Proposed Pedestrian and Bicycle Facilities

This chapter includes the following sections:

- **Infrastructure Improvement Types** describes the various physical changes available to build a connected, comfortable, and safe roadway network for bicyclists and pedestrians.
- **Amenities** presents a menu of options to improve multimodal comfort and connections as well as "best practices" for their implementation.
- **Wayfinding** defines the system of navigational signs and markings that inform and guide users along the best route to their destinations and presents a menu of wayfinding options to improve navigation for people walking, bicycling, rolling, and taking transit.
- **Infrastructure Recommendations** describes proposed engineering improvements related to the City's bicycle, pedestrian, and trail networks, including on- and off- street facilities like bicycle lanes, sidewalks, multi-use paths, trails, and crossing improvements, as well as studies for locations where further analysis or community outreach is necessary to determine the most appropriate improvement type for the location.

Infrastructure Improvement Types

Infrastructure improvements are physical changes to the roadway network which facilitate a connected, comfortable, and safe bicycle and pedestrian network.

Infrastructure improvement types for bicycling and walking facilities are described separately in the following sections, except for Class I Multi-Use Paths and Class I Multi-Use Path crossings. These facilities are included in both network categories because these facilities benefit bicyclists and pedestrians equally.

Crossing improvements are categorized by bicycle-specific approach/crossing improvements, pedestrian-specific crossing improvements, other crossing improvements, and Class I Multi-Use Path crossings, including at-grade and grade-separated Class I Multi-Use Path crossings. Some crossing improvements address both bicycle and pedestrian needs and are included in both sets of network options while others address only one mode of transportation and are only included in the proposed network type that benefits from the crossing improvement.

Bikeway Network Infrastructure Types

Recommended bicycle facilities include on- and off-street bicycle lanes and bikeways, as well as crossing improvements.

A visual guide to bicycle network infrastructure types has been included below. For a full description of bikeway facility types, including the four classifications and sub-classifications recognized by Caltrans, please see the Existing Conditions and the Methods of Increasing Walking and Bicycling chapters.

CLASS I MULTI-USE PATHS

Source: www.pedbikeimages.org / Dan Burden

Class I multi-use paths are exclusive walking and bicycling facilities where motor vehicles are prohibited. The minimum paved width of a two-way Class I facility is 8 feet, with 10 feet preferred with a minimum of 2 feet of shoulder width on either side (3 feet preferred).

CLASS II BICYCLE LANES

Source: www.pedbikeimages.org / Dan Burden

Class II bicycle lanes are striped lanes for bicyclists.

CLASS II BICYCLE LANES WITH GREEN-COLORED PAVEMENT

Source: www.pedbikeimages.org / Tiffany Robinson

Class II bicycle lanes with green-colored pavement are striped lanes for bicyclists that are enhanced with green pavement, either along the entire bikeway corridor or in conflict areas, like driveways and turn lanes.

CLASS II BUFFERED BICYCLE LANES

Source: www.pedbikeimages.org / Lyubov Zuyeva

Class II buffered bicycle lanes are striped lanes for bicyclists that include a painted "buffer" area between the bicycle lane and the travel lane or between the bicycle lane and the parking lane.

CLASS III BICYCLE ROUTES

Source: www.pedbikeimages.org / Brandon Whyte

Class III bicycle routes are signed routes for bicyclists on low-speed, low volume streets. Bicyclists share the roadway with motorists.

CLASS III BICYCLE BOULEVARDS

Source: www.pedbikeimages.org / Russ Roca

Class III bicycle boulevards are Class III bicycle routes that have been enhanced with traffic calming treatments that prioritize the travel and comfort of people traveling by bicycle.

CLASS IV SEPARATED BIKEWAYS

Source: www.pedbikeimages.org / Megan Kanagy

Class IV separated bikeways are on-street bicycle facilities with a physical barrier, like the parking lane or bollards, between the bikeway and motor vehicle lanes.

AT-GRADE CLASS I BIKEWAY CROSSINGS

Source: www.pedbikeimages.org / Dan Burden

At-grade Class I bikeway crossings are intersections where a Class I bikeway meets a roadway where bicyclists and motorists share the road.

GRADE-SEPARATED CLASS I BIKEWAY CROSSINGS

Source: www.pedbikeimages.org / Dan Burden

Grade-separated Class I bikeway crossings are intersections where a Class I bikeway meets a roadway or railroad, and bicyclists are physically separated from other modes by an overcrossing or undercrossing structure.

TRAFFIC CALMING

Source: Arleta Neighborhood Council

Traffic calming measures reduce motor vehicle speeds to increase safety and improve comfort for nearby pedestrians and bicyclists. Traffic calming measures include speed limit reductions, vertical deflection (speed humps or speed tables), and horizontal deflection (curb extensions, neighborhood traffic circles, chicanes, pinchpoints, or narrowings).

NEIGHBORHOOD TRAFFIC CIRCLES

Source: www.pedbikeimages.org / Carl Sundstrom

Neighborhood traffic circles are raised islands in residential intersections that help slow traffic on local and collector streets. Neighborhood traffic circles can help make crossings safer for pedestrians, encourage smoother and safer bicycle travel, and clarify right-of-way for all road users along Class III bicycle boulevards.

SPEED FEEDBACK SIGN

Source: Seattle Department of Transportation

Speed feedback signs use radar to detect and display the speed of passing cars and are typically sited on arterials with significant speeding concerns.

