APPENDIX A:
EXISTING CONDITIONS REPORT

Madera County Transportation Commission

Active Transportation Plan Baseline Report

March 2017

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Madera County
2017 Active Transportation Plan
Baseline Report

Prepared for:
Madera County Transportation Commission

March 2017

WC16-3355

FEHR PEERS

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EXECUTIVE SUMMARY

The Active Transportation Plan (ATP) is a county-wide effort to identify needs, resources, and strategies to improve and increase walking, bicycling, and transit use in Madera County. Prepared for the Madera County Transportation Commission (MCTC), this publication will provide a regional roadmap to develop pedestrian and bicycle infrastructure. The Plan envisions a future transportation system that accommodates growth, enhances circulation, and provides mobility and accessibility for users of all transportation modes. Encouraging and building infrastructure for safe access to active transportation modes also has the benefit of fostering health and fitness in the burgeoning population.

Public engagement and stakeholder outreach will continue throughout the year to assist in developing the final Plan. The final Plan will document additional findings from the outreach and provide action plan and project lists to support the vision for the future of walking and biking in the Madera Region.

This existing conditions report is organized in chapters, including:

Chapter One: Background
Chapter One provides an introduction to the region and the context of the Active Transportation Plan. It describes the county's land use development, demographics, and economy.

Chapter Two: Relevant Plans
Chapter Two presents previous regional and local transportation plans that provide guidance on regulatory framework in the Madera Region. This includes an assessment of Madera County plans and plans from adjacent communities.

Chapter Three: Bicycle Environment
Chapter Three discusses the infrastructure and practices currently employed in the region and provides an analysis of bicycle collisions in the county.

Chapter Four: Pedestrian Environment
Chapter Four details the existing pedestrian environment for the incorporated cities of Madera and Chowchilla as well as the unincorporated Valley and Foothill communities.

Chapter Five: Safe Routes to School
Chapter Five describes Safe Routes to School programs with an emphasis on strategies for rural communities that can be applied in the Madera Region.

1.0 BACKGROUND

The Madera County Transportation Commission (MCTC) is the Regional Transportation Planning Agency (RTPA) and the designated Metropolitan Planning Organization (MPO) for Madera County. The Commission is responsible for the development and adoption of the Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) as required by the State of California Senate Bill (SB) 375. As an MPO, the Commission distributes local, State, and Federal transportation funds and acts as a forum to foster inter-governmental collaboration on regional issues.

In accordance with the 2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), this Plan advances and complements the region's planning goals to protect the environment and health of county residents by working to improve air quality and encouraging active transportation.

1.1 PURPOSE

The Active Transportation Plan is an important step to increase walking and biking activities for all ages and abilities in the Madera region. The Plan also intends to establish eligibility for future grant opportunities and funding for infrastructure improvements. In the following sections, this Report will provide an overview of existing conditions related to the bicycle and pedestrian modes in the region and highlight current and future needs that will be considered in the next phase of the Plan.

1.2 ABOUT MADERA COUNTY

Madera County is located in the geographic center of California, in the heart of the Central Valley and the Central Sierras as shown in **Figure 1**. Encompassing 2,137 square miles, it is one of the fastest growing counties in California. The county is situated along State Route (SR) 99, approximately 18 miles north of Fresno. The San Joaquin River forms the south and west boundaries with Fresno County. To the north, the Fresno River forms a portion of the boundary with Merced County. Mariposa County forms the remainder of the northern boundary. The crest of the Sierra Nevada Mountains forms the eastern boundary with Mono County. Generally, the county can be divided into three broad geographic regions—the Valley area on the west; the Foothills area between Madera Canal and the 3,500-foot elevation contour; and the Mountains area from the 3,500-foot contour to the crest of the Sierra Nevada Mountains.

The Valley area is generally flat and ranges in elevation from 45 to 1,000 feet. This area contains approximately two-thirds of the county's population and includes the incorporated cities of Chowchilla and

Madera, as well as unincorporated communities of Fairmead, Bonadelle Ranchos, and Madera Ranchos. **Figure 2** highlights the incorporated cities of Madera and Chowchilla in relation to Madera County as a whole. The Foothills area contains the remaining one-third of the county population residing in the unincorporated communities of Oakhurst, Ahwahnee, North Fork, Coarsegold, Raymond, and Yosemite Lakes. The county also contains part of the Sierra and Inyo National Forests and Yosemite National Park.

The American Community Survey (2011-2015) estimates that Madera County has a population of 153,187, with 78% residing in the incorporated cities of Madera and Chowchilla and 22% residing in unincorporated communities. **Table 1** provides an overview of population change from 2010 to 2015.

TABLE 1: MCTC REGION POPULATION AND LAND AREA

City/County	2010 Census Population	ACS 2015 Population	Percent Change	Land Area (sq. miles)
City of Madera	92,437	96,610	4.5%	223
City of Chowchilla	23,371	23,476	0.4%	156
Unincorporated	35,057	33,101	-5.6%	1,758
Madera County (total)	**150,865**	**153,187**	**1.5%**	**2,137**

County in the San Joaquin Valley

Figure 1

San Joaquin Valley Counties

CITY OF MADERA

AVE 17
AVIATION DR
AVE 16
W CLEVELAND AVE
RIVERVIEW DR
N WESTBERRY BLVD
N SCHNOOR ST
SUNSET AVE
W 4TH ST
S OST
S LST
HOWARD RD
GRANADA DR
ALMOND AVE
W PECAN AVE
STADIUM RD
MADERA AVE
COUNTRY CLUB DR
N LAKE ST
SHERWOOD WAY
E CLEVELAND AVE
E LINCOLN AVE
CENTRAL AVE
E YOSEMITE AVE
SUNRISE AVE
OLIVE AVE
CALIFORNIA 99
CALIFORNIA 145

CITY OF CHOWCHILLA

AVE 26
HOWELL RD
VENTURA AVE
RIVERSIDE AVE
S 5TH ST
S 11TH ST
CHOWCHILLA BVD
WASHINGTON RD
RD 16
RD 15 1/2
AVE 24
RD 17 1/2
CALIFORNIA 99
CALIFORNIA 233
CALIFORNIA 152

CITY OF CHOWCHILLA
CITY OF MADERA

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Figure 2
Cities of Madera County

1.3 ECONOMY

In 2015, Madera County's agricultural employment comprised 23.4% of jobs, while nonagricultural employment comprised a total of 76.6% (EDD) of jobs. Madera County's current unemployment rate of 10.5% has been steadily decreasing since it peaked at 16.6% during the Great Recession. The U.S. Census American Community Survey (2011-2015) estimates the median household income in Madera County is $45,072. **Table 2** compares the median household incomes in the incorporated cities with the unincorporated areas of Madera County.

TABLE 2: MEDIAN HOUSEHOLD INCOME

City/County	Median Household Income (2015 Dollars)
City of Madera	$45,799
City of Chowchilla	$36,148
Unincorporated	$48,955
Madera County	**$45,072**

Sources: ACS 2011 – 2015 (5-year estimates)

With the addition of new industries and the expansion of several local companies, manufacturing has been one of the fastest growing sectors in Madera County. Manufacturing comprised 11% of industry employment in 2015, growing 16% since 2009. The county has over 100 manufacturing and processing plants. Major production areas are wine, dairy products, glass bottles, cardboard boxes, fiberglass insulation, food processing equipment, air cooling units, and plastic.

Government jobs account for 20% of the county's workforce. A contributing factor to this high percentage is employment at two State prisons in the region: Central California Women's Facility and Valley State Prison located in rural Chowchilla. Together, the prisons employ a total of 2,300 employees (according to the Madera County Economic Development Commission). The employment of Chukchansi Gold Resort & Casino is also included in government statistics due to its sovereign nation status. The Casino employs an estimated 1,200 employees.

1.4 LAND USE

MCTC's 2014 RTP/SCS identified a transportation system supported by a land use pattern that reduces vehicle trips, vehicle miles traveled (VMT), and greenhouse gas emissions. A mix and diversity of land uses

coupled with the density of development are all characteristics that help to support bicycle and pedestrian transportation and commuting. Other trip types such as running errands, dropping kids off at school, or visiting family could all be accomplished by walking or biking with adequate, safe infrastructure. Without supportive land uses, bicycle and pedestrian travel become less viable alternatives to driving. For them to be attractive alternatives amenities such as sidewalks, marked crosswalks, and bicycle lanes/paths need to connect origins and destinations important to potential users.

Land use patterns in Madera County have been closely related to the natural characteristics of the region's main geographic areas. Each of the three major geographical regions (Valley, Foothills, and Mountains) has provided a context for the development of its own set of industries and land use patterns. Since the industries associated with each area are typically resource-based, they are highly dependent upon the preservation of local land use conditions. For example, the cultivation of vineyards and orchards—a major industry in Madera County—is dependent on the deep rich soils of the valley to thrive.

Since agriculture has been a part of the county's fabric since its beginning, Madera County concentrates on preserving rural uses and protecting agricultural lands. Due to its level topography, prime cultivable soils, and excellent drainage, the western Valley area is predominantly agricultural with heavy intensive agriculture activity (cultivation of crops, nursery stock, and apiary products). The Foothill region is used for grazing and increasingly urban land uses. Extensive agriculture (irrigated pasture, grazing, and animal husbandry) is a major land use in the county. Urban uses in the Foothills are concentrated in and adjacent to the unincorporated communities of Raymond, Oakhurst, Coarsegold, and Yosemite Lakes. Land use in the Mountains area reflects the area's abundance of natural resources such as forests, water, and wildlife.

The cities of Madera and Chowchilla are also home to the county's largest manufacturing firms. Other main industries include food processing, logistics, and agri-business. Although no major urban settlements are located in the Mountains, the smaller communities of North Fork and Bass Lake are located there with economic bases linked to timber production and tourism, respectively. Other small communities in Eastern Madera County such as Oakhurst, Coarsegold, and others, are situated in the Sierra foothills and also focus on tourism-related activities—a major component of the economy.

Each city has an adopted General Plan to guide development within the city limits and within the city's larger planning area.

1.5 ACTIVE TRANSPORTATION IN MADERA COMMUNITIES

With the Madera region's varying topography between the lower lying Valley communities and the smaller, sometimes more isolated Foothill communities, each area provides for walking and biking differently. The

descriptions below provide an initial look at how each community has incorporated pedestrian and/or bicycle infrastructure into the fabric of their community based on the different land uses, topography, development patterns, and history of growth in each area.

1.5.1 CITY OF MADERA

The City of Madera has a compact, grid street system with low-density residential surrounding a commercial and office urban core. SR 145 bisects the city's downtown and follows sections of the arterial street system between the south city limits (along Madera Avenue), via Gateway Drive and Yosemite Avenue to the east city limits. Walking has always been a part of the transportation system in Madera. Automobiles were not widely available when the city was founded, and for many years, the city remained compact enough for people to walk easily from one edge of the city to the other. Madera's downtown grid of roadways reflects these early days—its short blocks are easy to walk.

Traditional residential neighborhoods built around the time of World War II surround the commercial and industrial heart of downtown. These neighborhoods are generally built on a grid pattern with narrow, tree lined streets. Contemporary residential subdivisions have been designed and priced for moderate income-level households throughout the city. These have typically incorporated the use of cul-de-sac streets, decreasing the connectivity between uses while providing traffic calmed residential streets. Sidewalks are not present in some older neighborhood residential areas but are included along major collector or arterial roadways. Newer neighborhoods generally have sidewalks within the neighborhoods.

A limited number of dedicated bicycle facilities are present within the City of Madera. On-street bicycle lanes are striped along Cleveland Avenue, Sunset Avenue, and southbound Lake Street. While many streets may have lower volumes and be comfortable for cyclists, they are not consistently striped or signed to indicate such streets as the preferred bicycle routes. Many of the existing bicycle facilities are located in the northern part of the city while the southern part has limited connectivity.

The Vern McCullough Fresno River Trail is a recognized feature of the city and provides recreation, access and mobility opportunities for pedestrians, runners, and bicyclists. It runs along the dry river in Madera and is approximately 3.5 miles long. The trail is divided in two by active railroad tracks and Gateway Drive, but the city is working on constructing a new undercrossing to bridge the gap.

1.5.2 CITY OF CHOWCHILLA

The City of Chowchilla, the northern gateway to Madera County, is located along SR 99 and the Union Pacific railroad corridor, north of SR 152 and south of the Merced—Madera County Line. SR 233 (West

Robertson Boulevard) traverses the city in a northeast/southwest diagonal direction. Chowchilla is approximately 15 miles northwest of the City of Madera.

Similar to the City of Madera's land uses, Chowchilla also has lower density residential uses surrounding a central commercial corridor, SR 233 (or West Robertson Boulevard). As the city's population increases, and as traffic increases into the Central Valley, the utility of SR 233 will need to be assessed as a viable long-term option for truck traffic since it acts as the main street in Chowchilla. As a major arterial street, SR 233 is a multi-modal facility for vehicles, bicycles, and pedestrians. While SR 233 and other larger streets in downtown Chowchilla have consistent sidewalks, residential neighborhoods can have gaps in sidewalk infrastructure along local streets.

The City of Chowchilla does not have any existing designated bikeway facilities within the downtown or surrounding neighborhood areas. A small portion of Avenue 26 to the east of SR-99 has on-street bicycle lanes. While neighborhoods streets have relatively lower volumes and speeds, allowing for cyclists to feel comfortable, preferred routes are generally not signed or striped to indicate where cyclists should travel.

1.5.3 UNINCORPORATED VALLEY COMMUNITIES

The Valley area includes the unincorporated communities of Fairmead and Madera Ranchos-Bonadelle Ranchos, among others. A well-developed agricultural economic base is established in this area. The 2010 Census population for the unincorporated valley communities are: Madera Ranchos-Bonadelle Ranchos (8,569), Fairmead (1,447), Rolling Hills (742), and La Vina (279).

1.5.3.1 Madera Ranchos

The Madera Ranchos area is a low density, middle income community with approximately 8,000 residents. It is surrounded by agricultural uses and the community's main features are the Madera Ranchos Liberty High School, located in the northwest corner of Road 36 and Avenue 12. Sparse commercial and service uses lie along Avenue 12 including a small shopping center. Avenue 12 is a two-lane country road that lies in the southeastern area of Madera County. It connects SR 99 to the west and SR 41 to the east and bisects the community of Madera Ranchos.

In its present conditions, Avenue 12 has gaps in sidewalk connectivity which provide access to the main retail center. Due to its rural character, sidewalks are not present in residential neighborhoods. Dedicated bicycle facilities are limited to on-street bicycle lanes around the perimeter of Liberty High School in the southern part of community.

1.5.3.2 Fairmead

The Fairmead planning area is bisected by SR-99, which provides the main access to communities to the north and south of Fairmead. The existing street system of Fairmead consists of a combination of poorly maintained paved roads and unimproved (unpaved) roads. The Southern Pacific Railroad parallels the west side of SR 99 and creates a barrier between the highway and the community.

The roadway system was designed as a grid network conjoined with a diagonal system in the southern portion of the community. Fairmead also generally lacks sidewalk infrastructure throughout the community and incorporates limited, widely spaced automobile-oriented lighting. No designated bike routes exist within the Fairmead Area. However, low traffic volumes create an environment that is conducive to bicycling within the local area.

1.5.3.3 Rolling Hills

Rolling Hills is located in the area of SR 41 and Avenue 10 in Madera County, just north of the Fresno County Line. It is a mostly low-density residential community with commercial land uses adjacent to SR 41 (Yosemite Freeway). The residential neighborhoods feature cul-de-sacs, and the land use development is auto-centric. No sidewalks or marked crosswalks are present throughout most of the community with the exception of limited areas along Avenue 10.

Avenue 10 is often used by regional cyclists travelling through Rolling Hills heading to or from the greater Fresno area to the south. No internal designated bicycle facilities currently exist, but low volume neighborhood streets provide comfortable options for cyclists.

1.5.3.4 La Vina Community

The La Vina community is located in southwest Madera County and has areas along the main local collector street (Avenue 9) that are in need of infrastructure improvements. The subdivision located south of La Vina was installed with sidewalks, but pedestrian facilities do not exist north of the subdivision into the rest of the area. Sidewalks are present directly in front of the subdivision with no sidewalks or marked crosswalks in the remainder of the community. The La Vina community does not have dedicated on-street bicycle facilities.

1.5.4 UNINCORPORATED FOOTHILLS COMMUNITIES

Many of the Foothill communities located in the eastern portion of Madera County came about during the California Gold Rush. The unincorporated Foothill communities today serve as popular tourist destinations for lodging and outdoor recreation at nearby national parks. Many aging Baby Boomers seeking quiet and

scenic second-home locations have also been moving into these rural areas. The 2010 Census total population for each community is ranked accordingly: Yosemite Lakes (4,952), Oakhurst (2,829), Coarsegold (1,840), Raymond (1,035), and Bass Lake (527). Other communities include Ahwahnee and North Fork.

1.5.4.1 Yosemite Lakes

From 2002 through 2007, Yosemite Lakes Park experienced a housing boom and now has 1,862 homes, 16 businesses, and more than 5,000 residents. Land use in the area is mostly low-density rural residential. The children in the community comprise 90% of the students at Rivergold Elementary School in Coarsegold. The community does not have designated bicycle facilities and preferred routes are not signed or striped to indicate where cyclists should travel. Pedestrian facilities are also generally not available throughout the community.

1.5.4.2 Oakhurst

The Oakhurst community is approximately 58 square miles and is centered on the intersection of SRs 41 and 49, which function as the primary circulation routes in the area. Rural residential development extends primarily to the east and southeast of the intersection of SRs 41 and 49 in central Oakhurst. However, outlying development in the northern portion of the planning area is also prevalent, including the Yosemite Forks, Cedar Valley, and Sugar Pine communities.

Tourism and recreational resort development, generated by Yosemite National Park, Bass Lake, and Sierra National Forest attractions, have replaced lumber as the primary economic base. The impacts of tourism on the community are most significant during the summer months, when vehicle trips on SR 41 are the highest and visitor serving employment is at its peak.

Bicycle and pedestrian facilities are almost entirely absent in residential areas, although the Oakhurst (Fresno) River Parkway trail has been extended from the community park near SR 41 and Road 426 (Crane Valley Road West). Cyclists in the area primarily consist of long distance recreational riders who are used to sharing the road with vehicular traffic or use wide shoulders where available. The road features a few median turn lanes with raised medians to control existing left-turn movements. Sidewalks are present along SR 41 in the main commercial area but have gaps in places which prevents a continuous pedestrian experience on either side of the roadway. Recent efforts by Caltrans, Madera County, and the community of Oakhurst have been focused on installing sidewalks in these gaps along the commercial corridor of SR 41, where existing right-of-way is available.

