to overcome barriers, such as nighttime bicycling, poor weather, or steep hills. Bicycling to transit creates benefits for the community by reducing air pollution, energy consumption, and traffic congestion, all with relatively low cost investments.

The public transportation system in Oroville consists of the B-Line service, operated by the Butte County Association of Governments (BCAG), which provides intercity/regional and local fixed-route connectivity. 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. 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. 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.

Some of Oroville's bus stops do not provide ADA-compliant facilities, bus route maps, or shelters to protect riders. Bicycle parking facilities are also not usually located at bus stops, but exterior bicycle racks are mounted on the front of all B-Line buses.

DESIGN GUIDELINES 3

3 DESIGN GUIDELINES

This chapter describes and illustrates bicycle and pedestrian design guidelines that should be used to inform the planning and design of future improvements to Oroville's multi-modal transportation network.

PEDESTRIAN DESIGN GUIDELINES

The recommended improvements for pedestrians included in this section are based upon the federal and State accessibility standards, including the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and California Title 24. The California Disabled Accessibility Guidebook (CalDAG) synthesizes the recommendations from both sources and is the basis for many of the following guidelines. Similarly, the pedestrian network recommendations are influenced by the State and national standards for transportation design, such as the *California Manual on Uniform Traffic Control Devices* (CA MUTCD) and the *American Association of State Highway and Transportation Official's* (AASHTO's) Green Book.

In September of 2008, the *California Complete Streets Act of 2008* was signed into law. Complete streets are roads designed to accommodate all users, including pedestrians, bicyclists, children, the elderly, persons with disabilities, transit riders, and motorists. The California Department of Transportation later issued a revised Deputy Directive titled *Complete Streets – Integrating the Transportation System*. As required by the legislation, the Oroville General Plan Circulation Element includes complete streets policies so that roadways are designed to safely accommodate all users. The Pedestrian Design Guidelines described in this section provide a framework for pedestrian improvements in Oroville that follow complete streets principles and implement the related General Plan policies. Incorporating the Pedestrian Design Guidelines into development projects will improve the safety and enjoyment of pedestrians in Oroville and provide accessibility for pedestrians of all mobility levels.

Ladder Crosswalk Striping

In-Pavement Lighted Crosswalk

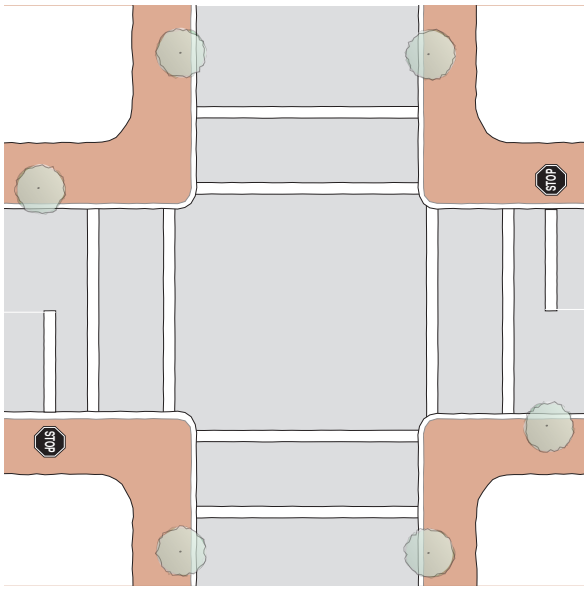
Crosswalk Paving Pattern

CROSSWALKS

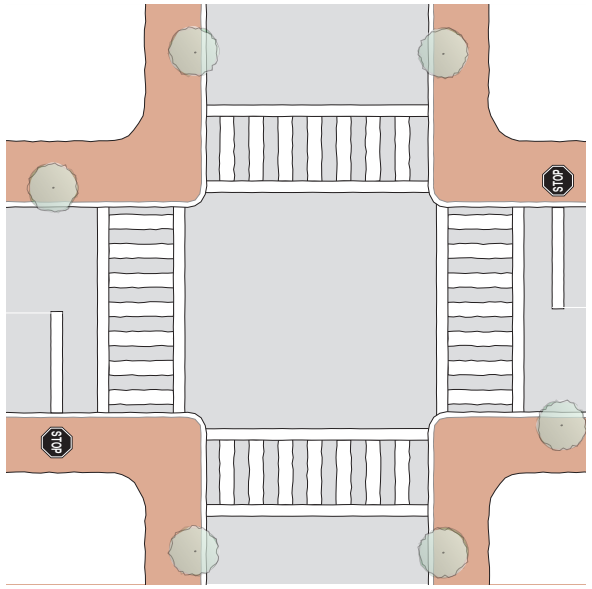
Crosswalks benefit both pedestrians and drivers in a number of ways. They prepare drivers for the potential of encountering a pedestrian, provide safe crossing locations, and are important links for pedestrian connectivity. Their location should be based on pedestrian needs, safety, and surrounding land use. Well-designed crosswalks are highly visible, compact, and allow for multiple pedestrians to cross in either direction.

While some crossings are controlled by both traffic signals and stop signs, others are uncontrolled. The California Vehicle Code states that the driver of a vehicle shall yield the right-of-way to a pedestrian crossing the roadway within any marked or unmarked (not striped) crosswalk at an intersection, except if directed otherwise. It is recommended that marked crosswalks be included at any uncontrolled intersection if the location is further than 300 feet from a controlled crossing location. Pedestrians should also be clearly visible by motorists for at least 250 feet, and enhanced visibility measures should be taken in locations adjacent to major destinations and in locations with potential pedestrian safety concerns.

The more compact a pedestrian crossing, the less time a pedestrian is in potential conflict with vehicles. Pedestrian crossing distances can be kept compact by incorporating narrow turning radii, discouraging free right turns, and narrowing roadway width with curb extensions.



Transverse Crosswalk Striping



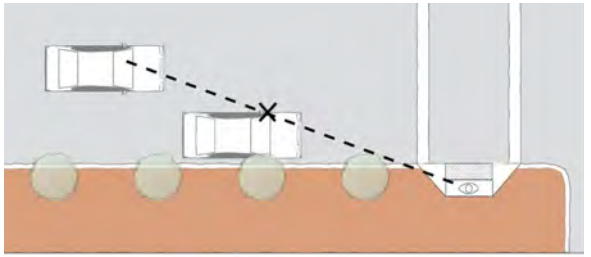
Ladder Crosswalk Striping

CURB EXTENSIONS

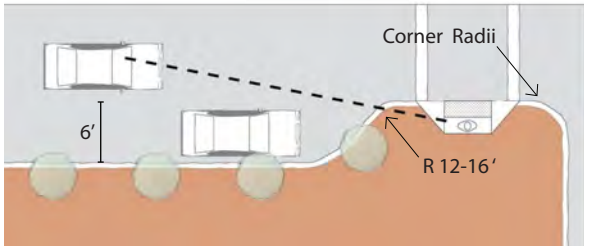
Curb extensions (also known as bulb-outs) extend the sidewalk into the adjacent parking lane, which narrows the roadway and widens the pedestrian way. Curb extensions are beneficial because they improve pedestrian visibility, reduce the distance pedestrians have to walk across an intersection, and allow space for additional pedestrian amenities, such as benches and planters. Typically, curb extensions are located at intersections, but they can also be used for mid-block crossings. They also contribute to traffic calming and reduce the capacity to park to close to the intersection corners and crosswalks, which is illegal. The design of curb extensions should adhere to the following guidelines:

- Maximum 6-foot extension into the street adjacent to parallel parking.
- Maximum 12-foot extension into the street adjacent to diagonal parking.
- Turning radius of curb extension, as it returns into the existing curb, should be approximately 12 to 16 feet.
- Corner radii should be addressed on a case-by-case basis and minimized to increase pedestrian safety while taking into account truck and emergency vehicle access.

Additionally, bike lanes should be painted continuously adjacent to the curb extension to avoid conflict.



Limited visibility - Parking too close to an intersection can hinder pedestrian visibility



Improved visibility - Curb extensions can help improve pedestrian visibility

Curb Extension

Rain Garden Bulb-Out

Pedestrian Crossing Pushbutton


Uncontrolled Intersection Crossing

PEDESTRIAN SIGNALS

Various audio and visual mechanisms located at signalized intersections can better communicate safety information to crosswalk users. Features like signal timing, accessible pedestrian signals (such as audible tones, verbal messages, and/or vibrating surfaces), and other innovative signal types enhance crosswalk safety for pedestrians, as well as vehicles.

The CA MUTCD recommends that controlled crossings should be timed for a walking speed of 3.5 feet per second. However, a pedestrian's walking speed is dependent upon many factors, including age and mobility. Existing pedestrian signal crossing times that do not meet the MUTCD standard for new facilities should be evaluated for potential upgrade. The ability to complete these upgrades to existing facilities will depend on the availability of funding. Currently, there is no funding assigned for such upgrades to existing conditions.

Accessible pedestrian signals (APS) are used to help guide pedestrians with impaired vision and/or hearing. The guidelines for the following recommended APS features are defined in the National Highway Research Program's Guidelines for Accessible Pedestrian Signals.

- Pushbutton Locator Tone
- Tactile Arrow
- Actuation Indication
- Audible WALK Indication
- Vibrotactile Walk Indication
- Response to Ambient Sound
- Pushbutton Information Message
- Louder Signal (Beaconing Signal)

The location of an APS is important to prevent ambiguity about which crosswalk is being signaled. Ideally, there are two pushbuttons (one for each direction) on one corner, which are mounted on two separate poles. Mounting the APS on a traffic signal is acceptable as well.

There are a number of innovative treatments for pedestrian signals that help to enhance safety at pedestrian crossings. Pedestrian crossings that might require innovative treatments include intersections with high volumes of pedestrians, crosswalks with a history of pedestrian and vehicle collisions, and extra wide intersections.

CORNER TURNING RADIUS

The size of a corner turning radius has a significant effect on the operation and safety of an intersection. Intersections with larger turning radii promote fast traffic speeds and increase the walking distance for pedestrians, while intersections with smaller turning radii promote slower traffic speeds, shorten the pedestrian walking distance, and provide for more sidewalk space at corners. Additional sidewalk space at corners provides an opportunity for perpendicular curb ramps, and is beneficial for street sweeping operations. However, if the turning radius is too small, it can reduce the efficiency of an intersection.

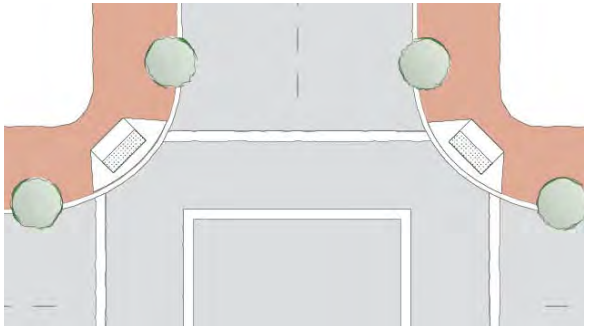
The general rule for designing a corner should be to choose the smallest appropriate turning radius, acknowledging that each location has a unique set of factors that determine the optimal radius. The turning radius should accommodate the expected amount and type of traffic for safe turning speeds. As the curb radius increases, incomplete stops become more frequent and drivers make turns at higher speeds.

Minimum turning radius recommendations are provided in *A Policy on Geometric Design of Highways and Streets* (AASHTO). Historically, these minimum turning radii have been exceeded in order to facilitate the efficient movement of larger vehicles. However, recent interest in balancing the needs of pedestrians and bicyclists highlight the need to adhere to minimum turning radii standards and consider alternative ways to accommodate vehicles with larger turning radii. The following are recommendations for the design of curb radii:

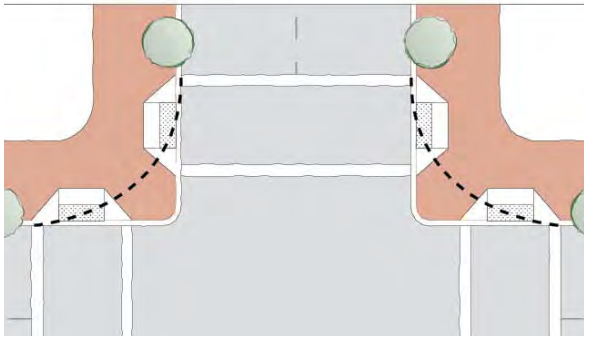
- 10-foot radius at locations with curbside parking.
- 20-foot radius at locations with no parking lane.

Potential alternatives to accommodate vehicles with larger turning radii are:

- Move stop lines back from the intersection.
- Allow vehicles that cannot navigate a tight turning radius to turn into the out-of-lane roadway.
- Add a parking lane adjacent to the corner to increase the relative turning radius.



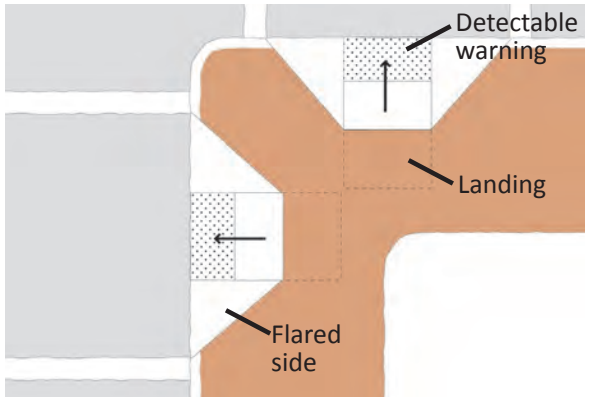
Larger Turning Radii - increase pedestrian crossing distance and limit amount of sidewalk available for perpendicular curb ramps.



Smaller Turning Radii - reduce the pedestrian crossing distance and create more sidewalk room for perpendicular curb ramps.

An ADA-compliant curb ramp should be provided at each end of the crosswalk.

Grooved Border around Curb Ramp



Perpendicular curb ramps - preferred

CURB RAMPS

Curb ramps provide access between a sidewalk and a surface that is located above or below an adjacent curb. Curb ramps are required wherever a pedestrian path crosses a curb, typically at every corner of an intersection. Curb ramps are an important link in providing accessibility and creating connectivity throughout the pedestrian network. Without curb ramps, curbs can create barriers for people with many types of mobility limitations. However, people with visibility limitations often rely on the curb for navigation and to identify the transition between the sidewalk and street; curb ramps can obscure this information. Given these conflicting interests, specific design strategies should be followed to ensure a safe and accessible environment for all users. For example, curb ramps should be designed with detectable warnings (e.g. raised domes and tactile warnings) that extend the full width and depth of the curb ramp.

The type of curb ramp used is dependent upon the location. The most common types of curb ramps are perpendicular curb ramps, returned-curb curb ramps, diagonal curb ramps, and parallel curb ramps (see images).

The following section outlines the minimum ADA requirements for curb ramps, the best practice design, and options for creating suitable design when an optimal design cannot be accommodated. The minimum ADA requirements for the construction of curb ramps are as follows:

- Curb ramp is a minimum of 4 feet in width.
- Slope of the curb ramp cannot exceed 8.33 percent.
- Curb ramp lies generally in a single sloped plane, with a minimum of surface warping and cross slope.
- Finished surface of the ramp contrasts from the adjacent sidewalk and is stable, firm, and slip resistant.
- No surface of the curb ramp contains any vertical edges of greater than ¼ inch.
- A level landing a minimum of 48 inches deep extends the full width of the ramp, provided at the upper end of the curb ramp, or the slope of the fanned or flared sides does not exceed 8.33 percent.
- Slope of the top landing area does not exceed 2 percent in any direction.
- Built-up curb ramps do not project into vehicular traffic lanes.
- Transitions from the ramp to the sidewalks, gutters, or streets are flush and free of abrupt changes.
- A 12-inch grooved border is provided along top and sides of the ramp at level surface of the sidewalk.