CONFLICT MARKINGS

Source: www.troutdaleoregon.gov

Conflict markings are dashed bicycle facility markings where turning motorists cross the bicycle lane. They are most often located near intersections, driveways, and onramps.

BIKE BOXES

Source: City of Long Beach

Bike boxes designate an area for bicyclists to wait in front of stopped motor vehicles during a red signal phase.

BIKE RAMPS

Source: www.pedbikeimages.org / Dan Burden

Bike ramps are ramps that allow for smooth bicycle travel between a roadway and an off-street bicycle facility.

BICYCLE SIGNALS/LEADING BICYCLE INTERVAL

Source: www.pedbikeimages.org / Adam Coppola Photography

Bicycle signals are traffic signal heads that provide a designated period for bicycles to enter the intersection ahead of motor vehicles.

INTERSECTION APPROACH IMPROVEMENTS

Source: www.pedbikeimages.org / Toole Design Group

Intersection approach improvements are dedicated bicycle facilities that continue through an intersection completely.

BICYCLE LOOP AND VIDEO DETECTION

Source: LADOT Bike Blog

Bicycle loop and video detection are methods of signal actuation at a bicycle crossing that detect the presence of bicyclists and initiate a green signal phase.

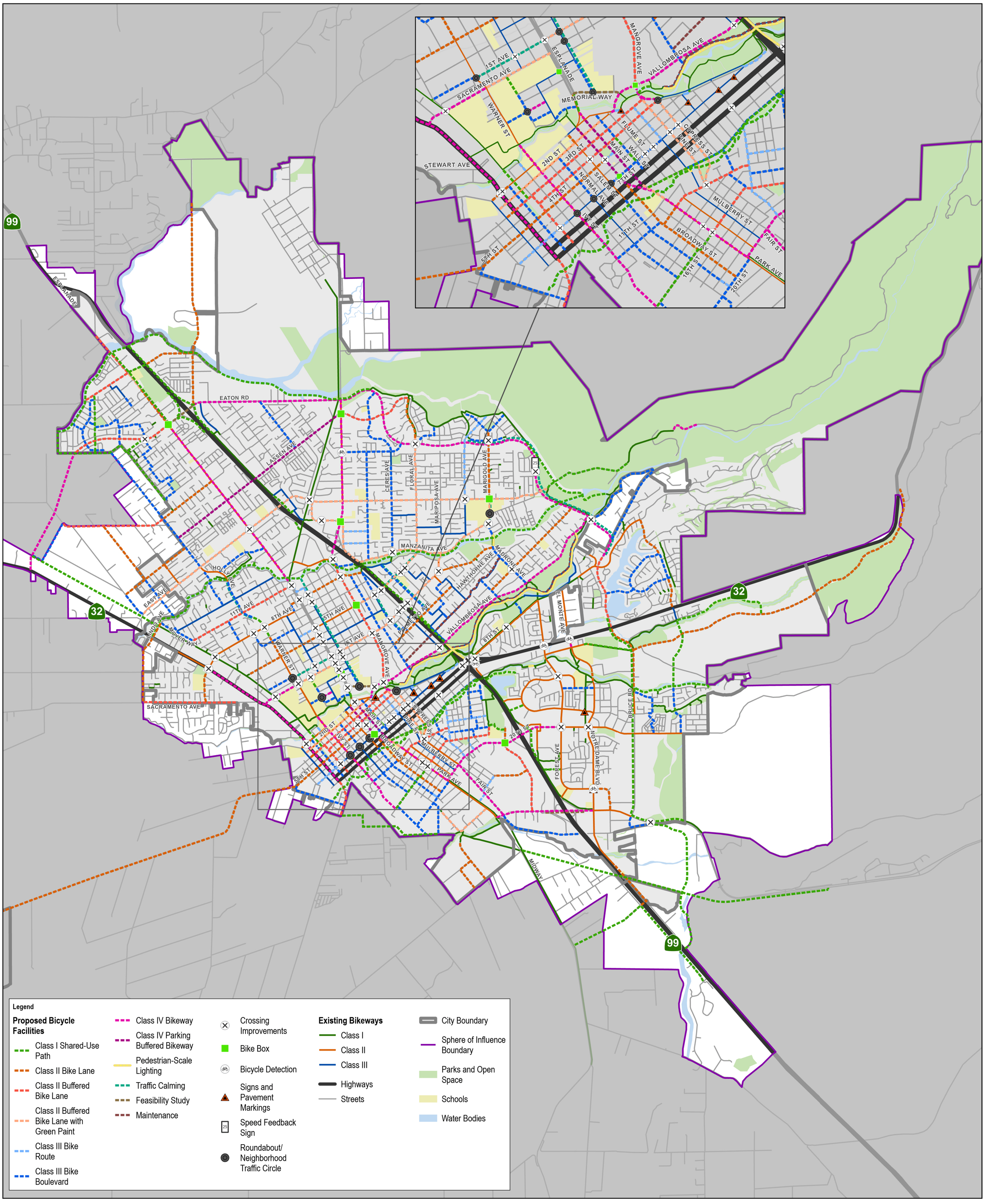
Over 154 miles of new bikeways are proposed in this Plan. A summary of existing and proposed bicycle network improvements is provided in

Table 12 and mapped in Figure 33.

