

Existing Conditions

Understanding current conditions, challenges, and opportunities forms the foundation for strategic project, program, and policy recommendations that meet the needs of the Chico community. This chapter describes the active transportation landscape in Chico today.

Local Context

The City of Chico is rapidly growing, with one of the highest growth rates of any city in California. The city's population increased from 86,187 residents in 2010 to 101,475 residents in 2020.

A significant reason for this increase is the recent influx of population from former residents of the City of Paradise and surrounding areas, who were forced to flee due to the devastating 2018 Camp Fire, and more recently, residents of Plumas and Butte counties impacted by the 2020 North Complex Fire.

With an increasing population comes increasing traffic, contributing to challenges for active transportation users. The City of Chico aims to improve conditions for pedestrians and bicyclists navigating the city and accessing local destinations, whether for short trips, to connect to transit, or commute to work or school. Building

a strong active transportation network also allows for improved recreational offerings, leading to better health outcomes for residents and the environment.

Land Use and Major Destinations

The City of Chico is approximately 33 square miles and the most populous city in Butte County, with the Chico Municipal Airport to the north, California State University (CSU) Chico to the south and extensive open space extending from CSU Chico, where Lower Bidwell Park begins, to Upper Bidwell Park in the northeast portion of the city. See Figure 1 for location context.

Chico's early development grew outwards from a centralized urban downtown core with a street grid pattern. Preserving rural and agricultural lands remains a high priority, including restricting growth at the Greenline, a 1982 boundary separating the Chico urban area from agricultural areas to the west.

Large commercial and industrial employment centers are concentrated along major arterials and State Routes (SR) 99 and 32. Schools, parks, and open space are scattered throughout

Source: www.downtownchico.com



the City, within walking distance for many residents (see Figure 2).

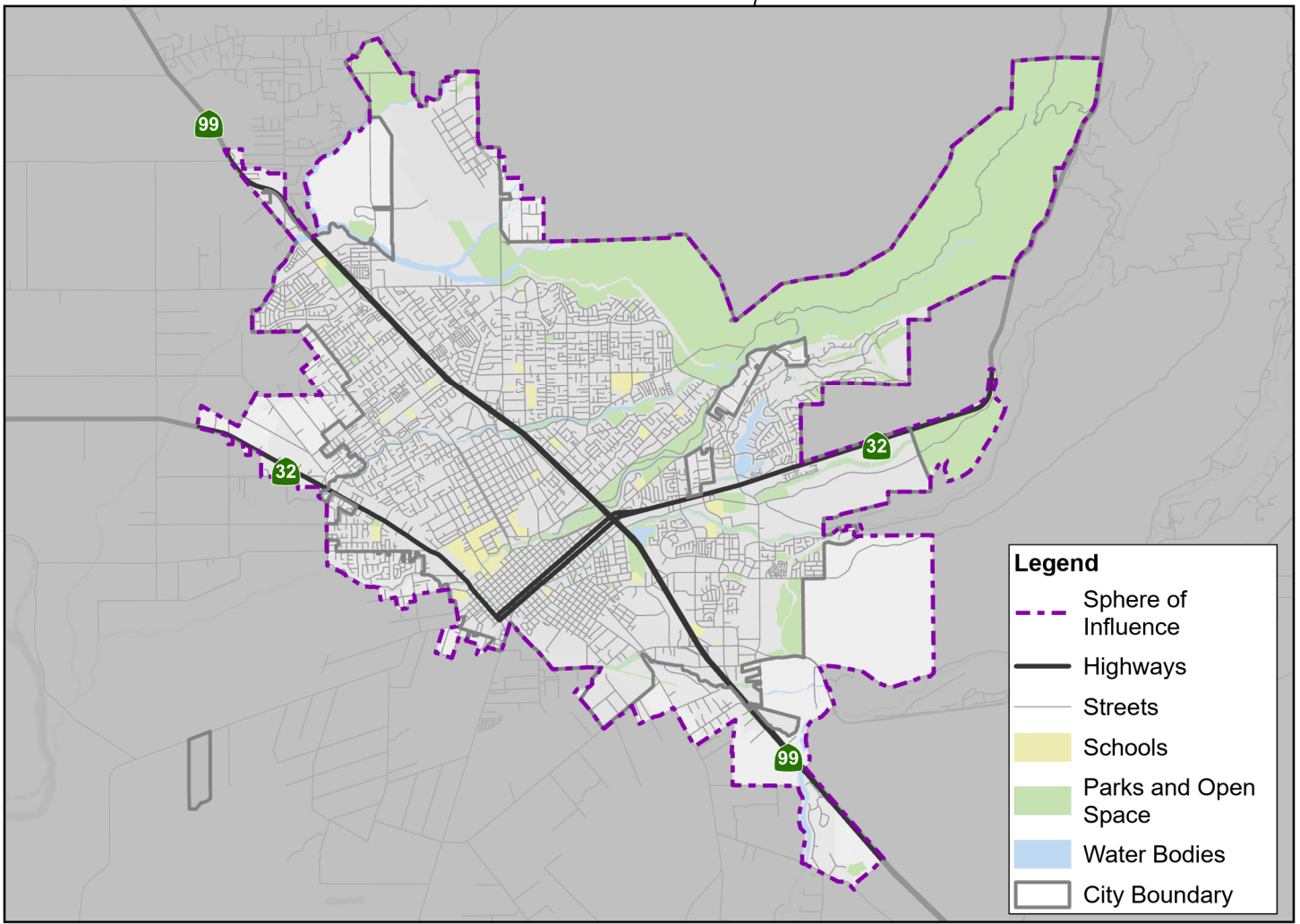
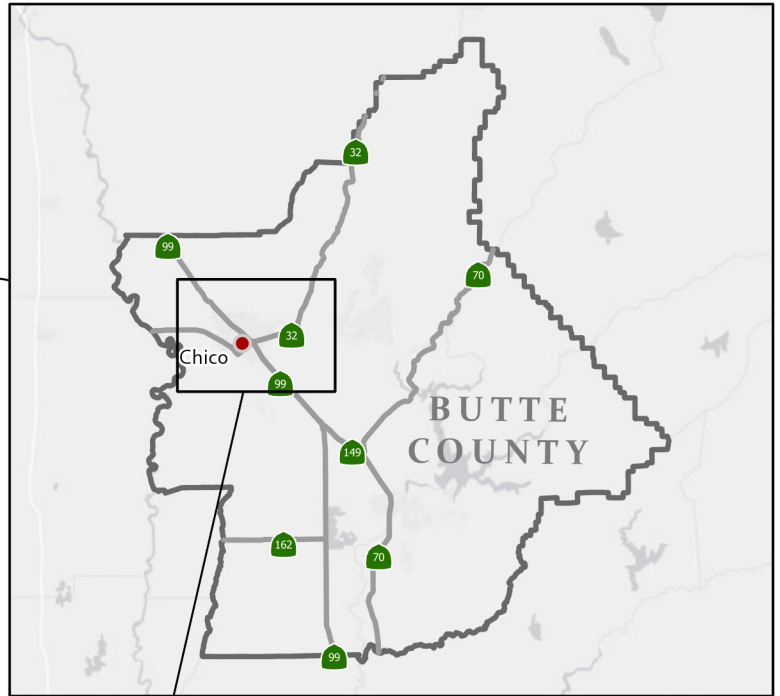
Affordable Housing

According to the City of Chico's 2014 housing element, 60 percent of area housing is single-unit structures, with another 16 percent comprised of duplexes, triplexes and fourplexes, an additional 21 percent in the form of 5+ unit structures, and the remaining 3 percent mobile home units.

Understanding the location of affordable and multi-family housing within the city is critical when considering transportation improvements, to ensure access for those residents who may most benefit from enhanced infrastructure. Lower income residents are more likely to be car-free or car-light, utilize Butte Regional Transit (B-Line) public transportation services, and walk or bicycle to reach their daily destinations and workplaces.

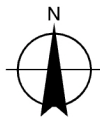
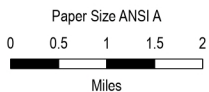
Figure 2 displays the location of multi-family residential and manufactured home parks, which display strong concentrations along major highways, including SR 99 and SR 32, as well as arterials such as Lassen Avenue.





Legend

- Sphere of Influence
- Highways
- Streets
- Schools
- Parks and Open Space
- Water Bodies
- City Boundary



**CITY OF CHICO
ACTIVE TRANSPORTATION PLAN**

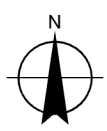
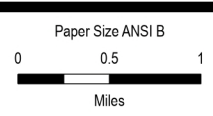
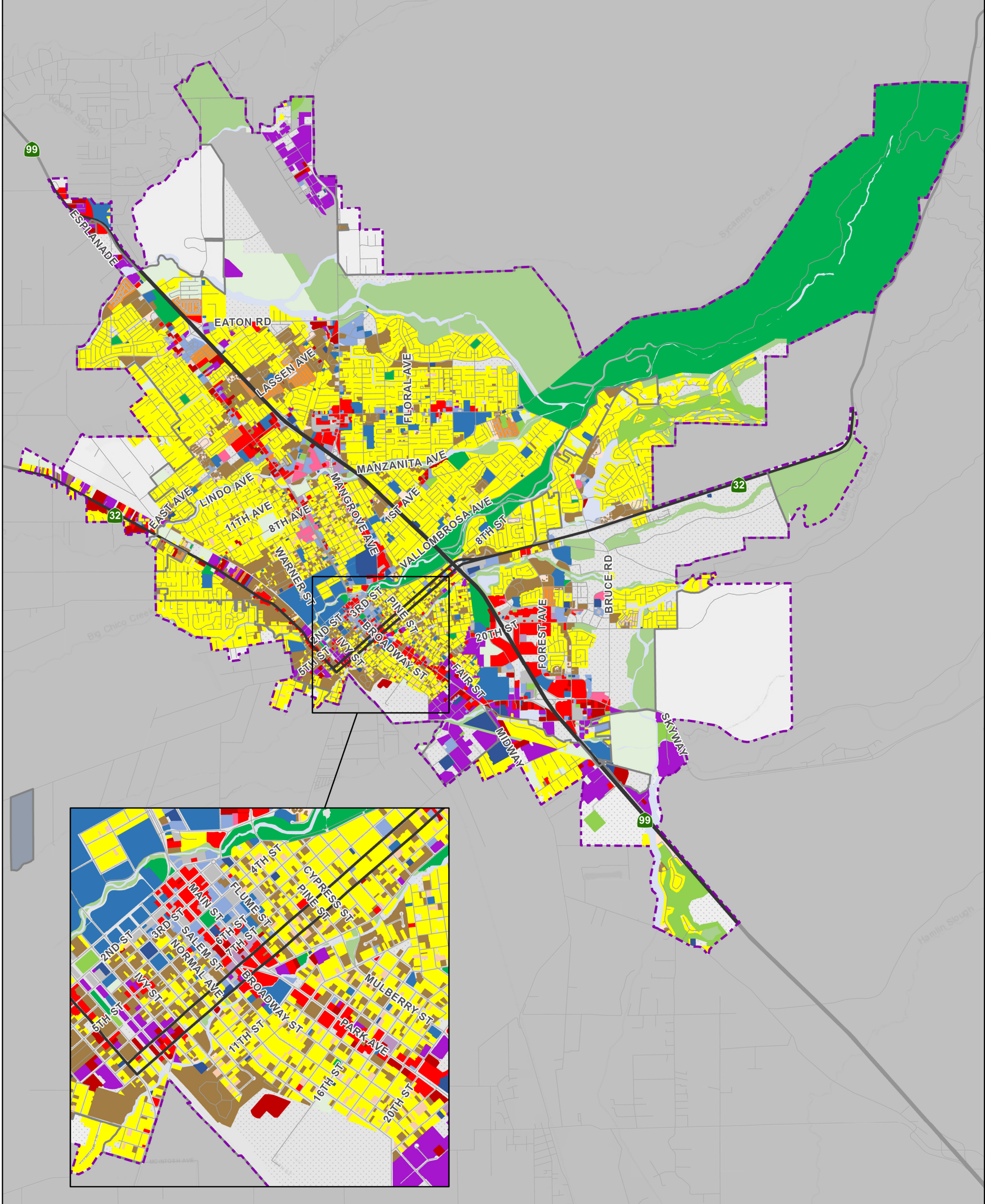
Project No. 12575135
Revision No. D
Date Dec 2023

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

CITY OF CHICO VICINITY OVERVIEW

FIGURE 1

Legend					
Sphere of Influence	Agricultural	Manufactured Home Park	Office	ROW - Public / Private	Surface Water & Drainage
Highways	Commercial Recreation	Manufacturing / Warehousing	Open Space	Single Family Residential	Transitory Occupancy
Streets	Commercial Retail	Medical Services	Parks	Single Family Residential w/ Second Unit	Transportation, Parking
City Boundary	Commercial Services	Mixed Use	Privately Owned Common Area	Vacant	
	Education / Assembly	Multi-Family Residential	Public / Quasi Public Services		



CITY OF CHICO
ACTIVE TRANSPORTATION PLAN

Project No. 12575135
Revision No. D
Date Jul 2022

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

LAND USE

FIGURE 2

Demographics

All demographic data reflects 2019 5-year estimates from the American Community Survey, unless otherwise indicated.

POPULATION

Chico is home to roughly 94,500 residents, or about 36,000 households². If current growth trends continue, the city population is projected to reach 139,713 residents by 2030, according to the Chico General Plan Land Use Element.

AGE

As shown in Table 1, residents under 18 years of age account for nearly one-fifth of Chico's population. A majority of those under 18 are unable to drive themselves in personal vehicles, signifying an increased need to walk, bicycle, or take transit to their destinations.

Table 1: Age of Chico Residents

Age Group	Percent
Under 18	19.2%
18-24	22.7%
25-44	25.7%
45-64	19.4%
65 and over	13%

Source: American Community Survey 2019 5-year estimates

INCOME

Median household income in Chico is \$53,324, which is on par with the Butte County median of \$52,537 but significantly below the California median of \$75,235.

² While 2019 ACS Data were used to populate the Demographics section, Chico's population in 2020 grew to 101,475, largely due to the influx of former residents of nearby Paradise, CA who were forced to flee due to the 2018 Camp Fire as well as residents of Plumas and Butte counties impacted by the 2020 North Complex Fire.



Figure 3 presents a median household income breakdown by Census tract.

ACCESS TO CARS

The Healthy Places Index (HPI), described in further detail in the Categories of Interest chapter, ranks the City of Chico within just the 17th percentile for automobile access³. Just under 3,000 Chico households, or nearly eight percent, do not have access to a car. This means approximately 6,700 people may rely on walking, bicycling, or taking transit for their daily transportation needs.

An additional 12,407 households in Chico have access to only one car, making them “car light.” If these households have two or more members making trips – shopping, going to appointments,

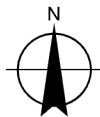
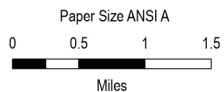
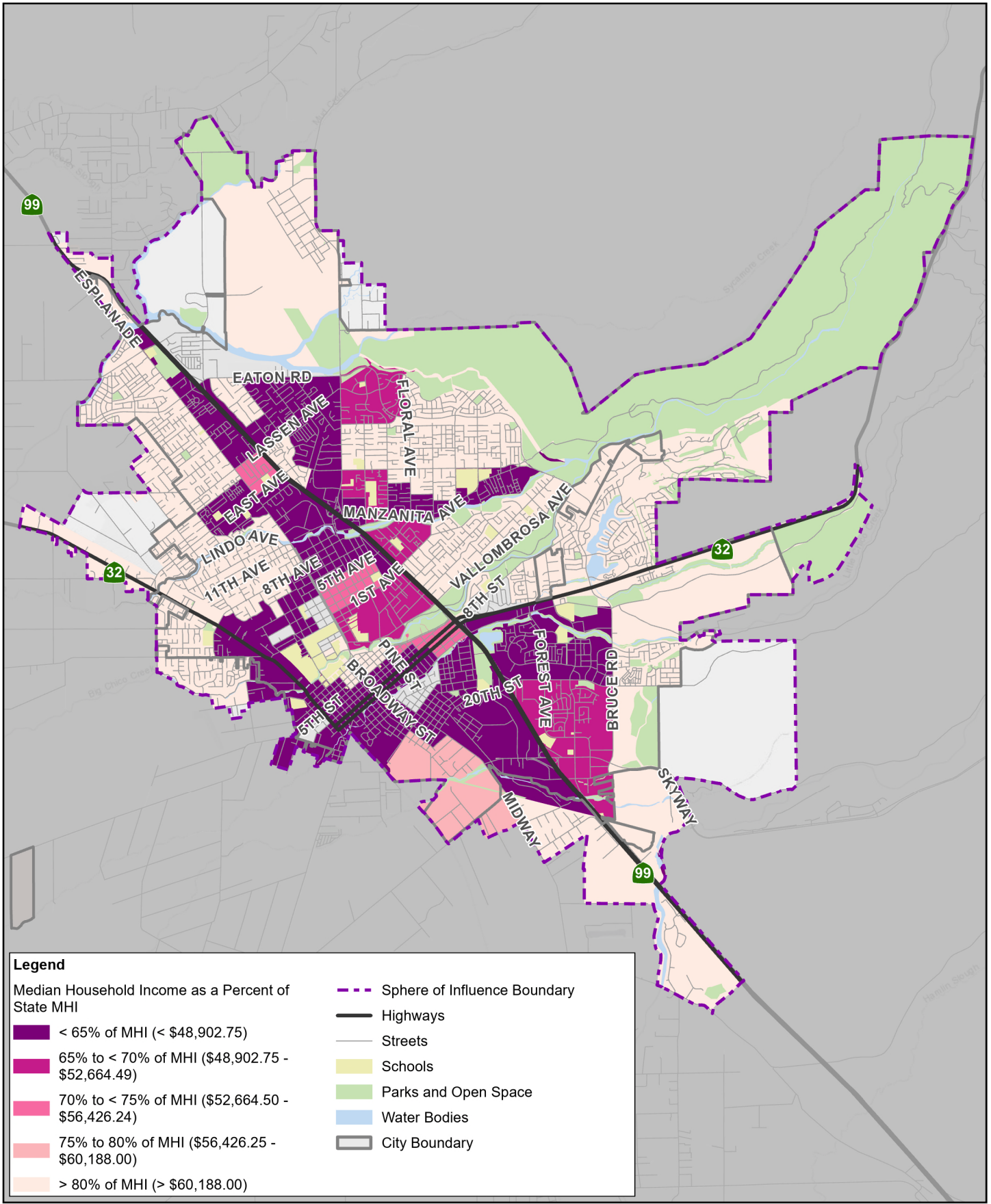
taking children to school – there may be some reliance on other modes of transportation. Combined, nearly 43 percent of households in Chico are considered car free or car light, very likely utilizing active transportation along their journeys to get where they need to go.

