

# SR 233/Robertson Boulevard Corridor Planning Study and Downtown Master Plan

Final Report  
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# SR 233/Robertson Boulevard Corridor Planning Study and Downtown Master Plan

## Draft Report

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Joint Agencies:



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# 1. Introduction

SR 233/Robertson Boulevard is a major corridor, acting as a spine for the local street network for the City of Chowchilla as well as a regional connector connecting cities across the region. The corridor, providing connections between Highway 99 (SR 99) and Highway 152 (SR 152), supports diverse land uses across the City of Chowchilla, including Downtown Chowchilla and other establishments that are critical to the area's vibrancy.

The way we move and how we interact with major streets and corridors is evolving. SR 233/Robertson Boulevard corridor, as it traverses through the City of Chowchilla presents a great opportunity to strengthen connectivity within existing neighborhoods in the City, support economic development, and enhance the quality of life for area residents, workers and visitors. This plan will result in transforming one of the oldest and economically sensitive, auto-centric thoroughfare into a vibrant multi-modal corridor where people can easily walk, bike, and ride transit.

## Project Background

The Madera County Transportation Commission (MCTC), City of Chowchilla, and Caltrans District 6 recognize the importance of safe and efficient traffic operations for all modes of travel on the SR 233/Robertson Boulevard corridor, and acknowledge that the auto-centric corridor requires infrastructure enhancements to provide the Chowchilla community with safer and convenient non-motorized modes of travel.

**SR 233/Robertson Boulevard Corridor Planning Study and Downtown Master Plan**, funded by the SB-1 Sustainable Communities Planning Grant and is a joint effort between Caltrans District 6, City of Chowchilla, and the Madera County Transportation Commission (MCTC). The SB-1 grant, directed by Caltrans, aims to support local and regional multi-modal transportation efforts that further the region's Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), state greenhouse gas (GHG) emission goals, the needs of disadvantaged communities, etc.

Since SR 233/Robertson Boulevard is also a main truck route and a major thoroughfare in the City of Chowchilla, a comprehensive analysis of trucking operations on City streets in order to identify its effect on pedestrians, bicyclists and other motor vehicles has been conducted. Additionally, a signage study was also conducted to locate the STOP signs that need to be replaced to increase transportation safety throughout the City of Chowchilla. Both of these studies were a part of SB-1 and were administered and managed by the City of Chowchilla. The study data as collected and the subsequent results were utilized in the design development and conceptualization of this corridor plan.



## Vision, Goals, and Objectives

The study was intended to analyze existing conditions for all modes of transportation, and to develop a plan to implement appropriate improvements that benefit all roadway users, residents, and businesses along the corridor. The study aims to increase safety for all modes of transportation and mitigate adverse truck traffic impacts, while improving traffic operations, along the corridor. The following are the goals and objectives of the study:

- Improve bicycle, pedestrian, and transit facilities along the study corridor
- Recommend traffic calming solutions to enhance safety for all modes of transportation
- Encourage the use of active transportation
- Improve traffic operations and reduce congestion along the corridor
- Address the transportation needs of the community
- Improve public health and enhance community livability

## Study Area

The City of Chowchilla has a total land area of 11.1 square miles and is located in the northwestern region of Madera County, approximately 15 miles northwest of the City of Madera. The SR 233/Robertson Boulevard corridor serves the City of Chowchilla and surrounding regional transportation needs. It provides local connections between residential and commercial areas, while it also serves as an internal and significant regional truck network.

The study corridor encompasses Robertson Boulevard and Avenue 26. Robertson Boulevard bisects the City providing a connection between SR 152 (Avenue 23)

to the south and SR 99 to the north. Robertson Boulevard is generally a two-to-four lane state highway facility that mainly serves agricultural, residential, and commercial land uses. Other land uses include schools and recreational facilities (i.e public parks). In the northern portion of the City, Robertson Boulevard continues into Avenue 26 which directly serves commercial, agricultural, and residential land uses. The extent of the study corridor include Robertson Boulevard between SR 152 and SR 99, and Avenue 26 between SR 99 and Road 19. **Figure 1** illustrates the study area.