1.5.4.3 Coarsegold

Coarsegold is located in the eastern part of Madera County, just south of Oakhurst bordering the Sierra National Forest. SR 41 provides the main access to the area with Raymond Road 415 providing secondary access. After World War II, the population of Eastern Madera grew rapidly due to recreational opportunities and the expansion of resort developments, as well as retirement and commuter residences.

Rural residential development of Coarsegold is concentrated in two areas: Yosemite Lakes Park and Indian Lakes Estate. The main business district of Coarsegold is located along a 1.5-mile stretch of SR 41 north and east of its intersection of Raymond Road. The community is both defined and constrained by the network of highways, roads, streets, waterways, and railways that move its residents and goods. The historical emphasis of transportation planning efforts in Coarsegold has been primarily auto-centric. Similar to Oakhurst, most local streets are dead-end drives, and bicycle and pedestrian facilities are absent. The steep terrain occurring in many parts of the region requires attempts to incorporate such facilities to be carefully planned and implemented.

1.5.4.4 Raymond

The Raymond Area is situated in north-central Madera County, located between Fresno River to the south and the border with Mariposa County to the north. Raymond is a rural community, and its economy is mainly comprised of cattle ranching and a long-standing quarrying industry. The majority of existing residential areas are designated as Rural Residential. Raymond has a very limited amount of commercially designated land, and many of the parcels are vacant and abut Road 600.

County Roads 600, 603, 800, and 415 are the main network of through streets. All county Roads operated at a Level of Service "A", meaning that traffic levels were at or below ten percent capacity. Most local streets are dead-end drives and are unpaved with no designated bicycle facilities present. Many neighborhoods have only one point of access and long dead end roads serving as collectors to shorter dead ends. Some roadways have wide shoulders for pedestrians to use and there are almost no pedestrian facilities constructed within area.

1.5.4.5 Bass Lake

The Bass Lake community is located just east of Oakhurst off SR 41. Most of the area surrounding Bass Lake is devoted to the tourism industry. Due to low vehicle traffic and paved trail routes, bicycling in and around the area is very popular for tourists and recreational riders. Road 222 (Shore Road) is a two lane road surrounded by government offices, hotels, and a few commercial buildings devoted to recreation with adjacent low-density residential development. Road 222 provides access to areas around the south side of Bass Lake while Road 274 (Malum Ridge Road) provides access to lakeside residences and resorts on the

north side of the lake. Sidewalks are provided in limited areas near resorts or in small clusters of commercial uses. Lighting for either automobiles or pedestrians is generally absent.

1.5.5 NATIONAL PARKS & RECREATION AREAS

Madera County also contains portions of national parks including Inyo National Forest, Sierra National Forest, and Yosemite National Park. In the Sierra National Forest, Fresno Dome towers over the forest of Soquel Meadow and is a popular destination for rock climbers. Thousand Island Lake in the far eastern portion of Madera County is a popular destination for hikers. Five miles northwest of Oakhurst lies the Wassama Round House State Historic Park. The Park and Round House are used by local Native Americans as a ceremonial meeting place; the park features special events, tours, and activities such as crafts and basket weaving.

1.6 DEMOGRAPHICS

In Madera County, the two major languages spoken at home are English (58.5% of households) and Spanish (37.7%). For all languages spoken at home, 9.4% of households have a limited English proficiency. Madera County has a significant Hispanic/Latino population, with 44.3% of the population Hispanic or Latino, 46.6% White (not Hispanic or Latino), 3.8% Black or African-American, 1.4% American Indian or Alaska Native, 1.2% Asian, 0.1% Native Hawaiian, 0.2% some other race, and 2.3% two or more races.

In terms of age, in 2015, 27.9% of the county population was under 18 years old, 59.6% between 18 to 65, and 12.5% over 65 years of age or older. While approximately 3.5% of the population in California does not have access to a motor vehicle, a higher number of residents at 6.6% of the population of Madera County do not own a car. Only 0.4% of the working population over 16 years old bikes to work. **Table 3** shows the means of commute in Madera County.

TABLE 3: MEANS OF COMMUTE IN MADERA COUNTY

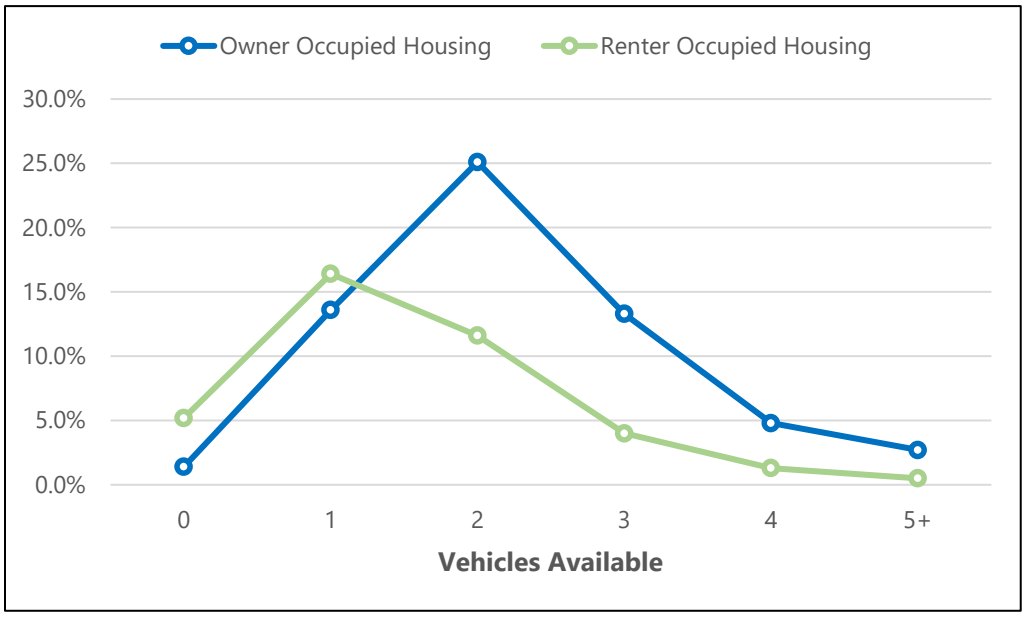
	Madera County	City of Madera	City of Chowchilla	Unincorporated Areas
Workers 16 Years and Over	**44,208**	18,525	2,916	22,767
Drove Alone	**77%**	72%	71%	82%
Carpooled	**13%**	17%	19%	9%
Public Transportation	**0%**	1%	1%	0%
Bicycle	**0%**	1%	1%	0%
Walked	**3%**	4%	3%	2%
Other Means	**2%**	2%	0%	1%
Worked at Home	**5%**	3%	5%	6%

Sources: ACS 2011 – 2015 (5-year estimates)

While 162 persons in Madera County chose bicycling as their primary means of commuting in the survey, this number does not include those under the age of 16 that may bike to school. Furthermore, it does not account for other travel such as recreation, tourism, or occasional trips.

Figure 3 in the next section illustrates the percentage of housing burdened low-income (making less than 80% of the HUD Area Median Family Income) households paying greater than 50% of their income to housing costs (five-year estimates, 2009-2013). Furthermore, as seen in **Table 4**, more renter-occupied households own zero vehicles and have an overall lower rate of vehicle ownership.

TABLE 4: NUMBER OF VEHICLES AVAILABLE BY HOUSEHOLD OWNERSHIP



Sources: ACS 2011 – 2015 (5-year estimates)

1.6.1 EQUITY CONSIDERATIONS

As outlined by the 2017 ATP Guidelines, active transportation plans should extend to and serve disadvantaged and underserved communities. Developed by the Office of Environmental Health Hazard Assessment (OEHHA), the California Communities Environmental Health Screening Tool (CalEnviroScreen) identifies communities burdened with environmental pollution and socioeconomic challenges. CalEnviroScreen utilizes two major components: 1) Pollution Burden (Exposure & Environmental Effects) and 2) Population Characteristics (Sensitive Populations and Socioeconomic Factors). **Table 5** summarizes the inputs which are included in the CalEnviroScreen data.

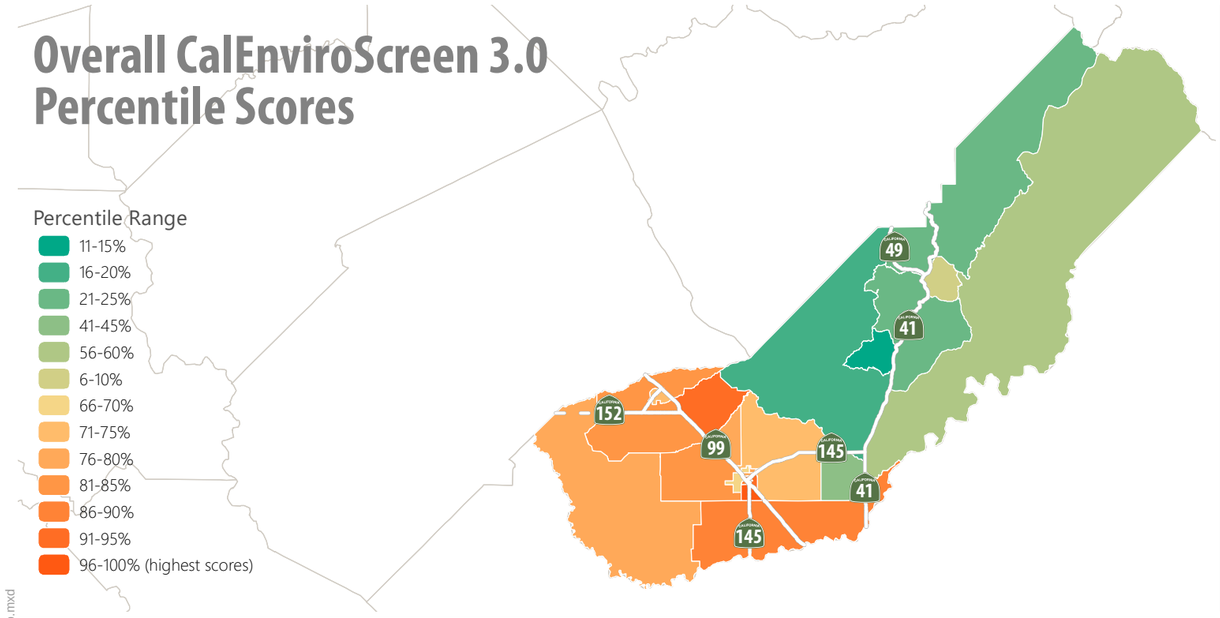
TABLE 5: CALENVIROSCREEN INDICATORS

POLLUTION BURDEN	POPULATION CHARACTERISTICS
EXPOSURE • Ozone concentrations in air • PM 2.5 concentrations in air • Diesel particulate matter emissions • Drinking water contaminants • Use of certain high-hazard, high-volatility pesticides • Toxic releases from facilities • Traffic density	SENSITIVE POPULATIONS • Asthma emergency department visits • Cardiovascular disease (emergency department visits for heart attacks) • Low birth-weight infants
ENVIRONMENTAL EFFECTS • Toxic cleanup sites • Groundwater threats from leaking underground storage sites and cleanups • Hazardous waste facilities and generators • Impaired water bodies • Solid waste sites and facilities	SOCIOECONOMIC FACTORS • Educational attainment • Housing burdened low income households • Linguistic isolation • Poverty • Unemployment

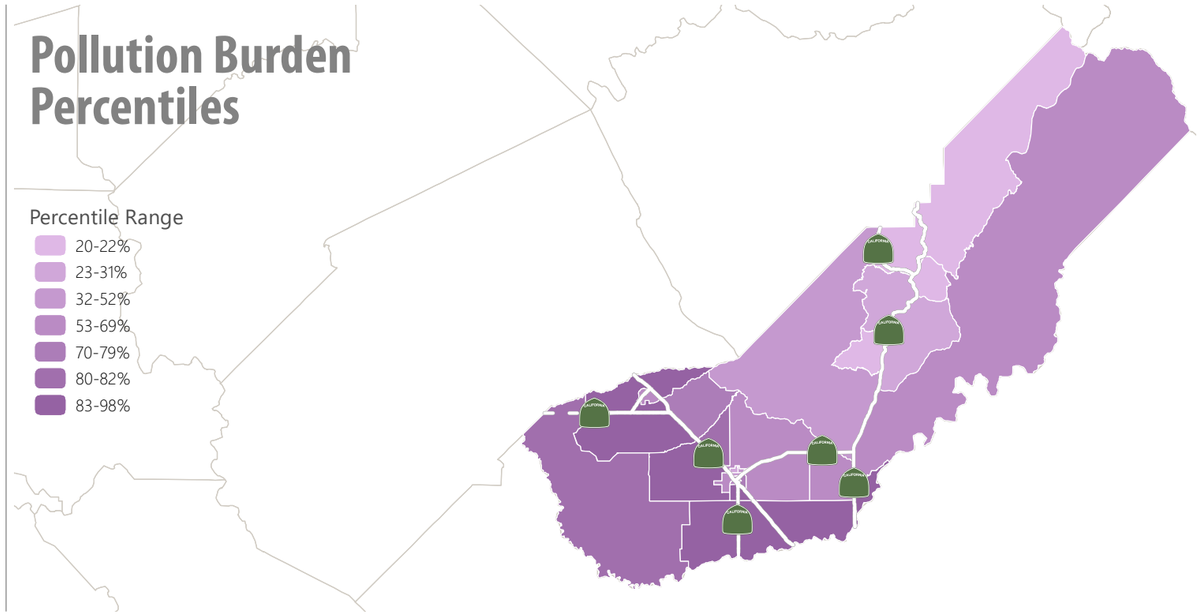
The Exposure indicators measure pollution sources, emissions and discharges, and environmental concentrations, while the Environmental Effects measure areas with environmental degradation such as facilities considered undesirable or even unsafe. The Population Characteristics indicators identify which populations are most vulnerable to pollutants. Thus, the overall CalEnviroScreen score identifies disadvantaged communities based on geographic, socioeconomic, public health, and environmental hazard criteria. The following maps in **Figure 3** reveal the percentile rank for each census tract within California; tracts above the 75th percentile are considered disadvantaged relative to the rest of the State. As is evidenced in Figure 3, the CalEnviroScreen data identifies much of the Valley area within the Madera region as the most disadvantaged.

Approximately 50.7% of the population of Madera County live below 200% of the Federal poverty level. Finally, many residents who are either too old to drive or have another disability will be mobility limited. 13.1% of Madera County have disabilities, while 3.7% of the civilian population are veterans 65 and over. Compared to the rest of the State of California, the population of Madera County has 17% more obese residents and is 14% less active. However, residents of Madera County also have 16% less access to exercise opportunities than the average California resident. **Figure 4** provides of snapshot of health and active transportation metrics for Madera County including mode split and collision summaries for bicyclists and pedestrians.

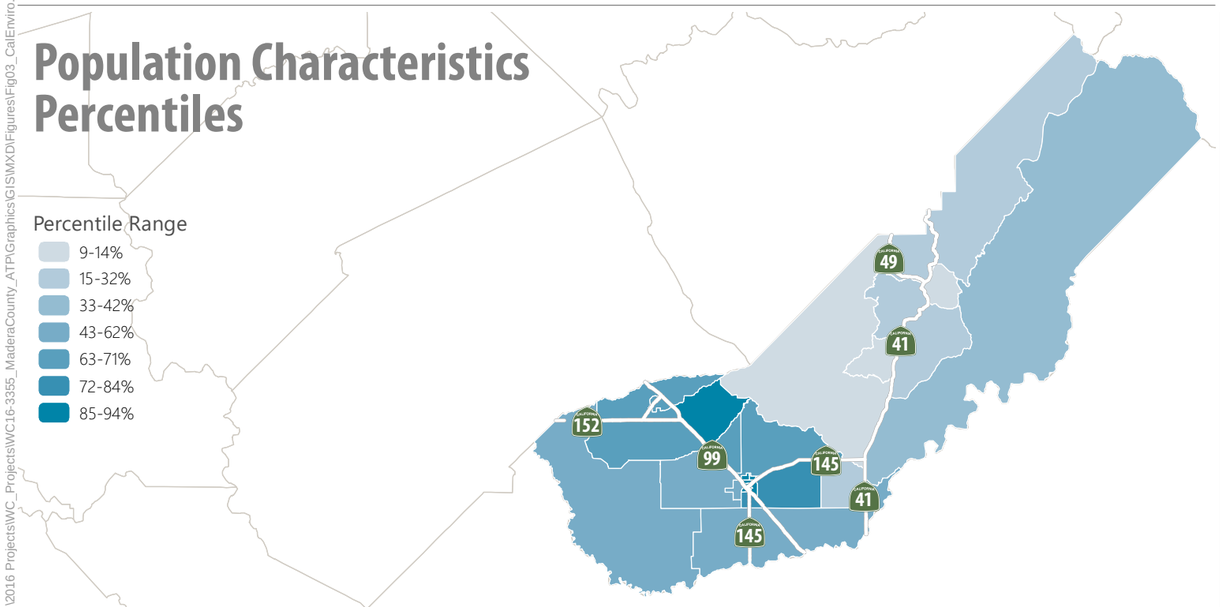
Overall CalEnviroScreen 3.0 Percentile Scores