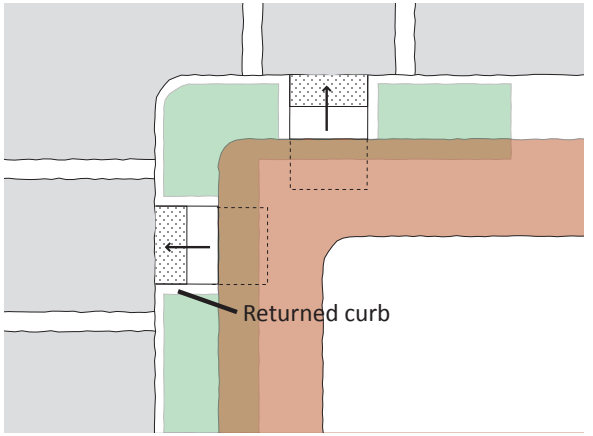
- Slope of the road, gutter, or sidewalk adjoining the curb ramp does not exceed 5 percent within 4 feet of the top and bottom of the curb ramp.
- Curb ramps are located or protected to prevent their obstruction by parked vehicles.
- Curb ramp has detectable warnings (e.g. raised domes and tactile warnings) that extend the full width and depth of the curb ramp, excluding the flared sides inside the grooved border.

The best practice is to have perpendicular curb ramps with either flared sidewalk or returned curbs. Perpendicular curb ramps require sidewalks that are wide enough to provide a top landing, which allows pedestrians not using the curb ramps to continuously walk across a level surface. Additionally, perpendicular curb ramps position users on a direct path along a crosswalk, and are positioned within the center of a crosswalk. Perpendicular curb ramps should be used at all locations within Oroville that have sidewalks that are wide enough to accommodate the minimum design requirements. If a location does not have the space to accommodate the minimum design requirements, the use of curb extensions or widening the sidewalk at the back of the walk should be considered before utilizing another form of curb ramp.

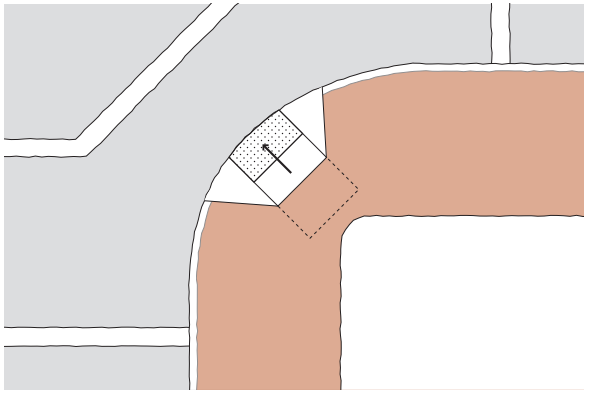
Returned curbs are the best practice only in locations where pedestrians cannot walk across the curb ramp, such as in a planting strip. Returned curbs should not be used when the curb ramp is within the pedestrian path of travel because the curbs will create a tripping hazard.

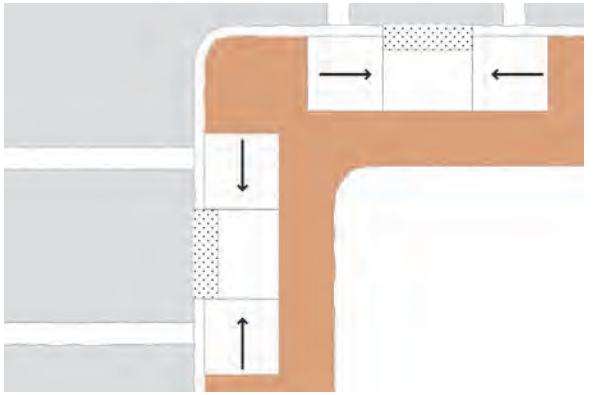
Diagonal curb ramps are not best practice because they direct pedestrians into the street at a diagonal orientation, requiring the pedestrian to enter the street and be exposed to traffic before turning to proceed within the crosswalk. Additionally, diagonal curb ramps make it more difficult for pedestrians with limited visibility to orient to the path of the crosswalk. Diagonal curb ramps should only be used when the limitations of the location demand it, such as areas with a narrow turning radii. Diagonal curb ramps may also be acceptable as retrofits in residential areas where traffic volumes are very low.

Parallel curb ramps should only be used in locations with narrow sidewalks that cannot accommodate the spatial requirements of perpendicular curb ramps, or in locations that require longer ramp lengths because of high curbs. Ideally, two parallel curb ramps should be used so that the direction of the curb ramp lines up with the direction of the crosswalk.



Returned-Curb curb ramps


Diagonal curb ramp


Parallel Curb Ramps

A curb ramp along a sidewalk at a drivewalk intersection.

Detecable warning surfaces and pedestrian gates placed on sidewalk approaching railroad tracks.

Sidewalk turns in order to accomodate railroad signage.

DRIVEWAY RAMPS

Driveways allow vehicles to cross the sidewalk and gain access between the street right-of-way and private parcels. It is the driver's responsibility to yield to pedestrians on the sidewalk; however this relationship inherently places pedestrians in potential conflict with vehicles.

The design of driveway aprons also affects the accessibility and safety of the sidewalk. The driveway apron and the flare of the driveway apron (the sloped transition between the driveway apron and the sidewalk) create changes in the sidewalk cross slope that pedestrians must navigate.

The optimal design for a driveway that crosses a pedestrian walkway includes a level path of travel along the sidewalk at the back of the driveway with a more steeply sloped driveway apron at the street edge. This design requires a sidewalk that is wide enough to accommodate both the driveway ramp and a separate pedestrian zone. Ideally, the sloped driveway ramp could be accommodated in a planting strip area and pedestrians would be entirely separated from the driveway ramp and the driveway flares. In areas where there is not enough sidewalk right-of-way to accommodate this design, the City should work with property owners to gain additional right-of-way easements across adjacent property to accommodate an offset pedestrian path.

New development should be designed to incorporate a minimum number of driveway ramps. Additionally, in areas with numerous driveways, adjacent businesses should be encouraged to combine driveway ramps, and unused driveway ramps should be removed.

RAILROAD CROSSINGS

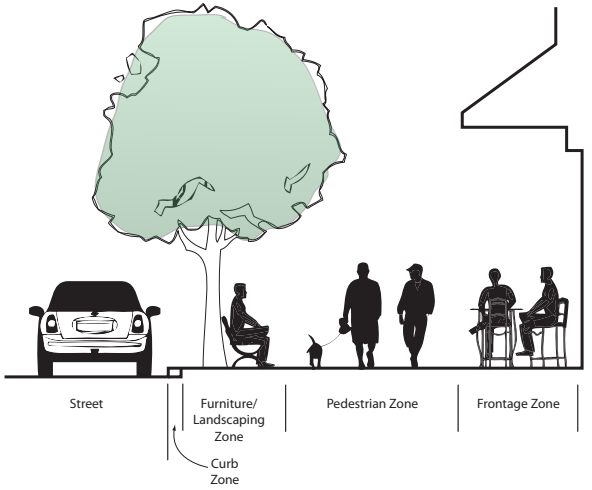
Railroad crossings provide a number of potential pedestrian safety conflicts that can be mitigated with safety improvements. Railroad crossings also create potential barriers to people using wheeled mobility devices, because the wheels have the potential to get caught in the rail flange-way gap. The rail flange-way is the opening adjacent to the rails that are necessary for rails to function; unfortunately they often exceed the ADA limit for openings. The following recommendations will improve the accessibility and safety of railroad crossings in Oroville.

- Install detectable warning surfaces to both sides of a railroad approach.
- Widen sidewalks and crosswalks so that pedestrians have room to position themselves across railroad tracks at a 90 degree angle to minimize conflicts with the flange-way gaps.
- Use surface materials adjacent to the railroad tracks that do no buckle, expand, or contract, such as concrete panels.
- Raise the sidewalk or crosswalk to be level with the top of the rail.

SIDEWALK WIDTH

Sidewalks provide space for more than just the movement of pedestrians. They also accommodate outdoor seating and street furniture. There are four distinct sidewalk zones, which are the curb zone, the furniture/landscape zone, the pedestrian zone, and the frontage zone (see image). These zones are applicable in different locations and have different design requirements, which can vary based on the adjacent uses, such as commercial versus residential. The following are recommended widths for these zones, in order to create safe and comfortable pedestrian movement.

- Curb Zone: Typically 6 inches in both commercial and residential areas.
- Furniture/Landscape Zone: In commercial areas, 4 to 8 feet wide, and 2 to 4 feet wide in residential areas.
- Pedestrian Zone: In commercial areas, 5 to 8 feet wide, and 5 feet wide in residential areas.
- Frontage Zone: A minimum of 2 feet, but up to 12 feet to accommodate outdoor seating in commercial areas. This zone is not required in residential areas because buildings are typically set back from the property line.



Sidewalk Cross Section

PEDESTRIAN AMENITIES AND SEATING

Sidewalk amenities and seating create a welcoming environment for pedestrians. Amenities like trash receptacles, benches, signage, and drinking fountains all contribute to the character and sense of community. Downtown Oroville already includes many of these types of sidewalk amenities. Additional amenities should be located in areas where they will be used by the highest number of pedestrians, including locations adjacent to major destinations. When locating amenities, it is important to understand that an area's needs may change over time, and the placement of amenities should allow for flexible use.

The following guidelines should influence the location and choice of amenities:

- Locate amenities in the furniture zone, when possible. They should not impede pedestrian accessibility, and their location should be carefully coordinated with the location of other objects within the sidewalk, such as utility vaults and light poles.
- Place amenities so that they respond to, and don't hinder, adjacent on-street parking or transit boarding zones.
- Use amenities that are universally accessible.
- Utilize a consistent palette of street furniture and amenities.

An information kiosk in Downtown Morgan Hill.

PEDESTRIAN SIGNAGE

Providing direction and distance information for major destinations can enhance residents' walking experience and help visitors find their way around the City. Informational signs should be installed along heavily-used pedestrian routes.

PEDESTRIAN-SCALE LIGHTING

Pedestrian-scale street lighting will not only help improve security, but also add to the character of the street and neighborhood. Sidewalks and landscaped areas should be lit to enhance safety and comfort. The following guidelines should influence the placement choice of pedestrian-scale lighting.

- Sidewalks should be illuminated through the use of pedestrian-scale pole fixtures (10 to 14 feet in height) or fixtures attached to the face of the buildings.
- The type and size of fixtures should be consistent along a single block.
- Pedestrian-scale lighting and/or street lamps should be evaluated for appropriate foot-candles and illumination per street standards.
- Placement of lighting should not interfere with the pedestrian path of travel and should not distract or interfere with vehicular circulation.
- All lighting should be oriented toward the ground, designed to preserve views of the night sky, and minimize glare.

LANDSCAPING

Vegetation contributes to a pleasant pedestrian environment. A tree canopy and landscape buffer along the sidewalk enhance aesthetics and can improve comfort by providing shade and contributing to lower air temperatures. A lush green median softens the hard features of nearby buildings, adds character, and provides pedestrians with a refuge when crossing the street.

The following guidelines should influence the choice and planting of landscaping:

- When planting vegetation within planting strips or tree wells, it is important that the planting areas do not create tripping hazards.
- Tree grates should be located so as to not disrupt the minimum 4 feet of sidewalk. The openings in tree grates should be a maximum of ½ inch wide.
- The vegetation chosen for the pedestrian network should reflect the identity of Oroville.
- Plants with minimal water and maintenance requirements should be chosen to reduce water consumption and maintenance costs.

Sidewalk vegetation contributing to a pleasant pedestrian environment.

CLASS I BIKE PATH	
Minimum Width	8 feet with additional 2 foot wide shoulder
Preferred Width	12 feet when moderate volumes of traffic are expected along the path, with additional 2 foot wide shoulder

Class I Bike Path

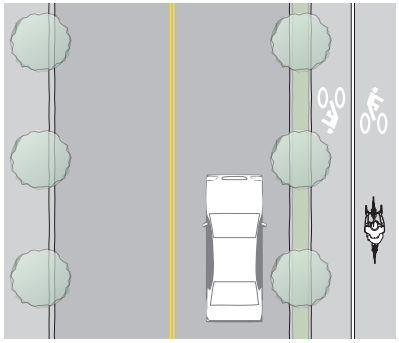
BICYCLE DESIGN GUIDELINES

This section outlines design guidelines and best practices for bicycle facilities recommended for Oroville to improve bicycle safety, street accessibility, and the roadway network improvements. These guidelines are based on the *Caltrans Highway Design Manual* (HDM), the CA MUTCD, and the AASHTO Guide for the Development of Bicycle Facilities, as well as best practices in other communities. These guidelines are intended as a supplement to the previously mentioned documents.

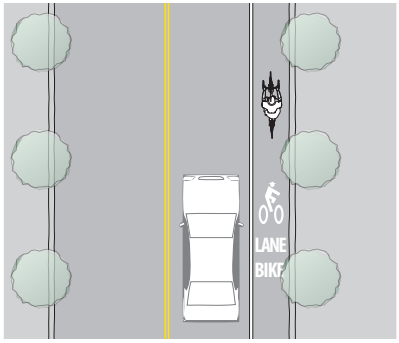
Bikeway planning and design in California typically relies on the guidelines and design standards established by Caltrans as documented in "*Chapter 1000: Bikeway Planning and Design*" of the HDM. Chapter 1000 follows standards developed by AASHTO and the Federal Highway Administration (FHWA), and identifies specific design standards for various conditions. These standards provide a good framework for future implementation, but may not always be feasible given specific constraints. Bikeway design and planning standards are continually changing and expanding. Despite this, most agencies adopt the Caltrans or AASHTO standards as a minimum. Based on the California Streets and Highways Code, Caltrans identifies three types of bikeways, as described and illustrated below.

CLASS I – BIKE PATHS

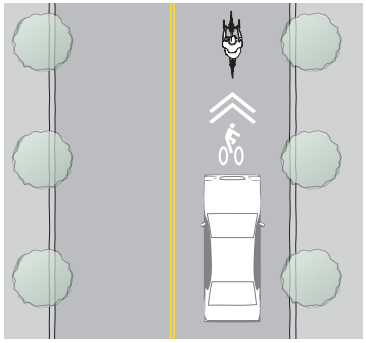
Also known as multi-use paths, these are separated from motor vehicle traffic, but may be shared with pedestrians. Class I bike paths are typically separated from roads by buffers, such as vegetation or physical barriers. Cross traffic should be minimized along these paths in order to avoid conflict and maintain safety. Bike paths are also often part of a shared-use path for pedestrians. These paths are an important component of bikeway networks because they provide a car-free environment for a portion of a bicycling trip. Such paths are typically located along an existing corridor such as a canal, riverfront, or railroad. Within a bikeway network, bike paths can also close a gap in motor vehicle access such as connecting two dead-end roads, traversing a park, or by providing more direct access in a subdivision between the residential street and surrounding major roadways.



Class I: Off-Street Multi-Use Bike Path



Class II: On-Street Bike Lane



Class III: On-Street Bike Route

CLASS II – BIKE LANES:

Class II – Bike Lanes: These lanes are demarcated in the roadway for the exclusive use of bicycles. Vehicle and pedestrian cross-flow is permitted. The striping is supported by pavement markings and signage. Class II bike lanes are typically used on streets with higher traffic volumes or greater speeds. The bike lanes improve conditions for bicyclists in the corridor by delineating separate rights-of-way assigned to bicyclists and to motorists. Bike lanes should be considered when adequate lane width is available for striping without loss to level-of-service, such as on two-lane or wider roads that allow motor vehicles to safely pass bicyclists.

CLASS III – BIKE ROUTES:

Class III – Bike Routes: These are located on roadways shared with motor vehicles. Bike routes are designated by signage and/or shared roadway bicycle markings (sharrows). Class III bike routes are recommended for the combined use of cars and bicyclists. The roadway is shared with cars, and routes are designated with signs and pavement markings only; there is no dedicated bike lane. Wider curb lanes, pavement maintenance, and traffic calming measures make them suitable for shared use. Bike routes can be used on a variety of street types, ranging from low-volume residential streets to busy arterials where widening for a dedicated bike lane is infeasible. Bike routes are most commonly used on slower or bicycle-friendly roads. These routes typically connect other bike lanes.