Table 12: Proposed Bikeway Miles

Bikeway Type	Existing Miles	Proposed Miles	# of Projects	Total Existing + Proposed Miles	Percent Increase
Class I Shared Use Path	35.3	40.4	57	75.7	114.5%
Class II Bicycle Lanes (Buffered and Regular)	40.1	52.6	70	110.1	174.6%
Class III	22.7	37	105	59.7	162.9%
Class IV Bikeways	0.5	25.1	30	25.6	5020%

Source: City of Chico and Recommendations



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GHD

CITY OF CHICO
ACTIVE TRANSPORTATION PLAN

BIKEWAY NETWORK INFRASTRUCTURE PROJECTS

Project No. **12575135**
Revision No. **A**
Date **Dec 2023**

FIGURE 33

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Data source: ; Boundaries, Streets: Chico, 2021. Created by: ethompson3

Pedestrian Network Infrastructure Types

The proposed pedestrian network includes Class I Multi-Use Paths along with sidewalks and spot improvements such as crossings and curb ramps. Pedestrian recommendations are intended to make walking trips safer, more comfortable, more convenient, and more enjoyable for users of all ages and abilities.

A visual guide to pedestrian infrastructure types has been included below. For a full description of pedestrian infrastructure types, from sidewalks and paths to crossing improvements, please refer to the Methods of Increasing Walking and Bicycling chapter.

SIDEWALKS AND PATHS

Source: www.pedbikeimages.org / Dan Burden

Sidewalks are paved facilities that provide comfortable walking space separate from the roadway. They are a fundamental element of Americans with Disabilities Act (ADA) compliance.

STANDARD OR TRANSVERSE MARKINGS CROSSWALK

Source: www.pedbikeimages.org / Dan Burden

Standard or transverse markings crosswalks are two parallel lines indicating the crossing area.

LADDER CROSSWALK

Source: www.pedbikeimages.org / Mike Cynecki

Ladder crosswalks include bold white bars that run perpendicular to the pedestrian path of travel.

ADVANCE STOP BAR OR YIELD MARKINGS

Source: www.pedbikeimages.org / Dan Burden

Advance stop bar or yield markings include a bold white bar or triangular “shark’s teeth” markings 6 to 8 feet in advance of a crosswalk. Controlled intersections utilize the stop bar while uncontrolled intersections utilize the yield markings.

RECTANGULAR RAPID FLASHING BEACON (RRFB)

Source: City of Long Beach

A RRFB utilizes human-activated flashing lights to provide additional visibility to pedestrian crosswalk signs at unsignalized intersections and midblock crossings, where traffic volumes do not warrant a signal or stop.

SIGNALIZED MIDBLOCK CROSSING

Source: NACTO

A signalized midblock crossing stops road traffic as needed to allow for non-motorized crossings of major streets at midblock locations where a beacon is determined to be insufficient.

AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANT CURB RAMP

Source: Van Midde Concrete

Curb ramps are used at street crossings that involve a change in grade to ensure crosswalks are accessible to people using wheelchairs, people with wheeled devices, and people with low or no vision, per ADA guidelines.

CURB EXTENSIONS

Source: www.pedbikeimages.org / Lara Justine

Curb extensions are traffic calming measures that widen the sidewalk at roadway intersections into the parking lane, shortening the street width at crossings.

LEADING PEDESTRIAN INTERVALS

Source: City of Long Beach

Leading pedestrian intervals are signalized intersections with a walk phase that precedes the green phase for motorists by a few seconds, allowing pedestrians to get a head start crossing the street.

Amenities

This section of amenities acts as an à la carte menu of potential infrastructure add-ons and specialty items that can be included throughout Chico's multimodal network, as desired. Each amenity presents an opportunity for improved comfort and convenience for people walking, bicycling, rolling, and taking transit.

The intent of the amenities presented is to have a unified look and feel throughout the Chico transportation network, emphasizing connectivity. Each pedestrian, bicycle, trail, and transit amenity item below includes an example photo of the amenity as well as a description of its general recommended

use and best practices. These recommendations are overarching for the entire network and not for any one segment. These amenities should be considered as the network is developed in new segments and for future upgrades to existing segments.

Pedestrian Amenity Options

STREET TREES

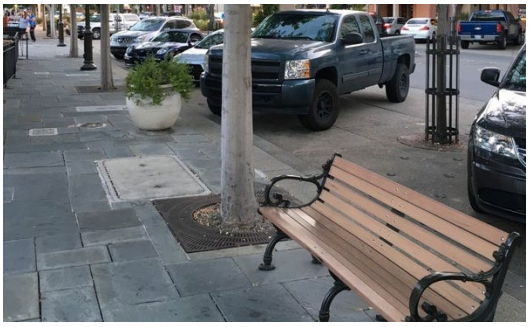
Street trees provide numerous pedestrian amenities including cleaner air, enhanced beauty, improved mental health, and strengthened community identity. In cities like Chico with hot, dry summers, street trees provide pedestrians with essential shade protection from the sun. Street trees can also improve traffic safety, with studies showing that individual driving speeds are significantly reduced along tree-lined streets in suburban settings[33].

PARKLETS

Pedestrians benefit from places to sit or linger as they travel to and from their destinations. Parklets are a way for the city to partner with nearby local businesses to create additional public space for community use. By converting curbside parking spaces into well designed, landscaped miniature community spaces, cities like Chico can incorporate additional greenery, seating, and (optional) bicycle racks into their urban fabric.