Pollution Burden Percentiles



Population Characteristics Percentiles



Housing Burden Percentiles

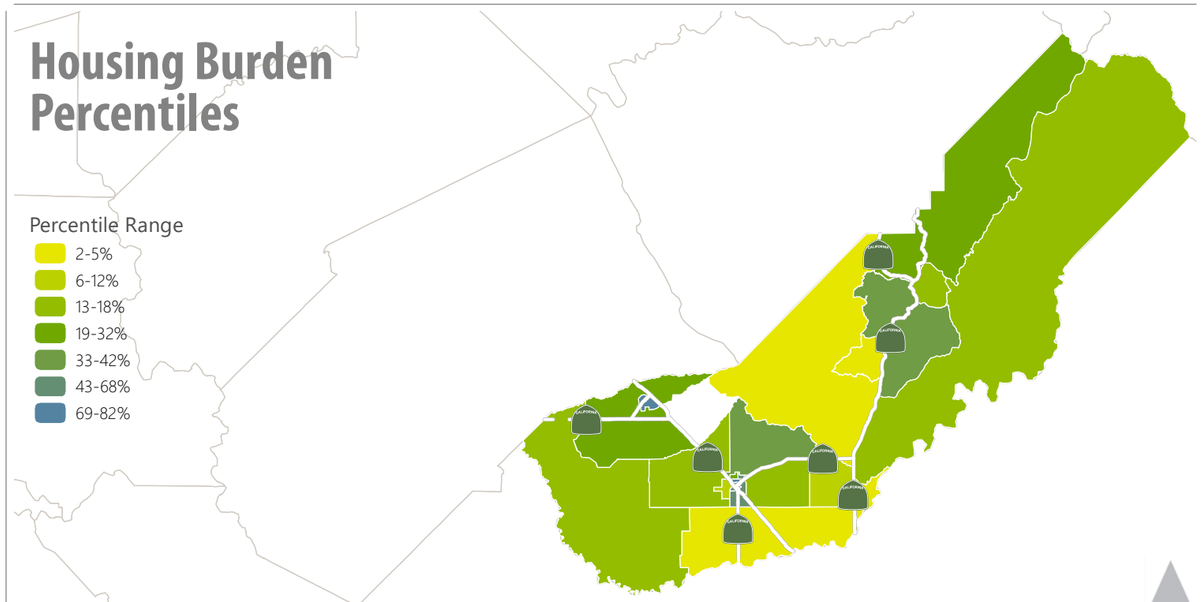


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Figure 3

CalEnviroScreen 3.0 Results for Madera County

Madera County **Health & Active Transportation** Snapshot

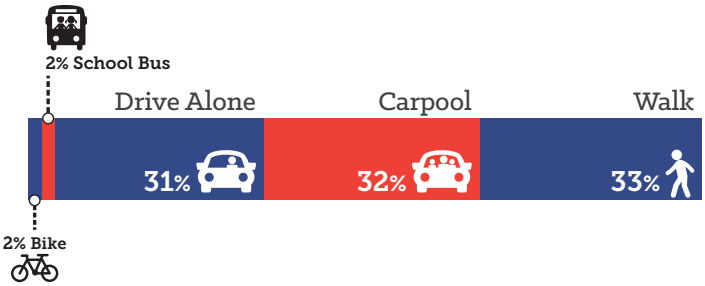
Health (Madera **vs.** California)

Obesity
+17%

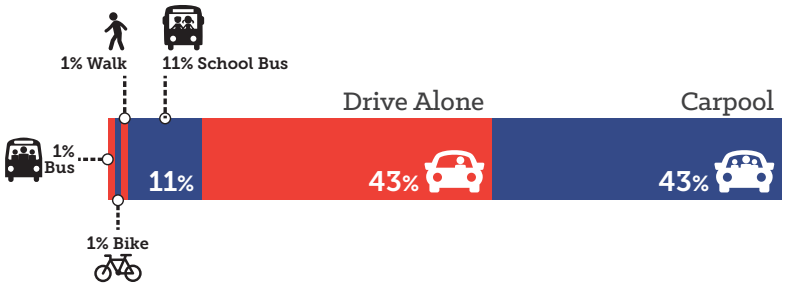
Physical Inactivity
+5%

Access to Exercise Opportunities
−16%

Mode Split



Trips **One** Mile or Less



Trips **Three** Miles or Less

Collisions

Top 3 Causes of All Bicycle Collisions

- 28% — Wrong Way Cycling
- 24% — Vehicle Lane Conflicts
- 15% — Improper Turning

Top 3 Causes of All Pedestrian Collisions

- 39% — Pedestrian At-fault
- 23% — Conflict within Pedestrian Areas
- 12% — Improper Driving

Safety

When **pedestrian** volumes increase **↑ 10%**

individual **accident** risk declines **↓ 5%**

When **bicycle** volumes increase **↑ 5%**

individual **accident** risk declines **↓ 3%**

1.7 TRANSPORTATION & TRAVEL PATTERNS

The most recent California Household Travel Survey (CHTS) was conducted between February 2012 and January 2013. Over 40,000 households from all 58 California counties were surveyed. The survey includes traditional travel diaries which track each household member's movements over the course of a single day. Using this data set, travel patterns were identified by household income and household size. This information provides the opportunity to customize a Plan which targets the distinct needs of residents within the Madera Region.

Table 6 illustrates that 54% high-income residents in Madera County traveled over three miles a day, while 45% of low income residents traveled one mile or less. **Table 7** and **Table 8** further break down the distances traveled by mode under one mile and within one to three miles, respectively. **Table 9** summarizes how each mode supports varying trip purposes.

Within the right context, trips one mile or less have a higher percentage of residents biking and walking from home to work, home to other purposes, and non-home-based purposes (trips that do not start out at home). As the mileage traveled increases to between one and three miles, the percentage of commuters who drive alone to work increases from 63% to 94%. The percentage of those who carpool to work also increases as distance traveled increases. Providing safer and more accessible active transportation infrastructure can encourage more walking and biking trips for trips one mile or less for non-commute trips. Providing better citywide bicycle facilities within the incorporated jurisdictions may help to support an increase in biking trips between one and three miles for commute and non-commute trips.

TABLE 6: DISTANCE TRAVELED BY HOUSEHOLD INCOME

Distance Traveled	Low*	Med**	High***	Grand Total
1 mile or less	45%	38%	27%	37%
1 to 3 miles	28%	21%	19%	22%
Over 3 miles	27%	41%	54%	41%
Grand Total	**100%**	**100%**	**100%**	**100%**

* Low: Under $25,000 annual household income
** Medium: $25,000 - $75,000 annual household income
*** High: over $75,000 annual household income
Source: CA Household Travel Survey (CHTS)

TABLE 7: TRIPS 1 MILE OR LESS: MODE SHARE BY TRIP PURPOSE

Mode	Home-based Work	Home-based Other	Non-home-based	Grand Total
Drive Alone	63%	21%	43%	31%
Carpool	6%	31%	40%	32%
Bike	16%	1%	0%	2%
Walk	15%	44%	17%	33%
School Bus	0%	3%	0%	2%
Grand Total	**100%**	**100%**	**100%**	**100%**

Source: CA Household Travel Survey (CHTS)

TABLE 8: TRIPS 1 TO 3 MILES: MODE SHARE BY TRIP PURPOSE

Mode	Home-based Work	Home-based Other	Non-home-based	Grand Total
Drive Alone	94%	25%	48%	43%
Carpool	4%	53%	50%	43%
Bus	0%	2%	0%	1%
Bike	2%	1%	0%	1%
Walk	0%	2%	0%	1%
School Bus	0%	17%	2%	11%
Grand Total	**100%**	**100%**	**100%**	**100%**

Source: CA Household Travel Survey (CHTS)

TABLE 9: TRIPS OVER 3 MILES: MODE SHARE BY TRIP PURPOSE

Mode	Home-based Work	Home-based Other	Non-home-based	Grand Total
Drive Alone	80%	35%	56%	50%
Carpool	18%	57%	43%	45%
Bus	1%	0%	0%	0%
Bike	0%	1%	0%	1%
Walk	1%	0%	0%	0%
School Bus	0%	7%	1%	4%
Grand Total	**100%**	**100%**	**100%**	**100%**

Source: CA Household Travel Survey (CHTS)

Table 10 and **Table 11** investigate trips of one to three miles more closely by household income and household size. With 17% of medium-income residents riding school buses; households with five or more people having a lower percentage of driving alone (24%) and a higher percentage (19%) of residents taking a bus to school.

TABLE 10: TRIPS 1 TO 3 MILES: MODE SHARE BY HOUSEHOLD INCOME

Mode	Low*	Med**	High***	Grand Total
Drive Alone	41%	38%	59%	43%
Carpool	54%	41%	36%	43%
Bus	0%	2%	0%	1%
Bike	2%	0%	2%	1%
Walk	1%	2%	0%	1%
School Bus	2%	17%	3%	11%
Grand Total	**100%**	**100%**	**100%**	**100%**

* Low: Under $25,000 annual household income
** Medium: $25,000 - $75,000 annual household income
*** High: over $75,000 annual household income
Source: CA Household Travel Survey (CHTS)

TABLE 11: TRIPS 1 TO 3 MILES: MODE SHARE BY HOUSEHOLD SIZE

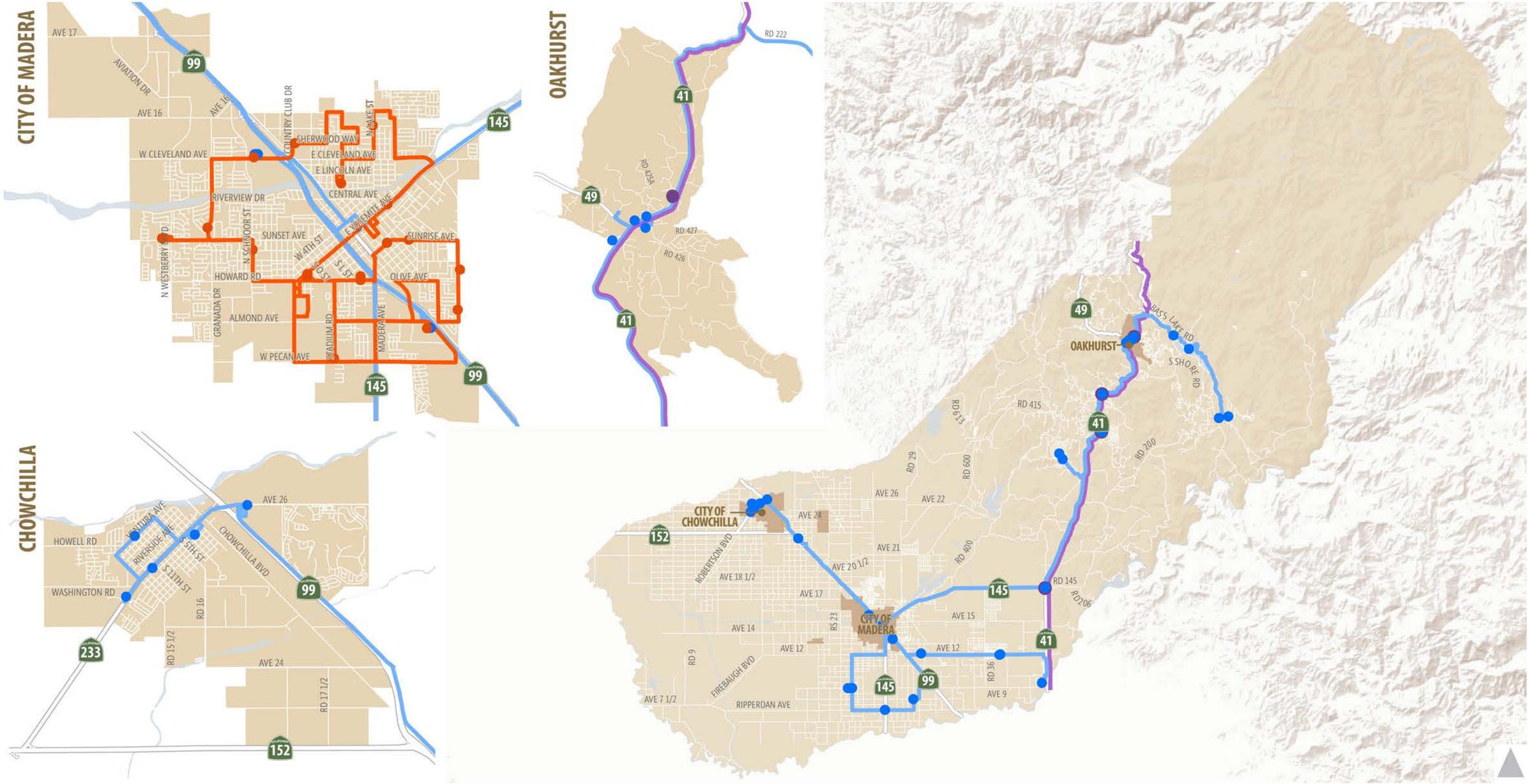
Mode	1 or 2	3 or 4	5 or more	Grand Total
Drive Alone	83%	45%	25%	43%
Carpool	17%	51%	51%	43%
Bus	0%	0%	2%	1%
Bike	0%	2%	1%	1%
Walk	0%	0%	2%	1%
School Bus	0%	2%	19%	11%
Grand Total	**100%**	**100%**	**100%**	**100%**

Source: CA Household Travel Survey (CHTS)

1.8 TRANSIT

Madera County is served by four primary transit services. The Madera County Connection provides regional fixed-route mass transit service to many of the Madera Region's communities and has a fare of $2.00. The Madera Area Express (MAX) provides local fixed-route services for the City of Madera and includes a fare of $0.75. The Chowchilla Area Transit Express (CATX) provides on-demand dial-a-ride service within Chowchilla and to Fairmead for a fare of $1.50-$2.00. The Yosemite Area Regional Transportation System (YARTS) provides a connection between the Yosemite Valley Visitors Center and Fresno with stops in Oakhurst, Coarsegold, and Park & Ride lot accessible from the City of Madera for a fare of about $8.00.

Major transit stops are key destinations for pedestrians and bicyclists. **Figure 5** depicts existing transit stops and fixed-route transit services that serve the Madera Region.



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Stops

Routes

- Yosemite Area Regional Transportation System
- Madera Area Express
- Madera County Connection

Figure 5

Existing Transit Facilities

2.0 RELEVANT PLANS

The regulatory framework in Madera County is driven by a regional blueprint to accommodate growth and plan for enhancements to the transportation system. Each local agency is also responsible for creating their own plans to guide future development and improvements to the transportation system that feed into the regional planning process. This section reviews relevant regional and local plans that guide or influence land use and the active transportation system in the Madera Region.

2.1 MCTC 2014 REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY ENVIRONMENTAL IMPACT REPORT (PEIR)

Like all MPOs, MCTC is required to develop a Regional Transportation Plan (RTP). The RTP is a long-range transportation plan providing a vision for regional transportation investments over at least a 20-year period. Using growth forecasts and socioeconomic trends (detailed in Chapter 3 "Madera County – Past, Present, & Future"), the Plan considers the role of transportation including economic factors, quality of life issues, and environmental factors. The RTP provides an opportunity to identify transportation strategies today that address our mobility needs for the future. The RTP is updated every four (4) years to reflect changes in economic trends, State and Federal project and funding requirements, progress made toward project implementation, and current socioeconomic trends. Transportation projects must be included in the RTP to qualify for Federal and State funding. The next RTP Update is due in 2018.

The RTP deals with all modes, and must also identify reasonably available funding sources for recommended capital and operational improvements. Beginning with the 2014 RTP, RTPs in California must also be coordinated with affordable housing needs analysis and land use strategies to reduce greenhouse gas emissions. This summary focuses on the Non-Motorized components of the 2014 RTP, i.e., those dealing with the planning, funding and implementation of bicycle and pedestrian facilities.

2.1.1 NON-MOTORIZED SYSTEMS

The RTP emphasized improving bicycle and pedestrian access to intermodal facilities (rail stations and transit centers). Using non-motorized forms of transportation reduces the number of engine cold starts and short vehicle trips, which contribute significantly to air pollution. The provision of new or improved access to such facilities could be made by bicycle or pedestrian modes and replace short automobile trips. To increase the bicycle mode share, significant publicity and marketing efforts are necessary, as well as a

new approach by transportation agencies to planning facilities for both bicyclists and pedestrians. This approach increases attention to these modes and focuses on intermodal connections.

The 2014 RTP lists several "Non-Motorized System Accomplishments":

City of Madera

- Fresno River Trail Schnoor Undercrossing, south bank
- Fresno River Trail, Westberry to Road 24

County of Madera

- Cesar Chavez Pedestrian Path
- Desmond/Nishimoto Path and Sidewalk
- Road 426 Sidewalk

2.1.2 RTP BICYCLE AND TRAIL IMPROVEMENTS

To enable the vision of non-motorized linkages to activity centers within the region, the local agencies have requested approximately $36.2 million for non-motorized projects in the 2014 RTP and SCS, representing a 70% increase in funding for non-motorized improvement projects from the 2011. The RTP dictates that regional decision makers should continue to promote the integration of non-motorized modes into the transportation planning process; the County should continue to implement the County Bikeway Plan; agencies should work together to continue implementation of the Fresno River Trail; and all responsible agencies should take steps to move beyond conceptual planning and development to implementation of plans and strategies.

The following actions were recommended to facilitate the achievement of these goals:

- Determine the status of existing non-motorized system to achieve the desired vision, goals, objectives and update and implement the existing Bikeway Plans as appropriate
- Implement recreational trails within the mountain communities that connect major activity centers and provide alternatives to driving between the communities
- As part of the Bikeway Plan Update process, identify and develop strategies to address institutional, transportation, funding, infrastructure and other barriers to the effective use of non-motorized transportation for commute purposes
- Identify strategies to link non-motorized transportation funding programs to standards for transit programs

- Fund the development and implementation of bicycle safety and education programs aimed at cyclists of all ages, potential bike commuters and motorists
- Sponsor legislation and or ordinances to increase enforcement of bicycling and driving laws to provide a safer climate for bicycle use
- Develop and implement bicycle incentive programs that recognize and reward employees for bicycle use like those that reward transit use
- Assist local governments in the implementation of non-motorized facilities consistent with the *Madera County 2004 Bicycle Transportation Plan*
- Encourage the use of non-motorized facilities as a transportation control measure
- Continue to allocate funds for non-motorized projects promoting both bicycle and pedestrian facilities
- Encourage local jurisdictions to consider adopting land use policies that promote non-motorized transportation and reduce dependence on the automobile for work, shopping, social and recreational purposes consistent with the *Madera County 2004 Bicycle Transportation Plan*. The SJVAPCD's Air Quality Guidelines for General Plans is available for use by local agencies to assist in the efforts to coordinate transportation, land use and air quality planning

2.1.3 PEDESTRIAN IMPROVEMENTS

The RTP includes several strategies focused on improving conditions for existing pedestrians and inducing others to join them. These measures include:

- Routinely maintaining existing sidewalks and curbing, including smoothing uneven surfaces, improving drainage, trimming vegetation, removing intrusive street furniture, including signs, sweeping and shoveling
- Building new sidewalks to provide continuity
- Providing 'pedestrian-friendly' intersection design (appropriate signal-head placement, signal intervals, curb ramps, signed and painted crosswalks, adequate lighting, etc.)
- Increasing emphasis on access to transit. In all these areas, access for people with disabilities must also be part of the program
- Providing safe and direct pedestrian routes and bikeways between places
- Promoting walking and bike riding for transportation and recreation

Overall, the 2014 RTP recommends several strategies that will collectively improve conditions for existing pedestrians and cyclists and to induce others to join them. In general, all new roadway projects and all

reconstruction projects should be constructed to provide increased safety and mobility for all users, including people who walk and bicycle. In addition, local agencies have identified general streetscape projects within their jurisdictions to promote walkability within activity centers; especially in downtown areas and along major corridors. These and other projects that will reduce greenhouse gas (GHG) emissions may be funded through the SCS Funding Program.