CLASS II BIKE LANE	
Adjacent to marked parallel parking	Minimum width: 5 feet Preferred width: 6 feet
Adjacent to unmarked parallel parking	Minimum bike lane and parking width: 12 feet With a rolled curb: 11 feet
Adjacent to curb and gutter	Minimum width: 5 feet Preferred width: 6 feet
On roadways without curb and gutter	Minimum width: 4 feet Preferred width: Additional width is desirable with speeds over 35mph

Bike lane with door zone marking adjacent to on-street parking.

Bike lane adjacent to curb and gutter.

CLASS III BIKE ROUTE	
Preferred Width	14 feet minimum lane width to share with vehicles
Additional Considerations	If 15 feet or more are available for the lane, striping the bike lane should be considered

Bicycle Boulevard

Sharrow pavement marking with additional painting of lane for visibility.

BIKEWAY WIDTHS AND MARKINGS

Class I bike paths should be a minimum of 8 feet wide with an additional 2-foot wide shoulder as required by Caltrans standards. A minimum of 12 feet is preferable when moderate volumes of pedestrian traffic are expected along the path, or if two-way bicycle traffic is expected. A separate path for pedestrians may be appropriate if high volumes of pedestrian traffic are expected. Bike paths with sufficient width for two lanes should have a lane marking, a solid yellow or white stripe to separate the two directions of travel and a dashed line where passing is permitted.

Class II bike lanes adjacent to on-street parallel parking should be a minimum of 5 feet wide for roadways with vehicle speeds of 35 mph or less, a minimum of 6 feet for 40 to 50 mph, and 8 feet for 50 mph or more. Even on low speed roads, many jurisdictions prefer a minimum 6-foot bike lane to allow for parked cars with opening doors. The minimum combined bike lane and unmarked parking stall width should be 12 feet (measured from the curb face to the outside bike lane strip). Bike lane striping assists bicyclists in following a straight path in the street right-of-way. Directional arrows with an accompanying word and/or bicycle symbols should be used to distinguish the bike lane from the adjacent vehicle travel lane. Colored bike lanes are another option for pavement markings that can be used in high-conflict areas to alert motorists to the presence of bicyclists.

Class III bike routes require a 14-foot minimum lane width. Lane width is determined from the edge stripe to the lane line or the gutter joint to the lane line. Striping the bike lane should be considered if 15 feet or more is available for the lane next to the curb line. Streets with speed limits of 40 mph or more should not be designated as Class III bike routes. Pavement markings are not required, but "sharrows" (shared right-of-way) or painted bicycle icons are recommended to signify to drivers that they must share the lane with bicycles.

BICYCLE SIGNAGE

On Class I bike paths, signage should be used in advance of roadway crossings to alert drivers of the upcoming crossing of pedestrians and bicyclists. CA MUTCD recommends the installation of signage type R44A (CA) along bike paths (see below). Wayfinding, destination, or directional information signs should be provided at important locations along bike paths. These signs can include mileage to a destination, mark an upcoming junction, or contain directional arrows.

Class II bike lane signs should be placed at the beginning of each designated bike lane, on the far side of the arterial intersections, at major changes in direction, and at ½ mile intervals. The BEGIN (CA MUTCD R81A) and END (CA MUTCD R81B) signs may be used below the required R81 sign to mark the beginning or end of a bike lane. If bike lane pavement markings are used, it is not necessary to include the bike lane sign at each pavement marking. Signs may also be used to state BICYCLE WRONG WAY (CA MUTCD R5-1b) on the back of bike lane signs to reinforce appropriate traffic flow for bicyclists.

Class III bike routes should have signs (CA MUTCD D11-1) located at decision points and at regular intervals so that bicyclists and vehicles will be informed that they are on a bicycle route. Destination signage or route number signs can be used with the bike route signage to provide additional guidance.

CA MUTCD D11-1 bike route sign

Bike route number sign

CA MUTCD R44A Signage

Optional signage for the start and end of bike lanes

CA MUTCD R81 required signage for Class II bike lane

Optional Wrong Way Signage

Bicycle boulevard sign

A bicycle detector loop with a pavement marking at a signalized intersection. When the detector senses the bicyclist, it changes traffic lights from red to green.

Through Bike Lane

Custom Bike Rack

Bike Loop Bollard

BICYCLE CROSSINGS AT RAILROADS

Attention must be given to bikeway railroad track crossings. The Caltrans HDM addresses treatments and considerations for railroad crossings. The crossing should be straight and at a right angle to the railroad. When an angled crossing is the only option for the bikeway or roadway, the shoulder or bikeway should be widened so that bicyclists can cross at a right angle. Crossing railroad tracks at a right angle is important for bicyclists so that they do not catch bike wheels in the flange way (the opening along a rail track). If widening is not possible, the flange way depth and width should be kept to a minimum through special construction and materials.

Pavement should be maintained so that buildup does not occur next to the rails. All railroad crossings are regulated by the California Public Utilities Commission (CPUC), and thus all new bicycle path railroad crossings must be approved by the CPUC.

BICYCLE CROSSINGS AT ROADWAYS

Class I Bike Paths Crossing Roadways

Based on the AASHTO and CA MUTCD guidelines for crossing treatments, the primary objective for crossings is a safe and convenient intersection for all mode types. When paths cross roadways at intersections, they should be assigned the same traffic control as the parallel roadway. For example, if the parallel roadway has a green signal, the path should also have a green/walk signal at the same time. A leading green/walk signal time for path users is recommended to give pedestrians and bicyclists a visible head start and to avoid potential conflicts with vehicle movement. If the path is crossing an all-way stop intersection, then STOP signs should be placed along the path at each intersection approach. At uncontrolled intersections, STOP or YIELD signs should be used to give right-of-way to either the path or the roadway.

Class II Bike Lanes at Intersections

Collisions between motorists and bicyclists most often occur at intersections. To reduce conflicts, Caltrans provides recommended intersection treatments in the HDM, including loop detectors and bike lane "pockets", or through bike lanes, at right- and left-turn only lanes. Loop detectors, or video detection, prompts traffic signals to change and must be painted on the roadway to show bicyclists where they should be located to trigger the detection. Through bike lanes provide a marked route for bicyclists to avoid potential conflicts with turn-only lanes. An alternate treatment is a "sharrow" marking in the through lane adjacent to the right-turn lane.

BICYCLE PARKING

Safe and secure bicycle parking is a critical component to most bicycle trips, and thus in promoting bicycle use. Bicycle racks should be visibly located near intended destinations, such as shopping areas, libraries, schools, and offices. They should be installed either on the sidewalk, outside the pedestrian zone, or in plaza spaces.

Bicycle Cage in a Parking Garage

Bicycle Lockers

Inverted U-Rack Bicycle Parking

Short-term bicycle parking is intended for bicyclists who plan to leave their bicycle for only a few hours. Short-term parking is generally provided with bicycle racks and is appropriate at shopping areas, libraries, and other places where the typical parking duration is about two hours or less. Bike racks should support the bicycle upright and in two places, enabling the frame and one or both wheels to be secured.

Long-term bicycle parking protects the entire bicycle and its components from theft, vandalism, and the weather. Long-term parking is appropriate for a few hours use up to a full day and overnight, and is usually found at employment or transit centers. Bicycle lockers, bike cages or rooms, and bike stations with valet parking are examples of long-term parking. Bike stations are generally located at intermodal connections between bicycle and transit, and can provide bicycle tune-ups, repairs, and rentals in order to sustain their operation.

RECREATIONAL TRAIL DESIGN GUIDELINES

Recreational trails should meet the Class 1 multi-use path requirements, including 12 feet in width and a 2-foot landscaped buffer separating it from vehicle traffic, which would provide safe, level, and protected paths for bicyclists and pedestrians traveling through Oroville. Such paths would serve as recreation routes for runners, walkers, and cyclists.

For designing new recreational trails, the Final Guidelines for Outdoor Developed Areas (ODA) issued by the US Access Board should be referenced. The ODA guidelines provide detailed accessibility recommendations for pedestrian/hiker designated trails and are considered best management practices. They should be used until updated ADA guidelines are released.

A landscaped buffer between pedestrians and bicyclists.

A bus stop with no shelter or transit information for riders.

PUBLIC TRANSIT DESIGN GUIDELINES

Butte Regional Transit "B-Line" stops should be prominently signed; provide attractive, safe and quality public amenities; and contain all pertinent route and schedule information, including major connecting services, to encourage and support a balanced mode circulation network in Oroville.

BUS STOP ZONES

Where feasible, bus stops should be located at the far side of the intersections they serve. All bus stops should provide at least one bench. All transit stops should be prominently signed, and all pertinent route and schedule information, including major connecting services, should be posted.

BOARDING AREAS

A standard boarding area (43 feet by 10 feet) is recommended for local bus stops. Minimum boarding areas should include space for front door (5 feet by 8 feet) and rear door (10 feet by 8 feet) ADA landing pads, and a minimum 4-foot clear pedestrian sidewalk.

CLEAR SPACE ALONG CURB LINE

A clear space is recommended along curb areas on the street side before the bus stop signage. The clear space should be level with a paved or concrete utility strip filled in to the sidewalk at a minimum of 30 feet long. The clear space should be a minimum of 4 feet back from curb line.

CURB RAMPS

All intersections with crosswalks within walking distance of bus stops should provide curb ramps.

BUS PADS

Bus pads should be 12 feet wide and 40 feet long. Bus pads should be concrete pavement where feasible.

BUS LANES/TURNOUTS/BUS BULBS

Bus lanes should be a minimum 12-foot outer travel lane. Where feasible, bus turnouts signify the location of the bus shelters. A 12-foot turn out lane is recommended when implemented and should meet certain prescribed conditions associated with the road layout and amount of buses to be accommodated. In general, bus bulbs are encouraged as opposed to turn outs.

ADA CLEARANCE AT BUS STOPS

Bus stops should maintain a 5-foot by 8-foot clear area for boarding of wheelchair users.

SEATING, SHELTER AND AMENITIES

All transit shelters should provide seating and protection from the sun, wind and rain. This can be achieved with either trees or a shelter, or both.

ENERGY EFFICIENT

Transit shelters should be designed to promote energy efficiency by incorporating features such as solar panels and LED lights.

BUS BENCH

A bench should be located on the ADA landing pad a minimum of 8 feet from the curb; if outside the ADA landing pad, it should be located a minimum of 4 feet from the curb. Bus benches should not block pedestrian and ADA access to or from the bus stop or sidewalk.

BUS SHELTER PAD

A bus shelter pad should be 5 feet by 13 feet and located a minimum of 8 feet behind the curb, adjacent to the bus stop pole to accommodate the ADA landing pad. The bus shelter pad should be placed outside of the ADA pad, adjacent to the sidewalk, a minimum of 4 feet back from curb line and within the clear curb space.

BUS SHELTER

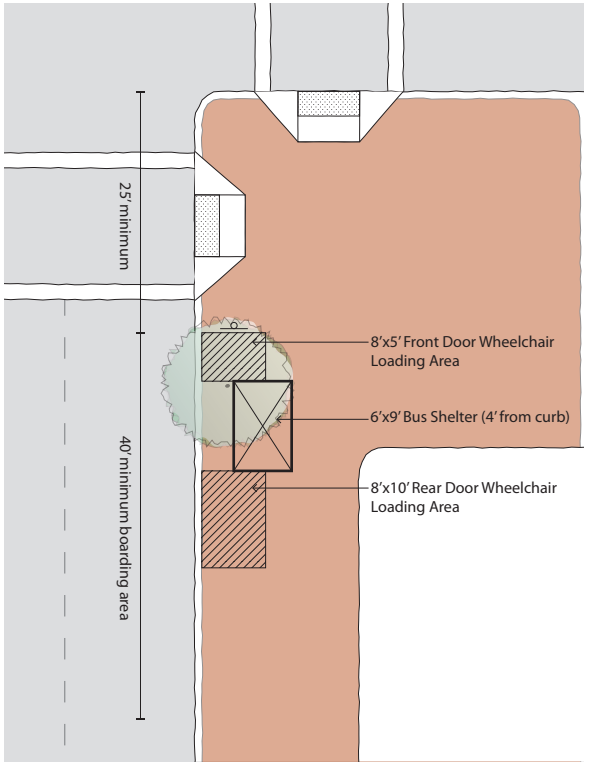
A bus shelter should be designed to be waterproof, avoid exposing passengers to splashing water from passing vehicles and runoff, and protect passengers from the elements including wind and the sun. The shelter should be located on the bus shelter pad at a minimum vertical clearance of 7.5 feet with a minimum roof dimension of 6 feet by 9 feet. The shelter overhang should be a minimum of 2 feet back from the curb line. Shelters should not be placed such that they block sight distance at intersections or driveways. This can normally be accomplished by placing the shelter more than 25 feet from the beginning or end of curb return of an intersection or driveway.

BUS STOP INFORMATION

Bus stops should accommodate a bus stop pole, flags and schedule information holders at the front of the bus stop to identify the stopping location of the bus. All bus stop signs and poles should be located no closer than 18 to 24 inches to the curb line, and not impede the 4-foot clear pedestrian zone or the ADA landing pads.

TRASH/RECYCLING

Trash and recycling containers should be placed outside of the clear space along curb line and outside the ADA landing pad. Trash cans should be placed after the pole (as per traffic flow), behind the pad or sidewalk, or at the end of the clear space.



Bus Stop Zone

Bus Stop Amenities

DESIGN SOLUTIONS 4


LIBERTY
Daily News

4 DESIGN SOLUTIONS

This chapter provides recommendations for bicycle and pedestrian improvements for each of Oroville's roadway types - arterials, collectors, and local streets - based on the design guidelines outlined in the Chapter 3.

The streetscape designs in this chapter serve as examples of how the guidelines can be implemented to promote bicycling and walking in the Oroville area. While they address specific street examples, these designs can be applied to other streets with the same roadway classification and right-of-way (ROW) width. It is important to keep in mind that when the ROW width cannot be expanded, enhancement of one element sometimes comes at the cost of another. Note that in these designs, permeable surfaces are illustrated for both parking stalls and pedestrian sidewalks to improve stormwater management as a secondary benefit to the circulation improvements.

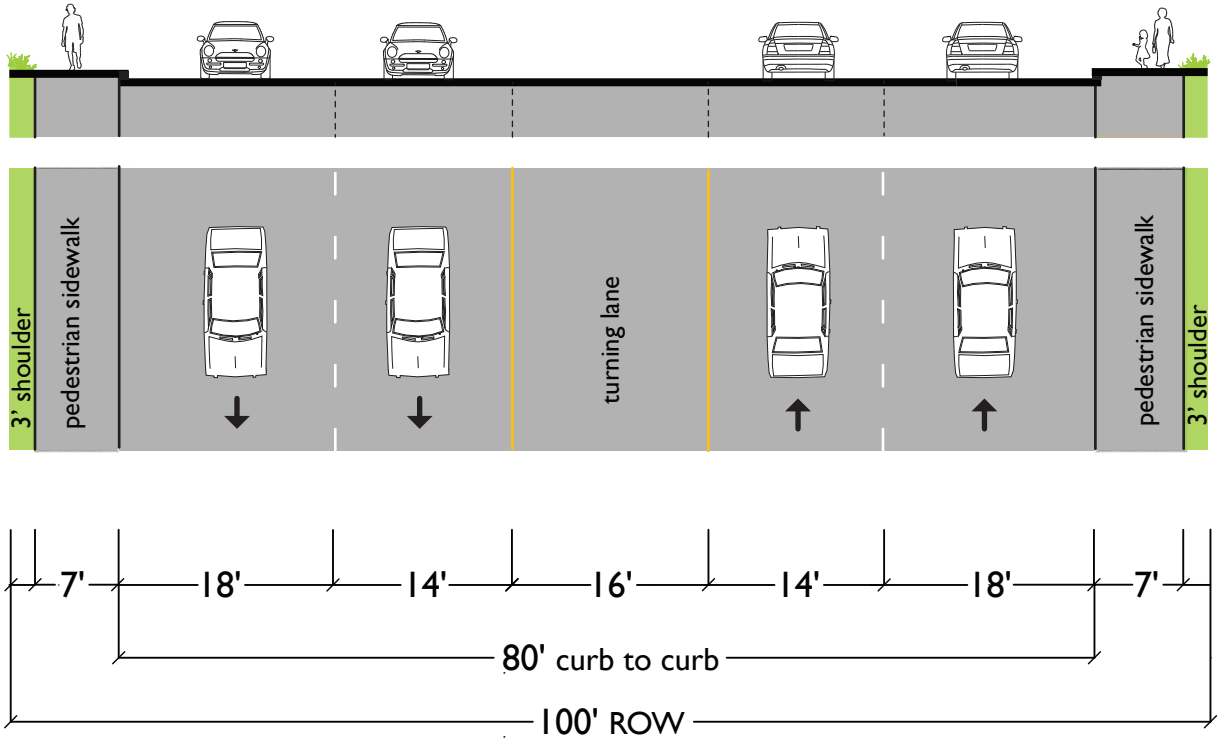
Existing Conditions: Oroville Dam Boulevard

ARTERIALS

Arterials are the largest right-of-ways addressed by this Plan in Oroville, serving as the major thoroughfares through the City. They support vehicles, public transit buses, bicycles, and pedestrians.