Parklets can be managed through a competitive application process by a city's public works department. Parklets should be a minimum of 6 feet wide, take up at least 1 parallel parking space, have vertical elements to help make them visible to motor vehicle traffic, and have a level transition at the sidewalk/curb to maintain accessibility. Drainage and stormwater runoff should also be considered when siting.

SEATING



Successful public spaces incorporate seating, providing a welcoming, comfortable environment that encourages pedestrians to rest, read, eat, or socialize. From formal seating, like benches and café tables and chairs, to informal seating, like low walls and planter edges, seating provides a place for residents and visitors alike to spend additional time in the public realm.

Seating should be arranged to create social spaces, encourage sitting, and discourage lying down. Seating should be sited beneath trees or other shade structures, where possible, to improve comfort. Benches parallel to the curb should be oriented toward buildings (and away from traffic) when located in the sidewalk zone nearest to the curb; they should be oriented away from buildings when up against building frontage. Benches also act as transit

[33] https://www.researchgate.net/publication/292767085_The_street_tree_effect_and_driver_safety

amenities and are further described in that context in a later section.

Seating should be made of high-quality, durable materials that can withstand human interaction, vandalism, and the elements.

PEDESTRIAN SCALE LIGHTING

According to the National Highway Traffic Safety Administration (NHTSA), 76 percent of all pedestrian related fatalities occurred during periods of darkness[34]. To help address this, pedestrian scale lighting provides supplemental illumination for the travel and activities of people, including children, walking, skating, and rolling at night. While pedestrian scale lighting is recommended in all areas where pedestrian activity is prioritized, like sidewalks, pathways, intersections, crossings, and plazas, there are suggested minimum average luminance on these facilities for visibility of pedestrians to drivers and for pedestrians' visibility of their walking, as outlined in the FHWA research report *Street Lighting for Pedestrian Safety*[35]. Pedestrian scale lighting supplements typical roadway streetlights by adding or adjusting the source of outdoor illumination closer to pedestrians, improving visibility of those walking along and across the street and enhancing safety for all road users.

STREETSCAPE SIGNAGE AND WAYFINDING

Streetscape signage and wayfinding provide directional information to key destinations nearby, including parks, transit stops, civic buildings, and other neighborhoods. They also can be used to create a sense of place within the neighborhood, providing historical information and marking points of interest.

Wayfinding signage is explained in greater detail in a later section.

TRASH RECEPTACLES

Trash and recycling receptacles reduce litter by providing a convenient place for waste disposal. Depending on style and functionality they can be moderately inexpensive and require only a small area that is clear and level. They should be placed to provide for easy maintenance, regular emptying, as well as high visibility to reduce the risk of vandalism. Newer trash compactor trash receptacles can increase the capacity of regular-sized bins, reducing

[34] https://safety.fhwa.dot.gov/roadway_dept/night_visib/docs/Pedestrian_Lighting_Primer_Final.pdf

[35] https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-09/StreetLightingPedestrianSafety.pdf

the required frequency of emptying and preventing unwanted scavenging.

Bicycle Amenity Options

BICYCLE PARKING

Bicycle racks at convenient locations provide secure places to park and lock bicycles on a short-term basis. Bicycle parking should be sited at level locations that are highly visible to avoid bicycle theft, as well as complementary to other amenities, like end of trip facilities. Special care should be taken to comply with accessibility requirements and avoid conflicts with motor vehicles, pedestrians, and mobility devices. Providing sanctioned bike parking in the right locations can help avoid bikes locked to objects such as trees, fences, railings, gutters, light poles, signs, and benches, which may cause maintenance or accessibility issues.

Most bicycle racks are designed to be durable, and the chosen style of rack should support the bicycle upright by its frame in two places, prevent the wheel of the bicycle from tipping over, enable the frame and one or both wheels to be secured, support bicycles without a diamond-shaped frame with a horizontal top tube, and allow front-in parking. A U-lock should be able to lock the front wheel and the down tube of an upright bicycle, and allow back-in parking, and a U-lock should be able to lock the rear wheel and seat tube of the bicycle.

Wheel-bending schoolyard bicycle racks, which can damage bicycles, and “wave” style bicycle racks, which are space inefficient, are outdated rack styles that are not recommended. Additional guidance on bicycle parking and bicycle rack selection may be found in the Association of Pedestrian and Bicycle Professionals Bicycle Parking Guidelines.

END OF TRIP FACILITIES

Longer distance bicycle commuters may wish to freshen up upon arrival, prior to beginning the day. To further encourage people to bicycle more often, additional amenities should be provided including showers, locker rooms, and bicycle wash stations. These amenities are frequently provided for bicycle commuters through workplace or school facilities.

BICYCLE REPAIR STATIONS

From flat tires to adjusting brakes and derailleurs, bicycle riders of all abilities sometimes need to make quick adjustments while out on the road or trail. Bicycle repair stations include all the necessary tools and equipment for basic bicycle repairs and maintenance. Bicycle repair stations act as a ruggedized bicycle tool “library,” designed to withstand both vandalism and the elements, with securely attached tools, stand and often a bicycle pump. Care should be taken when placing bicycle repair stations to avoid areas where vandalism is more likely, and instead placing them in highly visible, well-lit, and accessible locations where bicyclists may easily pull off the trail to make repairs.