2.2 MADERA COUNTY 2004 BICYCLE TRANSPORTATION PLAN

The Madera County 2004 Regional Bicycle Transportation Plan (RBTP) was created by MCTC to address the needs of both commuting and recreational cyclists throughout the Madera Region, identify safe and convenient routes to key locations throughout the county, and suggest needed improvements and additions to the bikeway routes and facilities. MCTC staff were directed to focus on the implementation program of the Plan.

The Plan proposed a regional bikeway network to connect urban areas and communities in Madera County with adjoining County systems in Fresno, Merced and Mariposa County. The focus of the internal network in Madera County included the City of Madera, City of Chowchilla, the urban unincorporated communities of Madera and Bonadelle Ranchos, and the foothill/mountain community of Oakhurst.

The RBPT serves as the basis for future investment in bicycle and pedestrian infrastructure in unincorporated areas. The Plan identified development priorities, funding sources, and grant opportunities. The RBTP noted that prioritizing non-motorized improvements is difficult due to funding fluctuations, coordination with larger street improvement projects and relative private development schedule changes. Nonetheless, the Plan divided proposals into short-term (5 to 10 years from implementation) or long-range (more than 10 years) implementation priority.

The Plan noted that non-motorized travel would likely continue to increase in popularity due to public awareness of health and environmental benefits. It identified four needs related to bike facilities in the implementation plan:

- Education and enforcement programs to ensure safe and proper use of proposed bike lanes and routes
- Adequate shoulders to allow for safe bicycle travel on SRs 41, 49 and 145 (and similar constraints on other State Highways and county roadways of regional significance)
- Bike route facilities and services, particularly in rural areas
- Bike parking and storage facilities in urban centers and air and water supplies at rural stops

2.2.1 KEY NEW DEVELOPMENT PLANS

The RBTP provided guidance on how two new large developments should include bicycle and pedestrian infrastructure. This will help to ensure to that these areas can support both internal and external bicycle and pedestrian access once completed.

2.2.1.1 State Center Community College Plan

The State Center Community College Plan had a significant influence on the 2004 RBTP. Although separated from the City of Madera for planning purposes, this 1800+ acre "new growth area" bounded generally by Avenue 13, the Santa Fe Railroad, Avenue 12 and SR 99 represents a southeastern extension of the urban area. As the name implies, the focus of this new planned community is the Madera Center campus for the State Center Community College. The planned community intends to include mixed uses ranging from suburban residential, multi-family, neighborhood and community commercial through special college and highway-oriented commercial, office and industrial developments. These land uses will be accompanied by complete urban infrastructure including utilities, water, sewer, flood control, park, school and open space as well as streets and other transportation improvements.

The concept plan envisions three distinct districts, each with a core area, linked together by unique transportation connections and retaining environmental corridors and cohesive design standards. Additional "open space linkages" are intended as bike and pedestrian corridors with recreation, flood control and habitat preservation integrated and providing buffers between residential and adjacent arterial roadways. The conceptual circulation plan provides a conventional grid system of arterial and collector streets including Avenue 13, Road 29 and Avenue 12 as major routes, and Avenue 12½, Road 30 and Road 30½ as internal collectors.

A unique future potential is a proposed "intermodal easement looping" from the intermodal stations on both the Union Pacific and Santa Fe Railroads along Avenue 12½, Avenue 13, and diagonally past the State Center Community College campus and core to Avenue 12, enabling future shuttle busses, light rail, trolley or alternative community circulation systems such as electric vehicles or people movers. These concepts facilitate bike and pedestrian circulation, particularly associated with the Community College and adjoining core commercial and multifamily residential district, but also utilizing the open space linkages through lower density residential areas and along major arterials and collectors. Thus, the design details can integrate pedestrian and bike paths and multi-purpose trails in these open space corridors to complement conventional sidewalks and on-street lanes in the interim. Until intermodal stations are feasible on either or both rail lines, however, this internal circulation should use conventional arterial and freeway interchange connections to link with the remainder of Madera and accommodate external traffic.

2.2.1.2 Rio Mesa and Gunner Ranch West Area Plans

Rio Mesa and Gunner Ranch West are two other major "new growth areas" planned for the SR 41 corridor adjoining Fresno County. Rio Mesa is generally bounded by Road 145, the San Joaquin River, and SR 41 while Gunner Ranch West is generally south of Avenue 10, and west of SR 41 or the San Joaquin River bluffs. Rio Mesa contains more than 15,000 acres. Gunner Ranch West contains approximately 1,200 acres including the Children's Hospital Central Valley Medical Complex. The new growth areas were projected in the 1994 Madera County General Plan Update for phased urban development over the next ten to twenty years, though much development has yet to occur.

Conceptual land use and circulation proposals defined in the Rio Mesa Area Plan envision three major village commercial and mixed use cores with less intensive residential and employment areas surrounding and low density edges near the river or adjoining Little Table Mountain and in the foothills approaching Millerton Lake. These three "village cores" also contain support facilities such as schools, parks, churches and other social and recreation activities with additional services also integrated. Ultimately, the 15,000 acre Rio Mesa Area Plan might accommodate more than 30,000 dwelling units, or a population almost equal to the current size of all of Madera County, but by the year 2020 approximately one quarter to one third of this potential is expected in phased developments.

The circulation concept for Rio Mesa includes a Freeway 41 extension from the Avenue 9/10 interchange, which is part of the Gunner Ranch West Area Plan, north to SR 145, with additional interchanges at Avenue 12 and Avenue 15. A six-lane divided major arterial would connect the Avenue 12 village core with the Avenue 15 Rio Mesa community core along a curvilinear alignment through the planning area east of the proposed Freeway 41 extension, with a branch arterial extending northeast toward third village core. Road 145 and several other 4 lane arterials and two-lane collectors would complete the major network of public roads proposed as part of the Rio Mesa Area Plan.

The concept circulation plan includes Class II bike lanes on all arterial, collector and local access roads except local rural roads where Class III routes could be designated as needed. Some of the facility types may need to be updated to include Caltrans new guidance on Class IV separated bikeway facilities for higher volume or higher speed roadways. Additionally, the development is also intended to be "transit-oriented" which includes bus turnouts and shelters, particularly around the higher density "village cores." Pedestrian facilities include sidewalks on all street sections (except local rural roads) and similar off-street trails. Both the pedestrian and bike trails would access Little Table Mountain and the San Joaquin River corridor, the latter with at least four connections between Friant Dam and the SR 41 bridge. The proposed San Joaquin River Parkway would include both hiking and biking trails and equestrian trails as well.

The Gunner Ranch West Area Plan provides for urban development of approximately 1,150 acres west of the San Joaquin River bluffs south of Avenue 10, including the Children's Hospital Central Valley medical complex. The land use plan proposes a major commercial core centered on Children's Boulevard, a new 6-lane arterial diagonal connection between Avenue 9 and a proposed SR 41 interchange near Avenue 10. Two and four-lane connectors would connect the existing highway which would become a freeway frontage road both north and south of Avenue 10 and link Avenue 10 to the entrance drive to the hospital. Additionally, Roads 40 and 40½ would be improved as north-south residential collectors further west. The residential neighborhood would center on Avenue 9 and Road 40½ where a community center site and K-8 school site are proposed.

The residential capacity, including some mixed-use, would be approximately 3,000 dwellings or a population of 8,000 people, phased over a 20-year development period. Bike lanes and bus turn-outs and shelters are proposed along Children's Boulevard from the SR 41 interchange through the commercial centers to the Valley Children's Hospital. Class II bike lanes would also be provided on all other arterial and collector streets. Similarly, the bicycle facilities may need to be amended to include more recent guidance from Caltrans on Class IV separated bikeways. Although not specifically proposed, the Gunner Ranch West Area Plan could include a Class I path along or parallel to the San Joaquin River bluffs, particularly from Lanes Bridge Road to Valley Children's Hospital, as an alternative and relief route to the busy Avenue 9/Children's Boulevard. This latter path could also connect to the existing Avenue 9 alignment private roadway traversing the San Joaquin River flood plain and linking with existing SR 41.

2.2.2 PROPOSED BICYCLE FACILITIES PROJECTS

The 2004 plan also included a prioritized list of proposed bicycle projects in the City of Madera, City of Chowchilla, and unincorporated area costing $10,474,830 in total. These were developed through a coordinated and cooperative process involving staff from each agency and MCTC staff and are consistent with the 2004 Regional Transportation Plan.

2.3 THE CITY OF MADERA CLIMATE ACTION PLAN (2015)

The City of Madera Climate Action Plan (CAP), was completed in August 2015 and adopted by the Madera City Council in September 2015. The CAP estimates GHG reductions from dozens of strategies and measures, including several transportation measures, four of which reduce vehicle miles traveled (VMT).

The CAP first forecasts a "business as usual" scenario for GHG emissions in two horizon years, 2020 and 2030. Section 2.2.1 of the CAP describes the Emissions Forecast Methodology. The year 2030 was selected

to maintain consistency with the City of Madera General Plan horizon year and to support California's larger effort to reduce statewide emissions under Executive Orders S-3-05 and B-30-15.

Among other GHG reductions strategies, the CAP includes a pedestrian and bicycle mode shift measure to reduce per capita VMT, and identifies associated VMT reductions by one percent in 2020 and two percent in 2030. This measure, designated T-2, is detailed in a CAP Appendix as shown below in **Table 12**. The policy authority is based primarily upon the City's current 2014 General Plan.

TABLE 12: DISTANCE TRAVELED BY HOUSEHOLD INCOME

T-2 Bicycle and Pedestrian Environment Continue to expand and improve the City's bicycle and pedestrian network.	**Strategy Components** T-2.1: Continue to pursue public and private funding to expand and link the City's bicycle and pedestrian network in accordance with the General Plan and Bicycle Master Plan. T-2.2: Develop policies and minimum design criteria for bicycle and pedestrian circulation in new residential development and implement through the development review process. Require the installation of adequate and secure bicycle parking at all new multi- family residential, commercial, governmental, and recreational locations throughout the City. T-2.3: Collaborate with law enforcement, school officials, and private organizations to encourage public bicycle safety programs.	**Responsible Departments** Administrative Services, Community Development – Planning & Public Works Parks & Community Services

2.4 CALTRANS BICYCLE GUIDE FOR DISTRICT 6 AND COMPLETE STREETS ELEMENTS (JUNE 2015)

Madera County is located within California Department of Transportation (Caltrans)'s District 6 zone. District 6 completed a comprehensive guide to cycling on State highways within Madera and neighboring counties in 2015. The *Guide* notes at the outset that despite midday summer heat and winter fog, this part of California is ideal for biking most of the year.

District 6 encompasses all State highways in five counties—Madera, Fresno, Kings, Tulare and Kern counties. The district consists of approximately 476 miles of freeway and 1,554 miles of rural and urban highway. With 2,030 miles of roadway, District 6 has the largest portion of road miles to maintain in the State highway

system. While SR 99 in District 6 prohibits bicycle access as does the freeway portion of SR 41 bicycle access is allowed along Madera's State highways, providing access from the flatlands to the foothills and beyond.

Madera's State highways lead to recreational lake areas within scenic mountain regions. These State highways lead to popular destinations such as Yosemite National Park. The *Guide* notes that mall agricultural communities and towns are scattered all along the State routes.

The *Guide* covers the following topics:

- The District
- Safety Tips
- State Laws
- Equipping Your Bicycle
- Operating Your Bicycle
- Highway Design Manual
- Relevant Caltrans initiatives, and Director

The *Guide* also discusses Bike to Work Month, Complete Streets, and Pedestrian and Transit access along State highways. While not a plan or a policy document, the *Guide* does provide a succinct summary of key Caltrans initiatives to encourage cycling and walking and improve planning for active travel.

- Routes
- Park and Ride Lots

2.5 THE CITY OF CLOVIS ACTIVE TRANSPORTATION PLAN (OCTOBER 2016)

The Clovis ATP is a comprehensive plan covering walking and biking facilities in Clovis. Topics covered include:

- Articulation of a long-term vision for walking and bicycling in the city
- Policies to achieve this vision
- Planned bicycle and pedestrian networks
- Guidelines for elements such as wayfinding signs and bicycle parking

- A prioritized list of projects to develop these networks

While the specifics of this Plan do not apply to Madera County, both this ATP and Fresno's ATP (summarized below) represent recent Active Transportation Plans in neighboring jurisdictions that can serve as useful models for Madera's ATP. Both Clovis and Fresno's ATPs satisfy current State of California's Active Transportation Program requirements.

2.6 THE CITY OF FRESNO ACTIVE TRANSPORTATION PLAN (DECEMBER 2016)

The City of Fresno's Active Transportation Plan (ATP) is intended as a comprehensive guide outlining the City's vision for active transportation, and a roadmap for achieving that vision. The ATP envisions a complete, safe, and comfortable network of trails, sidewalks, and bikeways that serves all residents of Fresno. This plan seeks to achieve four overarching goals:

- Equitably improve the safety and perceived safety of walking and bicycling in Fresno
- Increase walking and bicycling trips in Fresno by creating user-friendly facilities
- Improve the geographic equity of access to walking and bicycling facilities in Fresno
- Fill key gaps in Fresno's walking and bicycling networks

The City of Fresno convened a Stakeholder Advisory Committee that developed the four goals for this plan listed above. The Fresno ATP cites the City's General Plan (adopted in 2014) as the primary document specifying goals and policies relating to walking and bicycling. These policies are listed in detail in the ATP. Several other local, regional, and statewide plans also contain goals and policies relating to bicycling and walking in Fresno are also listed. Appendix C to the Fresno ATP summarizes relevant goals and policies from listed plans.

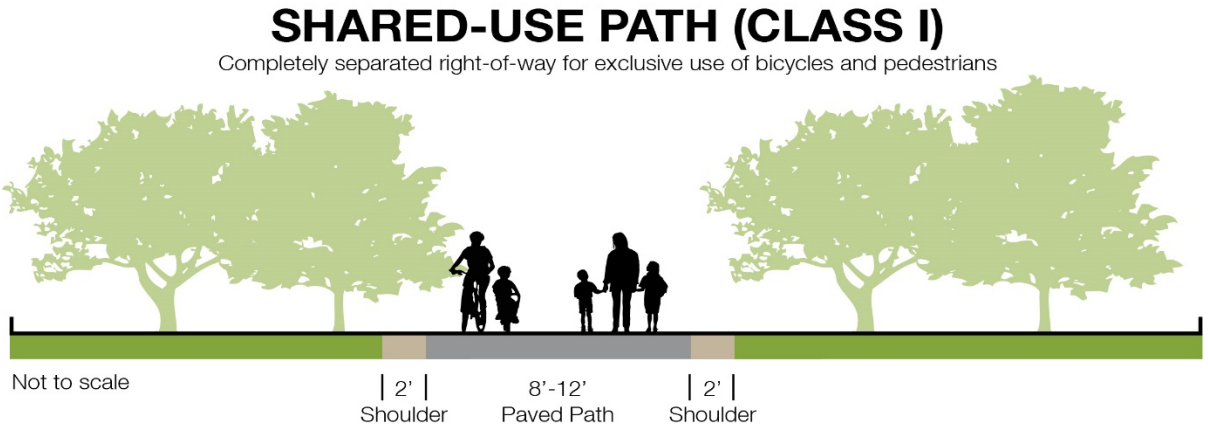
3.0 BICYCLING ENVIRONMENT

This section provides a summary of the existing bicycle network in the Madera Region, including types of facilities, significant routes, and bicycle parking locations.

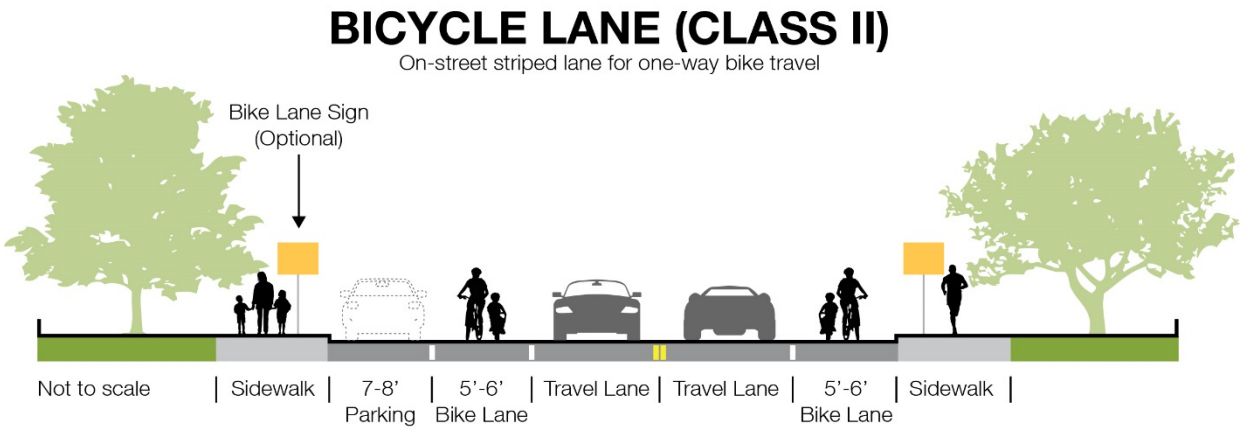
3.1 BIKEWAY CLASSIFICATIONS

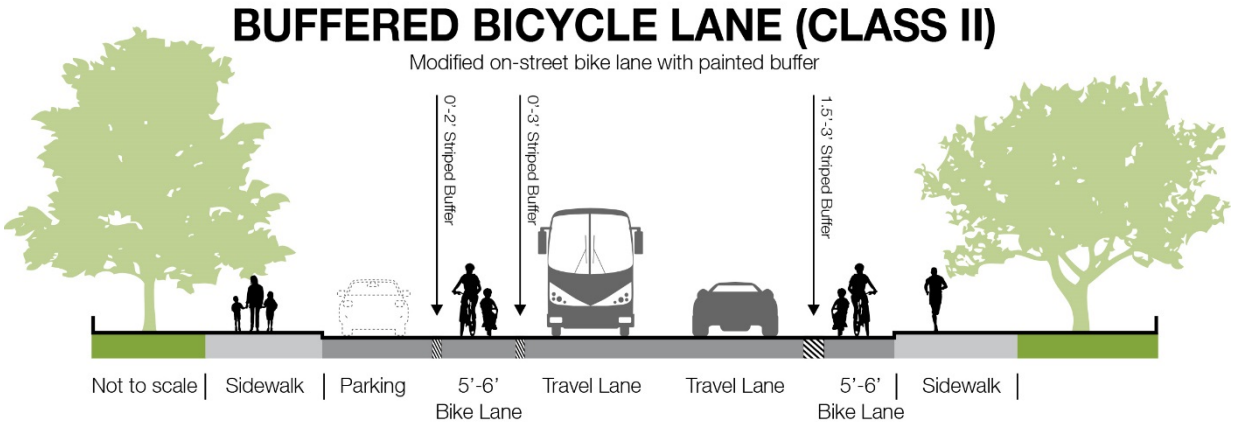
The California Department of Transportation (Caltrans) in the *Highway Design Manual* (Chapter 1000: Bikeway Planning and Design) and California Assembly Bill 1193 codify four distinct classifications of bikeways. Each bikeway class is intended to provide bicyclists with enhanced riding conditions. Bikeways offers various levels of separation from traffic based on traffic volume and speed, among other factors. The four bikeway types in California and appropriate contexts for each are detailed below.