DISADVANTAGED COMMUNITIES

Disadvantaged communities, including low-income communities, communities of color, people with disabilities, elderly, and communities faced with environmental or pollution burden, are often also burdened by a lack of appropriate facilities for bicycling and walking. The Categories of Interest chapter discusses disadvantaged communities in Chico and provides an analysis of transportation infrastructure in these areas.

³ Public Health Alliance of Southern California. California Healthy Places Index. <https://www.healthyplacesindex.org>.





CITY OF CHICO
ACTIVE TRANSPORTATION PLAN

Project No. 12575135
Revision No. D
Date Dec 2023

**EQUITY ANALYSIS:
2019 MEDIAN HOUSEHOLD
INCOME (MHI) BY BLOCK GROUP**

FIGURE 3

Transportation Behavior

Existing Trips

Analysis of existing trips is an important component of the ATP that will help form a baseline of information to help measure change in the future and inform policies and strategies to support active transportation projects and programs.

WHAT TYPES OF TRIPS?

Data from the United States Census Bureau's 2010-2014 (2014) and 2015-2019 (2019) American Community Survey (ACS) 5-year estimates form the basis of the following discussion on "what" commute trips are being made. Importantly, based on available data, the figures used do not yet reflect the impact of trip and travel behavior changes seen since the Covid-19 Pandemic. Shifts to hybrid work and flexible schedules, and their impact on trips within the study area, represent areas for further study in the future.

Based on the ACS data, the total population in the City increased by roughly 7,012 from 87,517 in 2014 to 94,529 in 2019, approximately an eight percent increase.

As the ATP further identifies ways to support and improve active transportation modes in the City, the following sub-section will examine some recent trends and current facts concerning commute mode choice and travel characteristics.

WHAT: COMMUTE MODE CHOICE

Table 2 shows the various means of transportation for workers 16 years and over. The number of workers show a slight increase between the two five-year estimates, growing from 39,841 to 45,567, an approximately 14 percent increase. As is the case for US cities, most of commuters drive (e.g., car, truck, or van) to work. 5,795 additional workers drove a car, truck, or van in 2019 than in 2014, an increase of

nearly 18 percent. Driving alone also rose by 21 percent between the 2014 and 2019 estimates.

Important to note for the ATP are changes to public transportation, walking and bicycling. Although already not a very high mode share (less than two percent for both estimate periods) public transportation to work decreased by 21 percent from 2014 to 2019. Walking and bicycling, when combined, represent a notable mode share, slightly above nine percent in 2019. This is also higher than Butte County's nearly five and a half percent mode share estimate for combined walking and bicycling. Looking more closely at bicycling and walking in Chico as commute modes, bicycling decreased by 0.8 percentage points while walking increased by 0.4 percentage points between the two estimates.

The bar chart in Figure 4 provides a linear comparison of Chico's commute mode share. This helps to better illustrate changes across all modes when comparing the two five-year survey estimates and highlights the subtle changes in active transportation mode share, among other things. Notably, working at home showed a slight decrease but is expected to shift upward as ACS data for 2020 and later become available, due in large part to increased occupational flexibility begun during the Covid-19 Pandemic.



Chico Plaza Fountain. Source: Tony Dunn
adunnphotography.blogspot.com

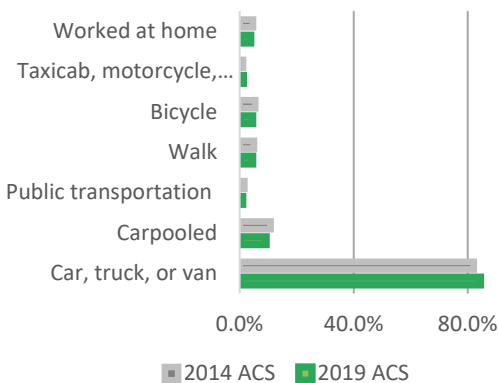


Table 2: Means of Transportation to Work

	2014 ACS		2019 ACS	
	Number	Percent	Number	Percent
Workers 16 years and over	39,841	-	45,567	-
Car, truck, or van	32,709	82.1%	38,504	84.5%
Drove alone	28,407	71.3%	34,266	75.2%
Carpooled	4,303	10.8%	4,238	9.3%
Public transit	637	1.6%	501	1.1%
Walk	1,992	5.0%	2,096	4.6%
Bicycle	2,151	5.4%	2,096	4.6%
Taxicab, motorcycle, other	478	1.2%	592	1.3%
Worked at home	1,873	4.7%	1,777	3.9%

Sources: American Community Survey (ACS) 5 - year estimates from 2014 (2010 – 2014) and 2019 (2015 – 2019)

Figure 4: Commute Mode Share



Sources: American Community Survey (ACS) 5 – year estimates from 2014 (2010 – 2014) and 2019 (2015 – 2019)

Table 3 and Figure 5 present the reported travel times from the 2014 and 2019 ACS. The average travel time to work for all workers decreased by 0.3 minutes in the 2019 ACS, a two percent decline from the 2014 ACS. In terms of absolute numbers and both survey periods, travel time is the highest in the “10 to 14 minutes” range. The next highest value is the “Less than 10 minutes,” range representing a little over 25 percent of total workers for both survey periods. Takeaways from the 2019 ACS

show about 80 percent of commuters spend less than 25 minutes traveling to work. Promisingly, 57 percent of commuters spend less than 15 minutes traveling to work, signifying a group that lives close enough to work to utilize active transportation to commute, provided appropriate infrastructure is in place to support it.

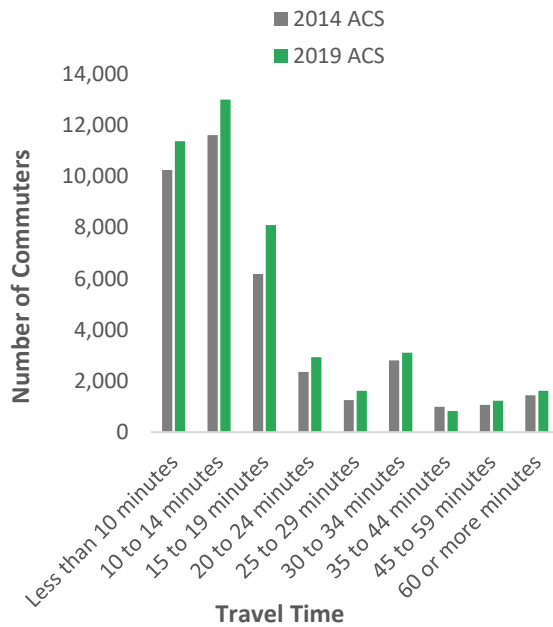
Table 3: Travel Time to Work

	2014 ACS		2019 ACS	
	Number	Percent	Number	Percent
Workers 16 years and over	37,958	-	43,790	-
Less than 10 minutes	10,249	27.0%	11,385	26.0%
10 to 14 minutes	11,615	30.6%	13,006	29.7%
15 to 19 minutes	6,187	16.3%	8,101	18.5%
20 to 24 minutes	2,353	6.2%	2,934	6.7%
25 to 29 minutes	1,253	3.3%	1,620	3.7%
30 to 34 minutes	2,809	7.4%	3,109	7.1%
35 to 44 minutes	987	2.6%	832	1.9%
45 to 59 minutes	1,063	2.8%	1,226	2.8%
60 or more minutes	1,442	3.8%	1,620	3.7%
Mean travel time (minutes)	-	17.2	-	16.9

Sources: American Community Survey (ACS) 5 - year estimates from 2014 (2010 – 2014) and 2019 (2015 – 2019)



Figure 5: Travel Time to Work



Sources: American Community Survey (ACS) 5 - year estimates from 2014 (2010 – 2014) and 2019 (2015 – 2019)

Survey Data and Outreach

“Chico should prioritize investments that will increase safety, safe routes to school and community places.”

- Open House attendee feedback

A Citizens Action Group called the Chico Bike/Pedestrian Working Group supported the City of Chico in developing the Chico Bicycle Plan 2019 Update. The Mechoopda Indian Tribe of Chico Rancheria also expressed their support for bicycle and pedestrian infrastructure improvements.

A 2015 City of Chico online survey associated with the Bicycle Plan 2019 Update asked residents to identify the most common issues and challenges impacting bicycling in Chico. The findings are displayed in Figure 6.

The Chico Bicycle Plan 2019 Update prioritized community involvement to identify the City’s biggest active transportation challenges, with a focus on disadvantaged neighborhoods. Similarly, this ATP’s overall goal is to advance Chico as a bicycle and pedestrian friendly community through engineering, education, encouragement, equity, and evaluation.

ENVIRONMENTAL JUSTICE SURVEY

In 2022, the City of Chico conducted an online survey to gather resident input on environmental justice topics related to public facilities and physical activity to help inform the development of the City’s Environmental Justice Element of the General Plan. In this survey, respondents identified their ZIP code and responded to questions about active transportation behavior choices, their experiences with active transportation infrastructure, and desired improvements. Figure 6 highlights some of these desired active transportation and community facility improvements. Overall survey responses varied but centered around a general theme of appreciation for existing active transportation facilities and a desire to see more.



Bicyclist riding on Vallombrosa Avenue an entrance to Bikeway 99

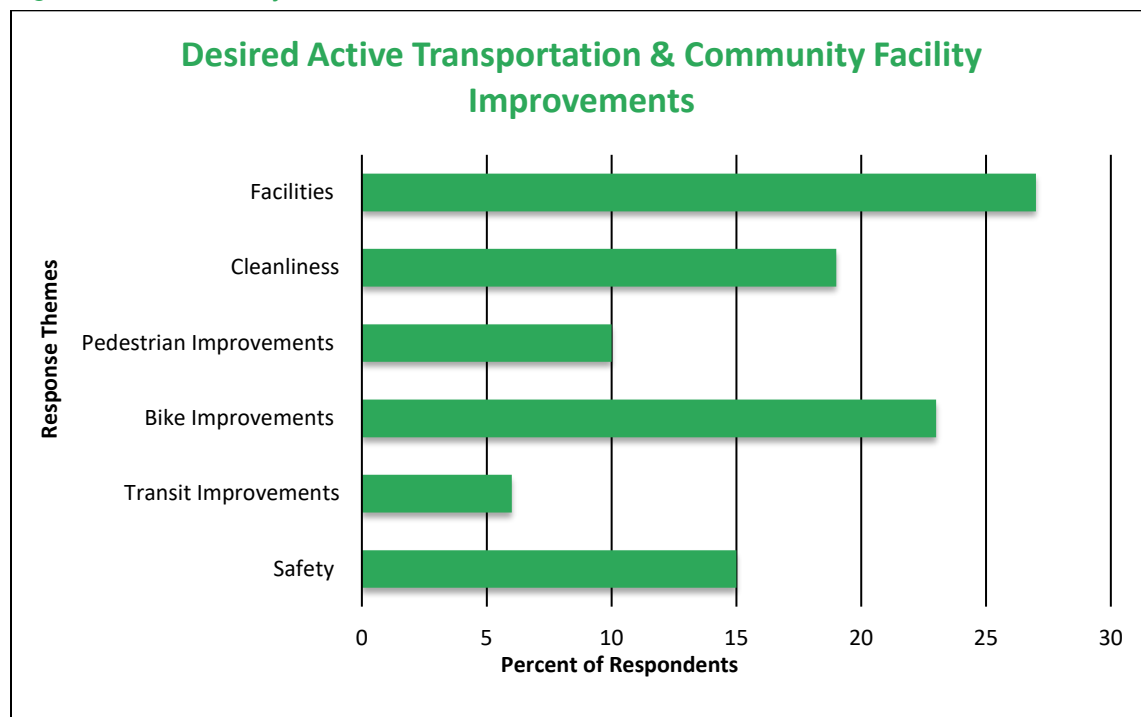


Specifically, many respondents wrote about a desire to walk or bike more but not being able to do so due to a lack of infrastructure or connectivity. Many respondents wrote about making transportation mode choices based on safety. Respondents wrote that they avoided walking or bicycling due to a lack of perceived safety on roadways. Arterial roadways in particular were highlighted as important for connectivity but lacking safe facilities for walking and bicycling. Similarly, respondents wrote that better access to new facilities for walking and bicycling would likely encourage them to try walking or bicycling. Desired improvements also included more lighting on existing facilities and

enhanced wayfinding information. Some also expressed that they experience health benefits from walking and bicycling or desired to experience those health benefits if they could only safely participate in those activities.

Respondents wrote about maintenance of existing bicycle and pedestrian facilities. Specifically, respondents discussed debris, brush overgrowth, and pavement conditions. Pavement conditions and the presence of debris were highlighted as impediments to bicycling on roads with existing bicycle facilities. These conditions were reported at Lower Bidwell Park as well as other trails throughout the city.

Figure 6: Online Survey Results



Source: 2022 Environmental Justice Survey Results, City of Chico



Transportation Network

Streets and Highways

The majority of Chico is organized into “superblocks” separated by a large grid of major arterials, many of which feature B-Line routes. Many of these arterials are four or more lanes wide, and they typically intersect with other arterials at signalized intersections.

Within the superblocks, collector streets provide access to neighborhoods characterized by cul-de-sac and loop streets; other neighborhoods exhibit a grid pattern.

State Route 99 runs north-south and State Route 32 runs both north-south and east-west through Chico, providing regional connections. SR 99 bisects southwest and northeast Chico and SR 32 flanks Downtown Chico, which presents connectivity and safety challenges for walking and bicycling.

Transit

B-Line, operated by Butte Regional Transit, is Butte County’s regional public transit system, operating 21 routes which serve the communities of Chico, Oroville, Paradise, and additional smaller locales in between. It is managed by the Butte County Association of Governments. Transit center hubs are located within the three major cities listed above, with the Chico Transit Center located downtown on West 2nd Street, near the corner with Salem Street.

B-Line also operates both an ADA paratransit service and Dial-A-Ride service to meet the needs of seniors and people with disabilities.

2022/2023 UNMET TRANSIT NEEDS ASSESSMENT DRAFT

As administrator for Transportation Development Act (TDA) funds for Butte County, B-Line is tasked with performing an annual Unmet Transit Needs process, which entails extensive public

outreach. Unmet Transit Needs are defined as “those trips required, but currently not provided and not scheduled to be provided within Butte County, for individuals dependent on public transit to maintain a minimum standard of living.”

The 2023/2024 Unmet Transit Needs Assessment reviewed the latest public testimony. Feedback touched on stops/routing, service area expansion requests, route timing, as well as miscellaneous items. BCAG’s findings, adopted in February 2023, determined that there are no Unmet Transit Needs that are considered Reasonable to Meet.

Rail

Chico is currently served by daily Amtrak intercity rail service along the Coast Starlight route, connecting Seattle to the north with Los Angeles to the south. Chico Station is located at 450 Orange Street, between 4th and 5th Streets.

BCAG is coordinating with San Joaquin Joint Powers Authority (SJJPA) and San Joaquin Regional Rail Commission (SJRRRC) staff to initiate the North Valley Passenger Rail service beginning in 2030, extending Altamont Corridor Express (ACE) and Amtrak San Joaquins trains northward from the Sacramento Area. This is anticipated to initially include four daily roundtrips between Chico and Sacramento with stops in Gridley, Marysville-Yuba City, and Plumas Lake. Hourly service is planned for this corridor before the year 2050. Additional details can be found on the project website: www.northvalleyrail.org.

Bicycle Facilities

The City of Chico has an existing network of bikeways throughout the community and is proud to have been awarded the League of



American Bicyclists Gold Level Award for 2016 to 2020.⁴ The awards are valid for four years.



Chico Bicycle Friendly Community Award

However, high-stress routes and crossings as well as network gaps remain. One of the Bicycle Friendly Community metrics is “Key Outcomes,” which calculates the percentage of daily bicyclists and crashes per 10,000 daily bicyclists. The average Platinum level community rankings (the highest award level) are displayed in comparison to Chico’s rankings in Table 4, demonstrating a significant safety gap.

Table 4: Bicycle Friendly Community Rankings

Key Outcomes	Average Platinum	Chico
Ridership Percentage of daily bicyclists	13.6%	5.4%
Crashes Crashes per 10,000 daily bicyclists	100	308
Fatalities Fatalities per 10,000 daily bicyclists	0.4	2

Source: The League of American Bicyclists Fall 2016 Rankings

Bikeway planning and design in California typically relies on guidelines and standards established in the Caltrans *Highway Design Manual*. There are four “classes” of bicycle facilities that provide varying levels of separation and comfort for bicyclists. These classes are described below. Existing bikeways in Chico, by class, are summarized in Table 5 and illustrated in Figure 7A and 7B.

Table 5: Existing Bikeway Miles

Bikeway Class	Existing Miles
Class I Shared Use Path	35.3 miles
Class II Bicycle Lanes	40.1 miles
Class III Bicycle Routes	22.7 miles
Class IV Separated Bikeways	0.5 miles

Source: City of Chico

CLASS I SHARED USE PATHS

Class I shared use paths, often called multi-use paths, are paved trails completely separate from the street. They allow two-way travel by people walking and bicycling and are considered the most comfortable facilities for children and inexperienced bicyclists, as there are few potential conflicts with people driving.



Peterson Memorial Way – Class I Multi-Use Path

⁴ League of American Bicyclists. Bicycle Friendly Community. Fall 2016. https://chico.ca.us/sites/main/files/file-attachments/bfc_fall_2016_reportcard_chico_ca.pdf?1574914953.