BICYCLE LEANING RAILS

Bicycle leaning rails allow bicyclists to rest an arm and foot when waiting at signalized intersections along designated bikeways. These amenities encourage more people to bicycle by providing something to hold onto for balance while waiting for the traffic signal. Bicycle leaning rails also encourage proper bicyclist positioning and alignment along multi-use trail crossings, reducing conflict between bicyclists and pedestrians. Bicycle leaning rails are produced by multiple manufacturers and come in a variety of lengths (typically 4' and 8'), finish options, and colors.

Trail Amenity Options

GATEWAY MONUMENTS

Gateway monuments are placed at main entrance points, trailheads, and prominent intersections of trails, creating a sense of place for the trail network and its users.

TRAIL MAP / GATEWAY SIGNS

A well-planned and attractive system of destination signs and trail maps can greatly enhance trail networks by orienting users to their location within the community and providing navigational assistance to nearby routes or points of interest. By highlighting connections to other trails or modes of transportation, gateway and trail map signs can encourage more people to walk and bicycle for more trips.

These signs can be implemented as a standalone feature at trail entrances or paired with wayfinding signs (described in a later section) along the trail to offer more comprehensive navigational assistance.

INTERPRETIVE SIGNS

Interpretive signs orient trail users to adjacent natural features, waterways, and local wildlife, building a deeper sense of awareness. Because many of the existing and planned trails follow creeks and natural areas, the City's trail network presents numerous opportunities for interpretive signage.

BENCHES

Providing seating along trails improves accessibility and comfort for all trail users, and can be especially helpful for children, older adults, and those with mobility challenges. Simple benches can be installed at a moderate cost and require a firm and level area. Many also include an adjacent accessible area where a person in a wheelchair or other mobility device may safely pull off the trail. Paving the area surrounding the bench is common, but not required.

SHADED BENCHES

Where trees do not provide sufficient shade cover, or where protection from weather is also desired, benches can be installed in conjunction with shade structures. The structure adds significant cost and requires more substantial footings, but typically does not dramatically increase the footprint of the trailside seating area.

PICNIC TABLES

Like benches, picnic tables provide seating along trails, improving accessibility and comfort for all trail users, and can be especially helpful for children, older adults, and those with mobility challenges. Picnic tables expand the number of uses that can be accommodated along the trail network, like outdoor gatherings, dining, and other activities. Simple picnic tables can be installed at a moderate cost and require a firm and level area. Many are designed to accessibility standards; placement of accessible tables will need to be in an area where a person in a wheelchair or other mobility device may safely pull off the trail.

TRASH RECEPTACLES

Large trash and/or recycling receptacles reduce litter on trails by providing a convenient place for waste disposal. They are moderately inexpensive and require only a small area that is clear and level (while concrete pads are common, they are not necessary).

When used in conjunction with dog waste stations (which include small trash receptacles), trash receptacles can be placed slightly further apart on trails. They should also be located to provide for easy maintenance and regular emptying.

DOG WASTE STATIONS

Dog waste stations provide bags and trash receptacles, making it convenient for people walking dogs on the trail to clean up after their pets. They are inexpensive, are typically pole-mounted, and can be placed frequently along the trail to encourage use. Care should be taken that waste stations are placed in locations where they can be maintained regularly.

DRINKING FOUNTAINS

Drinking fountains can improve the quality of experience for trail users on long trips, in hot weather, or where tree cover is sparse. While drinking fountains themselves are relatively small and only moderately expensive, providing an accessible area off the trail to access the fountain increases the required footprint.

Drinking fountains require potable water meters, which may not exist along the trail. Meters for drinking water are different from meters used for irrigation of landscaping. If a new water meter is required, significant additional costs are incurred.

PUBLIC RESTROOMS

Public restrooms offer improved comfort and accessibility of trails and can support cleaner trails. Due to their size, accessibility requirements, need for plumbing and sewer connections, and cost, public restrooms should be installed strategically where they will have the greatest benefit for trail users and other members of the community. Restrooms could be modular units such as the Portland Loo[36], or more robust buildings that include drinking fountains and other features. Where possible, wayfinding signage directing users to public restrooms in park facilities proximate to the trail can be utilized to increase knowledge of these existing amenities.

36 https://portlandloo.com/

BICYCLE PARKING

Bicycle racks at convenient locations provide secure places to park and lock bicycles on a short-term basis. Bicycle parking should be sited at level locations along the trail that are highly visible to avoid bicycle theft, as well as complementary to other amenities, like public restrooms or motor vehicle parking areas. Special care should be taken to comply with accessibility requirements and avoid conflicts with motor vehicles, pedestrians, mobility devices, and other trail users. Providing sanctioned bike parking in the right locations can help avoid bikes locked to objects such as trees, fences, railings, gutters, light poles, signs, and benches, which may cause maintenance or accessibility issues.

PUBLIC ART

Public art has the power to elevate a multimodal trail or shared-use path from useful infrastructure only into a treasured space in the community. Public art near trails can be used to tell the story of the trail or share the identity of the community through which it runs and establish an enhanced sense of place.

There are many types of public art on trails including sculptures, murals, painted trail surfaces, gardens, lighting, gates, and fences, as well as interactive art. Materials used can vary widely by region and budget but are regularly wood, stone, fiberglass, plastic, bronze, or copper. Temporary or "pop-up" art can also be a more affordable option for public art along trails but may require additional program management and curation efforts. Community members, including youth, can be great participants in selecting and creating art to foster a sense of community pride and ownership in the trail. Funding for public art can come from public, private, or philanthropic sources.