- *Class I Bikeway (Bike Path)* Bike paths provide a completely separate right-of-way and are designated for the exclusive use of people riding bicycles and walking with minimal cross-flow traffic. Such paths can be well situated along creeks, canals, and rail lines. Class I Bikeways can also offer opportunities not provided by the road system by serving as both recreational areas and/or desirable commuter routes.

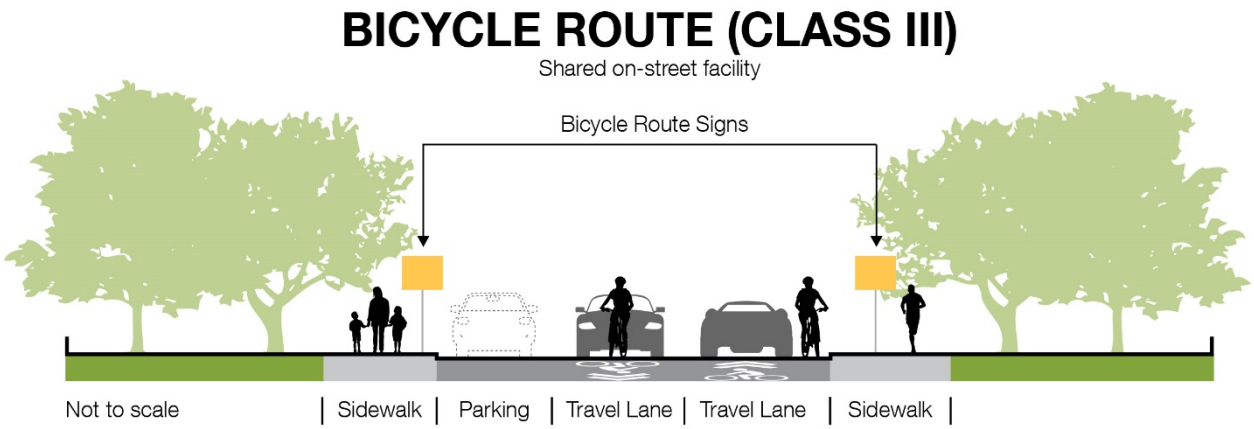


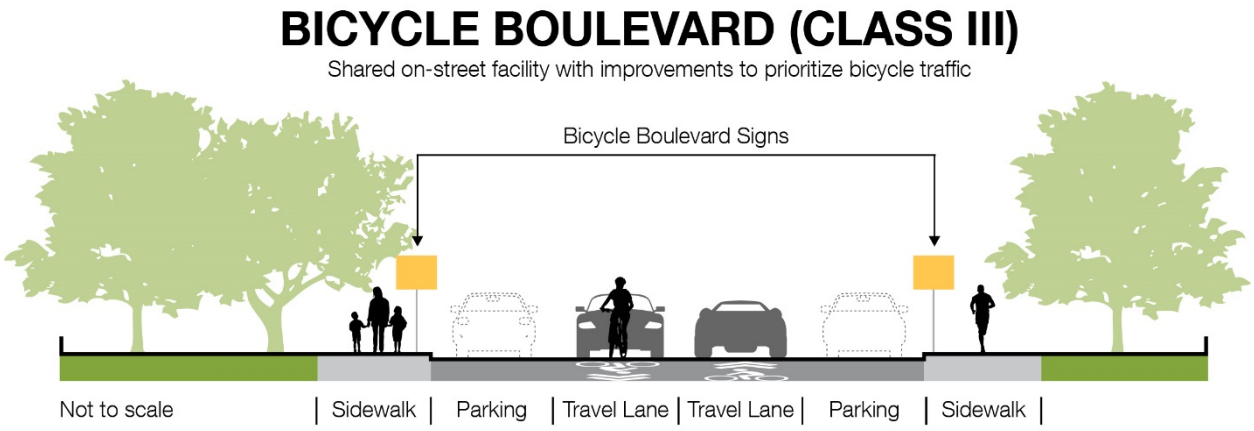
- *Class II Bikeway (Bike Lane)* Bike lanes provide designated street space for bicyclists, typically adjacent to the outer vehicle travel lanes. Bike lanes include special lane markings, pavement legends, and signage. Bike lanes may be enhanced with painted buffers between vehicle lanes and/or parking, and green paint at conflict zones (such as driveways or intersections).



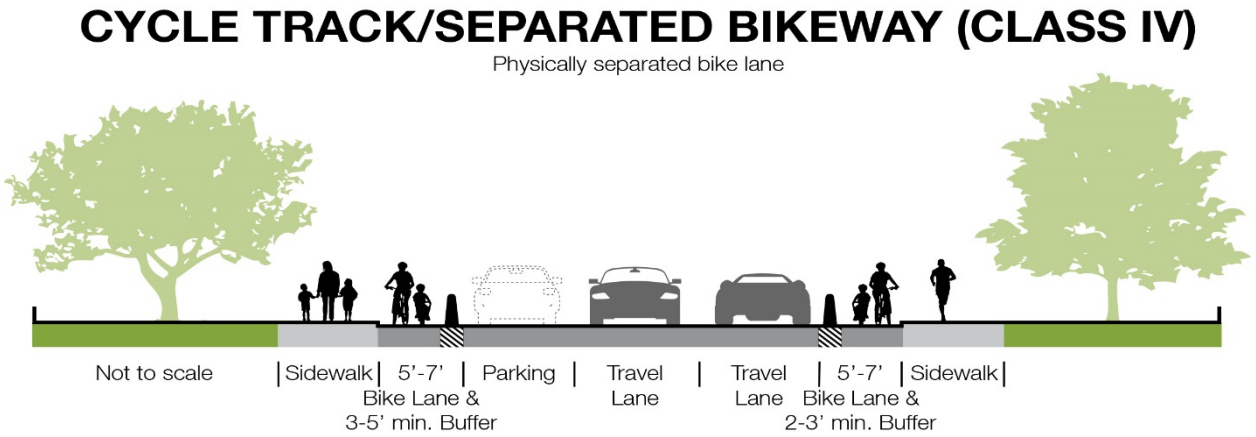


- *Class III Bikeway (Bike Route)* Bike routes provide enhanced mixed-traffic conditions for bicyclists through signage, striping, and/or traffic calming treatments, and to provide continuity to a bikeway network. Bike routes are typically designated along gaps between bike trails or bike lanes, or along low-volume, low-speed streets. Bicycle boulevards provide further enhancements to bike routes to encourage slow speeds and discourage non-local vehicle traffic via traffic diverters, chicanes, traffic circles, and/or speed tables. Bicycle boulevards can also feature special wayfinding signage to nearby destinations or other bikeways.

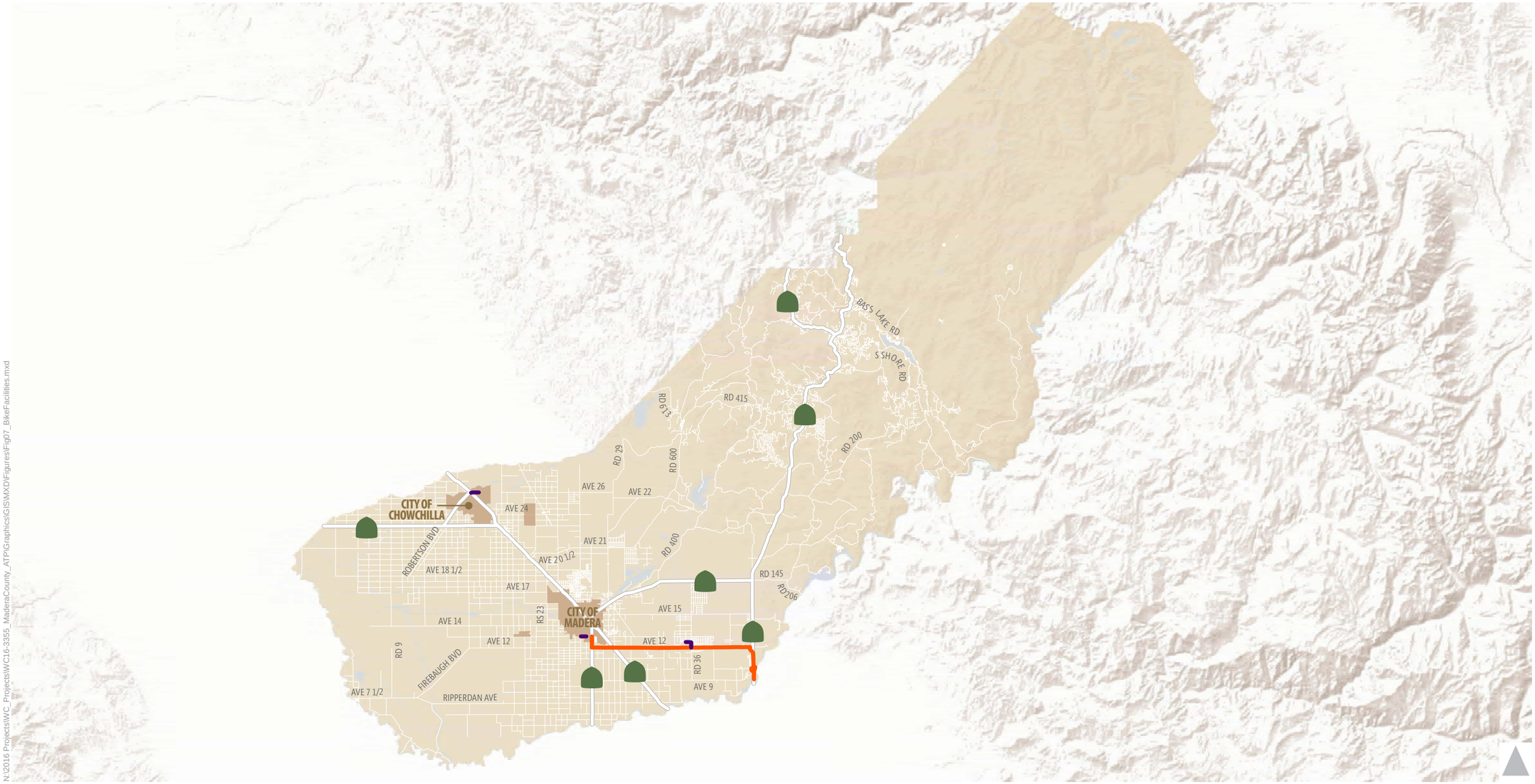




- *Class IV Bikeway (Separated Bikeway)* Separated Bikeways, also referred to as cycle tracks or protected bikeways, are bikeways for the exclusive use of bicycles which are physically separated from vehicle traffic. Separated Bikeways were recently adopted by Caltrans in 2015. Types of separation may include, but are not limited to, grade separation, flexible posts, physical barriers, or on-street parking.



An inventory of the existing bicycle network in Madera County was conducted and the results are presented by classification in **Figure 6 (A-D)**.



Note: The existing bicycle network will be updated based on input and validation from local jurisdictions

Existing Bike Facilities

- Class III - Bike Route
- Class II - Bike Lane
- Class I - Bike Path

Figure 6A

Existing Bike Facilities

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3.2 BARRIERS TO BICYCLE CONNECTIVITY

Bicycling is a viable mode of transportation particularly for relatively short trips in and around urbanized areas or rural communities. However, different types of bikeways feel more or less comfortable depending on the individual cyclist's confidence and experience. The planning process for bikeways needs to consider that multiple user types may want to ride a bicycle but simply feel that they do not have enough facilities designed for their comfort or experience level.

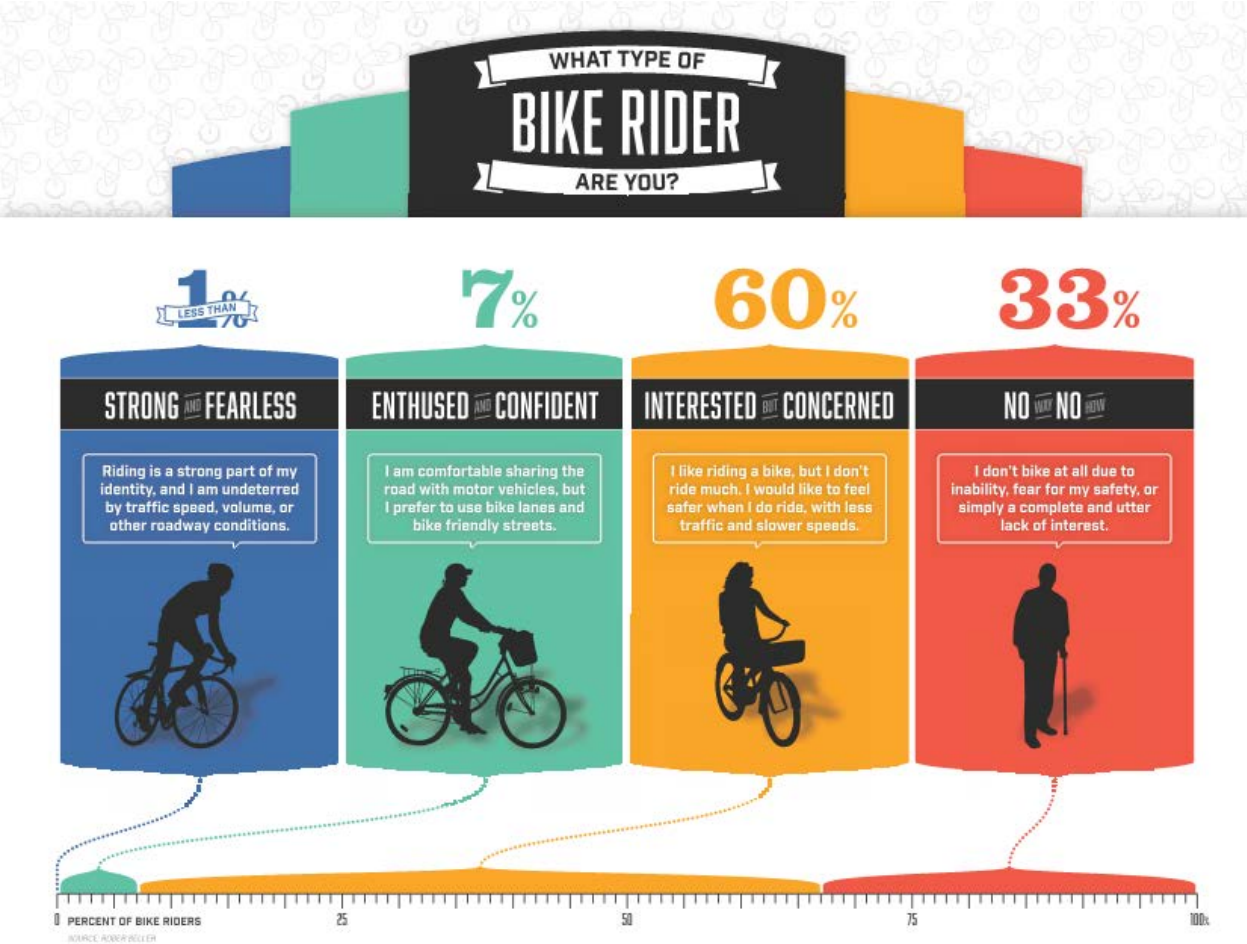
3.2.1 BICYCLE COMFORT

Level of Traffic Stress (LTS) analysis seeks to measure how much stress is experienced by bicyclists across a street network due to various characteristics of roads and bicycle facilities. A Level of Traffic Stress (LTS) methodology was developed by Merkuria, Furth, and Nixon in *Low-stress Bicycling and Network Connectivity* (2012).[1] LTS methodology is based on an application of Dutch bicycling standards and existing research in bicycle transportation. LTS rankings range from 1 (very low-stress; tolerable by all) to 4 (very high-stress; tolerable to only a few). Historically, bicycle network planning did not take LTS into account and how different users may utilize the bikeway network.

While a LTS analysis was not conducted as part of this plan, the principles for facility design can be used to assess generally how comfortable different facilities may be. LTS is also closely related to the Four Types of Cyclists theory, as depicted on the following page.[2] While the Four Types of Cyclists theory focuses on willingness to bicycle, LTS measures the quality of a person's experience while bicycling. The two are inter-related: low-stress bikeways (LTS 1 and 2) are generally tolerated by Strong and Fearless, Enthused and Confident, and most Interested but Concerned cyclists; in contrast, high-stress bikeways are tolerated by mainly Strong and Fearless cyclists. The development of a low-stress network and elimination of high-stress barriers is critical to broadening the appeal of bicycling, especially for "Enthused and Confident" and "Interested but Concerned Cyclists," who represent a large share of the population. The low-stress bicycle network must therefore have a broad reach with continuous facilities and comfortable crossings to promote new bicycling trips.