100-FOOT ROW ARTERIALS

Arterials that are approximately 100 feet wide, such as Oroville Dam Boulevard and Lincoln Boulevard, include four travel lanes, two in each direction, along with a center turning lane within the center of the ROW.

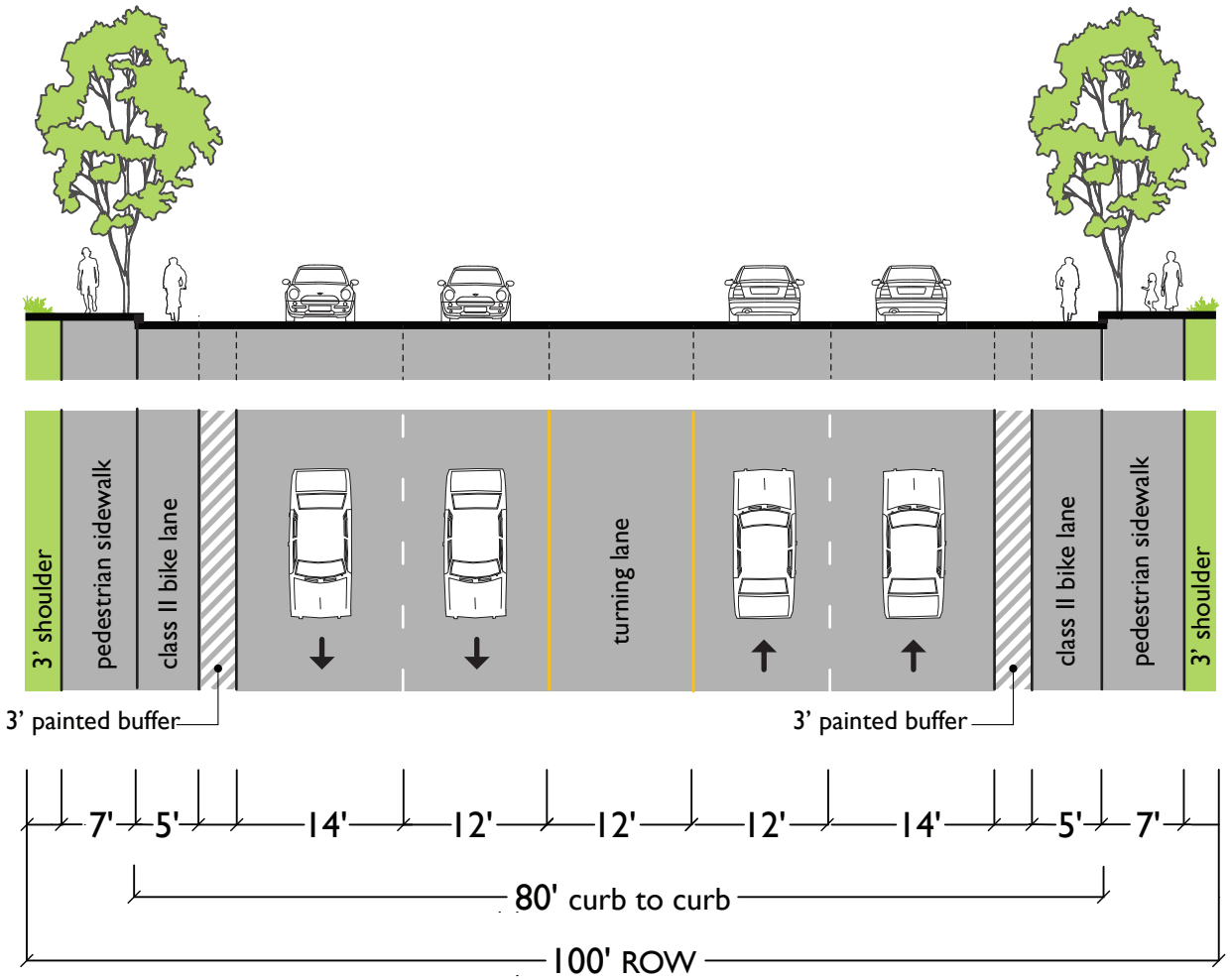


Existing Conditions: Oroville Dam Boulevard

A design solution to improve the streetscape for pedestrians and bicyclists on this roadway type without altering the existing curb to curb dimension entails narrowing the travel lanes and turning lane, and installing Class II bike lanes with a 3-foot painted buffer.

Improvements to the existing sidewalk could include widening at the back of walk in constrained areas or at points of obstruction. Implementing a street tree program for trees at the back of curb will provide shade and pedestrian amenity.

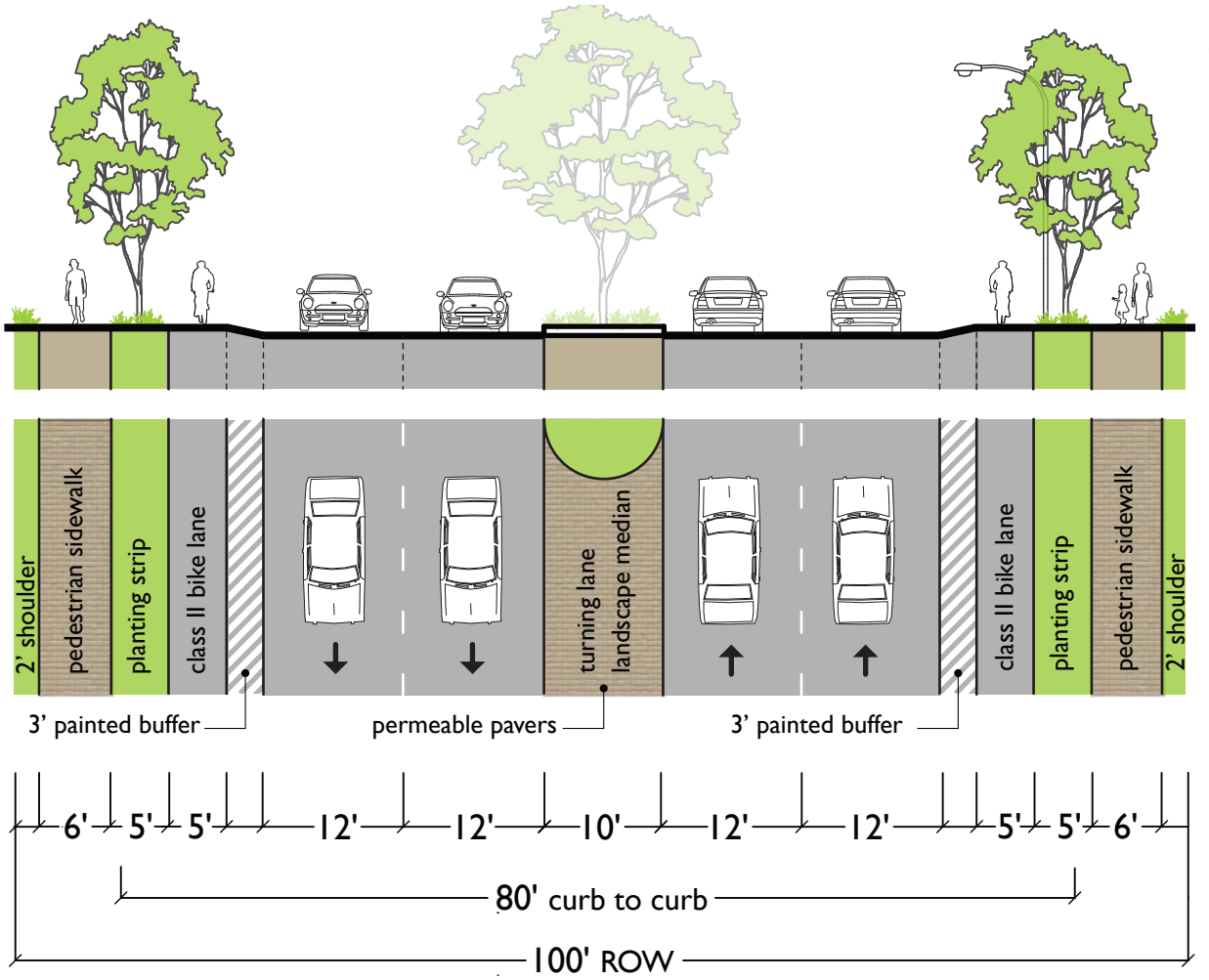
Existing Conditions: Lincoln Boulevard



Proposed Design Solution: Oroville Dam Boulevard

An alternative approach with more extensive improvements entails narrowing the outside travel lanes to 11 feet and installing a raised, 5-foot Class II bike lane and 3-foot buffer, as well as 5-foot planting strips between the bike lane and sidewalk. Street trees in the planting strips would provide shade to promote non-motorized forms of transportation.

Additionally, this design solution would convert the turning lane into a planted median that alternates with a turning lane. This creates a safety buffer for vehicles, as well as beautification to the streetscape. Note that this alternative includes additional infrastructure and narrowing of the existing curb to curb distance.



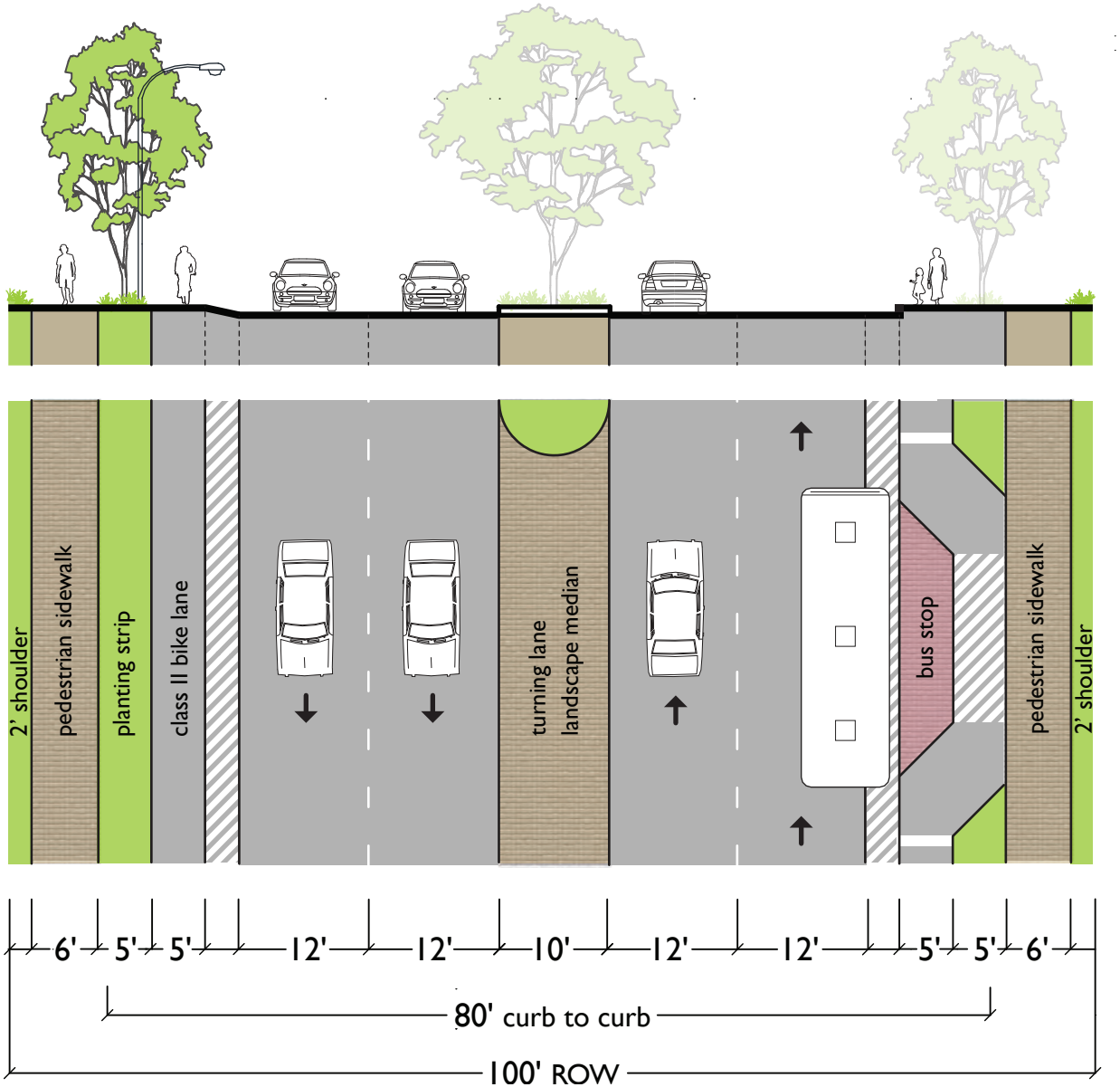
Proposed Design Solution: Oroville Dam Boulevard (Class II Bike Lanes)

Existing Conditions: Oroville Dam Boulevard

Proposed Design Solution: Oroville Dam Boulevard

Existing Bus Stop on Oroville Dam Boulevard

Both Oroville Dam Boulevard and Lincoln Avenue are public transit routes. At bus stop locations, the raised bike lanes should be lowered to be flush with the streetscape for the length required for a bus to pull in and out. The area designated for the bus to pull over must be marked to alert bicyclists. The planting strip will also be interrupted at these locations so the sidewalk can wrap around the bus stop facilities.