Special care should be taken to ensure the chosen public art can safely withstand human interaction and vandalism as well as the elements. Siting should place the public art so that it does not disrupt or block the trail when viewed or interacted with by trail users. Maintenance should be institutionalized through the Chico Public Works Department and the art should be insured, typically through the municipal insurance policy.

ADDITIONAL CONSIDERATIONS / MAINTENANCE

Maintaining each segment as well as the amenities is important to the overall usability and accessibility of the trail. A consideration for the safety of trail users would be to maintain the trail surface for ease of use and to design trails with root barriers to prevent roots from uplifting the paths.

Transit Amenity Options

Each transit amenity item below includes an example photo of the amenity as well as a description of its general recommended use and best practices. These recommendations are overarching for the public transit network and not for any particular location or service. These amenities should be considered in collaboration with B-Line and developed alongside any short- and long-range transit service planning.

SHELTER

Transit shelters improve passenger comfort by providing essential coverage from the elements, a place to rest, as well as transit service information.

Transit shelters should be provided at transit stops with a moderate amount of boardings, at transfer points, at transit stops in particularly weather-exposed locations, and locations with higher use by seniors and passengers with children.[37]

BENCHES

Benches provide a place to rest, not only for passengers waiting for transit connections, but also for people walking, jogging, and other active modes of travel. Benches can be sited with or without shelters, dependent on demand and spatial constraints. There are numerous bench designs to accommodate most transit stop locations, from very compact designs, like the one shown in the image above, to larger models that include armrests and/or seatbacks.

Transit stops with a moderate to high number of boardings should be prioritized to receive benches.[38] Benches at transit stops should be selected for comfort based on expected wait time and demand.

TRANSIT INFORMATION KIOSK

Transit stops must provide clear, legible information about routes served at that stop. Transit information kiosks provide passengers with additional information including some or all of the following: transit maps, schedules, real-time arrivals information, service alerts, fare information, announcements, and rider rules.

Prioritize any electronic or interactive transit information kiosks for high volume transit hubs or stations or other high activity areas due to cost, where applicable. Additional wayfinding information can be found in the Transit Wayfinding subsection below.

[37] https://nacto.org/publication/transit-street-design-guide/station-stop-elements/stop-elements/small-transit-shelter/

[38] https://nacto.org/publication/transit-street-design-guide/station-stop-elements/stop-elements/seating/

TRASH RECEPTACLES

Trash and/or recycling receptacles reduce litter at transit stops, on transit vehicles, and along the nearby pedestrian network by providing for waste disposal. Food and drink are not typically allowed on transit and placing receptacles at transit stops allows passengers to dispose of any unwanted items before boarding.

Trash receptacles can be paired with or mounted to transit shelters or can be standalone amenities, like those along trails. Standalone receptacles are moderately inexpensive and require only a small area that is clear and level (while concrete pads are common, they are not necessary). They should also be located to provide for easy maintenance and regular emptying.

LIGHTING

Lighting installed at transit stops and shelters helps to ensure safety and security for passengers waiting for their transit connection at night. Appropriate lighting allows waiting passengers to observe approaches to the transit area as well as other passengers within the facility.[39]

Lighting installation should be prioritized for the highest risk transit stops, as determined by a systemwide risk assessment in collaboration with B-Line and any other relevant transit operators.

BICYCLE PARKING

Like bicycle parking along bikeways and trails, bicycle racks at transit stops can provide secure places to park and lock bicycles. Bicycle parking allows multimodal passengers to ride to a nearby stop and transfer to transit. Bicycle racks near transit stops help to reduce the number of bicycles taken onboard buses, freeing up space for others.

Bicycle parking near transit differs by transit service type. Transit hubs with longer-distance or regional service may also consider long term bicycle parking and storage, like bicycle lockers. Transit stops with shorter-distance or local service may consider short term bicycle parking, like bicycle rack styles illustrated earlier.

Bicycle parking near transit should be located in a clear zone that does not impede traffic, pedestrians, or the operation of transit doors. Short-term bicycle racks should be sited 3 feet apart, within 50 feet of a transit stop, positioned in a visible, well-lit area.[40]

[39] https://www.apta.com/wp-content/uploads/Standards_Documents/APTA-SS-SIS-RP-001-10.pdf

[40] https://nacto.org/publication/transit-street-design-guide/station-stop-elements/stop-elements/bike-parking/

PUBLIC ART

In addition to an active transportation network amenity, public art can be creatively woven into the transit network. When done well, public art can tell the story of a community, foster civic pride, and bring beauty to ordinary city infrastructure.

There are many types of public art for transit networks including sculptures, murals, pavement markings, lighting, and interactive art. Materials used, community involvement, funding, siting, and maintenance of public art for transit are all very similar to those discussed in the earlier Trail Amenity Options section.

GREEN INFRASTRUCTURE

Green infrastructure in the form of shaded tree canopy or landscape design – sidewalks, parkways, medians, bioswales, flow-through planters – can improve the aesthetic appearance, passenger comfort, and ecological performance of a transit station or stop.[41] Green infrastructure can also support the livability of a community through traffic calming and can create opportunities for safer pedestrian crossings, including landscaped curb extensions and bus bulbs.

Best practices for green infrastructure near transit include selecting the appropriate vegetation by climate, prioritizing native and drought-tolerant plantings to reduce water use.