CLASS II BICYCLE LANES

Class II bicycle lanes are striped preferential lanes in the roadway for one-way bicycle travel. Some bicycle lanes include a striped buffer on one or both sides of the lane to increase separation from the traffic lane or from parked cars, where people may open doors into the bicycle lane.



East 8th Street – Class II Bicycle Lane

CLASS III BICYCLE ROUTES

Class III bicycle routes are signed routes where people bicycling share a travel lane or shoulder with people driving. Because they are shared facilities, bicycle routes are typically appropriate only on quiet, low-speed streets with relatively low traffic volumes.

Some bicycle routes include shared lane markings or “sharrows” that recommend proper bicycle positioning in the center of the travel lane and alert drivers that bicyclists may be present. Others include more robust traffic calming features to promote safety and comfort for people bicycling and are known as “bicycle boulevards.”



East 7th Street – Class III Bicycle Route, indicated by green sign

CLASS IV SEPARATED BIKEWAYS

Class IV separated bikeways are on-street bicycle facilities that are physically separated from motor vehicle traffic by a vertical element or barrier such as a curb, bollards, or vehicle parking aisle. They can allow for one- or two-way travel on one or both sides of the roadway.



Example of Class IV Separated Bikeway

Additional Bicycle Facilities

CONNECTORS

BCAG defines a further bicycle facility type on its city bike map as a “connector.”⁵ Connectors provide “links between paths, routes and lanes.” However, connectors aren’t marked or officially designated as routes and don’t necessarily provide enough space for automobiles, bicyclists, and pedestrians to all safely navigate. Paved connectors are designated as a red

⁵ Butte County Association of Governments. Bike Map. 2014. http://www.bcag.org/documents/transit/bike_maps/bcag_bike_map_front_web.pdf.



dashed line and unpaved as a purple dotted line (see Figure 8).

FEATURED ROUTE: BIKEWAY 99

The Bikeway 99 Route, which roughly parallels SR 99, is a popular designated bicycle route linking riders to important destinations. The route also presents safety challenges. Bikeway 99 begins in the north as a Class III bicycle route on Silverbell Road and ends as a Class II bicycle lane on Notre Dame Boulevard, just south of Morrow Lane. The route features several bike bridges connecting beneath SR 99 and over Little Chico Creek (see Figure 8).



Class I facility along Bikeway 99

Bikeway 99 offers riders the opportunity to directly access or connect to dedicated facilities that link to critical amenities, including educational institutions like Fairview High School, Neal Dow Elementary School, Parkview Elementary School, CSU Chico, and Butte College Chico Campus; shopping and places of employment like North Valley Plaza and Chico Marketplace; access to healthy food, such as grocery stores and farmers markets; and recreational offerings like Lower Bidwell Park and Community Park.

Throughout the network, Bikeway 99 transitions a dozen times between bikeway classes, including Class I, Class II, and Class III, and also contains gaps where no dedicated facility is present, such as just north of East 20th Street. Please see the Bikeway 99 chapter for additional

information and recommendations for improvement.

BIDWELL PARK TRAILS & CHICO AREA REGIONAL RIDES

The City of Chico features an extensive and popular trail system extending through Lower and Upper Bidwell Park, including Class I – IV bicycle facilities, minor trails, and pedestrian-only facilities. Peterson Memorial Way, which begins at the Lower Bidwell parking lot and extends nearly to Manzanita Way is signed for one-way (north to south) bike and car traffic only. Bike access is restricted near Sycamore Pool.

Though bicycle infrastructure connecting Chico to neighboring cities is limited, for the adventurous bicyclist there are regional routes, as featured in Figure 9, available to access destinations in nearby towns such as Durham, Dayton, and Nord.

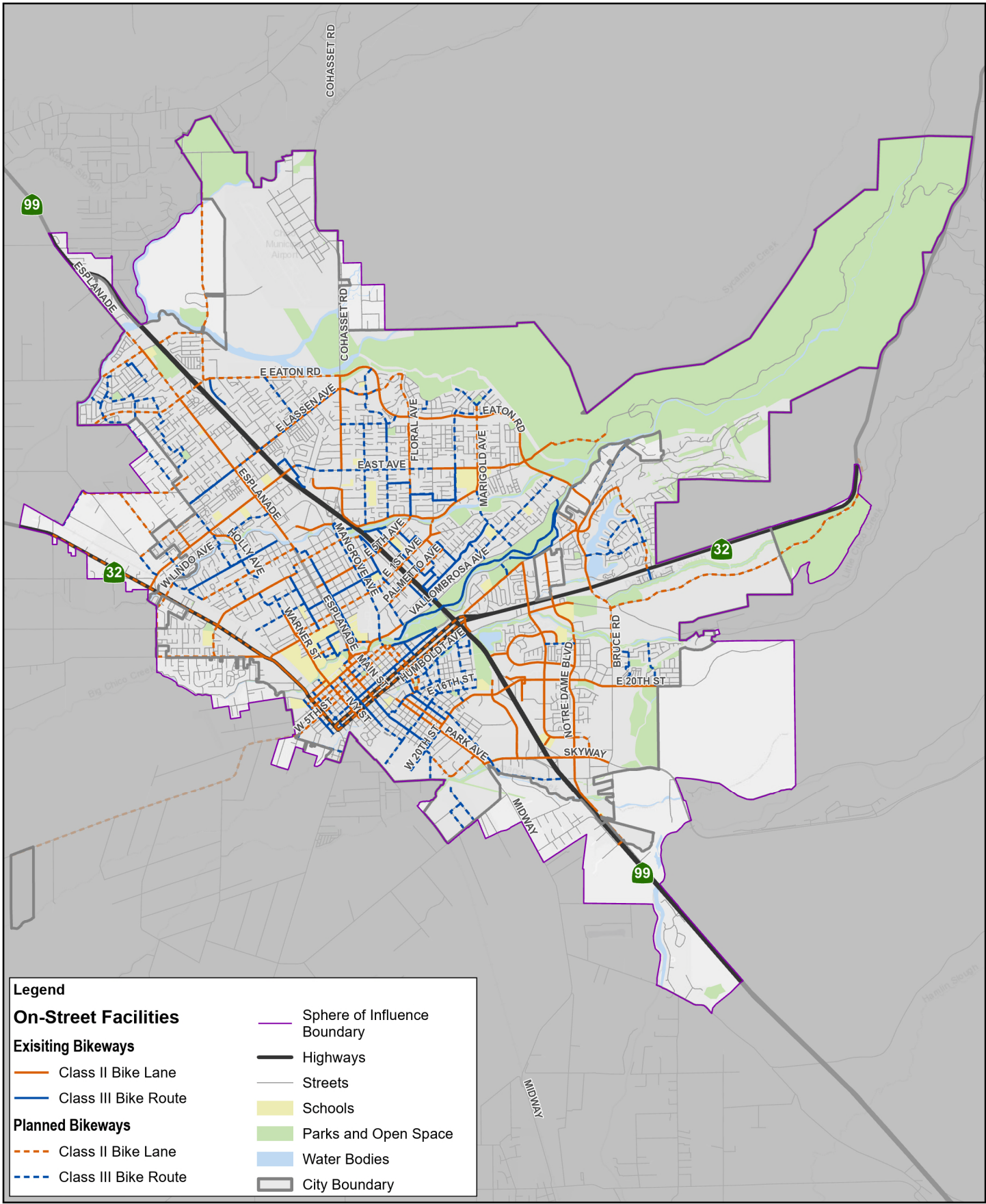


Trail in Bidwell Park



Chico Velo Cycling Club – Childflower Ride





Legend

On-Street Facilities

Existing Bikeways

- Class II Bike Lane
- Class III Bike Route

Planned Bikeways

- Class II Bike Lane
- Class III Bike Route

Sphere of Influence Boundary

Highways

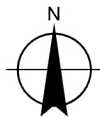
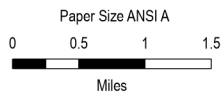
Streets

Schools

Parks and Open Space

Water Bodies

City Boundary

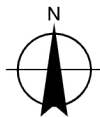
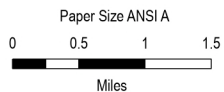
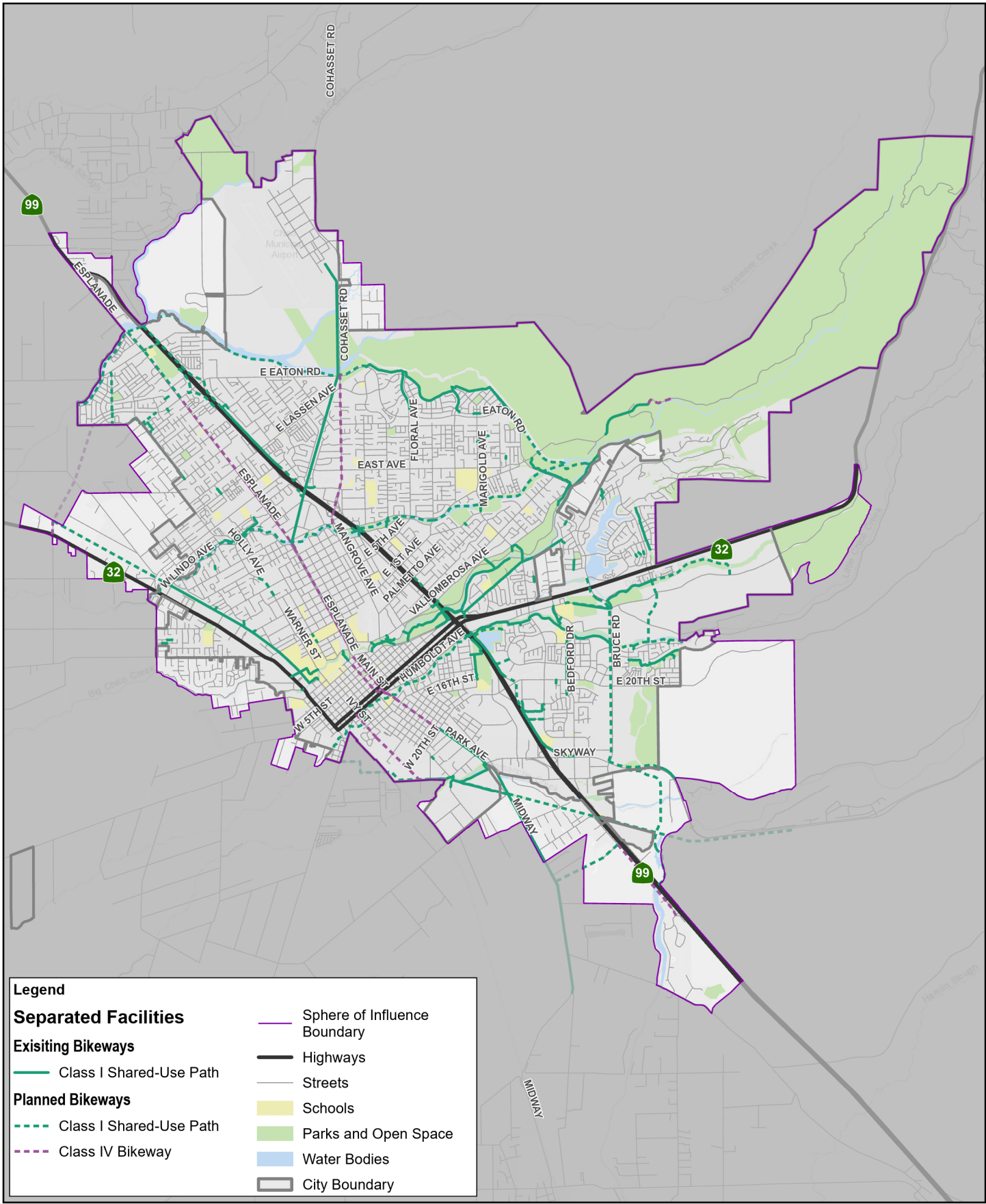


CITY OF CHICO
ACTIVE TRANSPORTATION PLAN

**EXISTING & PLANNED
BIKEWAY NETWORK:
ON-STREET FACILITIES**

Project No. 12575135
Revision No. D
Date Dec 2023

FIGURE 7A



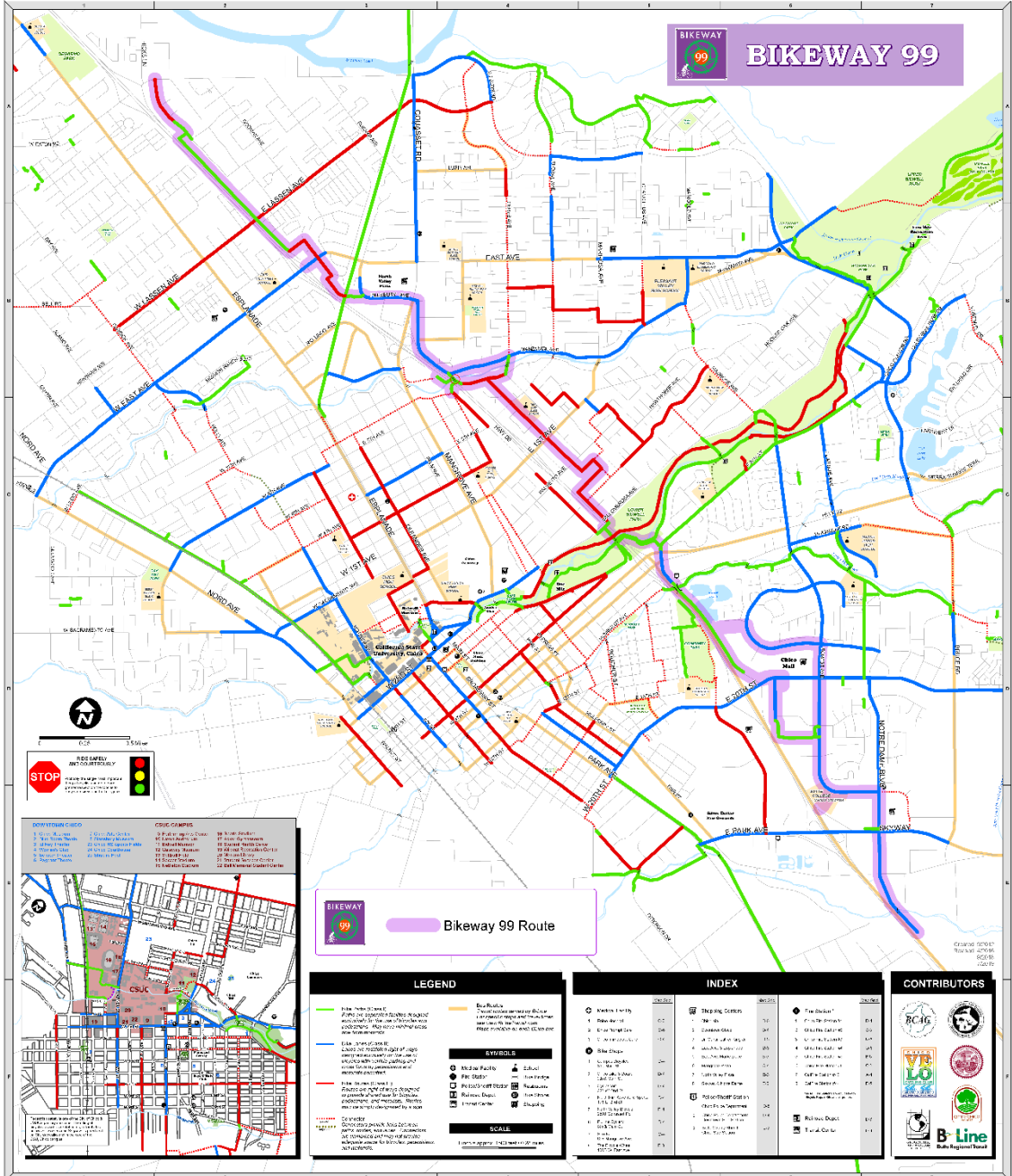
**CITY OF CHICO
ACTIVE TRANSPORTATION PLAN**

**EXISTING & PLANNED
BIKEWAY NETWORK:
SEPARATED FACILITIES**

Project No. 12575135
Revision No. D
Date Dec 2023

FIGURE 7B

Figure 8: Bikeway 99 Route



This map is available at <https://chico.ca.us/sites/main/files/file-attachments/bikeway99map2018.pdf?1575593111>



Figure 9: Chico Area Regional Rides



This map is available at <http://www.bcag.org/Planning/Bicycle/index.html>



Support Facilities

In addition to a network of bikeways, support facilities are also needed to attract and maintain dedicated bicyclists by considering their needs throughout their journey. People are less likely to ride their bicycles to destinations without secure bicycle parking. Other support facilities include showers or lockers at destinations, repair stations with basic tools, and wayfinding signs to help bicyclists navigate to routes and destinations.

BICYCLE PARKING

Secure bicycle parking is a critical part of a complete bicycle network. Bicycle parking is typically divided into two categories serving different purposes: short-term convenient bicycle racks and longer-term higher-security parking.

Short-term bicycle parking consists of bicycle racks placed in highly visible, convenient locations near the entrances to destinations. They serve bicyclists who need to park for a few hours or less, including visitors, customers, or other short-term users.

Long-term bicycle parking consists of bicycle lockers or secure parking areas like bicycle cages or bike rooms. They are intended for bicyclists who need to park for longer periods of time or overnight, including employees, students, transit riders, or residents in multifamily buildings.



Example of bicycle lockers

The Chico Bicycle Plan 2019 Update featured a bicycle parking inventory, including bicycle

lockers, within the Chico urban area, noting parking locations at area schools, parks, shopping centers, community services, government offices, and intermodal facilities. CSU Chico alone features 5,500 bicycle parking spaces.

The Bicycle Plan 2019 Update also included a participant mapping exercise to identify popular bike destinations, a helpful first step to ensure the adequacy of bike parking facilities. Community input identified a lack of secure bike parking as a major deterrent to residents regularly completing utilitarian trips by bike.

The Chico Municipal Code requires bicycle parking to be provided for all residential uses, except for single family residences that are detached and/or do not share common open space areas, as well as all commercial, service, manufacturing, and industrial uses. These include structures owned by the City and used for governmental purposes. The minimum number of bicycle spaces required is determined by the Parking Requirements Table 5-4 in the municipal code.