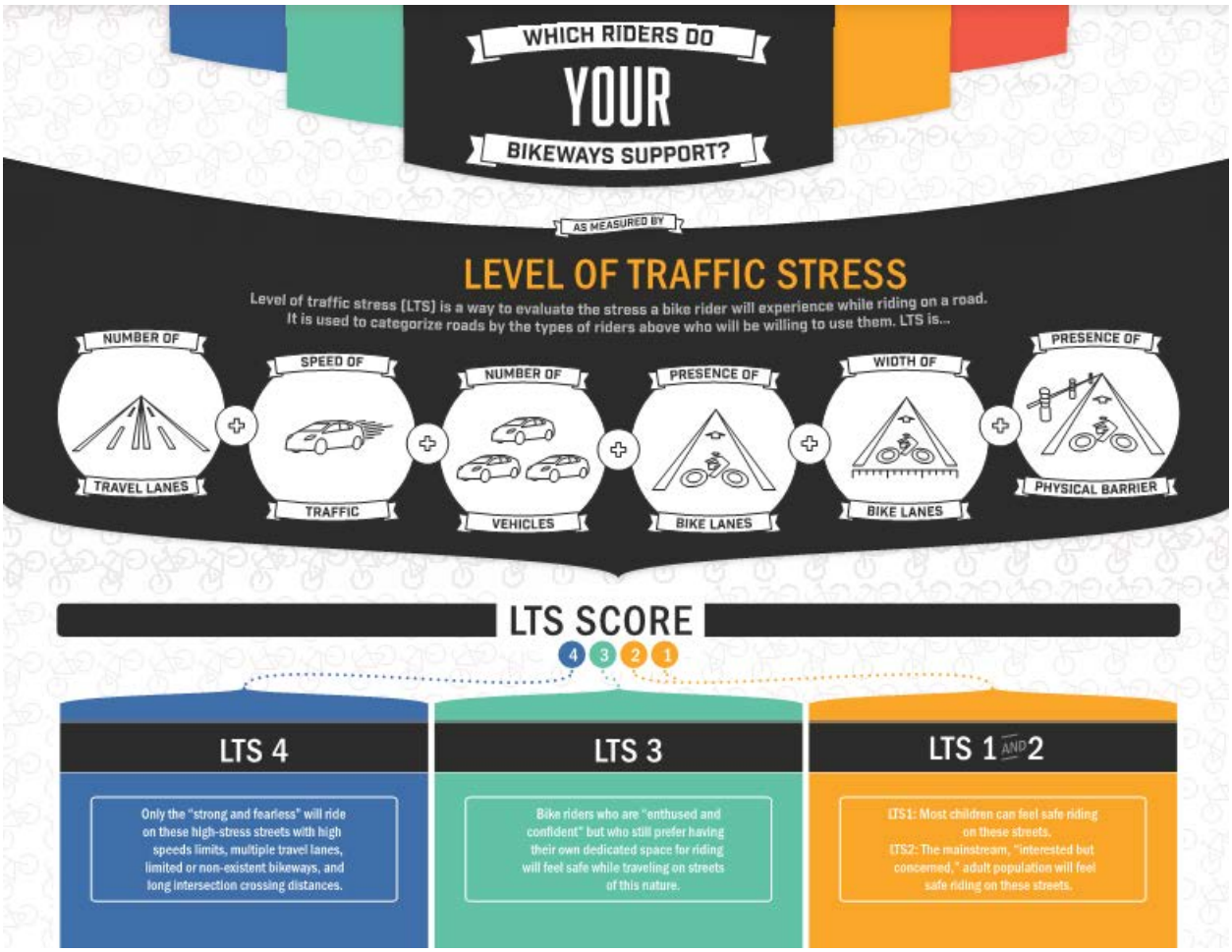
[1] Methodology available here: http://transweb.sjsu.edu/PDFs/research/1005-low-stress-bicycling-network-connectivity.pdf

[2] Roger Geller, "Four Types of Cyclists," undated. https://www.portlandoregon.gov/transportation/article/264746



Understanding What Types of Cyclists Use the Network

The Four Types of Cyclists and their typical breakdown across the population are shown at left. Research has shown that the Interested but Concerned are a large segment of the population that are attracted to highly comfortable bicycle facilities on which they feel safe riding. To feel comfortable and safe, they require low traffic stress (LTS 1 or 2) roadways that access important destinations throughout the city.



3.2.2 KEY BARRIERS TO ACCESS

With the understanding that different bicycle facility types may in themselves present barriers to access for certain segments of the population, higher stress routes are often considered a barrier to providing connectivity for all ages and abilities. High stress facilities (LTS 3 & 4) include bikeways adjacent to higher automobile volumes, higher speeds, or a lack of separation between vehicles and cyclists. In general, the previous bicycle plan proposed a large network of Class III Bicycles Routes along many of the regionally significant roadway system to connect with each community. Many of these rural two-lane roadways would be considered highly uncomfortable for anyone other than the "strong and fearless" type of cyclist. Because these routes either do not have wide enough shoulders or are not signed to alert vehicles to the presence of cyclists.

LTS Calculations

Roadway characteristics and type of bicycle infrastructure are the primary variables influencing the Level of Traffic Stress (LTS). The LTS score enables the public and local jurisdictions to understand who is likely to feel comfortable riding on a given roadway.

Portions of these regional routes are also integrated into local circulation networks, with few alternative citywide or communitywide routes. Generally, these routes are heavily traveled by trucks and cars at much higher speeds than bicycles or pedestrians. Bike and pedestrian use, even if minimal, is likely uncomfortable for people of all ages and abilities due to the high speed differential. These facilities often lack vertical and horizontal separation in these areas. This is particularly true on urban segments of these routes where all user types are present. However, many of these regional facilities outside of the urbanized areas are heavily used for recreational purposes.

The State routes and other major countywide roadway facilities also create crossing barriers for local bicycle travel. While some traffic signals are present in the main retail cores of communities, many of regionally significant roadways have unsignalized crossings in most other areas. This presents a challenge for cyclists to feel comfortable traversing higher volume roadways. Many of the signalized intersections also may not be equipped to detect bicycles.

Appendix B provides an overview of Caltrans facilities where bicyclists are prohibited and allowed from the Bicycle Guide for District 6 & Complete Streets Elements. Highly detailed bike route inventories for each State Highways in Madera County can also be found in this guide which contain roadway and shoulder widths by post mile for SR 41, 49, 99, 145, 152, and 233.

3.2.3 CONNECTIONS WITH ADJOINING COUNTIES

Inter-county connectivity from Madera County to the neighboring counties of Merced, Mariposa, and Fresno, relies heavily on the State Route system. The vast majority of inter-county bicycle travel is done by bicyclists out of the Fresno/Clovis Metropolitan Area who ride primarily in Eastern Madera County for recreational purposes. These State highways lead to popular destinations such as Yosemite National Park, which has Class I bicycle trails. Sequoia National Park experiences some bicycling on roads with lower posted speed limits.

Caltrans does not currently have any plans to designate the major State Routes in Madera County as Class II or III bicycle facilities, but these routes are open to bicycle travel as shared right-of-way except for freeway segments on SR 99 and SR 41. Caltrans is committed to providing adequate shoulder width to accommodate bicycle travel as highway reconstruction projects come on line. The segments below identify the primary access routes for cyclists traveling from Madera to an adjacent county:

Merced County Typical Access

- State Route 152 – Connects with SR 59 north to the City of Merced and continues west to the City of Los Banos.
- State Route 99 – North to the City of Merced. SR 99 in Merced County is an expressway, but the segment in Madera County from SR 152 to the Chowchilla River Bridge is a freeway restricted to bicycles. An alternative to SR 99 is the Chowchilla Blvd connection to Minturn Road north toward Le Grand into Merced County.

Mariposa County Typical Access

- Road 613 – Connects the community of Raymond via Ben Hur Road with the City of Mariposa.
- State Route 49 – Connects Oakhurst—Ahwahnee with the City of Mariposa.

Fresno County Typical Access

- Avenue 7 ½ – Connects to the City of Firebaugh to the west.
- State Route 145 – Connects the City of Madera to the west side of the City of Fresno and to the City of Kerman to the south.
- State Route 99 – SR 99 is a freeway restricted to bicycles south of the City of Madera to the San Joaquin River Bridge.
- Cobb Ranch Blvd. – From Avenue 10 across the Old SR 41 Bridge to the San Joaquin River Parkway Trail in the City of Fresno.
- Road 206 – A segment that connects SR 145 across the San Joaquin River with Friant Road in Fresno County that provides access to the City of Madera to the south.

3.3 BICYCLE COLLISIONS

Bicycle collision data is reported from the California Highway Patrol (Statewide Integrated Traffic Records System [SWITRS] Bicycle Collision Data) and data from the past seven years (2006 – 2013) was analyzed to reveal trends and patterns regarding bicyclist safety. **Figure 7** presents a countywide collision density map which emphasizes areas with increased levels of bicycle collisions and specifically identifies areas with bicyclist fatalities. The analysis shows high concentrations of collisions and fatalities within the downtowns and midtown areas of both the City of Chowchilla and the City of Madera, as well as along many of the major arterials in neighborhoods surrounding urban cores.

3.3.1 DATA LIMITATIONS

Official motor vehicle crash statistics such as SWITRS have been shown to underestimate the number of bicycle crashes that occur. SWITRS data is almost entirely limited to motor vehicle-related collisions that occur on public roadways in which a police report was filed, which creates a sample bias. Bicyclist-involved collisions may not be reported if they do not involve motor vehicles, if they occur in non-roadway locations such as parking lots or trails, or if a police report is not filed (which occurs in many less-serious crashes). A study by the San Francisco Department of Public Health estimated that motor vehicle crash files account for only 60 to 75 percent of hospitalized victims of pedestrian- and bicycle-motor vehicle crashes. Approximately 60 to 70 percent of bicyclists were admitted to a hospital as a result of a bicycle-only crash, and 25 to 50 percent of those crashes occurred on non-roadways or in non-traffic areas.

As part of the Active Transportation Plan process, safety-related feedback is being collected through interactive webmaps that will provide a proxy for locations that may need enhancements where collisions may be unreported. This process can also safety issues related to areas with a lack of lighting, debris or maintenance issues, or other perceived safety concerns.

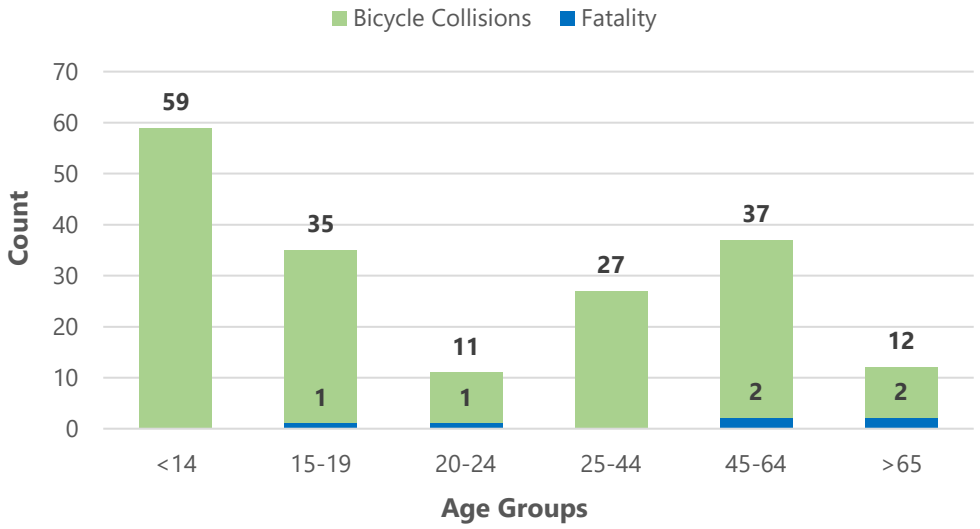
3.3.2 ANALYSIS

Between 2006 and 2013, 147 reported vehicle-bicyclist collisions occurred within Madera County. Of these collisions, six were fatal and fourteen were classified as severe injuries. Bicyclist-involved collisions accounted for approximately three percent of all traffic collisions. Approximately 80% of collisions occurred in daylight, while 17% occurred during dusk, dawn, or night conditions. Misdemeanor or felony hit and runs represented 18.4% of bicycle collisions.

In terms of demographics, 81.7% of the injured (136 persons injured) or killed (6 persons killed) victims were male and 16.9% were female. **Table 13** illustrates the number of victims by age groups. More bicyclists under 14 years of age have been injured by a vehicle-bicyclist collision than any other age group.

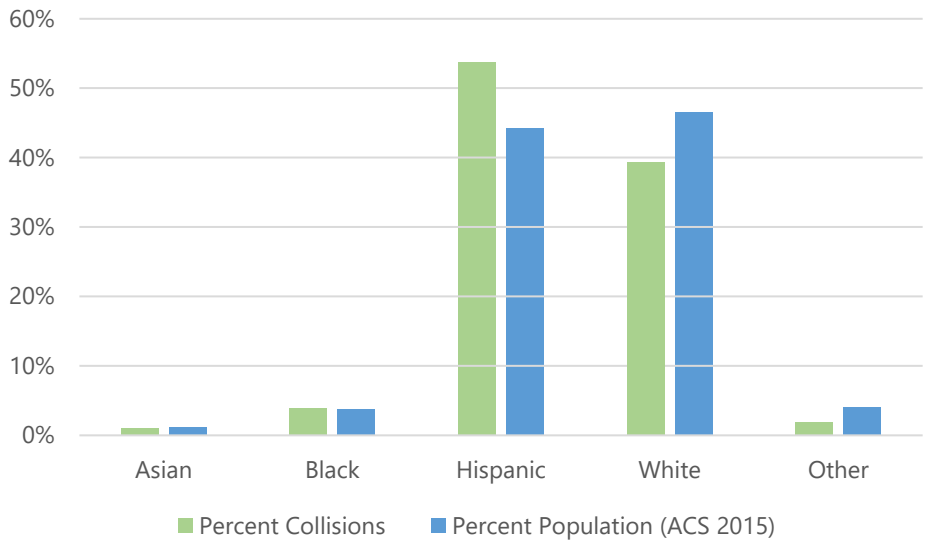
Data regarding the cause, type, and severity of vehicle-bicycle collisions in Madera County is limited and incomplete. A large proportion of collisions are uncategorized by type and cause, and data often falls short of capturing the nuance of how collisions occurred. **Table 14, Table 15,** and **Table 16** summarize the causes, types, and severity of collisions that occurred in Madera County between 2006 and 2013.

TABLE 13: BICYCLE COLLISIONS: VICTIM AGE GROUPS



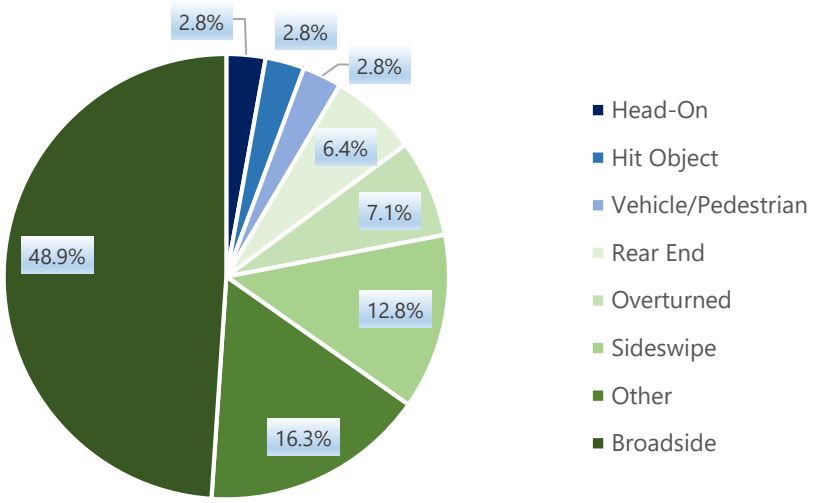
A higher number of residents fourteen and under are victims of bicycle-involved collisions.

TABLE 14: BICYCLE COLLISIONS BY RACE/ETHNICITY



Minorities are more likely experience a higher percentage of bicycle collisions in Madera County.

TABLE 15: TYPE OF BICYCLE COLLISIONS



Broadside collisions are the most common type of bicycle collision in Madera County, representing 48.9% of total bicycle-involved collisions. Broadside collisions are where the side of one vehicle is impacted by the front or rear of another vehicle. Other common collision types include sideswipe accidents and overturned/rollover collision,

The top three **causes** of bicycle collisions per the SWITRS data are:

1. Wrong Way Cycling (28%)
2. Vehicle Lane Conflicts (24%)
3. Improper Turning (15%)

3.3.2.1 Wrong Side of Road Collisions

The high proportion of wrong side of the road collisions is typically indicative of "interested but concerned" cyclists riding along busy streets. These collisions may relate to lack of bicycle infrastructure, or bicycle safety education. In some cases, bicyclists may ride the wrong way, either in-street or on the sidewalk, to keep vehicle traffic within their line of sight because it seems safer. However, drivers do not expect bicyclists to ride the wrong way – especially when turning, which often results in broadside collisions (the most common collision type).

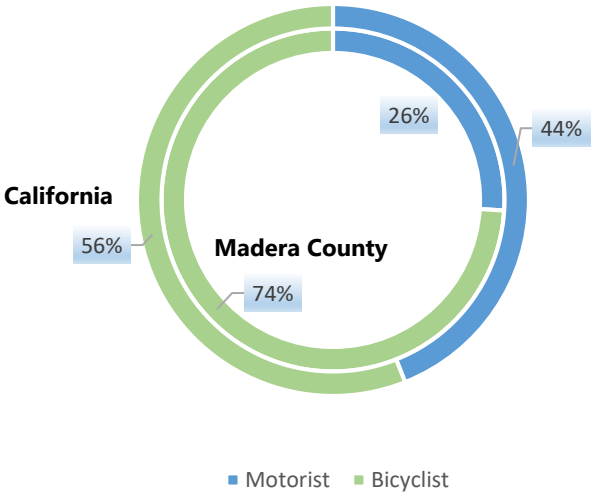
3.3.2.2 Traffic Signals and Signs

Collisions caused by violations of traffic signals and signs are indicative of intersections that may challenging for bicyclists. For example, a broadside collision may occur if a bicyclist is not able to clear an intersection crossing at a side street stop or traffic signal that does not include bicycle signal detection or a sufficient clearance interval. These violations may also be indicative of behavioral patterns such as not stopping fully at traffic lights or stop signs.

3.3.2.3 Automobile Right of Way

Collisions caused by a violation of the automobile right of way may refer to a variety of circumstances; overall, these collisions are typically indicative of disorganized or ambiguous street conditions which may not clearly define spaces for people driving and bicycling. These conditions suggest a need for clarification in the delineation of space and education of users to encourage safe travel. California's recently enacted Three-Foot Passing Law more clearly defines a bicyclists right-of-way while riding; however, many motorists still lack familiarity with the law.