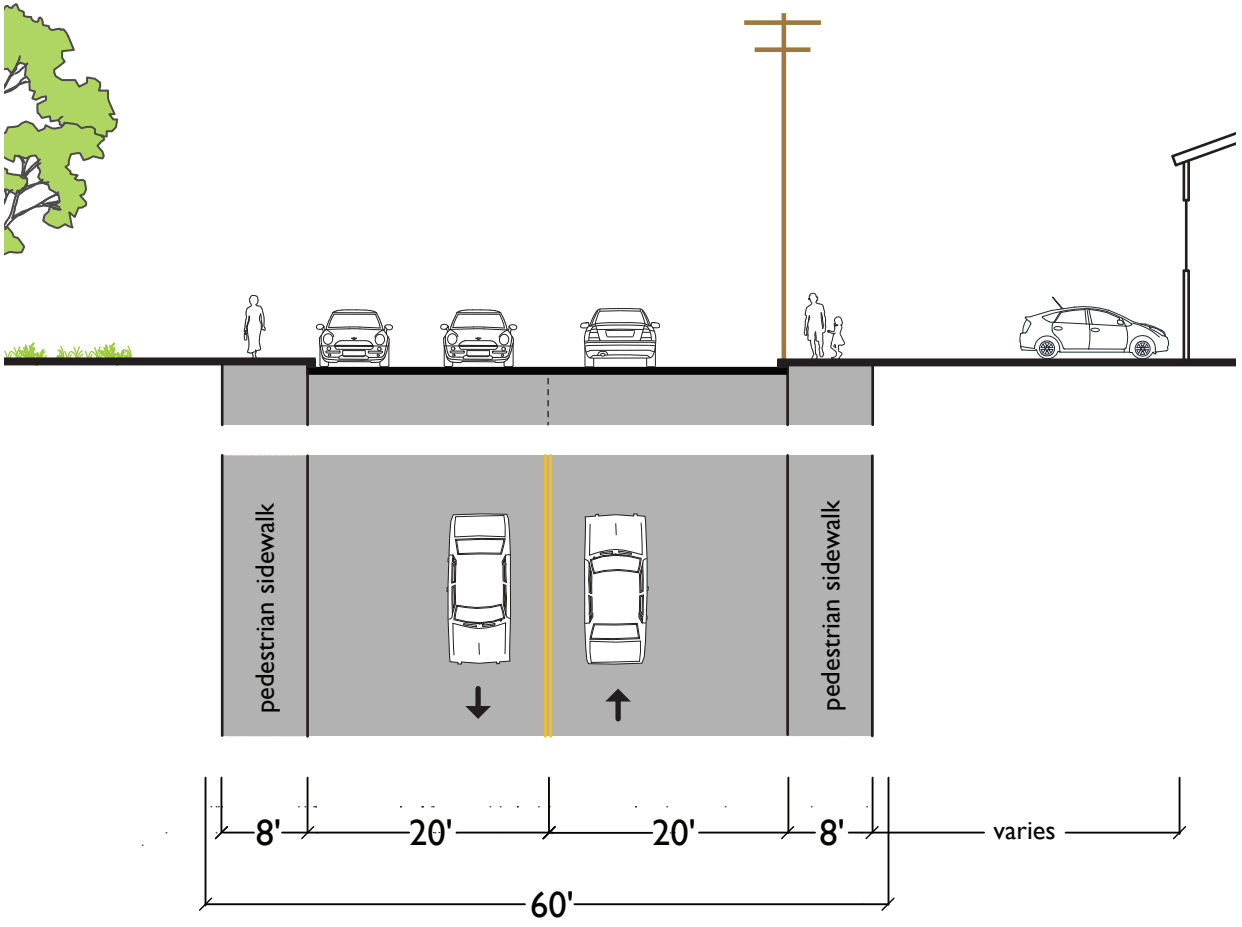
Proposed Design Solution: Oroville Dam Boulevard at Bus Stop

Existing Conditions: Myers Street

60-FOOT ROW ARTERIALS

Arterials that are approximately 60 feet wide include two travel lanes, one in each direction. Examples of these in Oroville are Myers Street, Montgomery Street, and Washington Avenue.

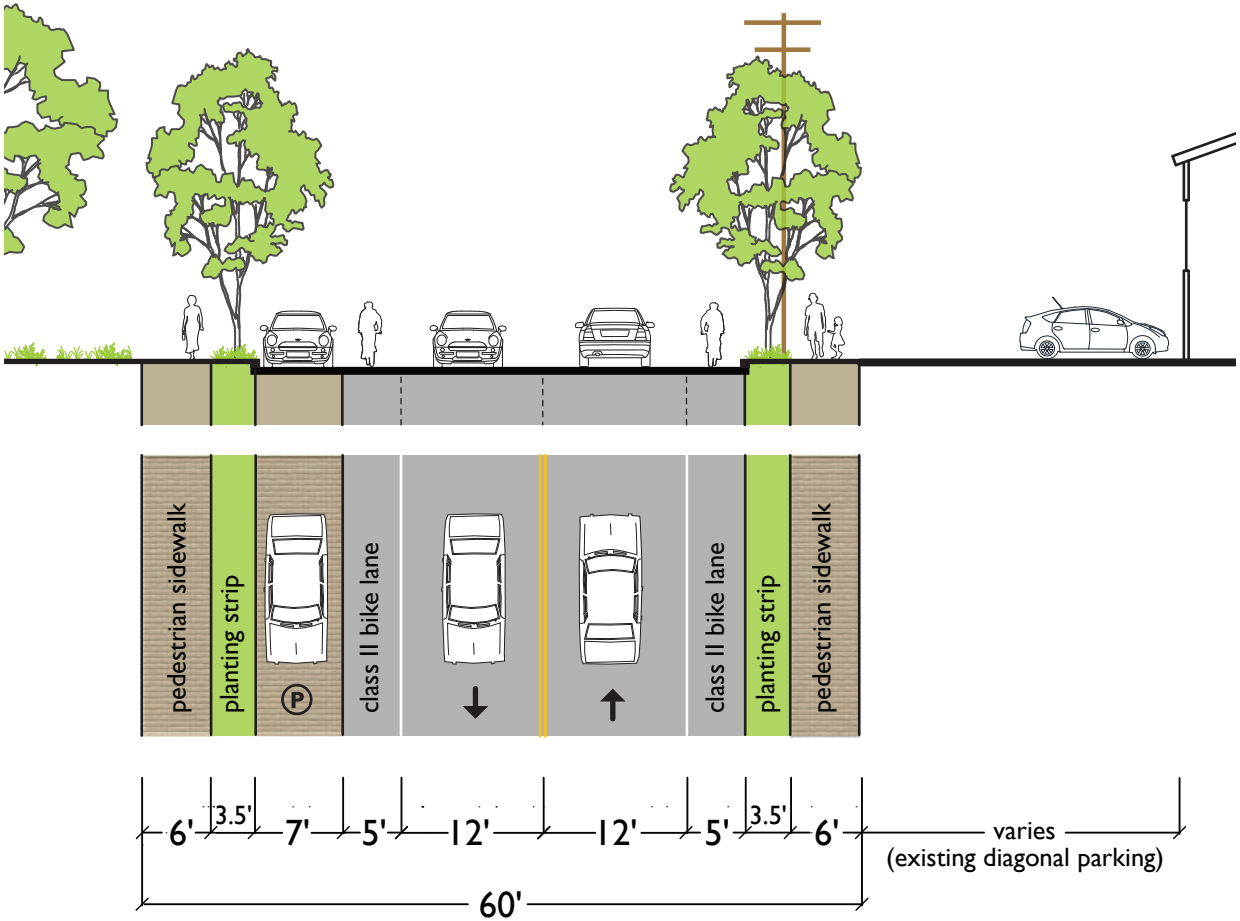
Myers Street travels through both residential and commercial zones. Adjacent buildings are currently set back from the ROW, which could potentially change in the future. The road has a fairly complete sidewalk on both sides of the street. In some places, vehicles park on one side of the road.



Existing Conditions: Myers Street

Because Myers Street is designated as a potential future bikeway, the design solution narrows the travel lanes to accommodate Class II bike lanes on either side of the street, with an 8-foot lane situated on one side of the street for parallel parking. Planting strips on both sides of the street will help shade bicyclists and pedestrians along the sidewalk.

Myers Street is also a bus route. Because of this, it is good practice to maintain an 11- to 12-foot travel lane to accommodate bus traffic adjacent to the proposed Class II bike lanes.

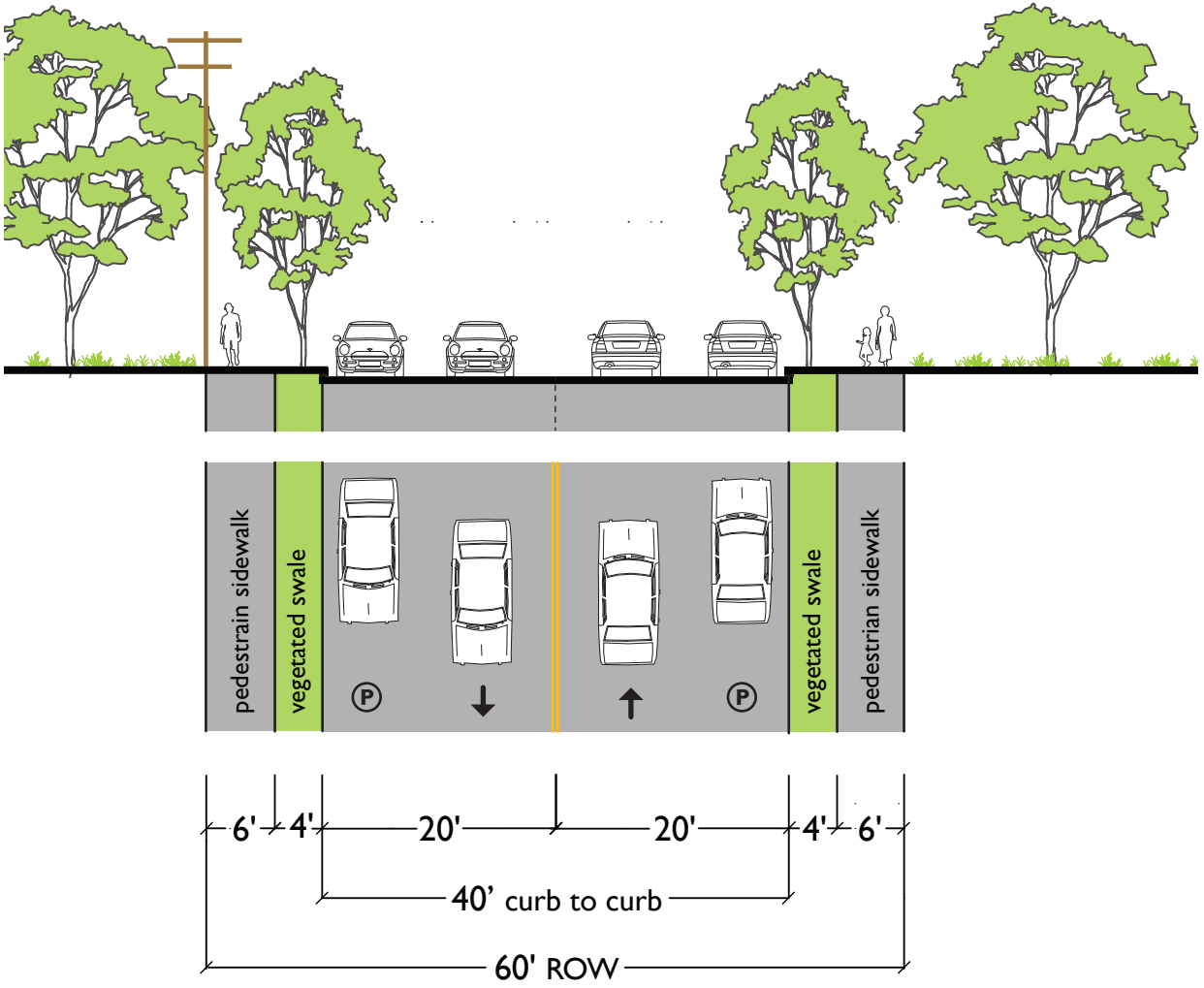


Proposed Design Solution: Myers Street (Class II Bike Lanes)

Existing Conditions: Montgomery Street

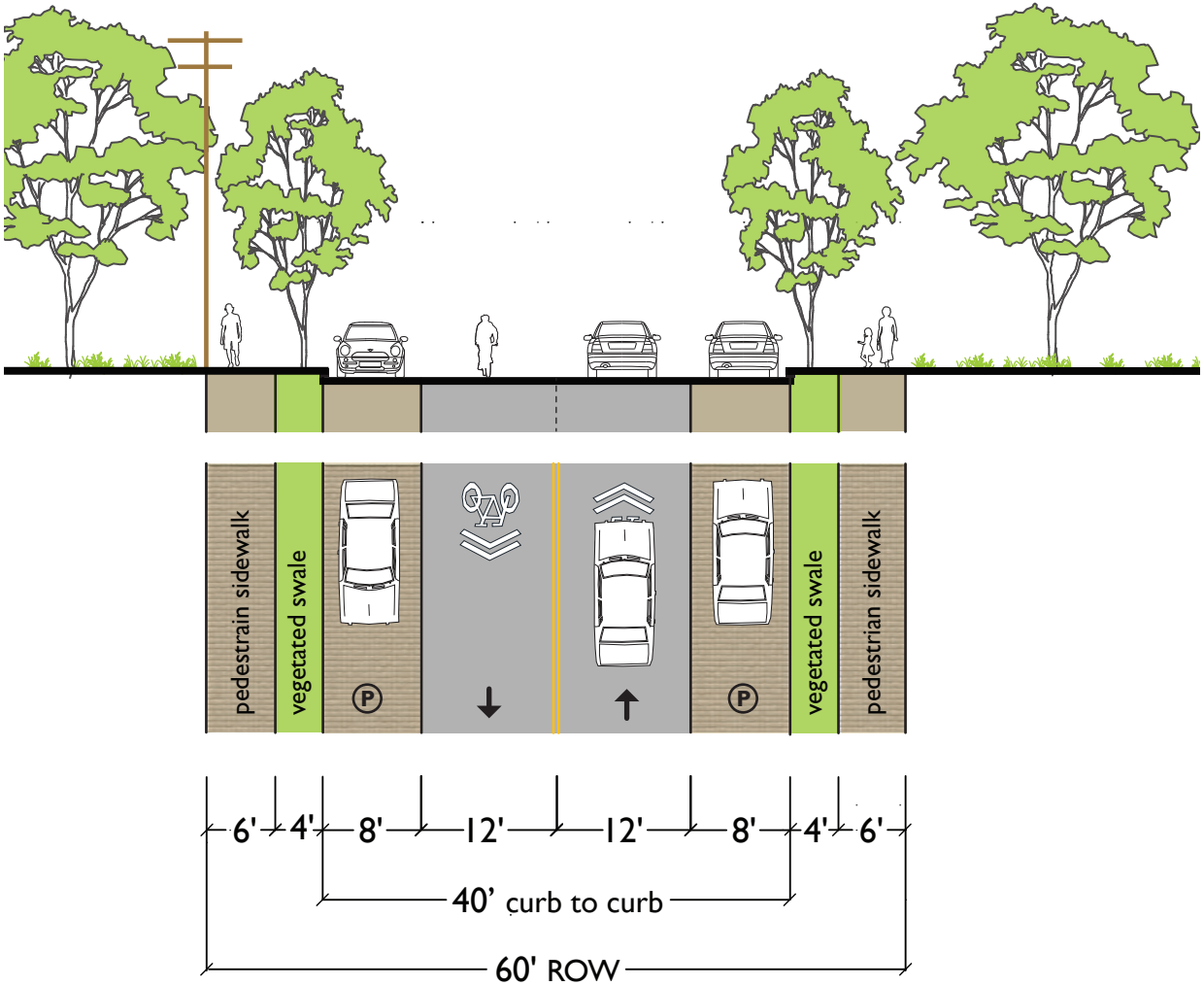
Many of the arterials around Downtown Oroville are fairly pedestrian-friendly with sidewalks buffered from the street by planting strips. Parking is available on both sides of the street.

Recommended improvements to these arterials are minimal. They include delineating the travel lanes from parking and upgrading intersections and pedestrian crossings, as depicted in the design solution for Washington Avenue on page 4-12. Streets designated as future bikeways are proposed to be Class III bike routes with "sharrow" markings on the pavement to alert vehicles that they must share the road with bicyclists.



Existing Conditions: Montgomery Street

An alternative to designing Montgomery Street, Bird Street, and Robinson Street, which run adjacent and parallel to each other, all as Class III bikeways is to designate only one of these low-traffic streets as a bikeway and convert it into a bicycle boulevard. A bicycle boulevard is a low-stress route for cyclists, equipped with elements to minimize bicyclists delay and maximize safety, with supplemental signs and markings, geometric design features, and traffic control devices.