In addition to permanent parking, Chico Velo, a local bicycle advocacy organization, offers bike valet parking for special events in Chico, including the Farmers Markets, concerts, and other community events. This specialized service encourages residents to ride to area activities, knowing their bicycles will be safe and secured throughout the duration of the event.

SHOWER AND CHANGING FACILITIES

For commuters, having access to a place to shower, change, and securely store their belongings makes bicycling to work easier and more attractive.

The municipal code currently allows developers to reduce a project's vehicle parking requirements by five percent if they provide facilities or programs that reduce vehicle parking demand, including showers, locker rooms, or additional secure bicycle parking beyond the



minimum. Requirements associated with the provision of showers and lockers by land use type and for specified building floor area are detailed within the code.

These facilities are typically provided by private developers or business owners for their tenants or employees. Educational facilities, including CSU Chico and area junior and senior high schools have shower, locker, and restroom facilities for students, faculty, and staff use. Most major employers provide showers and lockers as well.

BIKE REPAIR STATIONS

There are several bike repair kiosks, including bike pumps and tools, installed at Chico businesses. Chico Velo has also sponsored bike repair stations at local schools.



Person fixing their bike at a bicycle repair station.

TRANSIT INTEGRATION

All fixed route buses within B-Line's transit fleet feature front-loading service for up to three bicycles, which assists with regional connectivity and first- and last-mile connections that transit riders may need to make between their homes and/or workplaces.

Though the available amount is sparse, there are bike racks present at area intermodal facilities, including the Amtrak/Greyhound Station (7 spaces), Chico Municipal Airport (6 spaces), the Downtown Chico Transit Center (10 spaces) and the Park-and-Ride lot at SR 32 and Fir Street. Though B-Line buses provide bicycle loading space, only a handful of bus stops

feature bicycle parking, notably those at Butte College.



Transit rider securing a bicycle to a front-loading bike rack

Pedestrian Facilities

SIDEWALK

Together with Class I shared use paths, sidewalks form the backbone of the pedestrian transportation network.

Sidewalks are present throughout the downtown core and in historic downtown neighborhoods. However, obstructions such as light poles and utility boxes, inaccessible driveway ramps, and outstanding repair needs prove challenging for accessibility. Sidewalks are incomplete or non-existent in industrial areas, such as those in South Chico. Where narrow sidewalks are present immediately adjacent to high-speed arterials, it can be challenging for pedestrians to comfortably navigate.

CROSSWALKS

Crosswalks are an extension of the sidewalk and provide guidance for pedestrians by defining a path of travel across the roadway at intersections. Crosswalks are not required to be marked but marked crosswalks alert drivers to the crossing and increase yielding for pedestrians.

Marked crosswalks can use standard parallel lines or "ladder-style" high visibility markings that include bold perpendicular markings between crosswalk edge lines. In school zones, crosswalks are yellow.



CURB RAMPS

Curb ramps are necessary for people using wheelchairs to access sidewalks and crosswalks as well as people pushing strollers or who may have difficulty stepping onto a raised curb. Under the Americans with Disabilities Act (ADA), curb ramps are required to be installed with all new or retrofitted sidewalks.

At corners, two curb ramps should be provided that align with each crosswalk.

PEDESTRIAN SIGNALS AND RECTANGULAR RAPID FLASHING BEACONS

Pedestrian signals and rectangular rapid flashing beacons (RRFBs) are pedestrian activated devices used to facilitate crossings at midblock or uncontrolled locations. Uncontrolled locations are those without a traffic control device, such as stop sign or traffic signal.

Pedestrian signals control traffic at midblock crossing locations. The traffic signal rests on green for vehicles until a pedestrian pushes a button to cross the street. The signal changes to yellow and then red to stop traffic, and pedestrians are shown a “walk” signal.

RRFBs include bright amber rectangular lights that flash in an alternating pattern when a pedestrian pushes a button. The beacon is dark when not activated. RRFBs increase visibility of the crosswalk and alert drivers when a pedestrian is crossing the street.



New RRFB crossing on Fair Street in South Chico

ACCESSIBILITY INVENTORY

As part of the City’s ADA Transition Plan, the City of Chico completed a 2009 Phase 1 evaluation of pedestrian facilities, including sidewalks, crosswalks, curb ramps and parking facilities, to determine accessibility issues. This phase resulted in the notation of over 1,500 upgrades which were assigned a priority ranking from low to high. These existing conditions data helped to inform this Plan.

- ◆ For crosswalks, the inventory noted those that were missing, crosswalk surfaces in need of upgrading or restriping, and clear space upgrades at signal call buttons.
- ◆ For sidewalks, the inventory noted necessary repairs, maintenance concerns, path of travel upgrades, cross slopes at driveways not meeting ADA standards, and other hazards such as drop-offs.
- ◆ For curb ramps, the inventory noted missing ramps, running slopes, flared sides, and ramp transitions to the street not meeting ADA standards, as well as needed grooved borders and bottom/top landing upgrades.
- ◆ For parking areas, the inventory noted access aisles in need of “No Parking” signage for disabled parking spots, path of travel upgrades, and tow away signage. The ADA Committee brought the recommended list of projects to City Council as an amendment to the existing ADA Transition Plan to include them in the City’s Capital Projects budget.

Barriers

Both natural and human-made barriers may present challenges to safe travel for bicyclists and pedestrians in Chico. The presence of both SR 99 and SR 32, with high traffic volumes and speeds, increase stress for users attempting to cross these facilities. Caltrans District 3’s 2021 Active Transportation Plan conducted surveys where community members identified major bicycle and pedestrian needs along state



highways.⁶ SR 32 received the second most comments of any in the district, with two Chico needs identified:

- ◆ More crossing opportunities connecting apartments across Nord Avenue.
- ◆ Signal upgrades at Deer Creek Highway and Notre Dame Boulevard.

Additionally, on high-speed arterials like Walnut Street and 20th Street, faded crosswalks and limited crossing times presented challenges.

Several rail lines pass through the City, including an Amtrak route through Downtown Chico, which creates interruptions in safe and efficient travel in various locations. Other barriers to walking and bicycling may be context or site specific, including features like drainage facilities, large parking lots, and inadequate lighting or sightlines along trails. Bicycle theft is also a notable concern within Chico and may deter riders, particularly when bicycle parking availability is limited or inadequate at their destination.

Site Visit

The project team conducted a series of walk audits on May 17, 2022. These audits evaluated safety and access conditions near schools during arrival and dismissal, visited intersections with the highest incidence of pedestrian and bicyclist involved collisions in the past ten years, evaluated corridors identified as safety concerns by the Chico Active Transportation Technical Advisory Committee (CATTAC), traveled busy downtown corridors, and visited Lower Bidwell Park.

School Audits

The school audits took place at two elementary schools (arrival at Rosedale and dismissal at

Hooker Oak) and both Chico Junior High School and Chico High School during dismissal.



Student bicycles parked behind Chico High School

The elementary schools featured one-way pull-through areas and moderate to severe traffic congestion during peak times, with cars idling and double parking in loading zones. At Rosedale, a school attendant assisted children at a designated crosswalk. At Hooker Oak, poor neighborhood pavement conditions and a lack of curb ramps impacted access. A small handful of parents/guardians were observed walking or bicycling with students to both schools.



Arbutus Avenue and East 3rd Street pavement and crossing conditions

At Chico Junior High groups of students crossed Memorial Way to meet guardians in the shopping center lot and student bicyclists travelled toward Vallombrosa Avenue on the

⁶ Caltrans. District 3 Active Transportation Plan: Draft Summary Report.

<https://www.catplan.org/files/managed/Document/1203/2022-03-03%20D3%20working%20draft.pdf>.



north-side sidewalk or south-side in-lane. A school representative with a walkie talkie stood at the corner of Camellia Way and Memorial Way to encourage safe crossing.

At Chico High School there was vehicle congestion in the loading zone, which impacted students accessing the stop sign and pedestrian button for the RRFB at Esplanade. This congestion also blocked the transit stop in front of the school. The RRFB was highly utilized, but vehicles became impatient over time. Two student bicycle parking cages were moderately full.



Crossing on West Sacramento Avenue at Esplanade RRFB

High Collision Intersection Audits

The project team also visited intersections with a high incidence of pedestrian/bicyclist collisions, such as Walnut Street and West 1st Street, Walnut Street and West 3rd Street, East Avenue and Pillsbury Road, and Esplanade / Broadway Street / West 1st Street. There were commonalities between many of these, including faded crosswalk markings, a lack of ADA compliant curb ramps, sidewalk and bicyclist infrastructure adjacent to high-speed traffic, tree grates and other obstructions further limiting accessibility, and short pedestrian crossing times.



Crossing conditions at Walnut Street and West 3rd Street

CATTAC-Identified Corridors

The project team walked several corridors identified by the CATTAC where safety issues were present, including East 20th Street from Fair Street to Dr. Martin Luther King Jr. Parkway, Fair Street from 20th Street to Park Avenue and East 1st Avenue near the on- and off-ramps with SR 99.

Where sidewalk and bicycle facilities were present on these corridors, they were narrow and lacked a buffer between fast moving vehicles. Bicycle lanes often lacked in-pavement symbols to indicate they were not simply a shoulder lane. At major intersections, such as Dr. Martin Luther King Jr. Parkway, there was a lack of conflict markings for bicyclists. On Fair Street, sidewalk connectivity was poor, with numerous gaps present.

Downtown Chico

Dedicated bicycle facilities are uncommon on the main downtown corridors, yet bicycle racks are numerous and wide sidewalks are present with corner bulb-outs providing additional pedestrian waiting space.

Though a major route for through traffic entering or leaving downtown, the Esplanade/Main Street intersection proves challenging for pedestrians and bicyclists to navigate, given the Class I bike path on the west side is fenced to restrict pedestrian entrance. Pathways through Bidwell



Mansion State Historic Park do, however, provide excellent connections to the CSU Chico campus.

Lower Bidwell Park

Lower Bidwell Park offers generous space for pedestrians, bicyclists, residents, and visitors alike, to recreate or use the park's paths as comfortable routes to reach nearby destinations.

Main pathways, such as Peterson Memorial Way, featured well maintained trailside amenities such as benches, trash cans, and bike racks. Side trails were unpaved and less formally signed. One-way bicyclist travel was encouraged via signage on Peterson Memorial Way, where cars were allowed, yet not frequently observed.

Safety

Collision data involving people walking and bicycling in Chico was queried from UC Berkeley's Transportation Injury Mapping System (TIMS). Eleven years of data was evaluated, from January 1, 2010 to December 31, 2020. At the time of this analysis, 2020 data was still considered provisional and subject to change. Findings related to bicycling and walking collisions are highlighted in the following sections.

A total of 3,036 collisions were reported in Chico during this period, 17.7 percent of which involved people bicycling and 9.8 percent of which involved people walking.

Bicycle-Related Collisions

During the reviewed time period, 536 reported collisions involved a bicyclist. Of these, four were fatal and 41 resulted in severe injuries.

Overall collision severity of both bicycle and pedestrian collisions are mapped in Figure 10, with overall collision density mapped in Figure 11. Bicycle-only collisions are mapped by severity in Figure 12 and by collision density in Figure 13.

AGE

Among collisions where the age of the bicyclist was reported, 22 percent were under 18 years old. Children under 18 make up 19 percent of the Chico population, suggesting youths are slightly overrepresented among collision victims.

PRIMARY COLLISION FACTORS

Overall, the two most common collision factors were bicyclists or motor vehicle drivers traveling on the wrong side of the road and automobile right of way. One-third of collisions (33 percent) were attributed to each of those two factors. The second-most common collision factor (at 12.5 percent) was improper turning. Another four percent of collisions were attributed to each of the following behaviors: unsafe lane changes, pedestrian violations, traffic signals and signs, and lights.

Bicyclists were determined to be at fault in 63 percent of collisions (15 collisions). Motor vehicle drivers were determined to be at fault in 17 percent of collisions (4 collisions). Fault was not assigned in the remaining five collisions.

Among collisions where the bicyclist was determined to be at fault, about half (8 out of 15 collisions) were attributed to bicyclists traveling on the wrong side of the road. In many cases, people will ride their bicycle on the wrong side of the road facing traffic in the absence of comfortable facilities for bicycling, feeling that being able to see oncoming vehicles makes them safer.

Among collisions where the motor vehicle driver was determined to be at fault, half were attributed to automobile right of way violations.

TIME OF DAY

Most bicycle collisions occurred in daylight and almost all occurred with some sort of illumination:

- ◆ 71 percent (17 collisions) occurred in the daylight.



- ◆ 25 percent (six collisions) occurred during darkness, but with the roadway illuminated by streetlights.
- ◆ One collision occurred during darkness without illumination from streetlights.

Of all bicycle collisions, a plurality occurred in the afternoon, between noon and 6 p.m.

- ◆ Eight percent (two collisions) occurred in the early morning, between midnight and 6 a.m.
- ◆ Another 25 percent (six collisions) occurred in the morning, between 6 a.m. and noon.
- ◆ 42 percent (10 collisions) occurred in the afternoon, between noon and 6 p.m.
- ◆ A further 25 percent (six collisions) occurred in the evening, between 6 p.m. and midnight.

ADDITIONAL FINDINGS

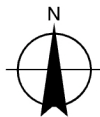
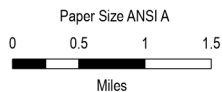
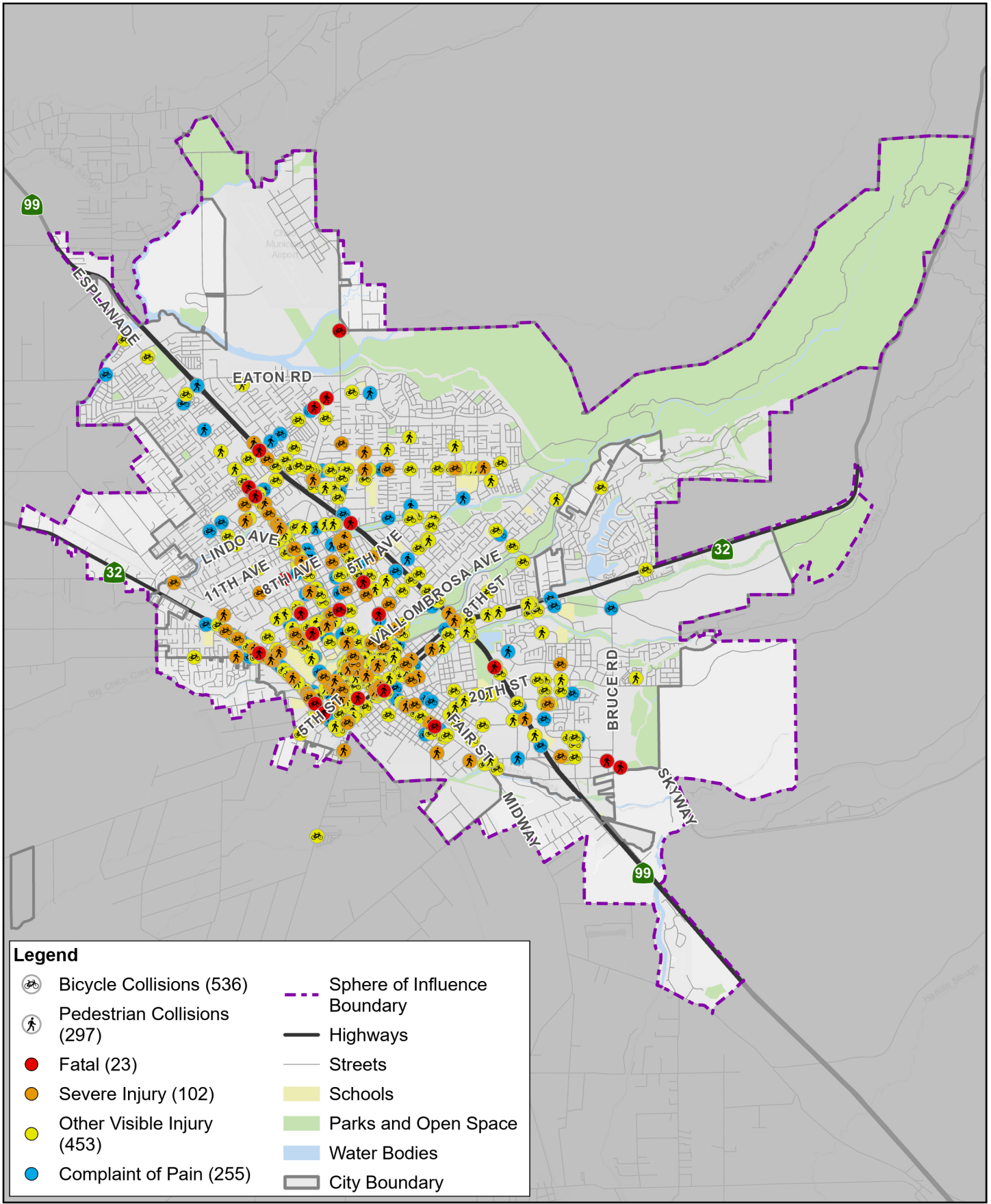
One-third of all bicycle collisions occurred within hotspots for collisions involving bicycles.

Most collisions (54 percent or 13 collisions) occurred on a state highway. Typically, state highways that serve as part of the local roadway network lack comfortable facilities for bicycling given the higher traffic speeds and volumes typically observed on these roadways.