Wayfinding

Wayfinding signage is a system of navigational signs and markings that inform active transportation users of their surroundings, showing helpful information at key points to guide them along the best route to their destinations.

Trail Wayfinding

Wayfinding signs are small, pole-mounted signs placed along trails and bikeways at intersections or other "decision points" as well as along network

[41] https://nacto.org/publication/transit-street-design-guide/station-stop-elements/stop-elements/green-infrastructure/

segments to confirm time or distance information for active transportation users.

Signs typically display destination and directional information, at a minimum, but may also include distance, travel time, and the name of the bikeway, trail, or neighborhood, as appropriate.

Bicycle Wayfinding

There are three types of bicycle wayfinding signs:

DECISION SIGNS

Oakland, CA

Concept

Decision Signs should be placed at the intersection of two or more bikeways to help inform bicyclists of the possible routes connecting to key destinations, like commercial centers, parks, or other bikeways.

TURN SIGNS

Chicago, IL

MUTCD

Turn Signs signal when a bikeway turns from the current roadway onto another roadway.

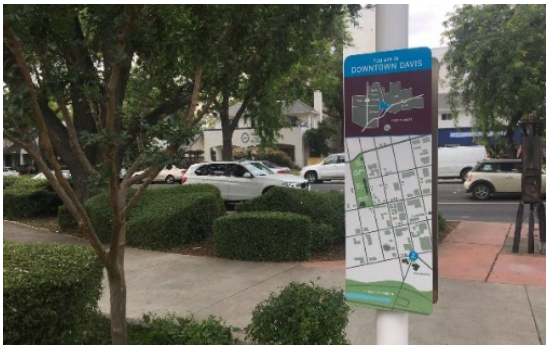
CONFIRMATION SIGNS

Chicago, IL

Oakland, CA

Confirmation Signs let bicyclists and other active users know that they are on a designated bikeway. They can also help bring awareness of the bicycle route for motorists.

Pedestrian Wayfinding



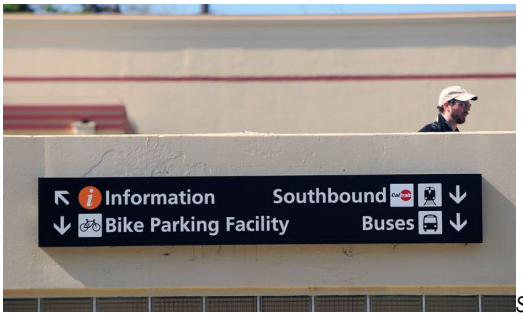
Source: Bret Yourstone

Pedestrian wayfinding systems are designed to be informative, providing accurate and understandable information that helps people walking or rolling assess their physical environment and efficiently navigate to their desired destinations. Pedestrian wayfinding systems help people get around a city or neighborhood without their cars, encouraging more people to walk.

Best practices for pedestrian wayfinding include:

- Wayfinding signage should have clear information, consistent visuals, and conspicuous placement.
- Wayfinding signage should be free of visual clutter with up-to-date information.
- Do not place more signs than are necessary to provide the right information at the right time.
- Make wayfinding signage and markings delightful, inspiring residents and visitors.

Transit Wayfinding



Source: Association of Bay Area Governments

Transit wayfinding should be designed in collaboration with local transit service providers, primarily B-Line. Transit wayfinding is a system of

branded navigational aids used to guide riders to and between transit stops and hubs. The system should contain clear branding, predictable placement, and legibly display routes as well as key transit service information to facilitate ease of use and to build and maintain trust with passengers.

Transit wayfinding best practices include:

- Name transit stops, hubs, stations, and destinations to reinforce brand and place recognition.
- Place wayfinding materials at regularly spaced intervals, in confusing areas, and at decision points. Use decision, turn, and confirmation signs, as with other types of wayfinding signage.
- Wayfinding signage should be located at eye-level or overhead and be highly visible.
- Use consistent agency branding, logos, colors, and fonts on all wayfinding signage and materials to reinforce visibility and brand identity, avoiding rider confusion.
- For station-area destinations, indicate direction and travel times in easily understood units, like block or walking time.
- Provide audible and tactile cues to assist with navigation, where possible.

Source: ChicoER.com

Infrastructure Recommendations

This section presents infrastructure recommendations identified to support improvements to the City's bicycle, pedestrian, and trail networks, and describes the approach toward developing these recommendations.

The recommendations development process began with creating an improvement dataset that combines unconstructed projects previously proposed in several relevant planning documents, including the Bicycle Plan 2019 Update. This approach provided the opportunity to begin the current recommendation process with a list of previously identified projects intended to address the City's needs.

Building upon the list of previously proposed improvements, the project team identified gaps and opportunities for improvement in the project list. By examining results of technical analyses that informed the needs identified in the existing conditions assessment (see the earlier Existing Conditions chapter), as well as concerns expressed during the community engagement process, an updated list of recommended projects was developed.

The recommendations are intended to provide Chico residents and visitors with accessible, connected, and safe options for bicycle and pedestrian uses in the city. The intent of these recommendations is to present short-term and long-term recommendations to improve the bicycle, pedestrian, and trail networks in Chico and provide a framework for the City to successfully implement these projects.