Proposed Design Solution: Montgomery Street (Class III Bike Route)

Class III Bike Routes

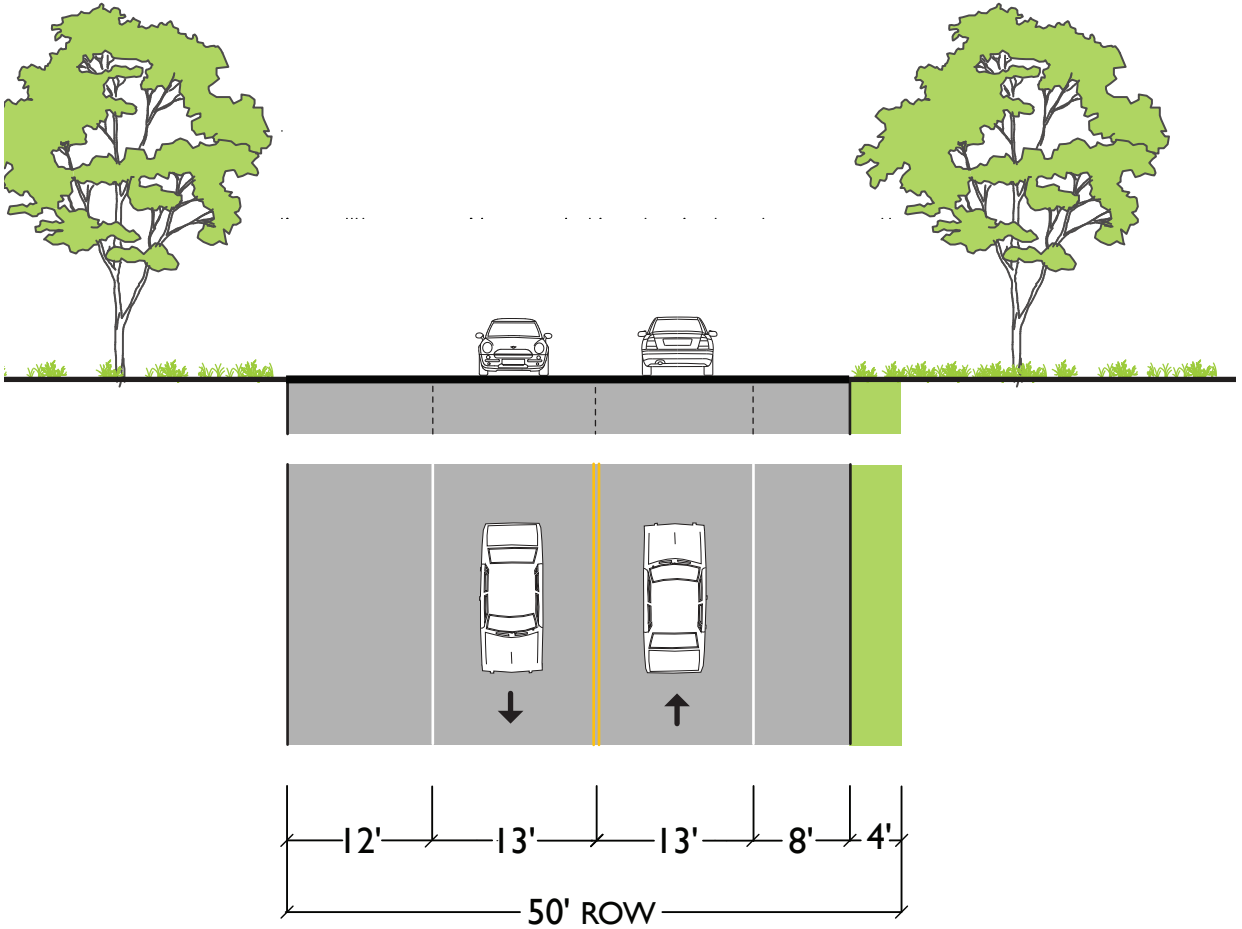
Existing Conditions: Washington Avenue

Proposed Design Solution: Washington Avenue

Existing Conditions: Oroville-Quincy Highway

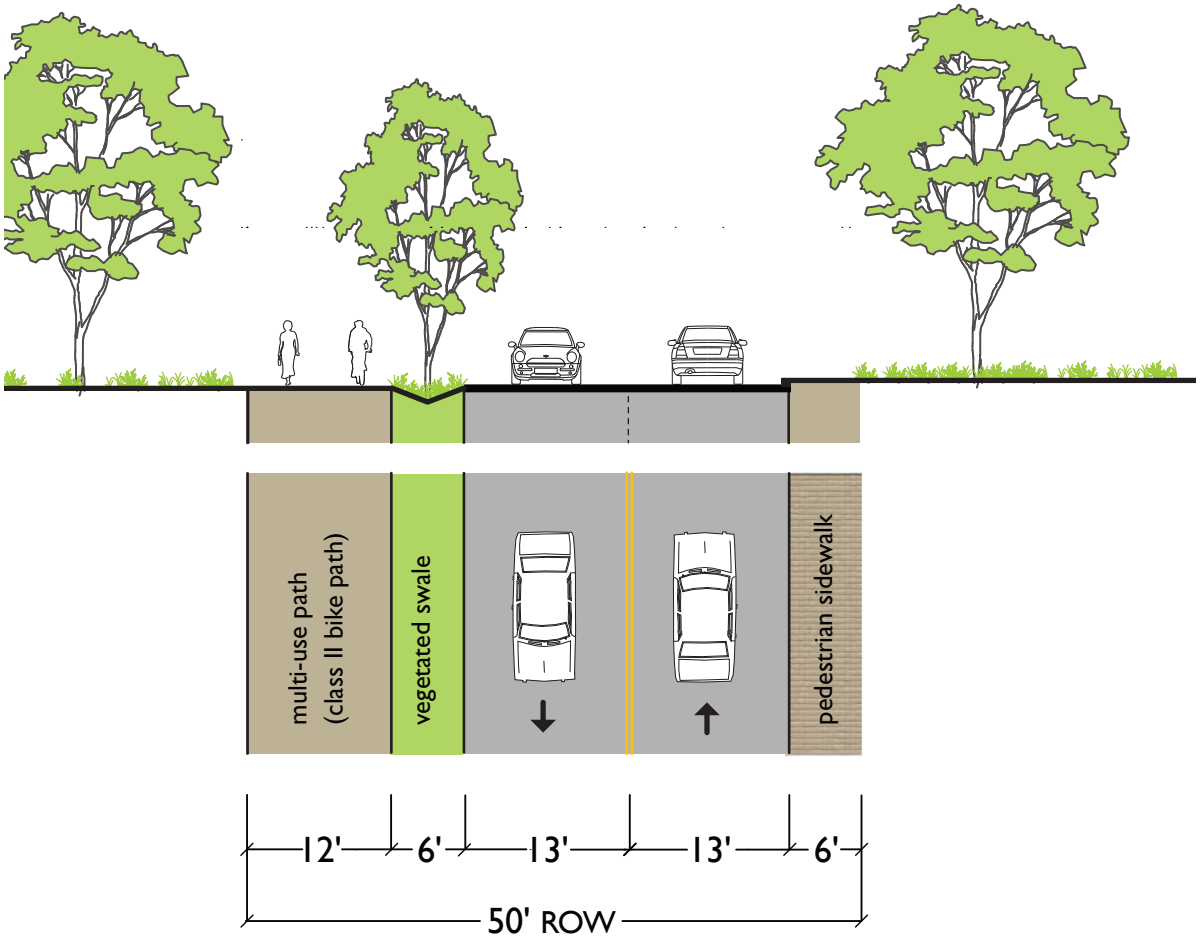
COLLECTORS (50' ROW)

Collector roads in Oroville, such as Oroville-Quincy Highway and Cherokee Road, are approximately 50 feet wide. Oroville-Quincy Highway is a rural collector, connecting those living in the outskirts of town with Downtown Oroville. Most vehicles turn on and off of the road infrequently. Because of this, vehicles are able to travel at higher speeds than on the collectors located in higher-density parts of the City.



Existing Conditions: Oroville-Quincy Highway

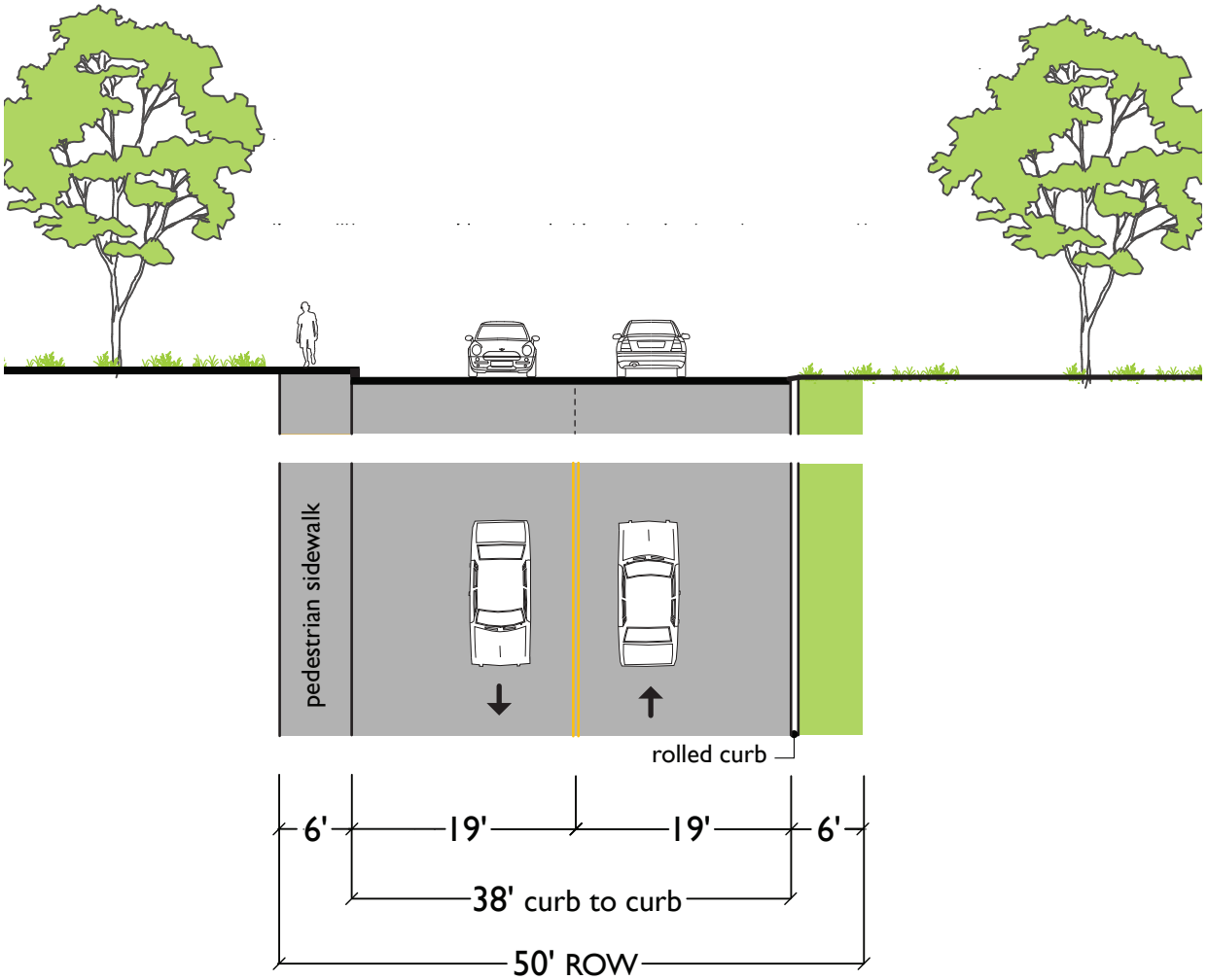
In this design solution for this rural application, vehicle travel lanes are maintained at 13 feet wide, but the shoulders are developed into safe and pleasant corridors for pedestrian and bicycle travel. As an example, the wide shoulder along the northern side of Oroville-Quincy Highway is transformed into a Class I bike route / multi-use path, and a pedestrian sidewalk with street trees is installed on the southern side of the ROW.



Proposed Design Solution: Oroville-Quincy Highway (Class I Bike Path)

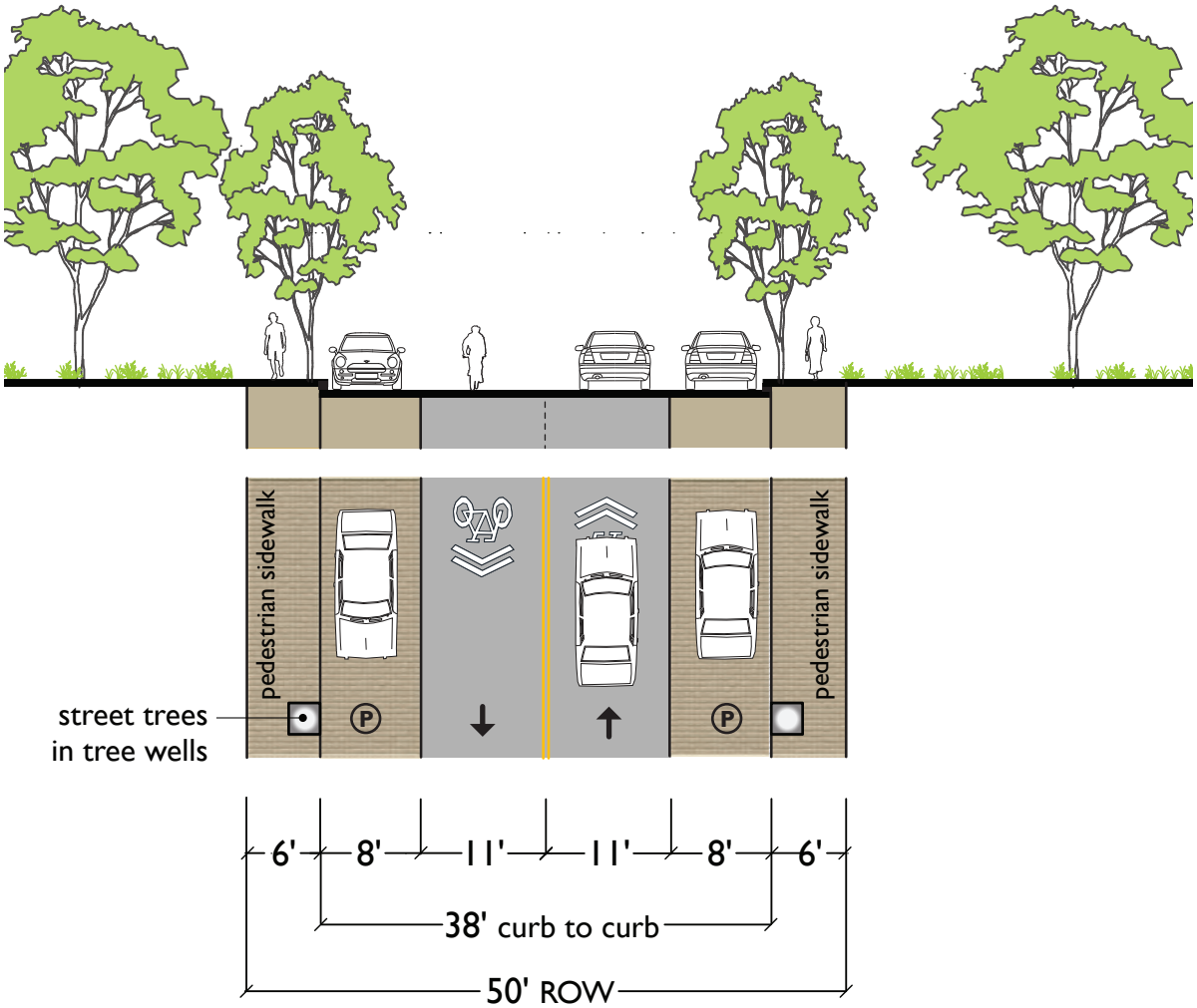
Existing Conditions: Cherokee Road

Other collectors, like Cherokee Road, are surrounded by cul-de-sac neighborhoods. Vehicles travel at slower speeds and turn on and off the road more frequently than in a rural environment. These roads must continue to allow for parking, while still supporting walking and cycling.



Existing Conditions: Cherokee Road

In this design solution, pedestrian sidewalks with street trees are located on either side of the street to promote walking between cul-de-sac neighborhoods. Parking is allowed adjacent to the sidewalk, with bulb-outs at the intersections to promote safe pedestrian crossings. Collectors with parking that are also designated as future bikeways should be Class III bike routes. "Sharrow" markings are placed on the pavement to alert vehicles that they must share the road with bicyclists.