West 8th Street is a state highway (SR 32) and serves as a local roadway without bicycle lane



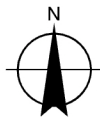
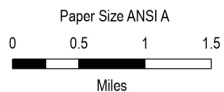
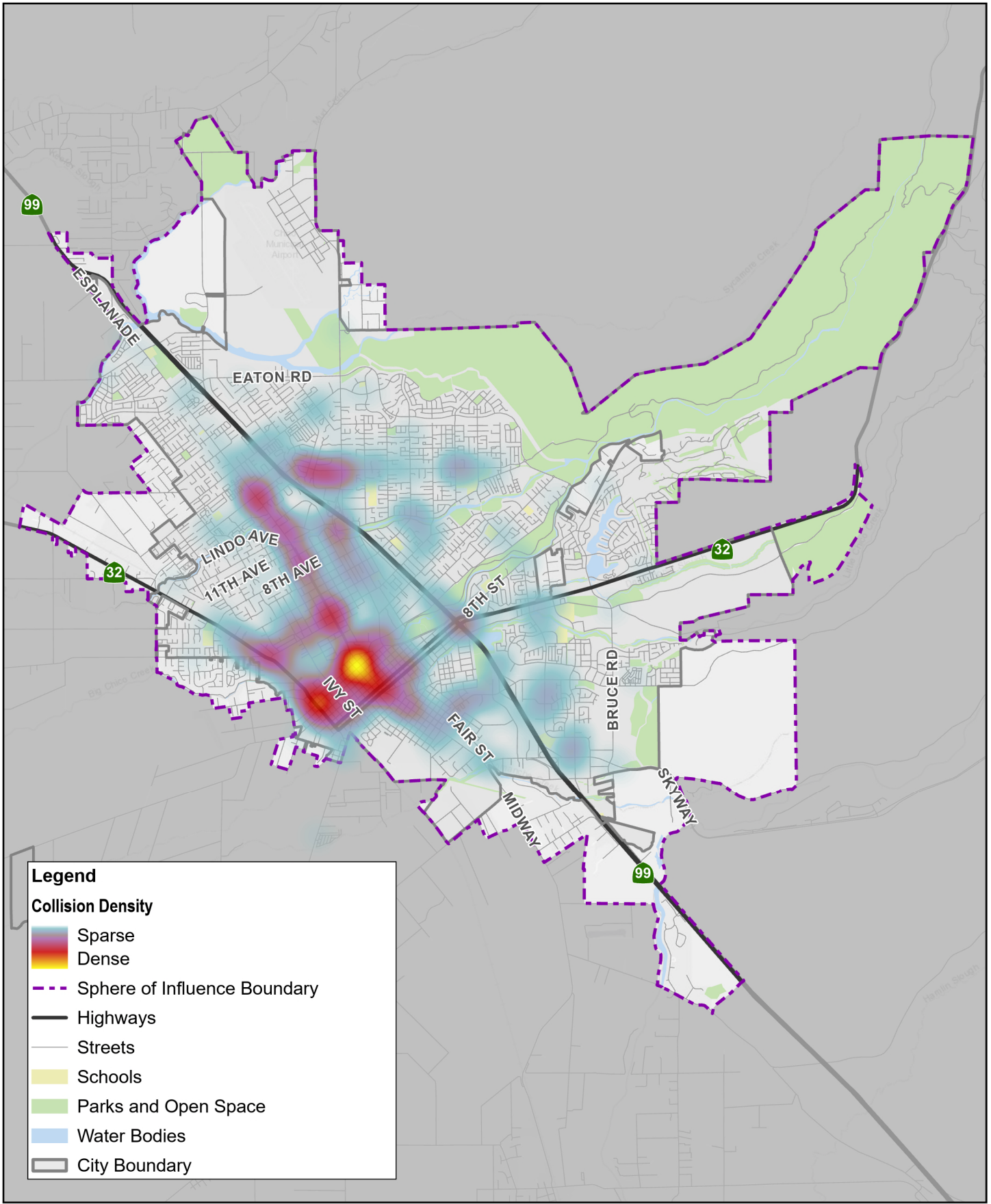


CITY OF CHICO
ACTIVE TRANSPORTATION PLAN

**BICYCLE & PEDESTRIAN COLLISIONS
BY SEVERITY
(2010 - 2020)**

Project No. 12575135
Revision No. C
Date Dec 2023

FIGURE 10

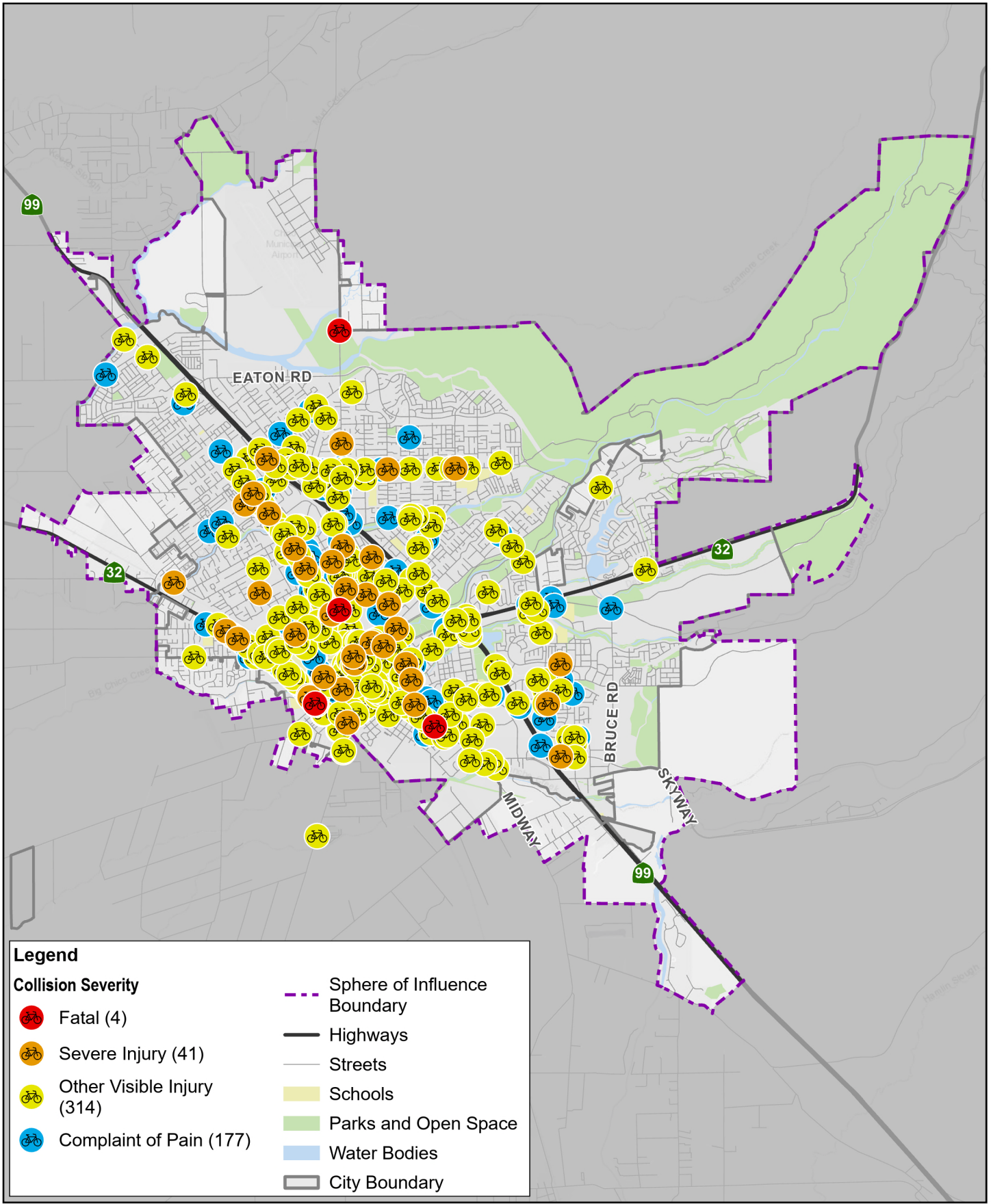


CITY OF CHICO
ACTIVE TRANSPORTATION PLAN

**BICYCLE & PEDESTRIAN COLLISIONS
BY DENSITY
(2010 - 2020)**

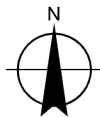
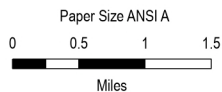
Project No. 12575135
Revision No. C
Date Dec 2023

FIGURE 11



Legend

Collision Severity	<ul style="list-style-type: none"> Fatal (4) Severe Injury (41) Other Visible Injury (314) Complaint of Pain (177) 	<ul style="list-style-type: none"> Sphere of Influence Boundary Highways Streets Schools Parks and Open Space Water Bodies City Boundary
---------------------------	--	--

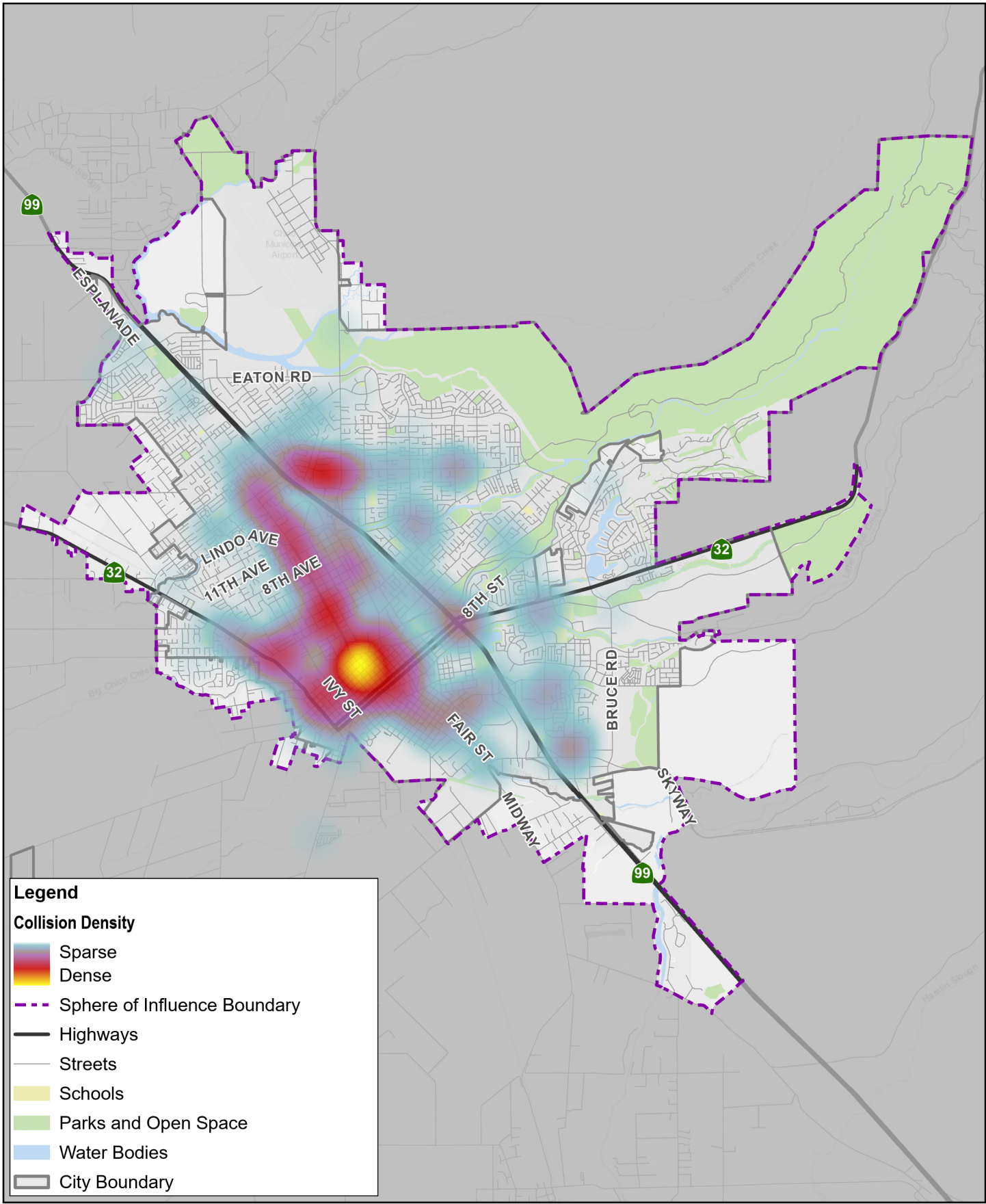


**CITY OF CHICO
ACTIVE TRANSPORTATION PLAN**

**BICYCLE COLLISIONS
BY SEVERITY
(2010 - 2020)**

Project No. 12575135
Revision No. C
Date Dec 2023

FIGURE 12

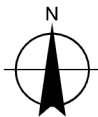
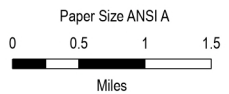


Legend

Collision Density

- Sparse
- Dense

- Sphere of Influence Boundary
- Highways
- Streets
- Schools
- Parks and Open Space
- Water Bodies
- City Boundary



**CITY OF CHICO
ACTIVE TRANSPORTATION PLAN**

**BICYCLE COLLISIONS
BY DENSITY
(2010 - 2020)**

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

FIGURE 13

\\ghdnet\ghd\US\Sacramento - 2200 21st\Projects\56112575135\GIS\Maps\Deliverables\12575135_ExistingConditions\12575135_ExistingConditions.aprx - 12575135_13_Chico_Bicycle_Collision_Density_RevD
 Print date: 05 Dec 2023 - 14:21

Data source: World Light Gray Canvas Base: Butte County, Bureau of Land Management, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, Boundaries, Streets: City of Chico 2021, Collision Data: Berkeley TIMS. Created by: ethompson3

Pedestrian-Related Collisions

During the period reviewed, 297 reported collisions involved a pedestrian. Of these, 19 were fatal and 61 resulted in severe injuries.

Overall collision severity of both bicycle and pedestrian collisions are mapped in Figure 10, with overall collision density mapped in Figure 11. Pedestrian-only collisions are mapped by severity in Figure 14 and by collision density in Figure 15.

AGE

Among collisions where the age of the pedestrian was reported, 15 percent of pedestrians were under 18 years old. Children under 18 make up 19 percent of the Chico population, suggesting youths are underrepresented among collision victims.

FAULT DETERMINATIONS

Of the 25 analyzed collisions:

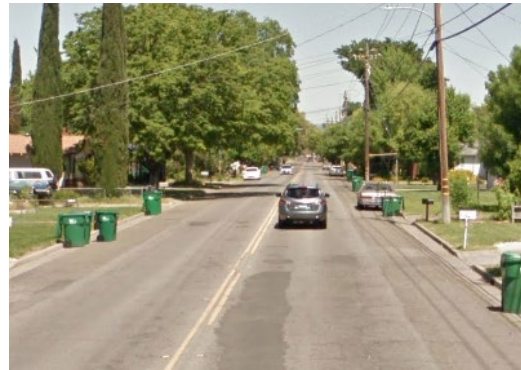
- ◆ 40 percent (10 collisions) were determined to be the fault of the pedestrian.
- ◆ 32 percent (eight collisions) were determined to be the fault of the motor vehicle driver.
- ◆ No fault determination was made in the remaining 28 percent (seven collisions) of reported collisions.

Additionally, 40 percent (ten collisions) of all pedestrian collisions occurred within hotspots for pedestrian collisions.

PRIMARY COLLISION FACTORS

In collisions where the pedestrian was determined to be at fault, the most common Primary Collision Factor (PCF) violations were pedestrian violations at 80 percent. In many cases, pedestrian fault can be attributed to lack of adequate pedestrian infrastructure, lack of knowledge of vehicle code provisions relating to pedestrian rights and responsibilities, or both. This can include pedestrians walking on the roadway, which often occurs due to lack of

sidewalk or sidewalk obstructions; pedestrians crossing at an unmarked crosswalk being recorded as crossing outside of a crosswalk; and “jaywalking,” or crossing outside of a crosswalk, without considering the distance to the nearest available safe crossing. Additionally, one collision each was recorded as a pedestrian being on the wrong side of the road (though there is no actual “wrong side of the road” for pedestrian travel), or another improper action violation.



Floral Avenue is a residential street near a high collision density area. The lack of sidewalks increases risk for pedestrians.

Among collisions where drivers were determined to be at fault, the most reported collision factor (four out of eight such collisions) was a violation of pedestrian right-of-way. This could include failure to yield right-of-way to pedestrians at a marked or unmarked crosswalk. Additionally, one collision each was recorded as drivers under the influence of alcohol or drug, improper turning, violating traffic signals or signs, and unsafe starting or backing.

Notably, 32 percent of collisions (eight collisions) occurred on a state highway. Like the discussion of bicycle-involved collisions, state highways that serve as part of the local roadway network often lack appropriate pedestrian facilities, such as connected sidewalks, marked crossings, and other important measures such as pedestrian signal heads.





Manzanita Court is a road near SR 99 near an area with pedestrian collisions. It has no sidewalks on one side and limited crosswalks, increasing risk for pedestrians.



Mangrove Avenue is a State Route where the sidewalk abruptly ends after the bridge. There are also few pedestrian crossings on this segment, increasing pedestrian risk.