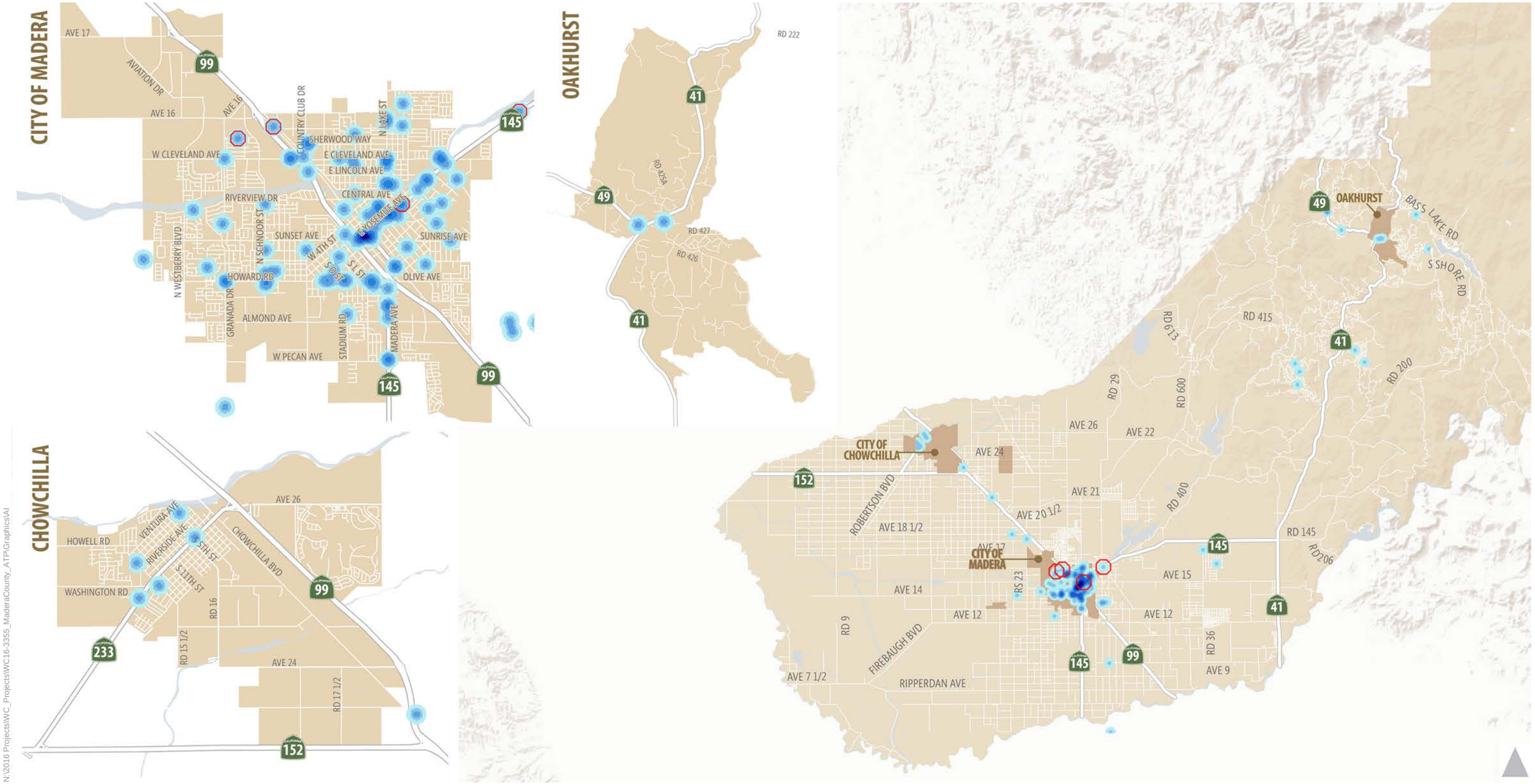
TABLE 16: BICYCLE COLLISIONS: PARTY AT FAULT



Bicyclists in Madera County are more likely to be at fault for bicycle collisions compared to the State as a whole. Education surrounding the proper use of bicycle facilities and sharing the roadway may be needed. The most common collision intersections are around major arterials such as Yosemite Avenue in the City of Madera. **Table 17** summarizes the intersections with the highest number of collisions and **Figure 7** depicts the density bicycle-involved collisions from 2006 to 2013 throughout the county.

TABLE 17: NUMBER OF BICYCLE COLLISIONS BY INTERSECTION

Rank	Intersection	Collisions
1	G ST & YOSEMITE AVE	3
2	FIG ST & YOSEMITE AVE	2
2	A ST & YOSEMITE AVE	2
2	CLEVELAND AVE & LAKE ST	2
2	CLEVELAND AVE & RAYMOND RD	2
2	COUNTRY CLUB DR & SHERWOOD ST	2
2	EL DORADO DR & MADERA AVE	2
2	4TH ST & B ST	2
2	11TH ST & GATEWAY DR	2
2	FLUME ST & YOSEMITE AVE	2
2	GRANADA DR & HOWARD RD	2
2	LAKE ST & SOUTH ST	2
2	MADERA AVE & PECAN AVE	2
2	VINEYARD AVE & YOSEMITE AVE	2



Collision involving a bicyclist with a fatality

Collision Density

Low ⟶ High

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Figure 7

Bicyclist Collision Density (2006 – 2013)

4.0 PEDESTRIAN ENVIRONMENT

This section provides a summary of the pedestrian focus areas in the Madera Region and key statistics related to pedestrian safety.

4.1 PEDESTRIAN FOCUS AREAS

This section is a placeholder that will assess key pedestrian focus areas in Madera County that are highlighted through the public engagement process and as identified by local agencies or communities through interactive webmap inputs. Pedestrian-oriented infrastructure will be assessed during the network development of the ATP for areas identified through this process.

4.2 PEDESTRIAN INFRASTRUCTURE OVERVIEW

4.2.1 CITY OF MADERA

Walking has always been a part of the transportation system in Madera. Automobiles were not widely available when the city was founded, and for many years, the city remained compact enough for people to walk easily from one edge of the city to the other. Madera's downtown grid of roadways reflects these early days—its short blocks are easy to walk. Major downtown intersections experience heavy traffic volumes and are surrounded by commercial and office uses. This area is generally more accessible as a pedestrian with complete sidewalks, standard curb ramps, signalized crossings, and marked crosswalks.

Outside of the core downtown area marked crosswalks become farther spaces on Yosemite Avenue and crossings are not signalized making it difficult for pedestrians to cross this busy roadway. Sidewalk gaps begin to appear on SR 145 and East Yosemite Avenue, especially toward outer lying rural areas. Select intersections in the northwest retail portion of Madera have visible brick-colored crosswalks. High visibility crosswalks have been implemented along the street adjacent to the Madera District Fair; however, these crosswalks lack overhead signs and flashing beacons to further alert vehicles at some of these unsignalized locations. Crosswalks marked at signalized intersections generally feature standard crosswalk striping.

The Vern McCullough Fresno River Trail is a recognized feature of the city and provides recreation, access and mobility opportunities for pedestrians, runners, and bicyclist. It runs along the usually dry river in Madera and is approximately 3.5 miles long. The trail is divided in two by active railroad tracks and Gateway

Drive, but the City is working on constructing a new undercrossing to bridge the gap. Residents have expressed interest in some pedestrian-oriented lighting and water stations.

4.2.2 CITY OF CHOWCHILLA PEDESTRIAN SETTING

The City of Chowchilla has lower density residential uses surrounding a central commercial corridor along SR 233 (West Robertson Boulevard). SR 233 lacks high visibility crosswalks, pedestrian refuge islands, and overhead street name signs at its unsignalized intersections. Automobile-oriented is provided along SR 233 but is not provided consistently in the surrounding neighborhoods and does not provide consistent pedestrian-oriented lighting. Signalized intersections have push-to-walk buttons, and the parallel crosswalk lines are fading and are not very visible. Curb ramps are typically diagonal (one per corner) and do not include tactile areas or truncated dome to alert persons with disabilities to crossing locations.

4.2.3 UNINCORPORATED VALLEY COMMUNITIES

The unincorporated communities of Madera Ranchos-Bonadelle Ranchos, Fairmead, Rolling Hills, and La Vina all feature similar gaps in pedestrian infrastructure. With a main thoroughfare through each community, sidewalks are normally minimally present, if present at all, which creates generally unwelcoming pedestrian environments. These communities often have a rural character and do feature sidewalks in most residential areas. Marked crosswalks are sparingly implemented even across major highways in some of the smaller communities. Pedestrian-scale lighting is not present in any of the communities and minimal automobile-oriented lighting can provide intermittent nighttime visibility for pedestrians in a few instances.

4.2.4 UNINCORPORATED FOOTHILLS COMMUNITIES

The unincorporated Foothill communities of Yosemite Lakes, Oakhurst, Coarsegold, Raymond, Bass Lake, and North Fork all feature similar pedestrian infrastructure due to the natural terrain and lower densities. With a main thoroughfare through each community, sidewalks are normally minimally present, if present at all, which creates generally unwelcoming pedestrian environments. Pedestrian facilities are almost entirely absent in residential areas and many streets end in dead end drives. Roadway shoulders are often used as pedestrian facilities where available. Lighting for either automobiles or pedestrians is generally absent.

4.3 PEDESTRIAN COLLISIONS

Between 2006 and 2013, 247 vehicle-pedestrian collisions occurred within Madera County. Of these collisions, 32 were fatal and 37 involved severe injuries. Pedestrian-involved collisions accounted for approximately five percent of all traffic collisions. Approximately 54% of collisions occurred in daylight, while

46% occurred during dusk, dawn, or night conditions. Included in that 46%, 22% of collisions occurred during dark, no street-light conditions where visibility would have been very low. Misdemeanor or felony hit and runs account for 25% of all collisions. In terms of demographics, 61.4% of the injured (215 persons injured) or killed (32 persons killed) victims were male and 35.9% were female. **Figure 8** depicts pedestrian collision densities along roadway corridors throughout the Madera Region and identifies areas with pedestrian fatalities.

Table 18, Table 19, and **Table 20** analyze the types of pedestrian collisions in Madera County.

TABLE 18: PEDESTRIAN COLLISIONS: VICTIM AGE GROUPS

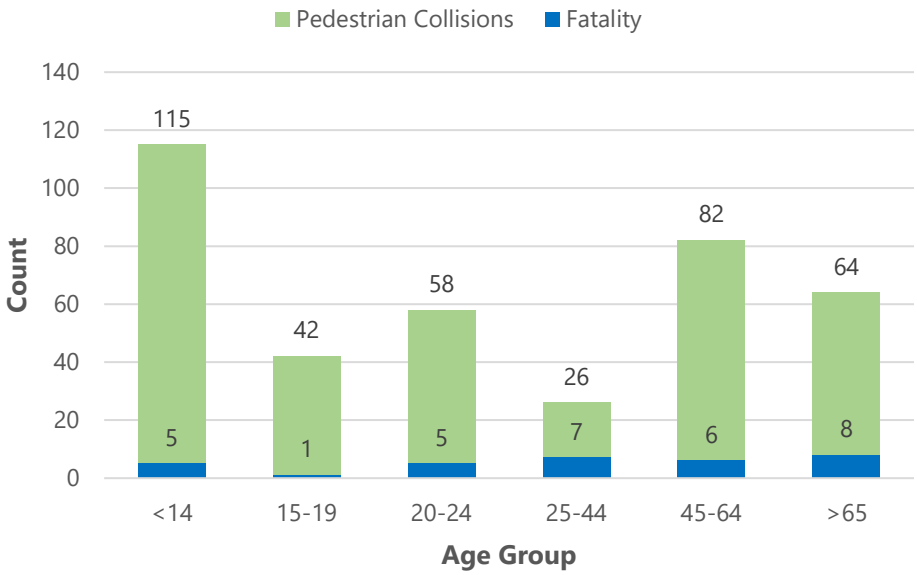
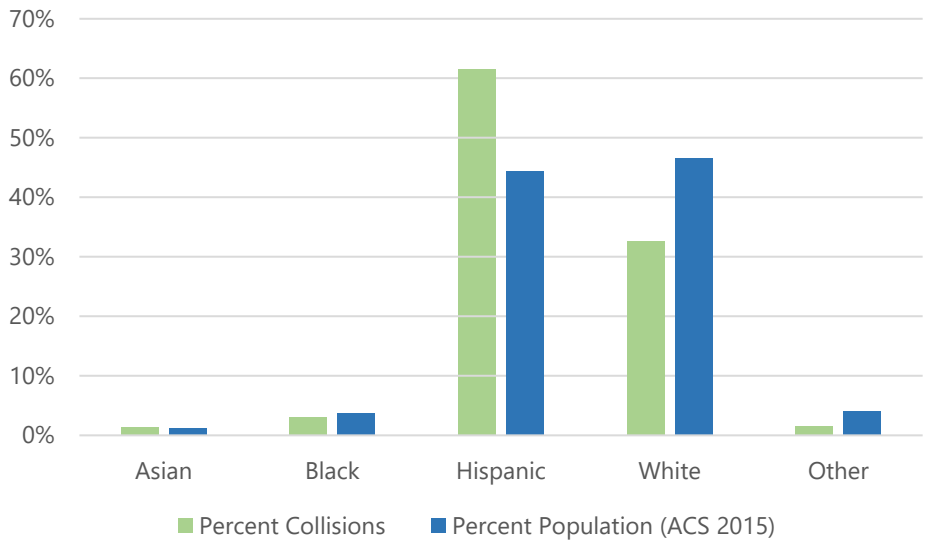
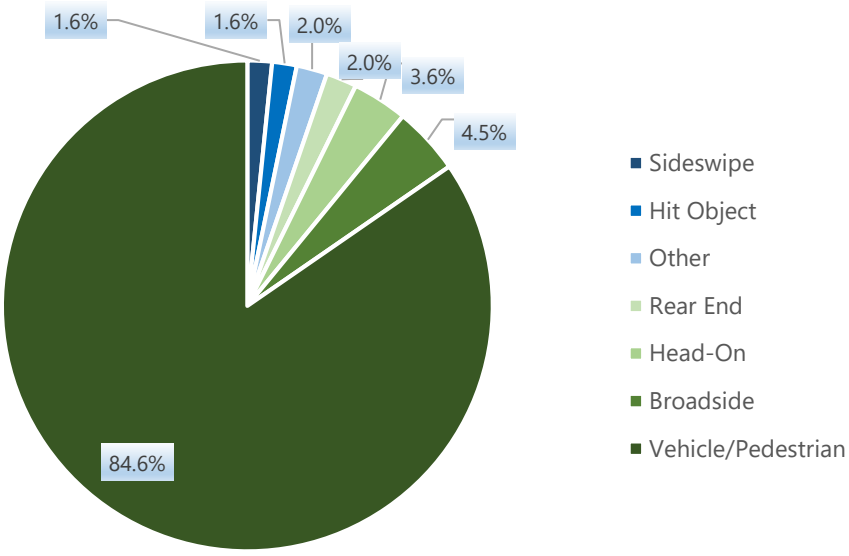


TABLE 19: PEDESTRIAN COLLISIONS BY RACE/ETHNICITY



Similar to bicycle collisions analysis, more pedestrians under 14 years of age were involved in a vehicle-pedestrian collision. Hispanic persons were involved in a higher number of pedestrian collisions relative to their percent population.

TABLE 20: TYPE OF PEDESTRIAN COLLISIONS



Broadside collisions are the most common collision in Madera County at 84.6%. This is likely due to people being t-boned by vehicles in crossings or across driveways. **Table 21** depicts a higher number of motorists were at fault than pedestrian but only marginally.

TABLE 21: PEDESTRIAN COLLISIONS: PARTY AT FAULT

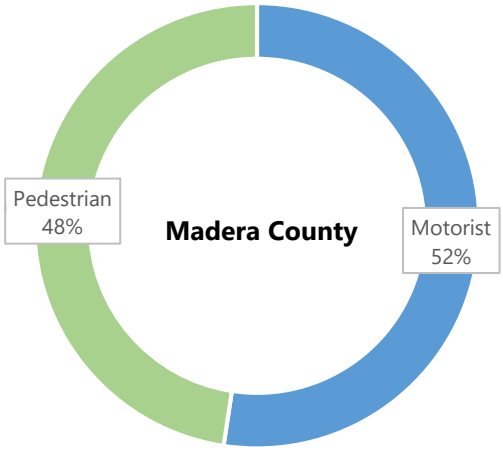
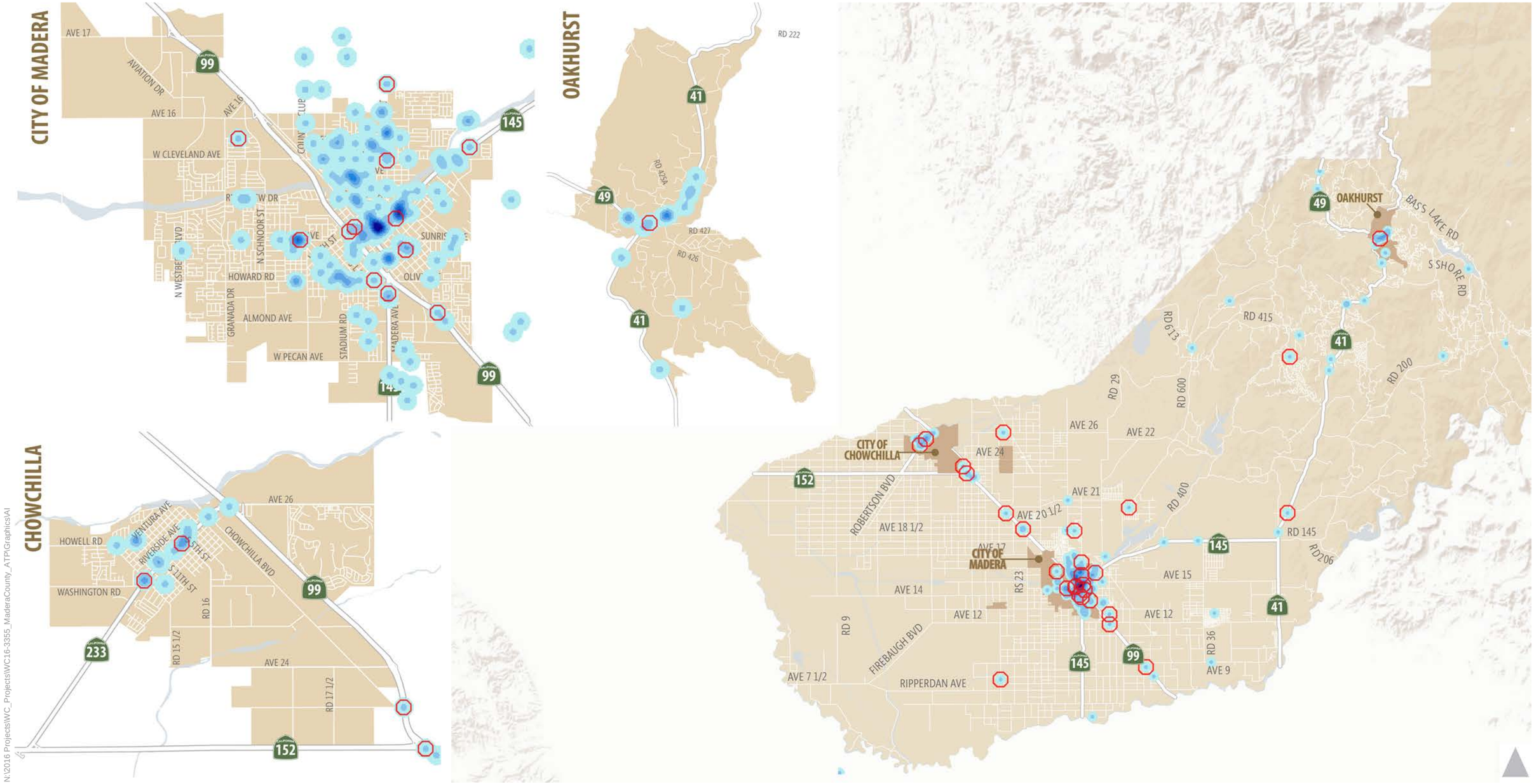


Table 22 summarizes the intersections in Madera County with the highest number of pedestrian-involved collisions. D Street & Yosemite Avenue is a 4-lane arterial intersection with surrounding commercial and office development in the City of Madera's downtown area. Despite being signalized with pedestrian call buttons and having adequate sidewalks and curbs, it still ranks first for most pedestrian collisions. The intersection of 6th Street and Lake Street in the City of Madera is the second highest intersection tied with Gateway Drive and Madera Ave which connects the off-ramps from SR 99 to downtown Madera.