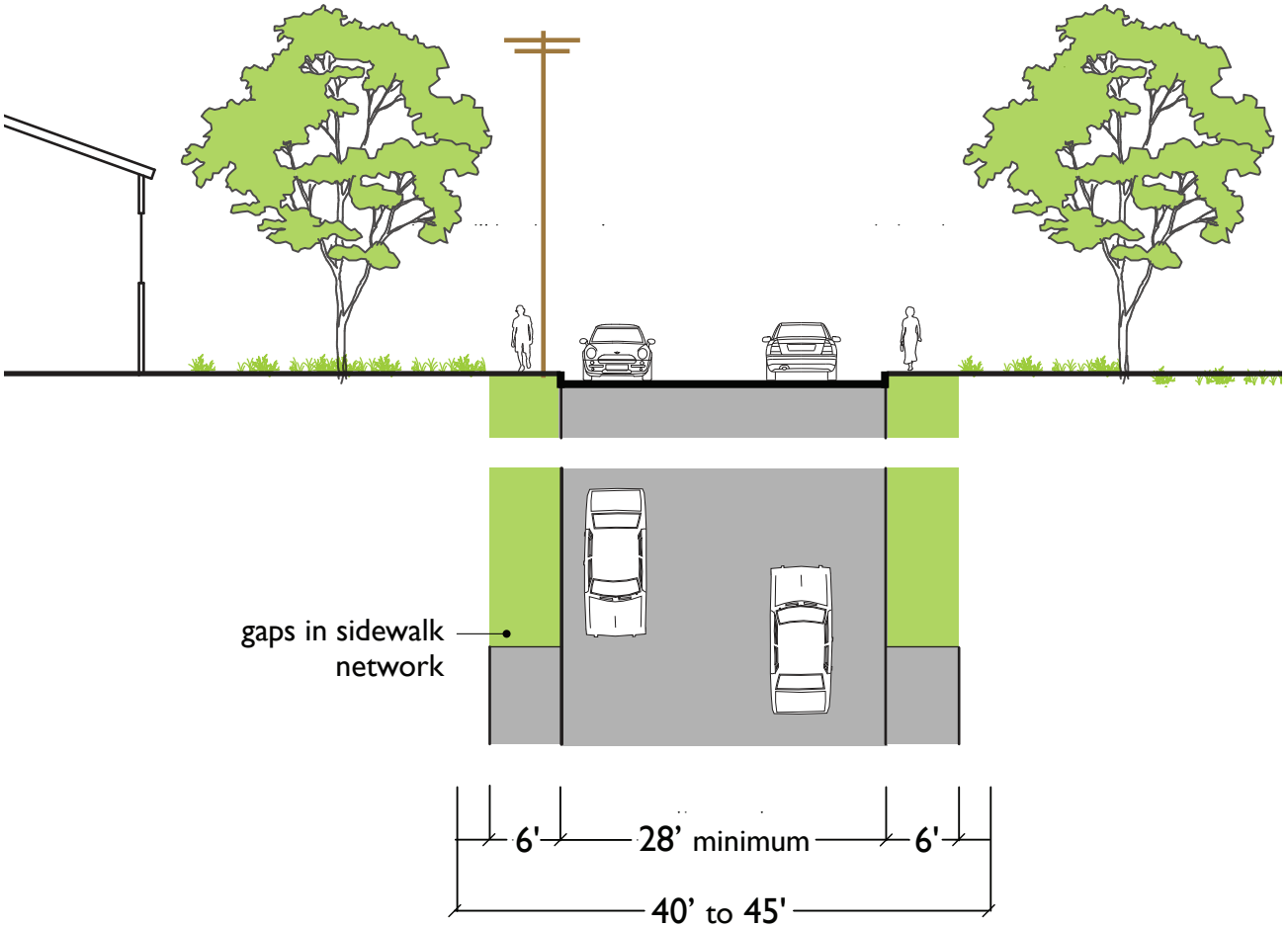


Proposed Design Solution: Cherokee Road (Class III Bike Route)

Existing Conditions: Clemo Avenue

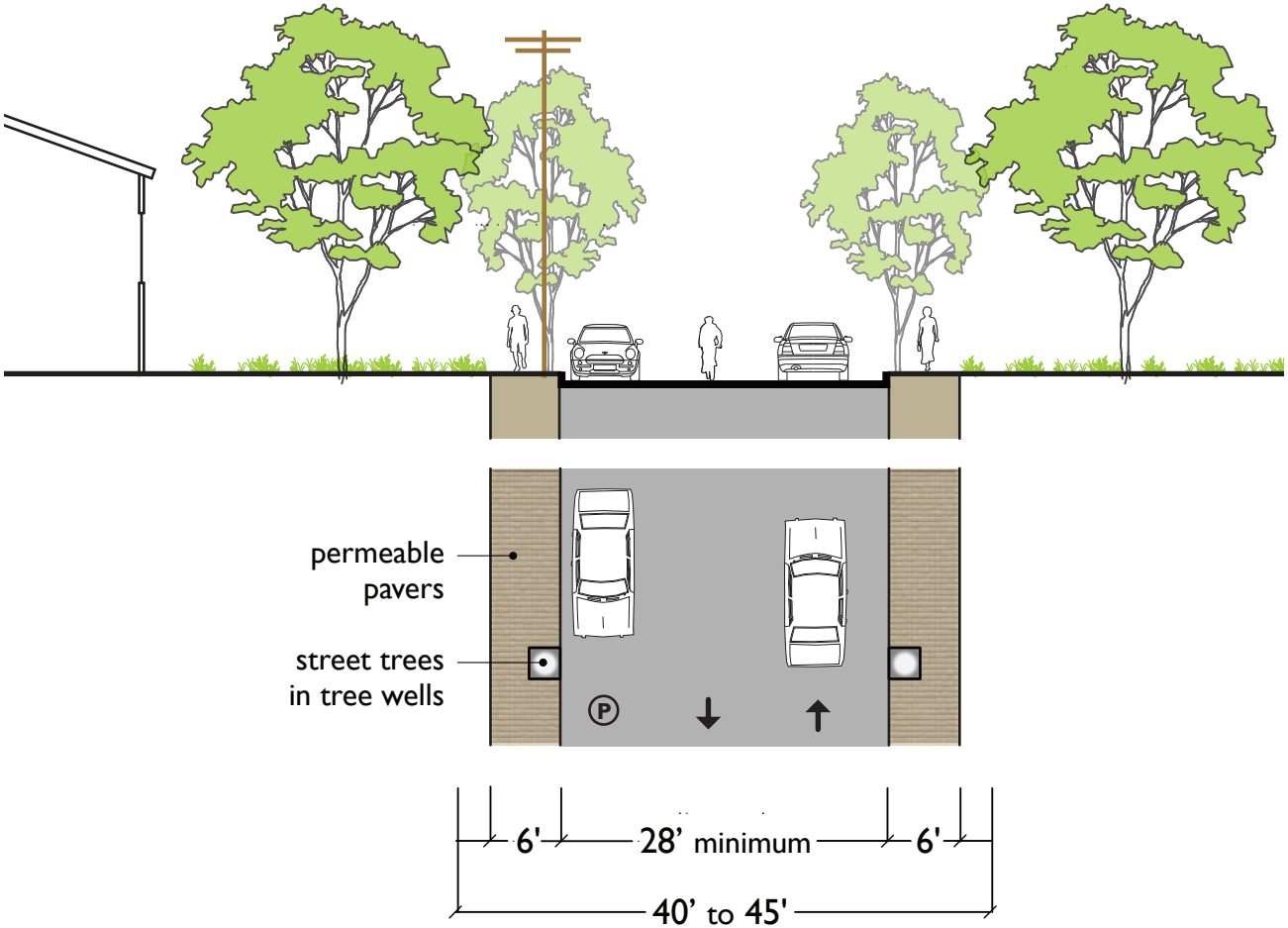
LOCAL STREETS (45' ROW)

Local streets run through residential neighborhoods and are approximately 40 to 45 feet wide. The majority of local streets are in good condition with respect to bicyclist and pedestrian needs. Many are equipped with pedestrian-friendly sidewalk conditions, including curb infrastructure and street trees. Curb to curb dimensions are approximately 30 to 35 feet, which allows for parking and two-way travel in the form of queuing (see diagram on the following page). Vehicle speeds on narrow, local streets are relatively slow, which allows for safe bicycle travel in the Class III manner. The most negative pedestrian conditions are those where gaps exist in the sidewalk network. An example of this is Clemo Avenue, between Hammon Avenue and Boynton Avenue.

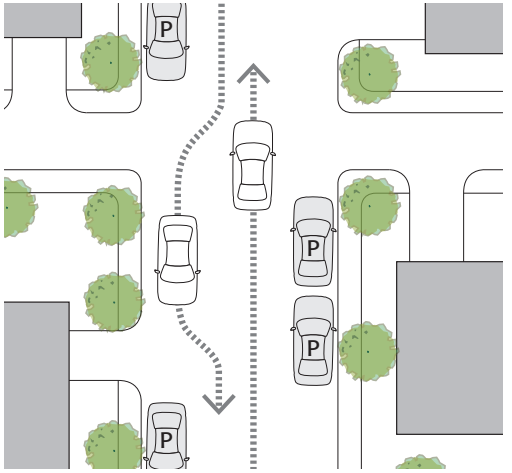


Existing Conditions: Clemo Avenue

Recommended improvements for local streets like Clemo Avenue consist of completing all fragmented sidewalk conditions, planting street trees where feasible, and installing pedestrian crossings.



Proposed Design Solution: Clemo Avenue



Queuing Street

IMPLEMENTATION 5


LANE
BIKE

5 IMPLEMENTATION

This chapter outlines recommendations for support programs that promote multimodal transportation. Support programs will play an important role in implementing the City of Oroville Balanced Mode Circulation Plan by increasing public awareness and interests in the benefits of bicycling and walking, as well as by improving safety and convenience for bicyclists and pedestrians.

Support programs are categorized into five groups: Safe Routes to School, education, encouragement, maintenance, and enforcement programs. The following describes each group in detail.

This chapter also describes the process and strategies for implementation of the recommended projects in this Plan and identifies potential funding sources.

SUPPORT PROGRAMS

SAFE ROUTES TO SCHOOL

Making walking and bicycling to school safer for children can increase the number of children who walk and bicycle to schools. It is critical to alleviate the safety concerns that often prevent parents from allowing or encouraging their children to walk or bike to schools. Encouraging walking and bicycling to school also can reduce peak-hour traffic congestion around schools caused by parents dropping pff and picking up their children by car and address existing safety problems near schools.

Safe Routes to School (SRTS) refers to all programs designed to encourage walking and bicycling to schools. In addition to reducing traffic congestion near schools, SRTS programs can help improve children's health and reduce air pollution. The following provides a framework for an a SRTS program:[1]

1 http://guide.saferoutesinfo.org/steps/index.cfm

1. Create a Coalition that represents a wide range of interests and expertise that are related to SRTS. The potential members include school district staff; parents; local pedestrian, bicycle and safety advocates; City Council members; transportation or traffic engineers; planners; and local pedestrian and bicycle co-ordinators.
2. Enhance SRTS efforts. The City of Oroville has SRTS projects currently underway; however, a strategy to develop a comprehensive SRTS plan approach to additional projects in the city would benefit from creating a vision and identifying issues and solutions. The SRTS plan should address issues and strategies related to engineering, enforcement, education, encouragement, and evaluation. The following describes those basic elements of a SRTS program:
   - Education strategies include teaching students how to walk and bike safely and the benefits of walking and bicycling as well as reminding parents, neighbors, and drivers to yield to pedestrians and bicyclists while driving.
   - Encouragement strategies aim to inspire children, parents, teachers, and others to walk or ride their bicycle through fun programs and special events. These strategies can be relatively inexpensive.
   - Enforcement strategies seek to change the unsafe behaviors of drivers, bicyclists, and pedestrians. This also includes educating pedestrians and bicyclists on walking and bicycling safely and paying attention to their environment.
   - Engineering strategies aim to create a built environment that can safely accommodate all modes of transportation and that can influence people's behavior, such as encouraging more walking and bicycling.
3. Seek funding for the SRTS Plan. There are various funding sources supporting SRTS program activities, such as Congestion Mitigation and Air Quality, Surface Transportation Program, and State SRTS programs. See Legislation and Funding at www.saferoutesinfo.org/legislation_funding for more information.
4. Implement and Evaluate the SRTS Plan. During the implementation of the SRTS Plan, the Coalition should continue monitoring it to identify the most and least effective strategies. Based on the evaluation, the Coalition should make adjustments to the SRTS Plan. Keeping the program going is also important for the success of the plan. Key strategies include:
   - Identify best practices.
   - Get visibility for activities through local media.
   - Encourage school districts and the City to adopt policies that support children walking and bicycling to school.
   - Create a permanent committee to continue implementing and updating the SRTS Plan.

EDUCATION PROGRAMS

This section outlines recommended education programs that target residents of all ages in Oroville. Providing education to children as early as possible is especially critical since this can help them build life-long habits regarding safe walking and bicycling. Educating adults is also an important component of this program because they are role models for children. These education programs aim to remind adults of safety rules so as to encourage them to maintain safe habits and to adopt the most up-to-date safety practices. This section provides details on major education programs that target three different groups: school children, adults, and motorists.

SCHOOL CHILDREN EDUCATION

School-based education is important in building safe walking and bicycling habits because most life-long habits are developed at a young age. Schools should include bicycle education programs into third, fourth, and fifth grade curriculums and provide lessons on safe walking and bicycling on an annual basis or more. Pedestrian education should be incorporated into first through third grade curriculums. Through the program, school children should learn defensive walking and crossing the street, such as looking both ways for cars at intersections, crossing the street at marked crosswalk locations, and avoiding crossing the street behind a bus or car. Members of the police department should be involved in the programs and teach safety rules. The programs should be accompanied by incentive programs, such as giving a reward for modeling safe techniques. The education program should include the following lesson items:

- Training on how to safely ride a bicycle
- Use of bicycle helmets and hand signals
- Bicycle repair and maintenance
- Importance of visible clothes and lights, especially during nighttime bicycling
- Safe bicycle riding tips:
- Negotiating at intersections
- Avoiding sidewalk riding (except in child safety conditions)
- Defensive bicycling and walking
- Traffic rules

Schools should be responsible for preparing educational materials, including maps of the areas around the school site for bicyclists and pedestrians, a description of the proper school drop-off and pick-up procedures for parents, and pamphlets on safety tips and the benefits of walking and bicycling.

Creating a Safety Committee (or subcommittee of the SRTS Coalition) can help develop and implement the program, find additional funding, and communicate with the School Boards or City Council. The committee should consist of parents, teachers, student representatives, police, active bicyclists, and City staff.

ADULT BICYCLE EDUCATION

The City of Oroville should establish an adult bicycle education program in cooperation with the Butte Bicycle Coalition, Lake Oroville Bicyclists Organization, and/or other bicycle groups and City departments. Adult bicycle education programs include bicycle training sessions, tours, and rides, as well as bicycle maintenance lessons. These programs will allow adults to learn defensive bicycling and share bicycling information. As a result, they will feel more comfortable bicycling, which may encourage them to commute to and from work by bicycle or ride their bicycle for other utilitarian or recreational purposes.

MOTORIST EDUCATION

Many motorists do not know the laws governing bicycling and walking. Some motorists believe that bicyclists are not allowed to share travel lanes with cars when there are no bicycle lanes. Motorists may also not know that is it legal for pedestrians to cross the street at any intersection, unless specifically posted otherwise. Motorists often fail to yield to bicyclists or realize that bicyclists are riding closely next to them. The main means of educating motorists include installing signs that warn motorists about the potential existence of bicyclists and pedestrians, providing a brochure on bicycle and pedestrian safety and laws for public distribution, and including bicycle safety into traffic school curriculum.

ENCOURAGEMENT PROGRAMS

EMPLOYER INCENTIVE PROGRAMS

Employers can encourage employees to ride a bicycle or walk by providing incentives to those who commute by bicycle or foot. Similarly, as outlined in the City's Climate Action Plan, the City encourages voluntary commute trip reduction programs at businesses and employment facilities; such programs include bicycle and pedestrian amenities like showers, bicycle parking, and lockers.