TIME OF DAY

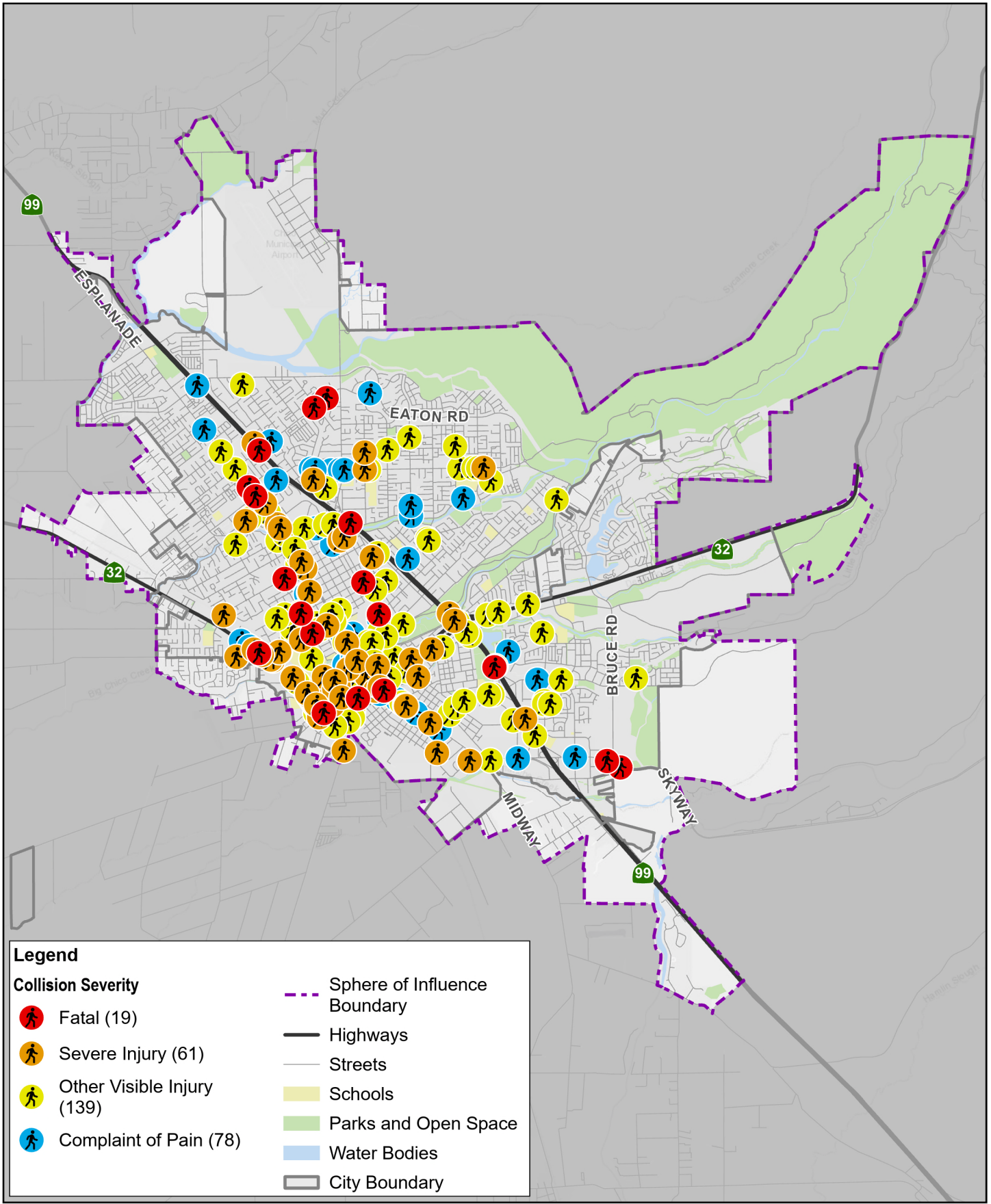
Most pedestrian collisions occurred in daylight, and nearly all occurred with some sort of illumination.

- ◆ 60 percent (15 collisions) occurred in the daylight.
- ◆ 24 percent (six collisions) occurred during darkness, but with the roadway illuminated by streetlights.
- ◆ 16 percent (four collisions) occurred during darkness, and without illumination from streetlights.

Of all pedestrian collisions, a plurality occurred in the afternoon, between noon and 6 p.m., or in the evening, between 6 p.m. and midnight.

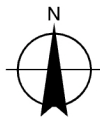
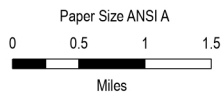
- ◆ Four percent (one collision) occurred in the early morning, between midnight and 6 a.m.
- ◆ 16 percent (four collisions) occurred in the morning, between 6 a.m. and noon.
- ◆ 40 percent (10 collisions) occurred in the afternoon, between noon and 6 p.m.
- ◆ Another 40 percent (10 collisions) occurred in the evening, between 6 p.m. and midnight.





Legend

Fatal (19)	Sphere of Influence Boundary
Severe Injury (61)	Highways
Other Visible Injury (139)	Streets
Complaint of Pain (78)	Schools
	Parks and Open Space
	Water Bodies
	City Boundary

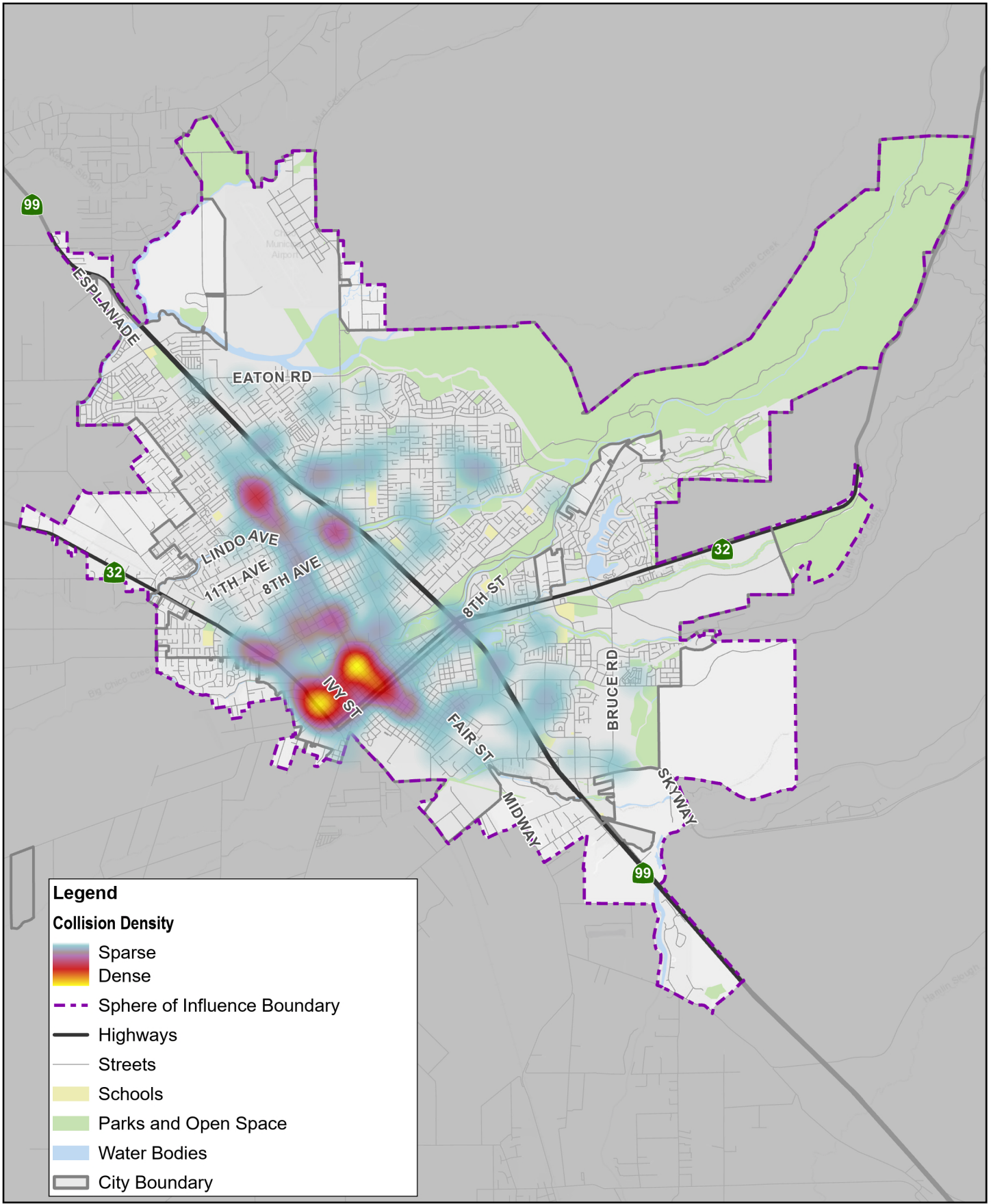


**CITY OF CHICO
ACTIVE TRANSPORTATION PLAN**

**PEDESTRIAN COLLISIONS
BY SEVERITY
(2010 - 2020)**

Project No. 12575135
Revision No. D
Date Dec 2023

FIGURE 14

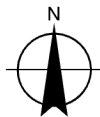
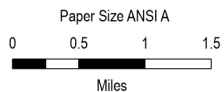


Legend

Collision Density

- Sparse
- Dense

- Sphere of Influence Boundary
- Highways
- Streets
- Schools
- Parks and Open Space
- Water Bodies
- City Boundary



**CITY OF CHICO
ACTIVE TRANSPORTATION PLAN**

**PEDESTRIAN COLLISIONS
BY DENSITY
(2010 - 2020)**

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

FIGURE 15

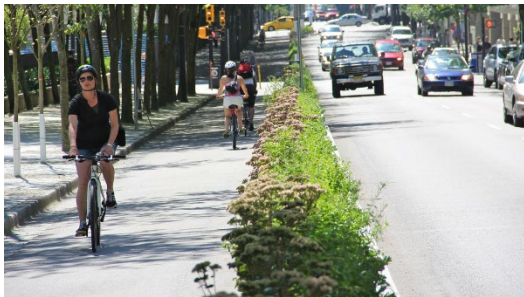
Level of Traffic Stress

This section provides information about the level of traffic stress (LTS) analysis and results for the bicycle network in Chico.

LTS is the perceived sense of danger associated with bicycling or walking in or adjacent to vehicle traffic. Studies have shown that traffic stress is one of the biggest deterrents to bicycling and walking.⁷ The less stressful the experience, and the lower the LTS score, the more likely it is to appeal to a broader segment of the population.

A bicycle and pedestrian network will attract a large portion of the community if it is designed to reduce stress associated with potential motor vehicle conflicts and connects people to their destinations.

Bicycle and pedestrian facilities are considered low stress if they have few interactions with vehicle traffic (such as slow, low-traffic neighborhood streets) or if greater separation is provided between people walking or bicycling and vehicle traffic.



Class IV separated bikeways shield bicyclists from vehicular traffic, increasing safety and comfort for “interested but concerned” riders.

LTS scores were used to develop project recommendations that would create a lower stress network for people of different ages, abilities, and comfort with bicycling in Chico. Using the LTS scores presented here, the Project team was able to select facility

recommendations to increase separation between bicyclists and vehicle traffic, especially on higher-speed, multi-lane arterials. LTS scores were also used as a metric to prioritize the composite list of recommendations. Prioritization is discussed in greater detail in the Implementation Plan chapter.

Types of Bicyclists

Research conducted by the Portland, Oregon Bureau of Transportation indicates the majority of people in the United States would bicycle if dedicated bicycle facilities were provided. Based on their skill level and confidence, most people self-identify as one of the four “types of bicyclists” shown in a later graphic.⁸ Only a small percentage of Americans are willing to ride if no facilities are provided—the so-called “Strong and Fearless” bicyclists.

To better meet the needs of the “Interested but Concerned” bicyclists, it is recommended that communities work to decrease stress and improve comfort on their bikeway network. LTS 1 and 2 roads are typically appealing to these bicyclists.

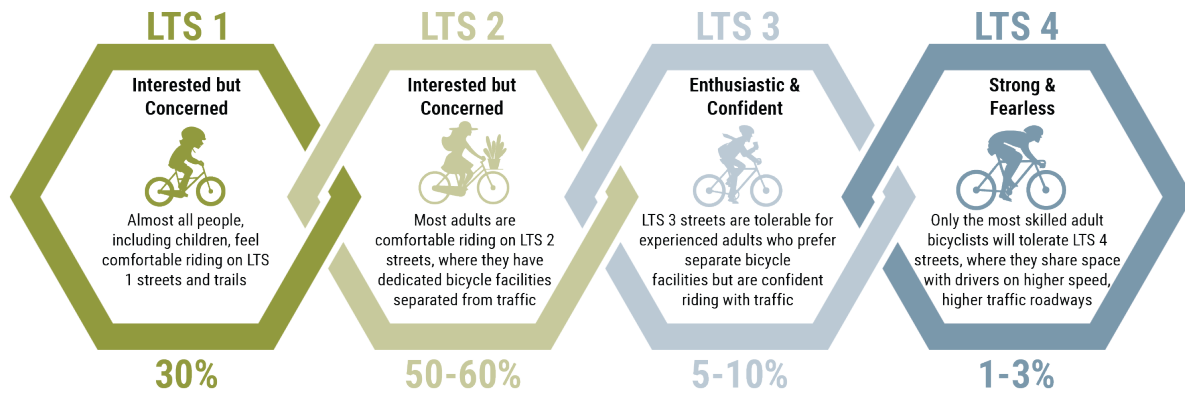


“Interested but Concerned” riders require lower-stress bikeways to feel comfortable riding.

⁷ Mekuria, M. C., Furth, P. G., & Nixon, H. (2012). Low-stress bicycling and network connectivity.

⁸ Dill, J., & McNeil, N. (2013). Four types of cyclists? Examination of typology for better understanding of bicycling behavior and potential. *Transportation Research Record*, 2387(1), 129-138.





Source: GHD using PBOT data

Bicycle Level of Traffic Stress

Bicycle LTS assigns a score from 1 to 4 to street segments, intersection approaches, and intersection crossings based on roadway data, including:

- ◆ Posted speed limit
- ◆ Number of vehicle lanes
- ◆ Intersection control devices (stop signs, traffic signals)
- ◆ Type of bikeway, if applicable
- ◆ Separation between bicycle facility and vehicles
- ◆ Configuration of right-turn lanes at intersections

A score of LTS 1 indicates a street with low stress and high comfort for people bicycling. LTS 4 reflects a highly stressful experience. A lower-stress network means all bicyclists, regardless of age or ability, can comfortably ride to their destination.

Detailed methodology and results are provided in Appendix A.

SEGMENTS

Figure 16 shows segment LTS scores. For this analysis, roadway segments are defined as a portion of a roadway from one intersection to the

next, or to the end of the roadway if no intersections are present. Across all City roadway segments, scores were as follows:

- ◆ 77 percent scored LTS 1
- ◆ 5 percent scored LTS 2
- ◆ 11 percent scored LTS 3
- ◆ 7 percent scored LTS 4

Bicycling is prohibited on freeways (SR 99), including on- and off-ramps, so those were excluded from this calculation.

These scores illustrate low-stress bicycle connections and gaps as they exist in Chico today. Much of the network in the City scored LTS 1, with about 77 percent of facilities scoring LTS 1. However, these facilities are primarily minor local roads, residential streets, or off-street paths. In many parts of the City, low-stress islands are surrounded by high-stress arterial roadways, where most average adults would not feel comfortable riding a bicycle.

Arterial roadways serve as the direct connection to many destinations. When only arterial roadways are examined, 47 percent are LTS 3. A further 46 percent are LTS 4. This indicates that many residents may not feel comfortable bicycling on arterial roadways, even if a bicycle lane is present. Thus, many City residents may only feel comfortable bicycling in their immediate



neighborhood, on low-stress local streets, and may not be able to reach major destinations from residential areas.

APPROACHES

Approach LTS scores, shown in Figure 17, illustrate LTS at intersection approaches (with signals). Across all City intersection approaches, scores were as follows:

- ◆ 0 percent scored LTS 1
- ◆ 1 percent scored LTS 2
- ◆ 15 percent scored LTS 3
- ◆ 83 percent scored LTS 4

These data reflect high-stress experiences at almost all intersections evaluated. The configuration of right-turn lanes for motor vehicles, and the design of bicycle lanes, at intersections can create high-stress experiences. Many of these intersections are locations where right-turn lanes for motor vehicles interfere with bicycle lanes or cause them to shift abruptly. Furthermore, at some intersections, bicycle lanes end abruptly, creating a stressful environment when bicyclists must mix with motor vehicle traffic unexpectedly. High-stress intersection approaches can present an increased risk of collision with motor vehicles, as drivers merge with bicyclists or turn across bicycle lanes.

CROSSINGS

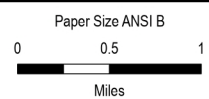
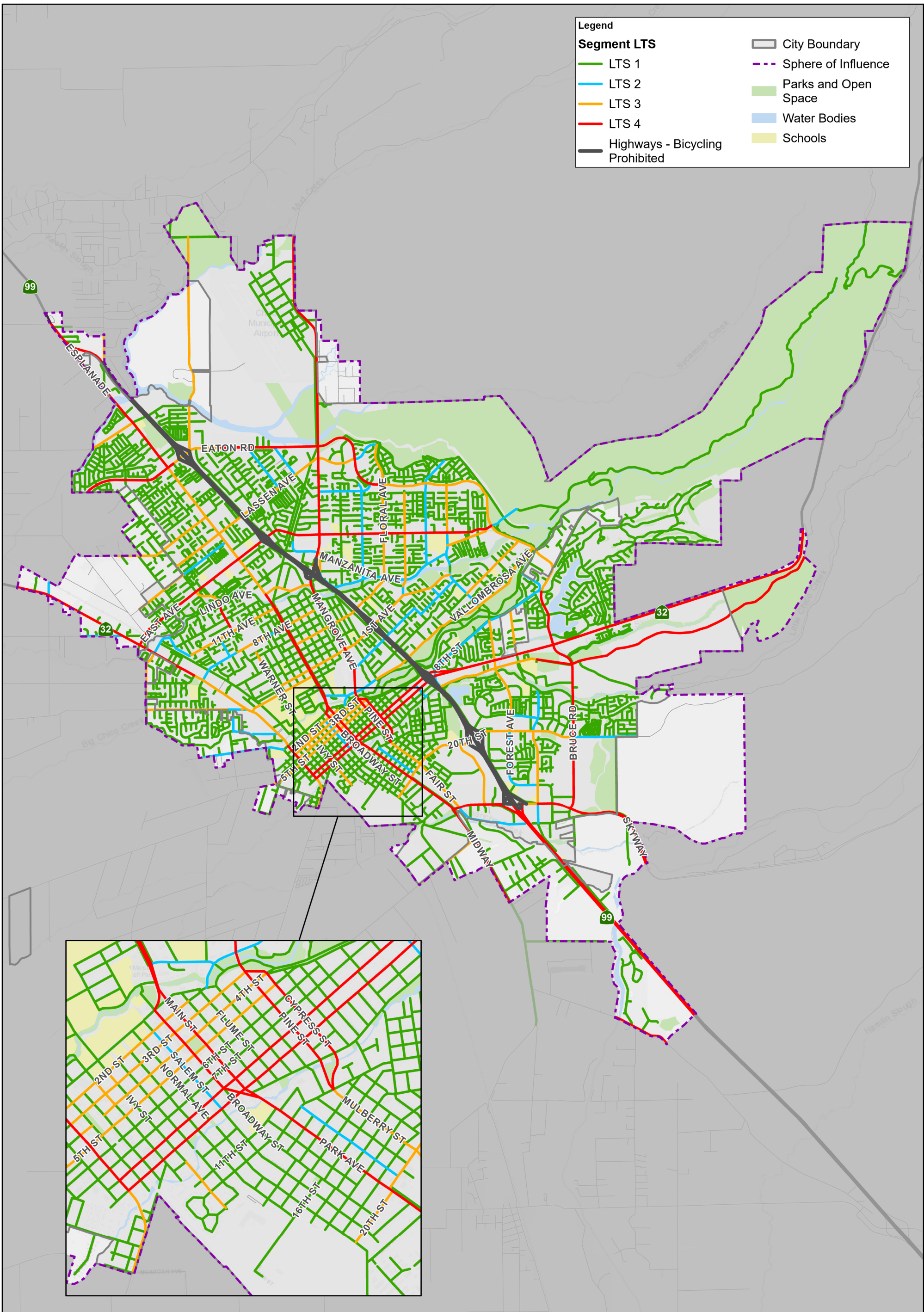
Crossing LTS scores, shown in Figure 18, illustrate LTS at unsignalized crossings. Across all City roadway crossings, scores were as follows:

- ◆ 77 percent scored LTS 1
- ◆ 7 percent scored LTS 2
- ◆ 9 percent scored LTS 3
- ◆ 7 percent scored LTS 4

These data reflect that unsignalized crossings were typically found to be low stress. These crossings were mostly found to be intersections of two local or residential streets. These are likely to be easy for most adults and children on bicycles to navigate.