TABLE 22: NUMBER OF PEDESTRIAN COLLISIONS BY INTERSECTION

Rank	Intersection	Collisions
1	D ST & YOSEMITE AVE	5
2	6TH ST & LAKE ST	3
2	GATEWAY DR & MADERA AVE	3
4	FAIRVIEW AVE & HOWARD RD	2
4	11TH ST & HOSPITAL DR & VENTURA AVE	2
4	CENTRAL AVE & D ST	2
4	D ST & SOUTH ST	2
4	5TH ST & ROBERTSON BLVD	2
4	FAIRVIEW AVE & SUNSET AVE	2
4	15TH ST & ROBERTSON BLVD	2
4	FLUME ST & YOSEMITE AVE	2
4	G ST & YOSEMITE AVE	2
4	6TH ST & D ST	2
4	JAMES WAY & LAKE ST	2
4	LAKE ST & YOSEMITE AVE	2
4	ROTAN AVE & SUNSET AVE	2
4	VINEYARD AVE & YOSEMITE AVE	2



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Collision involving a pedestrian with a fatality

Collision Density

Low ⟶ High

Figure 8

Pedestrian Collision Density (2006 – 2013)

5.0 SAFE ROUTES TO SCHOOL

Safe Routes to Schools (SRTS) refers to a variety of multi-disciplinary programs aimed at promoting walking and bicycling to school, and improving traffic safety around school areas through education, enforcement and engineering measures. Under the 2006 ½ cent Transportation Sales Tax Measure Investment Plan, $93.7 million will be spent to improve each city's and the county's local transportation system for the Safe Routes to Schools and Jobs project.

Because Madera County is very agriculture-based, schools that lie in unincorporated parts of the county often have limited financial resources due to limited county budgets for making infrastructure improvements. Small communities can be overlooked entirely when it comes to funding opportunities and get passed up for infrastructure projects in favor of areas with a larger population. Therefore, in rural areas with a lack of safe infrastructure for pedestrians and bicyclists, schools and school districts sometimes feel the safest choice is to discourage children from walking and bicycling to school.

While some rural California communities are beginning to see the benefits of SRTS programs, many continue to struggle with common barriers to safely walking and bicycling to and from school including long travel distances, high traffic volumes and speeds, unsafe intersections and crossings, and the fear of crime and violence.

Local schools in Madera County often feature Walk or Bike to School Day events every year but have limited formal education programs for students on a regular basis. This is often a result of limited funding opportunities available in Madera County.

6.0 CONCLUSION

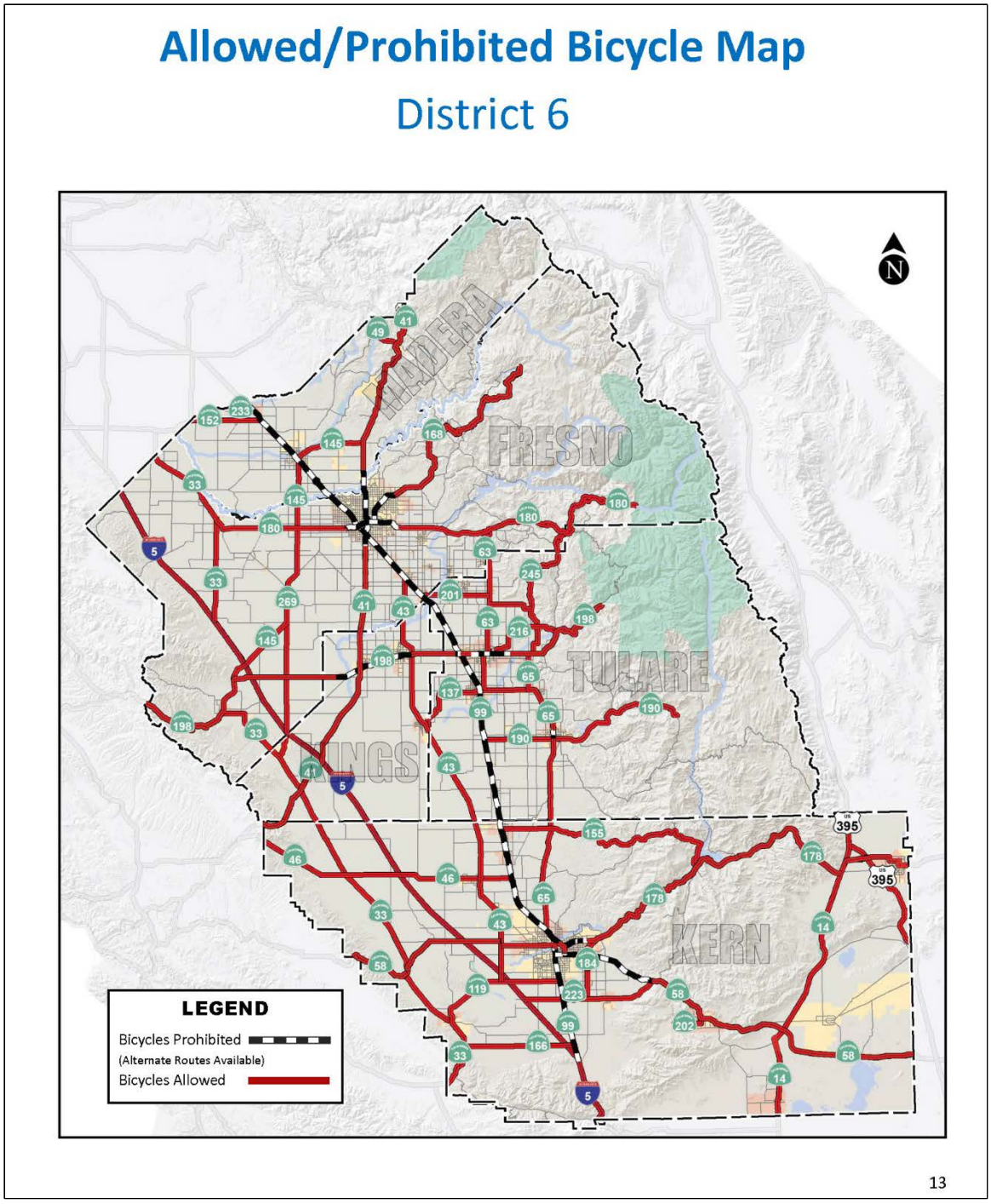
The Madera County Active Transportation Plan is being prepared to meet the requirements of the California Transportation Commission's 2017 Active Transportation Program Guidelines. The Plan hopes to enhance mobility, increase regional connectivity, improve bicycle and pedestrian facilities, and promote safety and equity for all users in rural and urban communities. Next steps for this project include conducting public engagement and stakeholder outreach with nine pop-up events throughout the county. Using input from the public and an assessment of gaps in the bicycle and pedestrian networks, future projects will be identified and vetted by local jurisdictions and MCTC for inclusion in the final ATP. MCTC will continue identifying areas of improvement and meeting the RTP/SCS goals to support environmental and public health goals as well as to create desirable and vibrant communities.

APPENDIX A: CTC 2017 ATP REQUIREMENTS

Element	Description
a	The estimated number of existing bicycle trips and pedestrian trips in the plan area, both in absolute numbers and as a percentage of all trips, and the estimated increase in the number of bicycle trips and pedestrian trips resulting from implementation of the plan.
b	The number and location of collisions, serious injuries, and fatalities suffered by bicyclists and pedestrians in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.
c	A map and description of existing and proposed land use and settlement patterns which must include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other destinations.
d	A map and description of existing and proposed bicycle transportation facilities, including a description of bicycle facilities that serve public and private schools and, if appropriate, a description of how the five Es (Education, Encouragement, Enforcement, Engineering, and Evaluation) will be used to increase rates of bicycling to school.
e	A map and description of existing and proposed end-of-trip bicycle parking facilities.
f	A description of existing and proposed policies related to bicycle parking in public locations, private parking garages and parking lots and in new commercial and residential developments.
g	A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These must include, but not be limited to, bicycle parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.
h	A map and description of existing and proposed pedestrian facilities, including those at major transit hubs and those that serve public and private schools and, if appropriate, a description of how the five Es (Education, Encouragement, Enforcement, Engineering, and Evaluation) will be used to increase rates of walking to school. Major transit hubs must include, but are not limited to, rail and transit terminals, and ferry docks and landings.
i	A description of proposed signage providing wayfinding along bicycle and pedestrian networks to designated destinations.
j	A description of the policies and procedures for maintaining existing and proposed bicycle and pedestrian facilities, including, but not limited to, the maintenance of smooth pavement, ADA level surfaces, freedom from encroaching vegetation, maintenance of traffic control devices including striping and other pavement markings, and lighting.
k	A description of bicycle and pedestrian safety, education, and encouragement programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the law impacting bicycle and pedestrian safety, and the resulting effect on collisions involving bicyclists and pedestrians.
l	A description of the extent of community involvement in development of the plan, including disadvantaged and underserved communities.

Element	Description
m	A description of how the active transportation plan has been coordinated with neighboring jurisdictions, including school districts within the plan area, and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.
n	A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.
o	A description of past expenditures for bicycle and pedestrian facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicyclists and pedestrians in the plan area. Include anticipated revenue sources and potential grant funding for bicycle and pedestrian uses.
p	A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.
q	A resolution showing adoption of the plan by the city, county or district. If the active transportation plan was prepared by a county transportation commission, regional transportation planning agency, MPO, school district or transit district, the plan should indicate the support via resolution of the city(s) or county(s) in which the proposed facilities would be located.

APPENDIX B: CALTRANS DISTRICT 6 BICYCLE MAPS



STATE ROUTE 41 MADERA/MARIPOSA COUNTY BICYCLE MAP

Location (Postmile/PM)	Facility (Lanes)	Rural/ Urban	Shoulder (Treated)	Terrain	Speed Limit Posted	Facility Description
Fresno/Madera County Line to Avenue 12 (PM 0.00 – 3.23)	4 Lane Freeway/ 3 Lane Expressway	Rural/ Urban	10 ft.	Level to Rolling	65	Bicycle and Pedestrian Access Prohibited, alternative route available. Park & Ride Lot, PM 1.4.
Avenue 12 to State Route 145 (PM 3.23 – 9.25)	2 Lane Expressway/ Highway	Rural	0 to 10 ft.	Rolling	55	Shoulders 8 ft. over 50% of segment. Commuter and recreational traffic. Bicycle rack in Park and Ride Lot at SR 145, PM 9.3.
State Route 145 to Raymond Road (PM 9.25-28.02)	2 Lane Highway	Rural	0 to 8 ft.	Rolling to Mountainous	55	Shoulders are mostly 2 feet or less. Recreational traffic to Yosemite National Park. Commuter traffic, Park and Ride Lot at PM 17.9.
Raymond Road to Madera/Mariposa County Line (PM 28.02 – 45.73)	2 Lane Highway	Rural/ Urban	0 to 10 ft.	Mountainous	40, 45, & 55	Shoulders are mostly 2 feet or less on winding roads. Mostly rural with unincorporated areas of Coarsegold and Oakhurst. Recreational traffic to Yosemite National Park.
Madera/Mariposa County Line to Yosemite Nat. Park (PM 0.00 – 4.90)	2 Lane Highway	Rural	0 to 8 feet	Mountainous	35 & 55	Shoulders are mostly 2 feet or less on winding roads. Recreational traffic to Yosemite National Park.

STATE ROUTE 49 MADERA COUNTY BICYCLE MAP

Location (Post mile/PM)	Facility (Lanes)	Rural/ Urban	Shoulder (Treated)	Terrain	Speed Limit Posted	Facility Description
State Route 41 to Meadow Vista Drive (PM 0.00 – 0.45)	4 Lane Highway	Urban	4-8 ft.	Mountainous	35	Shoulders mostly 6 feet, unincorporated area of Oakhurst. Commercial activity such as restaurants and grocery stores.
Meadow Vista Drive to Bollinger Place (PM 0.45 – 0.98)	2 Lane Highway	Rural	4-6 ft.	Mountainous	45	Shoulders mostly 6 feet, surrounded by forest land area with some industrial structures.
Bollinger Place to County Road 628 (PM 0.98 – 5.53)	2 Lane Highway	Rural	0-6 ft.	Mountainous	40 & 55	Shoulders mostly two feet or less, unincorporated area of Ahwahnee, surrounded by forest land area and a few structures.
County Road 628 to Madera/Mariposa County Line (PM 5.53 – 9.28)	2 Lane Highway	Rural	0-6 ft.	Mountainous	45 & 55	Shoulders mostly two feet or less, unincorporated area of Nipinnawasee, surrounded by forest land area with few structures.

STATE ROUTE 145 MADERA COUNTY BICYCLE MAP

Location (Post mile/PM)	Facility (Lanes)	Rural/ Urban	Shoulder (Treated)	Terrain	Speed Limit Posted	Facility Description
Fresno/Madera County Line to Avenue 12 (PM 0.00 – 7.06)	2 Lane Highway	Rural	0-8 ft.	Level	45 & 55	Shoulders 8 feet mostly. Surrounding agricultural land with few structures. Community of Ripperdan at PM 2.01.
Avenue 12 to State Route 99 (PM 7.06 – 9.08)	2/4 Lane Highway	Rural/ Urban	6-8 ft.	Level	35, 45, & 55	Shoulders 8 feet mostly, south of Madera and within the southern Madera city limits. Agriculture land use in rural segment, commercial, industrial, and residential use in urban area.
State Route 99 to Storey Road (PM 9.08 – 11.13)	2/4 Lane Highway	Urban	3-8 ft.	Level	30 & 40	Shoulders 8 feet mostly but on-street parking is allowed which narrows bicycle travel way. Downtown central business district in the City of Madera.
Storey Road to State Route 41 (PM 11.13 – 25.46)	2 Lane Highway	Rural	0-8 ft.	Level	55	Shoulders mostly 2 feet or less. Surrounding agricultural and grazing land.

STATE ROUTE 152 MADERA COUNTY BICYCLE MAP

Location (Post mile/PM)	Facility (Lanes)	Rural/ Urban	Shoulder (Treated)	Terrain	Speed Limit Posted	Facility Description
Merced/Madera County Line to State Route 233 (PM 0.00 – 10.80)	4 Lane Expressway	Rural	8 ft.	Level	65	8 foot shoulders, surrounding agricultural land with few structures. Farm machinery crossing.
State Route 233 to State Route 99 (PM 10.80 – 15.62)	4 Lane Expressway	Rural	8 ft.	Level	65	8 foot shoulders, surrounding agricultural land with few structures. Farm machinery crossing.

STATE ROUTE 233 MADERA COUNTY BICYCLE MAP

Location (Post mile/PM)	Facility (Lanes)	Rural/ Urban	Shoulder (Treated)	Terrain	Speed Limit Posted	Facility Description
State Route 152 to Avenue 24 1/2 (PM 0.00 – 1.80)	2 Lane Highway	Rural	8 ft.	Level	50 & 55	Shoulders are 8 feet, surrounding agriculture, residential, industrial land use.
Avenue 24 ½ to 15th Street (PM 1.80 – 2.49)	2 Lane Highway	Urban	8 ft.	Level	40 & 50	Shoulders are 8 feet, within City of Chowchilla city limits. **Bicycle route**. Commercial and industrial land use.
15th Street to State Route 99 (PM 2.49 – 3.89)	2/4 Lane Highway	Urban	8 feet	Level	30 & 40	Shoulders are 8 feet with automobile on-street parking along shoulders. Sidewalks along route. **Bicycle Route** within City of Chowchilla city limits. Commercial and residential land use.

STATE ROUTE 99 ALTERNATIVE BIKE ROUTES FOR STATE ROUTE 99

Location (miles)	Facility (Lanes)	Rural/ Urban	Shoulder (Treated)	Terrain	Speed Limit Posted	Facility Description
Interstate 5 to Madera/Merced County Line (172 + miles of freeway)	4/6/8 Lane Freeway	Rural/ Urban	8-10 ft.	Mostly Level	65 & 70	Bicycle and Pedestrian Access Prohibited on State Route 99 within District 6. Alternative Routes Available.