PROMOTIONAL EVENTS

The City may hold bicycle and pedestrian promotional and educational events, such as bike-to-work day, bike-to-school day, and walk-a-child-to-school day. A bike-to-work day event can be held in May when California bike-to-work week activities are happening. The presence of police and City staff at these events is important for both safety and promotional purposes. School Districts should play the lead role in school-related events, such as bike-to-school day and walk-a-child-to-school day.

Oroville should also consider joining established events locally and in nearby communities, such as those organized by bicycling clubs. The public can benefit from practical programs, such as a bicycle safety check and bicycle safety courses, as well as bicycle stunt shows and amateur bicycle races. Bicycle events are also great opportunities to educate and encourage inexperienced bicyclists and children.

Usually, the City plays an important role in these events because they require permits, financial assistance, police, and staff time. Local businesses can help sponsor the events in conjunction with the City.

BICYCLE AND PEDESTRIAN MAPS

Maps can promote bicycling and walking for Oroville residents, as well as visitors. These maps should show different types of bikeways and pedestrian paths, major destinations, the location of bicycle parking facilities, and safety information. Advertising revenues from local bike shops and other local businesses can subsidize the cost of producing these maps. Information centers, employers, schools, libraries, bike shops, other retail shops, and the City's website can distribute the maps.

MAINTENANCE PROGRAMS

The City should develop a maintenance plan and secure funding for ongoing maintenance costs for bicycle and pedestrian facilities. The City can employ several funding programs to secure outside funding sources besides the City's general fund, such as "Adopt-a-Path" programs and fundraising activities. Additional discussion of funding can be found later in this chapter, under Funding. The maintenance plan should address the following items:[2]

- Annual assessment of bicycle and pedestrian facility conditions.
- Maintenance budget.

2 http://www.bicyclinginfo.org/bikesafe/case_studies/casestudy.cfm?CS_NUM=403

- A checklist of all maintenance items, the frequency of each task, the cost for each task, the annual cost of each task, and the responsible person or department for each task.
- A list of maintenance activities that are divided into "routine" and "major" maintenance categories. The major routine activities should address the following issues:
    - Signs and Traffic Markings
    - Sight Distance and Clearance
    - Surface Repair
    - Sweeping and Cleaning
    - Structural Deterioration
    - Illumination
- A list of maintenance priority tasks.
- A tracking system to complete maintenance activities in a timely manner.
- An evaluation system to collect the feedback of residents or claims resulting from poor maintenance.

ENFORCEMENT PROGRAMS

Enforcing traffic laws can be a very effective tool to improve safety for pedestrians and bicyclists, but at the same time, implementation can be expensive because it often requires police staff time. This section contains two enforcement programs and strategies.

ENHANCING POLICE ENFORCEMENT

The City may enhance police enforcement in the areas of high pedestrian and bicycle traffic. A stronger police presence and more frequent citation issuance for traffic violations can effectively reduce potentially hazardous situations. Frequent bicycle violations include wrong-way bicycling, failure to obey traffic control devices, and lack of required safety equipment, such as helmets and lights. Prior to implementation of this program, the Police Department should educate police staff on bicycle and pedestrian laws, the best way to approach an offender, and violations to target for enforcement.

CHANGING FINE STRUCTURE

For drivers, increasing traffic fines can discourage violations. The City may consider doubling fines in school zones to enhance pedestrian safety near schools and target violations at crosswalks.

IMPLEMENTATION

IMPLEMENTATION PROCESS

The following outlines typical steps that are expected during the implementation process:

5. Apply for grants to fund improvements.
6. Coordinate with other jurisdictions as necessary.
7. Develop further design, engineering, and cost estimates as necessary.
8. Secure environmental review and permitting as necessary.
9. Construct projects.

IMPLEMENTATION STRATEGIES

Designating bicycle and pedestrian program staff can help City staff focus on implementing pedestrian and bicycle improvements. The City should designate a staff person as a Bicycle and Pedestrian Program Manager who will be responsible for overall implementation of the Balanced Mode Circulation Plan, as well as plan review, coordination with other agencies, and financing. The following describes the roles and responsibilities of the Bicycle and Pedestrian Program Manager.

- Participate in the City's plan review process, including traffic impact studies, street improvement projects, and development projects, to manage the implementation of the recommended projects, the collection of impact fees, and the application of design guidelines and goals presented in this Plan.
- Prepare a monitoring plan in coordination with the Police Department to evaluate bicycle and pedestrian-related collision data and provide needed enforcement with regard to issues of security, vandalism, and crime along the pedestrian and bicycle network.
- Monitor funding opportunities and prepare funding applications especially for competitive funding sources that require coordination with other local and regional agencies.
- Take the lead in developing and implementing the maintenance plan and collaborating with the Public Works Department.
- Work closely with adjacent communities, regional agencies including the Butte County Association of Governments and Caltrans, and other City Departments including Police, Public Works, Finance, and Parks and Recreation to capture all opportunities to implement the Balanced Mode Circulation Plan.

FUNDING

The purpose of this section is to identify funding opportunities to support the implementation of the Balanced Mode Circulation Plan. This section outlines the types of funding available and briefly describes how the funds can be used and the process of attaining the funds. The funding opportunities listed below include funding for further planning, construction, and implementation.

Available funding is affected by the economic climate, and as a result this list is subject to change. The City of Oroville should pursue applications for the majority of the grant funding opportunities.

There are a variety of potential funding sources, including local, State, regional, and federal programs, that can be used to construct pedestrian and bicycle improvements. The City should also take advantage of private contributions in implementing the pedestrian and bicycle improvements. This could include a variety of resources, such as volunteer labor during construction or monetary donations towards specific improvements. The funding sources considered appropriate for Oroville are discussed in detail below.

LOCAL FUNDING SOURCES

DEVELOPMENT IMPACT FEES

Development impact fees are payments required by local governments of new development for the purpose of providing new or expanded public capital facilities. Developers in Oroville are already subject to a variety of development impact fees, which could be expanded to specifically fund bicycle and pedestrian improvements. Also, the City may require, as a condition of approval for new development, that the developer provide certain improvements, such as sidewalk improvements or transit amenities.

MELLO-ROOS COMMUNITY FACILITIES DISTRICTS

The Mello-Roos Community Facilities Act of 1982 allows any County, City, special district, school district, or joint powers authority to establish a Community Facilities District (CFD), which allows for financing of public improvements and services through taxation within the district. The services and improvements that CFDs can finance include streets, sewer systems, and other basic infrastructure. A CFD is created by a sponsoring local government agency and includes all properties that will benefit from the improvements to be constructed or the services to be provided. A CFD cannot be formed without a two-thirds majority vote of residents living within the proposed boundaries. Once the CFD is approved, a Special Tax Lien is placed against each property in the CFD and property owners pay a special tax annually.

STATE FUNDING SOURCES

The following discussion describes State funds that could be used for transportation solutions identified in this Plan. Each of the funding sources requires a competitive grant application process. Funds for transportation-related projects are available from the Transportation Development Act (TDA), and from various State programs and agencies, including Caltrans and the California Office of Traffic Safety (OTS).

TRANSPORTATION DEVELOPMENT ACT ARTICLE 3

TDA funds generated from a portion of the general State sales tax are returned to the source counties to fund transportation projects. TDA Article 3 provides for 2 percent of County TDA funds to be set aside for bicycle and pedestrian projects. Eligible projects include right-of-way acquisition; planning, design, and engineering; and construction of bicycle and pedestrian infrastructure, including retrofitting to meet ADA requirements, and related facilities.

BICYCLE TRANSPORTATION ACCOUNT

The Caltrans Bicycle Transportation Account (BTA) provides State funds on a competitive basis for City and County projects that improve safety and convenience for bicycle commuters, including design, engineering, and construction of bicycle lanes and paths. To be eligible for BTA funds, a City or County must adopt a Bicycle Transportation Plan (BTP) that complies with Streets and Highways Code Section 891.2 within four years prior to the year of application. The BTP must be approved by the local agency's Regional Transportation Planning Agency. Caltrans anticipates $7.2 million to be available annually for bicycle projects stating in 2014. Funds are allocated to cities and counties on a matching basis that requires a minimum of 10 percent of the total cost. No applicant can receive more than 25 percent of the total amount transferred to the BTA in a single fiscal year.

- More information is available at: http://www.dot.ca.gov/hq/LocalPrograms/bta/btawebPage.htm

SAFE ROUTES TO SCHOOL (SRTS)

This program provides funding for sidewalk improvements, traffic calming and speed reduction measures, pedestrian and bicycle crossing improvements, on-street and off-street bicycle facilities, and traffic diversion improvements. To qualify for this program, the project must be within the vicinity of a school. The State program was established by State legislation in 1999, and with the passage of AB 57 in 2007, the State SRTS program was extended indefinitely. Each year, $24.25 million in funds are available and require a local match of 10 percent. Infrastructure projects are eligible to receive SRTS funds.

- More information is available at: http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm

STATE HIGHWAY OPERATIONS AND PROTECTION PLAN

Caltrans administers the State Highway Operations and Protection Plan (SHOPP), a multi-year program of capital projects intended to preserve and protect the State Highway System, which includes Oroville Dam Boulevard and Olive Highway (part of State Highway 162). Funding is from State and federal gas taxes, and covers capital improvements related to maintenance, safety, and rehabilitation of State highways and bridges. Just over $1 billion is allocated to SHOPP annually. Projects include rehabilitation, landscaping, traffic management systems, rest areas, auxiliary lanes, and safety improvements. Each project must have a completed Project Study Report to be eligible for funding. Projects are developed in the fall of every odd numbered year.

OFFICE OF TRAFFIC SAFETY GRANTS

The Office of Traffic Safety (OTS) administers federal traffic safety grant funds that are apportioned to California under the National Highway Safety Act. The OTS has several priority areas for grant funding, including pedestrian and bicycle safety. The OTS supports a wide variety of traffic safety programs, including pedestrian and bicycle safety programs for children, child passenger safety outreach, and support for increased law enforcement services and resources, such as safety helmet distribution, and court diversion programs for safety helmet violators.

- More information is available at: http://www.ots.ca.gov/ots_and_traffic_safety/faqs.asp

ENVIRONMENTAL ENHANCEMENT AND MITIGATION PROGRAM

The Environmental Enhancement and Mitigation (EEMP) Program is a State fund established by Caltrans to fund beautification improvements to roadsides to mitigate the effects of transportation projects. It offers a total of $10 million each year for grants to local, State, and federal governmental agencies and to nonprofit organizations for projects to mitigate the environmental impacts caused by new or modified public transportation facilities. Typical grants range from $200,000 to $250,000. Up to 25 percent local matching is usually required. Eligible projects must be directly or indirectly related to the environmental impact of the modification of an existing transportation facility or construction of a new transportation facility. Grants are awarded in the categories of highway landscaping and urban forestry, resource lands, roadside recreation, and mitigation projects beyond the scope of the lead agency.

- More information is available at: http://www.resources.ca.gov/eem/

CALTRANS ENVIRONMENTAL JUSTICE AND COMMUNITY-BASED TRANSPORTATION PLANNING GRANT

The Office of Community Planning (OCP) is responsible for managing the Environmental Justice (EJ) and Community-Based Transportation Planning (CBTP) Grant Programs, which are competitive grant programs funded from the State Highway Account (SHA). A total of $6 million in State funds are available for the both programs each fiscal year.

- More information is available at: http://www.dot.ca.gov/hq/tpp/offices/ocp/EJ_CBTP_Handbook_FY%202011-12.pdf

a. Caltrans Environmental Justice: Context-Sensitive Planning

The Caltrans EJ program provides funding for planning-related projects that promote environmental justice in local planning, contribute to early and continuous involvement of low-income and minority communities in the planning and decision-making process, improve mobility and access for underserved communities, and create a business climate that leads to more economic opportunities, services, and affordable housing. Caltrans EJ grants require a 10-percent local match with a 5-percent in kind contribution maximum. EJ grants are available in amounts up to $250,000.

b. Caltrans Community-Based Transportation Program

The Caltrans CBTP grant program is primarily used to seed planning activities that encourage livable communities. Caltrans CBTP grants assist local agencies to better integrate land use and transportation planning, to develop alternatives for addressing growth and to assess efficient infrastructure investments that meet community needs. These planning activities are expected to help leverage projects that foster sustainable economies, increase available affordable housing, improve the housing/jobs balance, encourage transit-oriented and mixed-use development, expand transportation choices, reflect community values, and include non-traditional participation in transportation decision-making. CBTP grant-funded projects demonstrate the value of these new approaches locally, and provide best practices for statewide application. CBTP grants require a 10 percent local match. CBTP grants are available in amounts up to $300,000.

FEDERAL FUNDING SOURCES

The primary sources of federal funding for bicycle and pedestrian facilities are from the U.S. Department of Transportation and the U.S. Department of Housing and Urban Development.

SAFETEA-LU, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, authorized surface transportation investment and had supplied various funding programs until it expired in September 2009. President Obama signed the new two-year transportation authorization bill, Moving Ahead for Progress in the 21st Century (MAP-21), into law in July 2012. MAP-21 took effect on October 1, 2012. Specific funding programs under MAP-21 are discussed in detail below:

CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT PROGRAM

The Congestion Mitigation and Air Quality Improvement Program (CMAQ) is a federal program supporting a range of projects that reduce transportation-related air emissions in air quality nonattainment areas. Butte County Association of Governments, the local MPO, administers the CMAQ grant on a per-population and competitive basis in Butte County. The CMAQ funds support transportation projects that are likely to reduce air pollution and are included in the Metropolitan Planning Organization's (MPO's) current transportation plan and transportation improvement program (TIP) or the current State transportation improvement program (STIP) in areas without an MPO. Bicycle and pedestrian facilities programs are one of the eligible activities. The CMAQ program authorizes an average of $3.3 billion per year.

- More information is available at: http://www.bcag.org/Projects/Congestion-Mitigation-and-Air-Quality-Program/index.html

TRANSPORTATION ALTERNATIVES

This is a new program under MAP-21 that will consolidate the Transportation Enhancement program with the Recreational Trails and the Safe Routes to Schools programs. Eligible projects include bicycle and pedestrian facilities, safe routes for non-drivers projects and systems, vegetation management practices in rights of ways, preservation of abandoned railway corridors including for pedestrian and bicycle trails, and any environmental mitigation.

- More information is available at: http://www.fhwa.dot.gov/map21/summaryinfo.cfm

COMMUNITY DEVELOPMENT BLOCK GRANTS

Since 1974, the U.S. Department of Housing and Urban Development has administered Community Development Block Grant (CDBG) funds. The goal of the CDBG program is to develop viable urban communities by providing decent housing and a suitable living environment and by expanding economic opportunities, principally for persons of low and moderate income. "Persons of low and moderate income" or the "targeted income group" (TIG) are defined as families, households, and individuals whose incomes do not exceed 80 percent of the county median income, with adjustments for family or household size. Each year the program makes funds available to eligible jurisdictions through several allocations.

Projects must meet specific criteria of either benefitting low-income households or persons, creating new jobs, or accommodating specific business expansion/retention. CDBG funds are available for a variety of project types, including public works projects.

- More information is available at: www.hud.gov/offices/cpd/communitydevelopment/programs/index.cfm

NON-TRADITIONAL FUNDING SOURCES

ADOPT-A-TRAIL OR PATH PROGRAMS

The City may establish Adopt-A-Trail or Adopt-A-Path programs to coordinate with local groups, businesses, and/or residents on trail or path development and maintenance. Local businesses and organizations may adopt a trail or a bicycle path similar to the adoption of segments of the Interstate Highway System. The adoption is in the form of an annual commitment to pay for the routine maintenance of the trail or path. The supporters and their contribution could be indicated on signs posted along the trail or path.

REVENUE-PRODUCING OPERATIONS

The City could consider including revenue-producing operations, such as bicycle rental or repair facilities and food and drink establishments, as part of the development of a trail or bike path. The City may use the lease revenues from these operations for trail or path maintenance costs.

GRANTS AND FOUNDATIONS

Private foundations or corporate donors can be great resources for funding projects or event programs. Foundations that support pedestrian and bicycle improvements are listed in the Foundation Center online database at www.fconline.fdncenter.org.