Some moderately stressful LTS 3 crossings, and high-stress LTS 4 crossings were identified as well. These are primarily along collector and arterial roadways, especially at locations where local or residential streets intersect with larger roadways. These contribute to the perception of larger streets as barriers to low-stress connectivity. A stressful crossing can discourage a potential bicyclist, even if the roadways along the route are otherwise low stress.



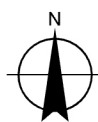
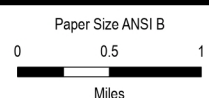
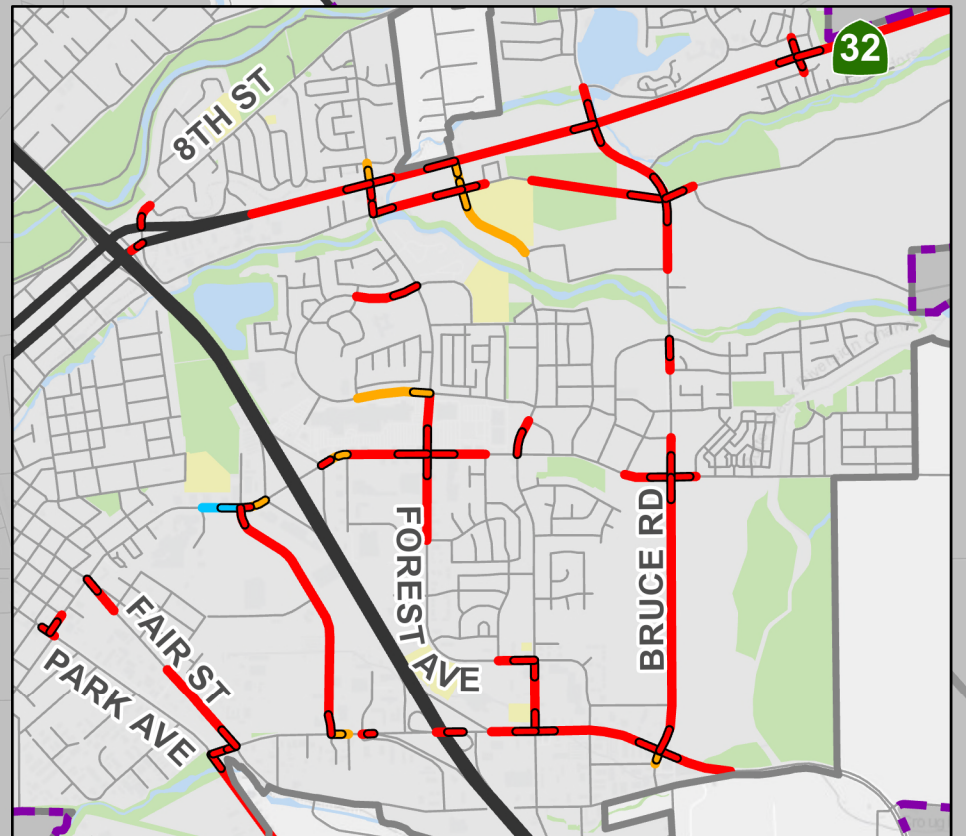
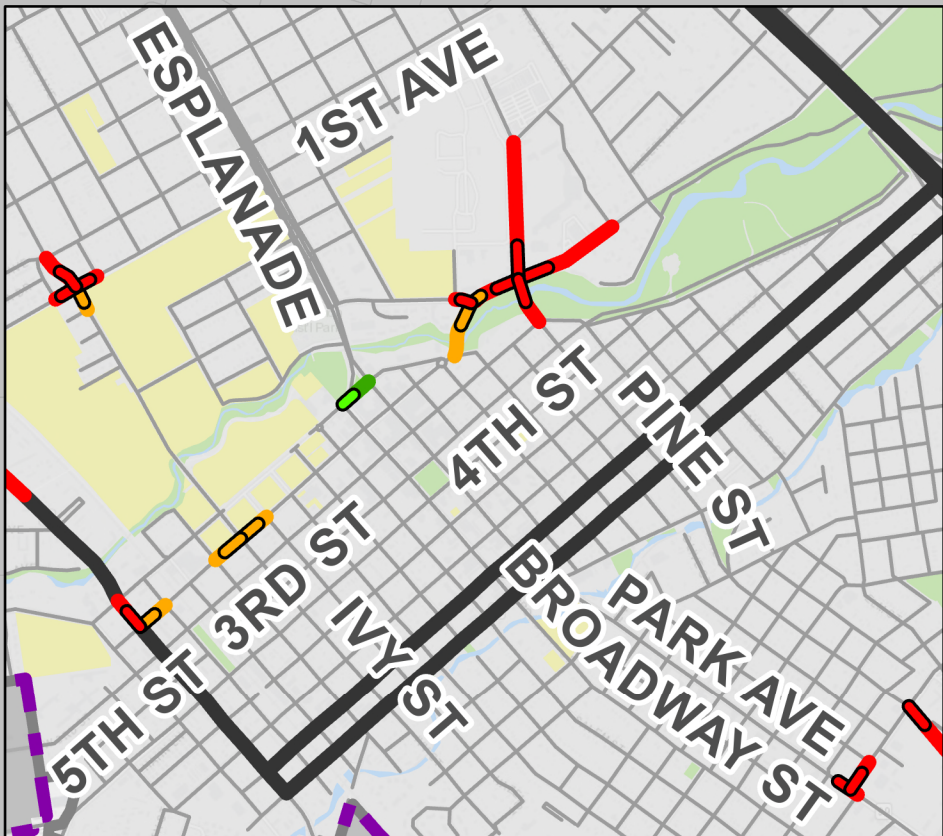
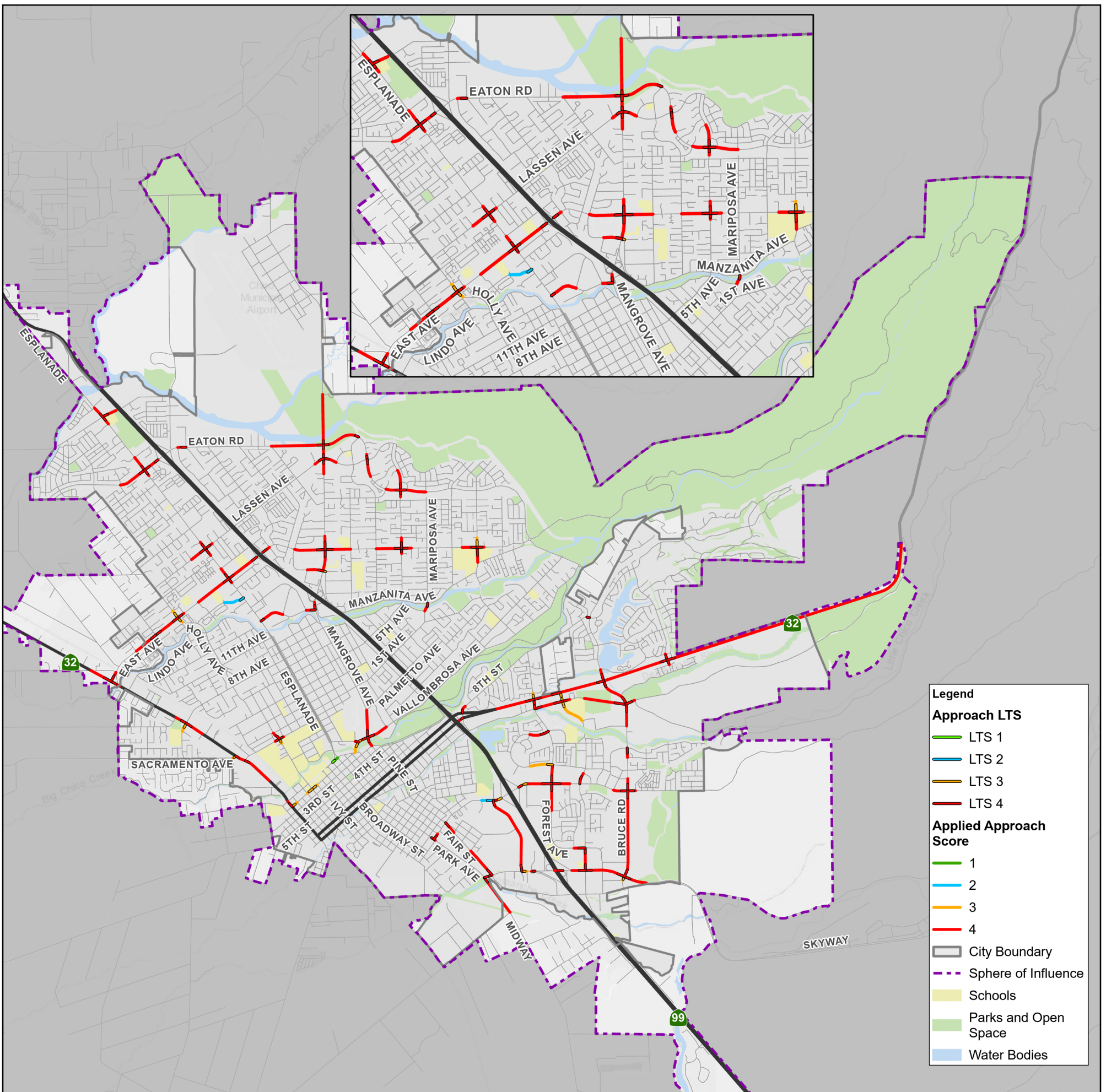


CITY OF CHICO
ACTIVE TRANSPORTATION PLAN

Project No. 12575135
Revision No. B
Date Jul 2022

SEGMENT LTS

FIGURE 16



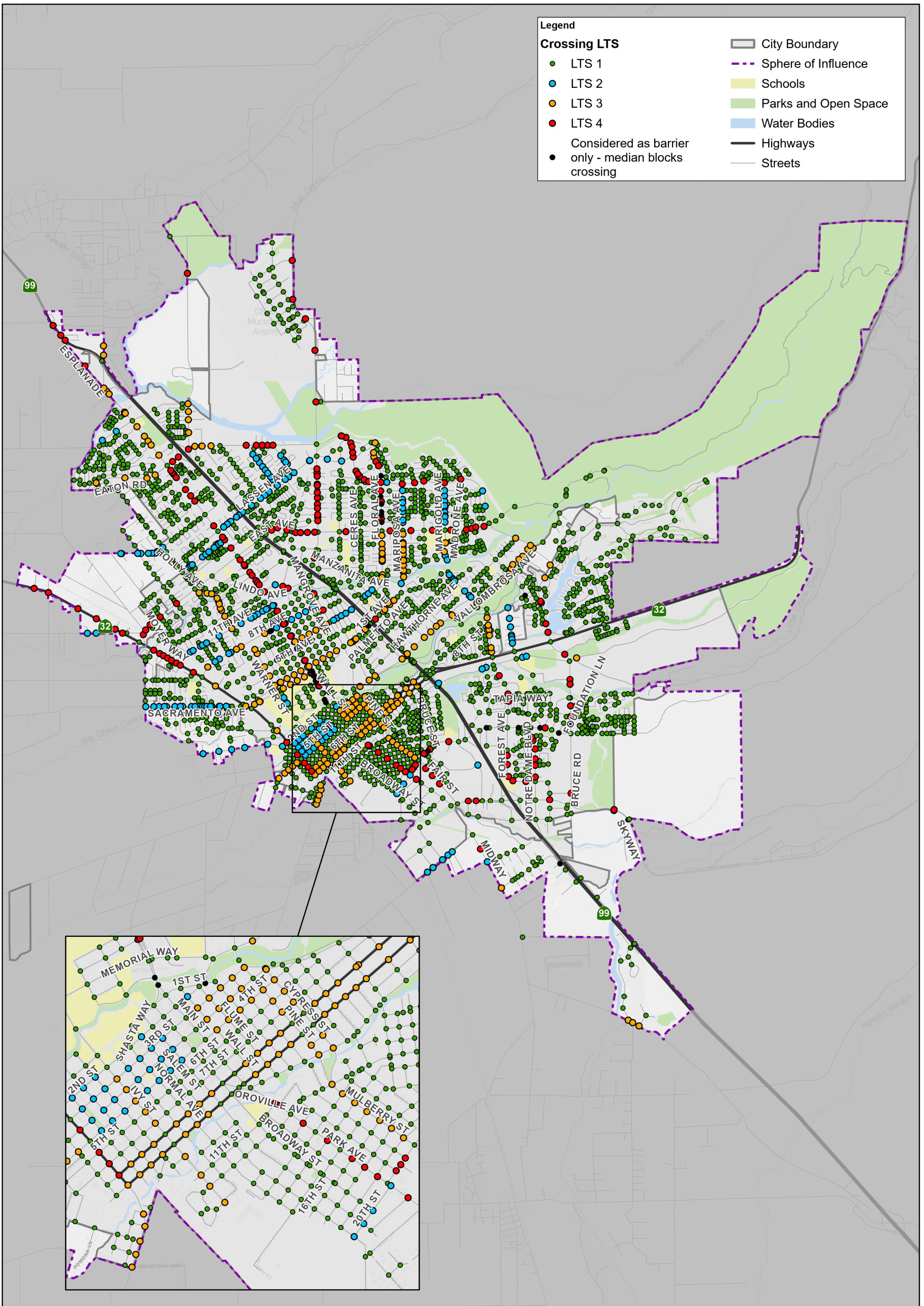
CITY OF CHICO
ACTIVE TRANSPORTATION PLAN

Project No. 12575135
Revision No. C
Date Dec 2022

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

APPROACH LTS

FIGURE 17

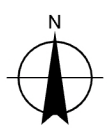
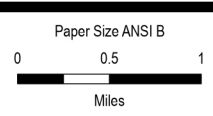


Legend

Crossing LTS

- LTS 1
- LTS 2
- LTS 3
- LTS 4
- Considered as barrier only - median blocks crossing

- ▭ City Boundary
- Sphere of Influence
- Schools
- Parks and Open Space
- Water Bodies
- Highways
- Streets



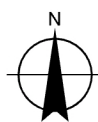
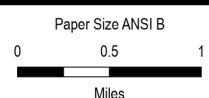
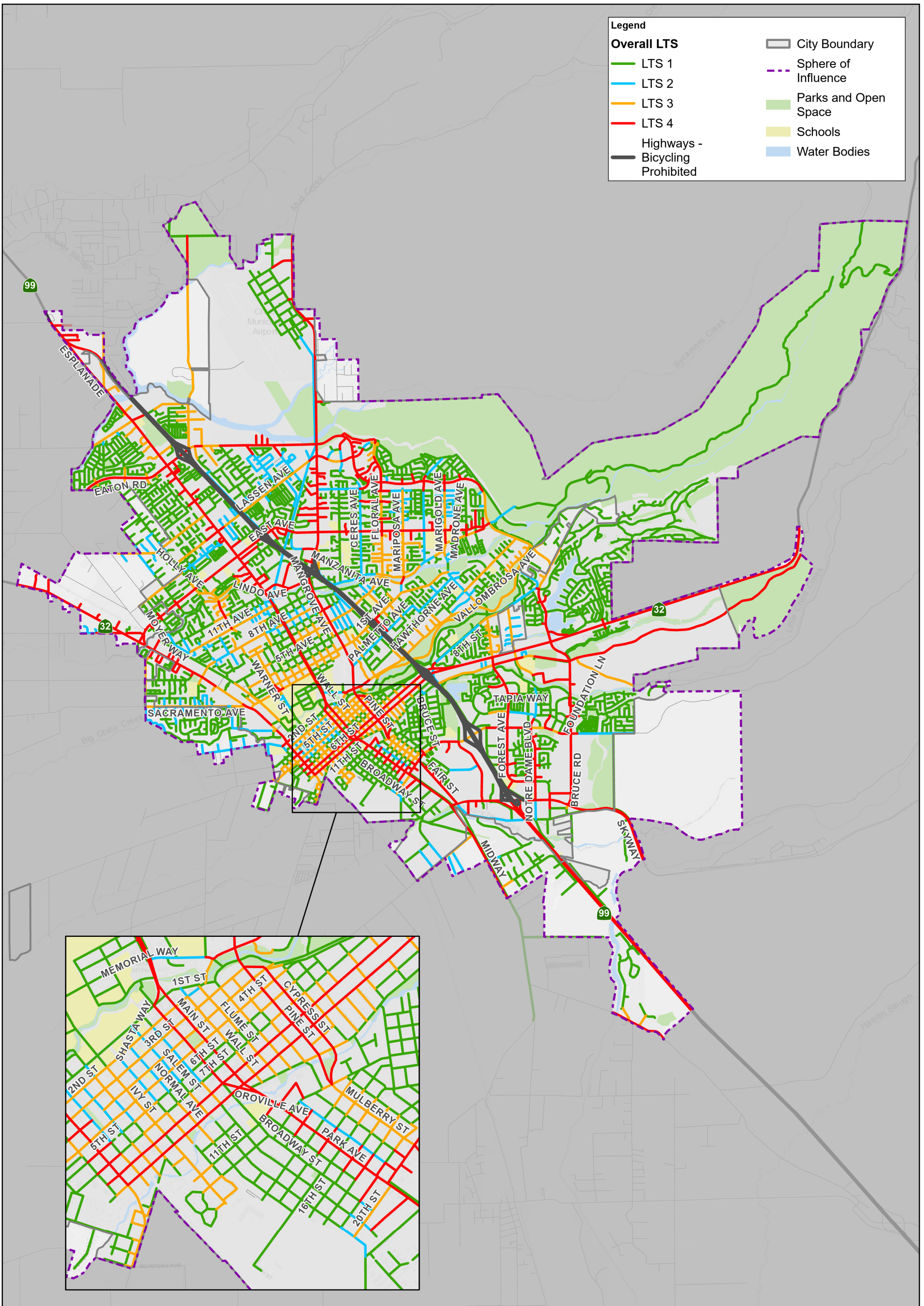
CITY OF CHICO
ACTIVE TRANSPORTATION PLAN

Project No. 12575135
Revision No. B
Date Dec 2023

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

CROSSING LTS

FIGURE 18



CITY OF CHICO
ACTIVE TRANSPORTATION PLAN

Project No. 12575135
Revision No. B
Date Dec 2023

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

OVERALL LTS

FIGURE 19

Local Road Safety Plan Project Recommendations

The *2021 City of Chico Local Road Safety Plan* (LRSP) establishes a framework for identifying, evaluating, and prioritizing transportation safety improvements on local streets within the City. The City LRSP supports safety related efforts such as the Citywide Systemic Safety Project (CSSP) as well as location-specific reconstruction projects.