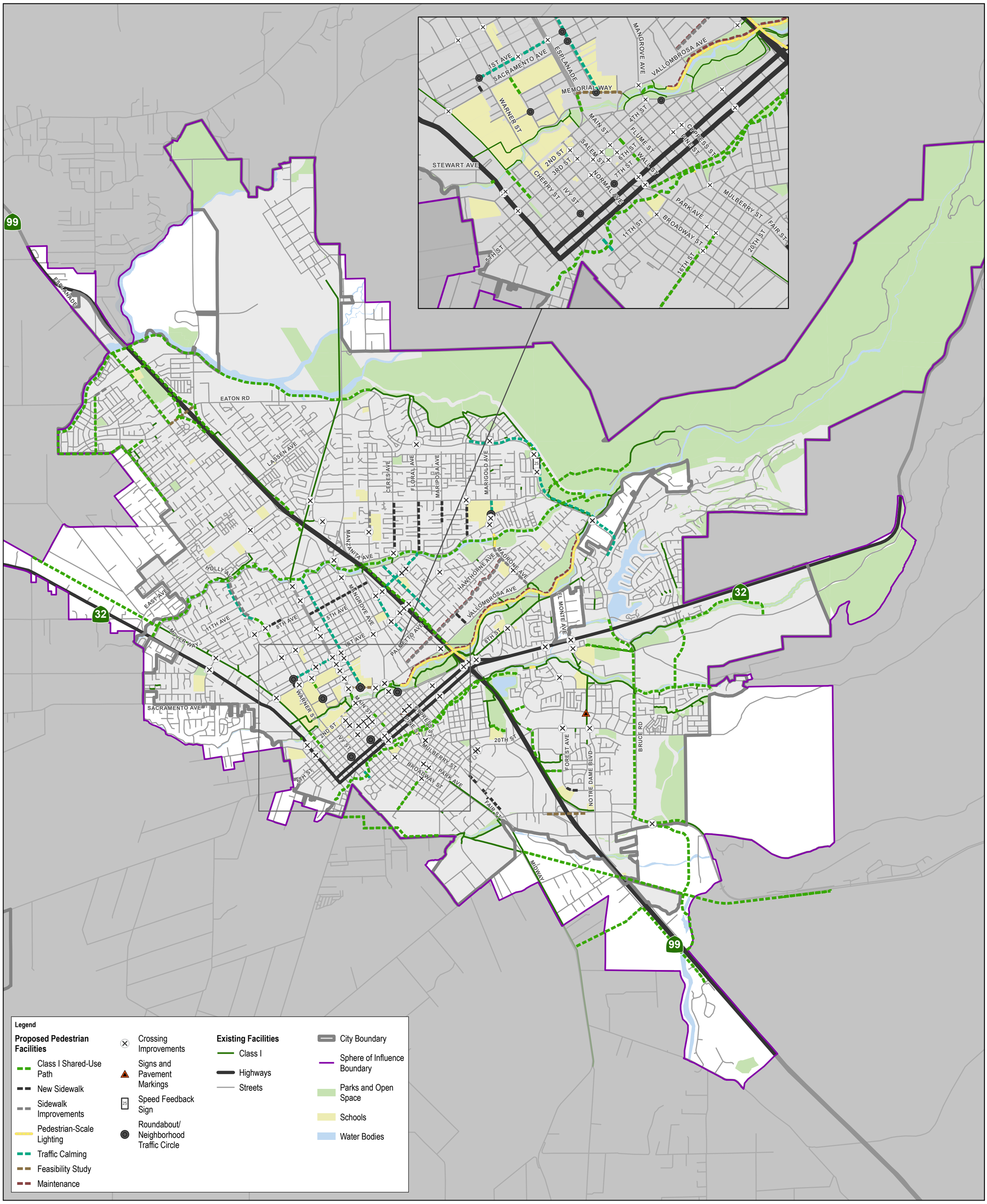
While the proposed improvements are the result of a comprehensive examination of the City's needs, all recommendations have been developed within a planning-level analysis framework. For a project to advance, additional analyses may be required prior to implementation, design, or construction. These analyses may include an engineering study to understand any relevant site-specific issues and develop a design in compliance with state and local design standards, additional public review, and procuring the necessary project funding.

Given the nature of this document as a planning-level framework, there will be a need for minor modifications or adjustment that nonetheless support the overall vision of improving walking and bicycling in Chico. Proposed minor adjustments would need to be approved by the Director of Public Works or their designee and would need to adhere to any established design protocols and support the vision and goals outlined in this Plan. Examples of minor adjustments include, but are not limited to:

- Relocation within a project area
- The connectivity no longer makes sense
- The property is rezoned for a different use that would not require the same improvements
- A CIP project included a connection, so it is no longer needed at that location
- A determination that a relocation would increase safety
- Provide improved connectivity to amenities
- Other reason as described by the Public Works Director which enhances the overall system functionality
- Improve bicycle or pedestrian circulation

This list is not intended to be fully inclusive. The Director of Public Works, or their designee, has the flexibility to make the final determination on when a minor adjustment would make more sense. Where it is determined that the map best fits the character of the project then they will be required, and development applications shall execute such at the sole discretion of the City.

For a table of the full list of infrastructure and study recommendations, see Appendix C. For an additional map highlighting only protected facilities, see Appendix F.



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CITY OF CHICO
ACTIVE TRANSPORTATION PLAN

PEDESTRIAN NETWORK PROJECTS

Project No. **12575135**
Revision No. **-**
Date **12/21/2023**

FIGURE 34

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