The LRSP provides the foundation for agencies to target safety countermeasures and apply for grant funding to implement improvements. One of the main funding mechanisms for roadway safety enhancements is the Highway Safety Improvement Program (HSIP). As of 2020, agencies must have an LRSP on file to be

eligible for HSIP funding, which is allocated via state departments of transportation.

The Federal Highway Administration (FHWA) provides best practices for implementing LRSPs, including guidance on risk factors to assess when evaluating both intersections and roadway segments for safety improvements. Risk factors include roadway characteristics which may have contributed to past crashes and/or increase the incidence of future ones. The LRSP development team determined the risk factors most pertinent to crashes within the city, then evaluated site-specific incidences in order to determine appropriate targeted HSIP countermeasures.

The LRSP conducted an in-depth analysis of 2014-2019 crash data to determine focus areas for improvements, developing a list of both location specific and systemic projects (see



Figure 20).

The top intersection and roadway segment projects from the LRSP, many of which are also locations highlighted within the pedestrian and bicyclist collision analysis section above, are further detailed below.

*Esplanade & East Avenue
(intersection project)*

On Esplanade looking north toward East Ave. Source: Google Earth

COLLISION DATA

This intersection is within the Top 5 for number of bicycle and pedestrian involved collisions at or proximate to it in the last 10 years for which TIMS map-based data is available (2010-2020). Both a hit-and-run pedestrian fatality and a pedestrian suspected serious injury occurred at this intersection

FHWA RISK FACTORS

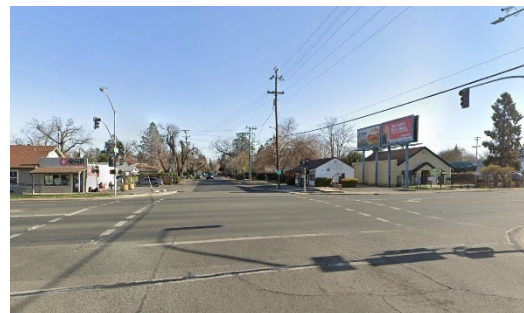
- ◆ Pavement condition and friction
- ◆ Number of signal heads vs. number of lanes
- ◆ Pedestrian crosswalk presence, crossing distance, signal head type

Table 6: Potential HSIP Countermeasures at Esplanade & East Avenue Intersection

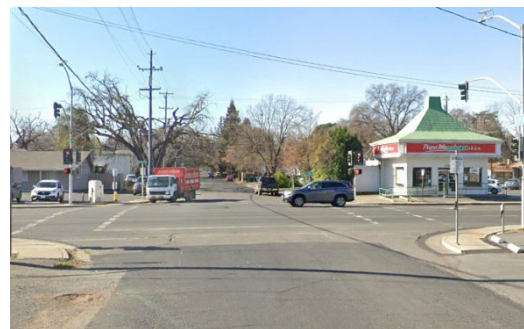
Type	Countermeasure
Signal Modification	Improve signal hardware: lenses, back plates with retroreflective borders, mounting, size, and number
Signal Modification	Improve signal timing (coordination, phases, red, yellow, or operation)
Signal Modification	Install Emergency Pre-emption systems
Operation/Warning	Install raised pavement markers and striping (through intersection)

Source: City of Chico – Local Road Safety Plan (2021)

*East 3rd Avenue & Mangrove Avenue
(intersection project)*



On East 3rd Avenue looking east toward Mangrove Avenue. Source: Google Earth



On East 3rd Avenue looking west toward Mangrove Avenue. Source: Google Earth

COLLISION DATA

This intersection is the site of a 2018 suspected serious injury involving a bicyclist.



FHWA RISK FACTORS

- ◆ Lack of lighting
- ◆ Number of signal heads vs. number of lanes
- ◆ Presence of backplates
- ◆ Pedestrian crosswalk presence, crossing distance, signal head type
- ◆ Pavement condition and friction
- ◆ Driveway presence, design, and density

Table 7: Potential HSIP Countermeasures at East 3rd Avenue & Mangrove Avenue Intersection

Type	Countermeasure
Lighting	Add intersection lighting
Signal Modification	Improve signal hardware: lenses, back plates with retroreflective borders, mounting, size, and number
Signal Modification	Improve signal timing (coordination, phases, red, yellow, or operation)
Signal Modification	Install Emergency Pre-emption systems
Signal Modification	Convert signal to mast-arm (from pedestal-mounted)
Operation/Warning	Install raised pavement markers and striping (through intersection)
Ped and Bike	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)

Source: City of Chico – Local Road Safety Plan (2021)

8th Street & Main Street (intersection project)



On East 8th Street., looking west toward Main Street. Source: Google Earth

COLLISION DATA

This intersection is within the Top 5 for number of bicycle and pedestrian involved collisions at or proximate to it in the last 10 years for which TIMS map-based data is available (2010-2020). This intersection is the site of a 2019 suspected serious injury involving a bicyclist.



FHWA RISK FACTORS

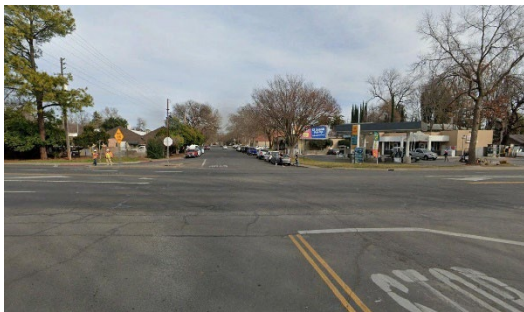
- ◆ Lack of lighting
- ◆ Pedestrian crosswalk presence, crossing distance, signal head type
- ◆ Number of signal heads vs. number of lanes
- ◆ Pavement condition and friction

Table 8: Potential HSIP Countermeasures at East 8th Street & Main Street Intersection

Type	Countermeasure
Lighting	Add intersection lighting
Signal Modification	Improve signal timing (coordination, phases, red, yellow, or operation)
Signal Modification	Install Emergency Pre-emption systems
Ped and Bike	Install pedestrian countdown signal heads
Ped and Bike	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)

Source: City of Chico – Local Road Safety Plan (2021)

Nord Avenue: West 1st Street to West Lindo Avenue



On West 1st. Street, looking east toward Nord Avenue. Source: Google Earth



On West Lindo Avenue, looking east toward Nord Avenue. Source: Google Earth

COLLISION DATA

The Nord & W. 1st Street intersection is within the Top 10 for number of bicycle and pedestrian involved collisions at or proximate to it in the last 10 years for which TIMS map-based data is available (2010-2020). This intersection is the site of three suspected serious injuries, two involving pedestrians and one involving a bicyclist. West of the 1st Street intersection, there are an additional seven suspected serious injuries and two fatalities along this corridor involving bicyclists and pedestrians.

FHWA RISK FACTORS

- ◆ Pavement condition and friction
- ◆ Roadside or edge hazard rating (potentially including side slope design)
- ◆ Driveway presence, design, and density
- ◆ Presence of shoulder/centerline rumble strips

Table 9: Potential HSIP Countermeasures at Nord Avenue: West 1st Street to West Lindo Avenue

Type	Countermeasure
Lighting	Add segment lighting
Remove / Shield Obstacles	Remove or relocate fixed objects outside of Clear Recovery Zone
Operation / Warning	Install dynamic/variable speed warning signs
Operation / Warning	Install delineators, reflectors, and/or object markers



Operation / Warning	Install edge-lines and centerlines
Ped and Bike	Install bike lanes
Ped and Bike	Install sidewalk / pathway (to avoid walking along roadway)

Source: City of Chico – Local Road Safety Plan (2021)

20th Street: Franklin Street to Huntington Drive



On Franklin Street, looking northwest toward 20th Street. Source: Google Earth



On Huntington Drive looking north toward 20th Street. Source: Google Earth

COLLISION DATA

The 20th Street & Forest Avenue intersection within this segment is the site of one suspected serious injury involving a pedestrian.

FHWA RISK FACTORS

- ◆ Horizontal curve density
- ◆ Roadside or edge hazard rating (potentially including side slope design)
- ◆ Driveway presence, design, and density

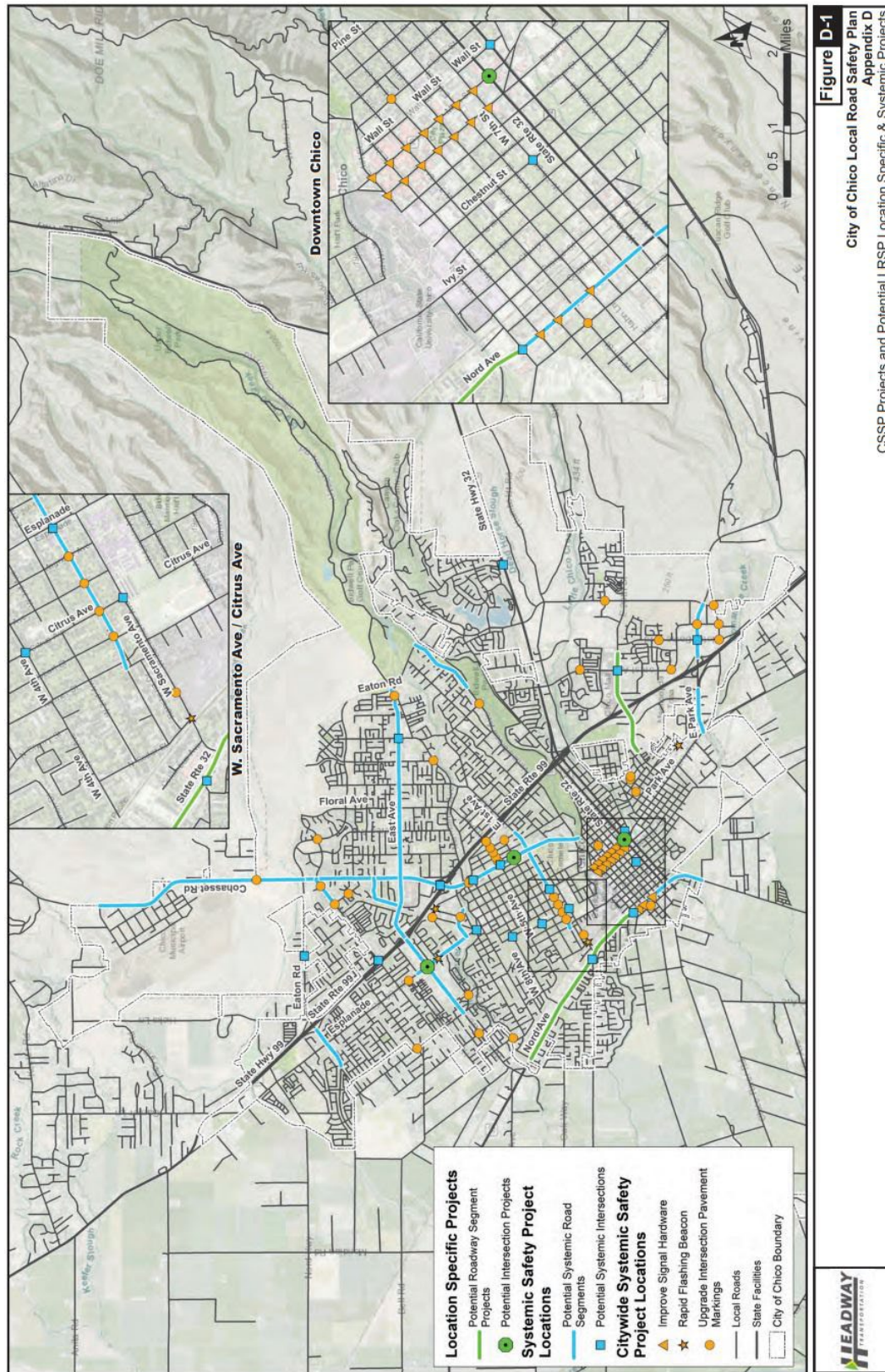
Table 10: Potential HSIP Countermeasures at 20th Street: Franklin Street to Huntington Drive

Type	Countermeasure
Remove / Shield Obstacles	Remove or relocate fixed objects outside of Clear Recovery Zone
Operation / Warning	Install chevron signs on horizontal curves
Operation / Warning	Install curve advance warning signs
Operation / Warning	Install delineators, reflectors, and/or object markers
Operation / Warning	Install edge-lines and centerlines

Source: City of Chico – Local Road Safety Plan (2021)



Figure 20: CSSP Projects and Potential LRSP Location Specific & Systemic Projects



Programs

Programs support walking and bicycling in a community by sharing information, promoting safety, and fostering a vibrant active transportation culture.

Communities with high rates of walking and bicycling often use a “Five E’s” approach, with education, encouragement, evaluation, and equity complementing **engineering** improvements.

- ◆ **Education** programs share information about safety, benefits of active transportation, and resources or facilities available in the community. They should address people bicycling, walking, and driving.
- ◆ **Encouragement** programs promote bicycling and walking as fun, convenient, and enjoyable modes of transportation and recreation.
- ◆ **Evaluation** programs monitor success through counts, surveys, and data review to inform adjustments or modifications to programs, policies, and the built environment.
- ◆ **Equity** is a lens through which all programs and infrastructure projects should be viewed to ensure disadvantaged members of the community have access to and benefit from the City’s investments in active transportation.

The City and its partners have been carrying out the following programs in recent years to support bicycling and walking.

May is Bike Month

A May is Bike Month campaign runs annually and include popular events such as Bike Movie Night, the Chico Bike Music Festival, night-light rides, and the vintage “Seersucker Ride.”



Poster for the 2022 Chico Bicycle Music Festival

National Bike Challenge

Running from May 1 through September 30, the National Bike Challenge offers a fun way for bicyclists to log their mileage and compete against their family and friends. The Strava integration makes tracking easier. The local non-profit Chico Velo sponsors both the Butte and Glenn County Local Challenges.

Adopt-A-Path

The Adopt-A-Path program is administered by Chico Velo in partnership with the City of Chico. There are eight key bikeways that have been adopted by local businesses and other organizations. Adopters perform regular clean-ups along adopted bikeways and report needed repairs to help provide safe and convenient active transportation facilities.



Adopt-A-Path sign





Bicycle safety class taught at school.

Safe Routes to School

Safe Routes to School (SRTS) programs offer education and encouragement activities intended to increase the number of children who walk or bicycle to school and reduce traffic congestion in school areas.

Butte County Public Health (BCPH) works with schools across the county to help students build important skills for safe commuting. BCPH operates the SRTS program within Chico, providing bicycle education and encouragement to area youth. BCPH also works with the California Highway Patrol (CHP) to distribute helmets and provide bicycle and pedestrian safety education at school and community events.

Butte County Public Health's SRTS program includes several activities:

- ◆ **Walk to School Day** is celebrated each October and Bike to School Day is celebrated each May. Both activities provide incentives and encourage students to walk to school. Students who participate receive free goodies and are eligible for larger raffle prizes.
- ◆ **Bike Rodeos** sponsored by BCPH offer hands-on training, assisting students with navigating a technical course. With the help of safety educators, students learn how to properly wear a helmet, navigate obstacles, use hand signals, and be predictable bicyclists.
- ◆ **In Class Lessons** include lessons on both safe walking and cycling to school. Health educators share lessons in dynamic formats, including games, experiments, and videos. Teachers are given pedestrian and bicycle resource manuals with further lesson plans to extend learning opportunities.

Community Education & Encouragement

A number of local entities contribute to educational and encouragement campaigns targeting Chico residents and employees, such as BCPH, large employers (including the City of Chico), Ability First Sports, and Chico Velo.

- ◆ **Community Classes** led and sponsored by BCPH and Chico Velo feature both youth and adult bicycle safety lessons, including the League of American Bicyclists Traffic Skills curriculum, bike maintenance trainings at area bike shops, advanced bike skills clinics led by local racing teams, bicycle transportation planning design classes tailored to engineers and planners, and bicycle safe driver courses.
- ◆ **Adaptive Bicycling Education** and equipment is offered by Chico-based Ability First Sports, a group committed to supplying adaptive equipment and instruction to ensure access for all. Ability First Sports also organizes free events, utilizing decades of knowledge and expertise in adapted sports coaching to educate and encourage an active lifestyle for individuals with physical disabilities.
- ◆ **Bike Safety Campaigns** are featured in local media outlets, sponsored by BCPH and Chico Velo and provide safety tips and other relevant information.
- ◆ **Bicycle Commute Incentives** are sponsored by large employers, including the City of Chico, and provide vouchers to employees who choose to ride to work. Vouchers can be redeemed at area bike shops.