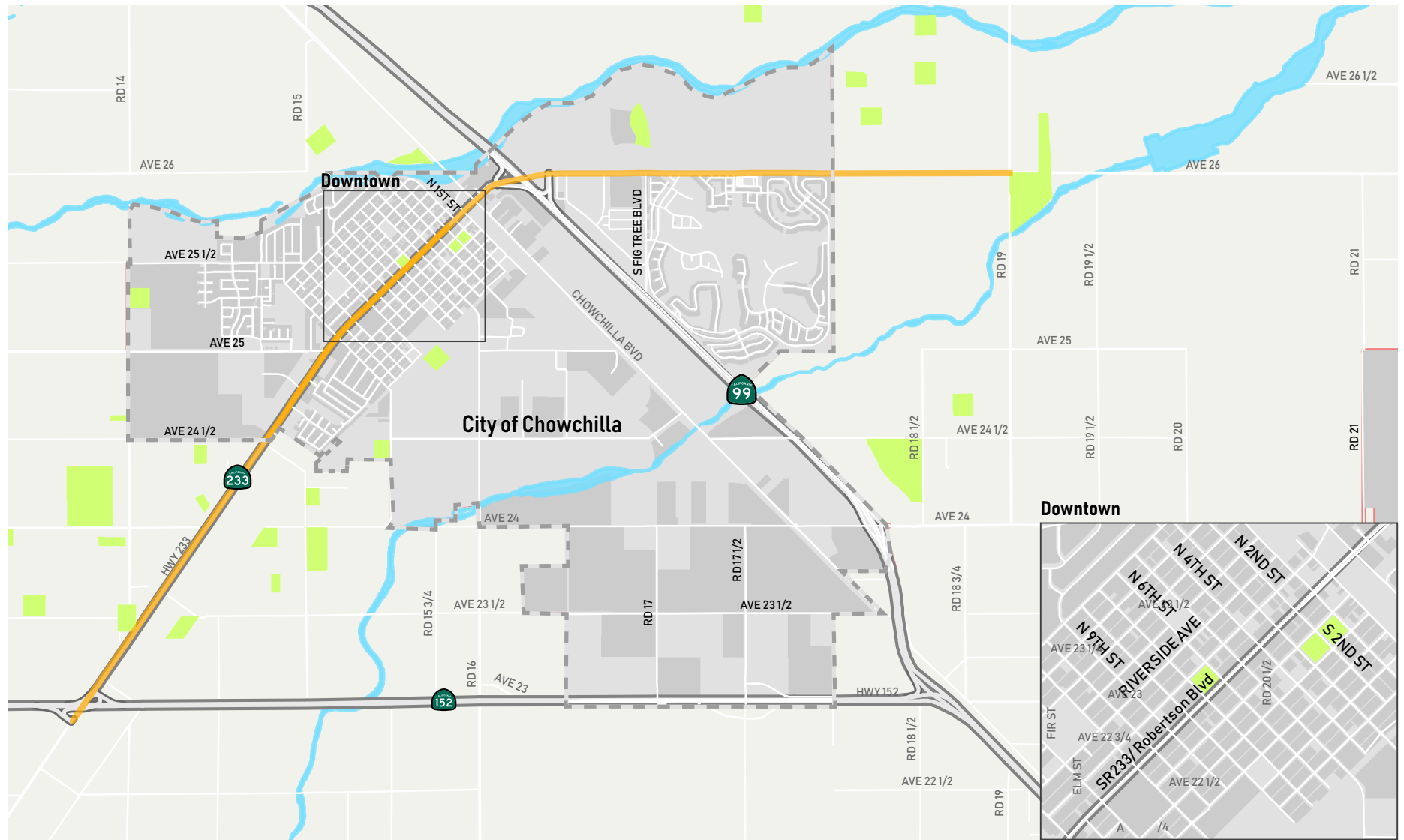
## Planning and Policy Context



Prior planning decisions and technical studies are essential to acquiring a full understanding of the study corridor. They also serve as guiding principles for exploring and identifying multi-modal opportunities along the study corridor to ensure alternatives are developed in accordance with local and regional standards and guidelines. The documents reviewed in this section entail the regional transportation plans, short range transit development plans, active transportation plans as well as various design guidelines. Some plans have listed projects while others have policy guidelines guiding further development in the region. The following **Table 1** list the various plans and policy documents reviewed for this study along with their findings:

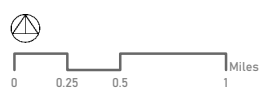




Figure 1. Study Area



 Chowchilla City Boundary  
 Study Corridor



**Table 1. Findings: Planning and Policy Context**

Plan/Policy Document	Findings
2018 Regional Transportation Plan (RTP)/ Sustainable Communities Strategy (SCS) <sup>1</sup>	<ul style="list-style-type: none"> <li>• The plan anticipates an increase of 81% of total vehicle trips and 27% of Vehicle Miles Travelled (VMT) from 2010 to 2042.</li> <li>• To accommodate this growth, the RTP proposes widening of congested roadways and highways like SR 41 and SR 99, and a focus on improving bicycle facilities.</li> <li>• The Sustainable Communities Strategy (SCS) emphasizes performance-based project prioritization as a planning strategy, with performance measures such as safety, bridge/pavement condition, congestion/system performance, and transit asset management.</li> </ul>
Madera CTC 2018 Regional Transportation Improvement Program <sup>2</sup>	<ul style="list-style-type: none"> <li>• The 2018 Regional Transportation Improvement Program (RTIP) is a program that plans the allocation of available state and federal funding to highway, local road, transit, and active transportation projects within Madera County.</li> <li>• The 2018 RTIP identifies three projects funded under the program, including two State Route 99 (SR 99) widening projects under Caltrans and a general planning, programming, and monitoring fund for the Madera CTC.</li> <li>• Caltrans plans to widen State Route 99 to six-lanes from Avenue 7 to Avenue 12 and from Avenue 12 to Avenue 17.</li> </ul>
Madera CTC Short Range Transit Development Plan (SRTDP) <sup>3</sup>	<ul style="list-style-type: none"> <li>• This transportation plan is a five-year document that is meant to guide public transit agencies when making system improvements.</li> <li>• The plan outlines existing conditions, transit goals, performance standards, and transit needs/issues that exist in jurisdictions within Madera County.</li> <li>• Transit needs and issues are organized by jurisdiction and include recommended improvements.</li> </ul>
Madera County Transportation Commission Active Transportation Plan( ATP) <sup>4</sup>	<ul style="list-style-type: none"> <li>• Adopted in 2018, provides guidance for the development of a connected and effective active transportation system through Madera County.</li> <li>• The ATP identifies top priority corridors for pedestrian and bicycle improvements within the City of Madera, City of Chowchilla, and unincorporated county areas.</li> <li>• Proposed bike facilities within the study area include Class IV separated bikeway along Robertson Boulevard between Myer Drive and Chowchilla Boulevard, Class II bike lanes along Robertson Boulevard and Avenue 26 between Chowchilla Boulevard and Montgomery Lake Way, and a Class III bike route along Avenue 26 east of Chowchilla City limits.</li> <li>• Proposed pedestrian facility improvements within the study area include sidewalk, corridor, and intersections improvements along Robertson Boulevard south of 15th Street, near Wilson Middle School, and at the SR 233/Robertson Boulevard and SR 99 overcrossing.</li> </ul>
Smart Mobility 2010: A Call to Action for the New Decade <sup>5</sup>	<ul style="list-style-type: none"> <li>• A Handbook adopted by Caltrans in 2010 with the intent to serve as a tool to address transportation challenges in a smart and sustainable manner.</li> <li>• The handbook identifies location efficiency, reliable mobility, health and safety, environmental stewardship, social equity, and robust economy as the six principles that make up the Smart Mobility Framework (SMF).</li> <li>• The handbook identifies rural and agricultural lands as place types that mainly rely on automobile transportation but should focus on creating walkable and bike-able agricultural and rural roads for a Smart Mobility approach.</li> <li>• It highlights that suburbanization should be avoided to ensure that agricultural roads serve all modes of transportation and are connected to Main Streets and central town areas.</li> </ul>



Plan/Policy Document	Findings
City of Chowchilla Downtown Design Guidelines, 2017 <sup>6</sup>	<ul style="list-style-type: none"> <li>• The purpose of the Downtown Design Guidelines is to assist property owners and developers in fitting their projects into Downtown Chowchilla while preserving the character of the area.</li> <li>• The plan identifies project types subject to the guidelines as new construction projects, additions and expansions to existing buildings, exterior façade changes, and new signage projects.</li> <li>• The plan includes guidelines for site plans, circulation and parking, architecture, landscaping, street furniture, and signs.</li> <li>• Apart from guidelines that must be met, the plan addresses City preferences such as 6 feet wide sidewalks, thermoplastic crosswalks, and curb bulb-outs.</li> </ul>
Bicycle Guide for District 6 and Complete Street Elements <sup>7</sup>	<ul style="list-style-type: none"> <li>• The main purpose of this plan is to serve as a guide for bicyclists.</li> <li>• The plan includes safety tips, laws, bicycle maps, complete streets maps, and available resources.</li> <li>• The plan also details which areas of roadway lanes bicycles are allowed to ride in based on facility type and traffic conditions.</li> </ul>
Towards an Active California - State Bicycle + Pedestrian Plan <sup>8</sup>	<ul style="list-style-type: none"> <li>• Caltrans' first pedestrian and bicycle plan with the vision that "people in California of all ages, abilities, and incomes can safely, conveniently, and comfortably walk and bicycle for their transportation needs" by the year 2040.</li> <li>• Objectives of the plan include improving safety, increasing active mobility, preserving a high-quality system, and enhancing social equity.</li> <li>• Details existing pedestrian and bicycle conditions, outreach strategies used in the development of the plan, strategies for plan implementation, and implementation actions.</li> <li>• This plan organizes strategies by the four objectives of the plan (safety, mobility, preservation, social equity).</li> </ul>
Main Street, California - A Guide for improving Community and Transportation Vitality <sup>9</sup>	<ul style="list-style-type: none"> <li>• Addresses the importance of main streets when developing multi-modal networks.</li> <li>• Discusses the importance of Main Streets for all users and in all communities</li> <li>• Highlights that to increase transit and active transportation use, a multi-modal network with direct connections to transit facilities and high-density destinations is required.</li> <li>• Focuses on making main streets livable - that reflect community character, providing sustainable streets that are inclusive and allow users to choose their mode of travel.</li> </ul>

<sup>1</sup>2018 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) - [https://www.maderact.org/sites/default/files/fileattachments/transportation/page/2351/mctc\\_2018\\_rtp\\_am\\_1\\_technical\\_revision.pdf](https://www.maderact.org/sites/default/files/fileattachments/transportation/page/2351/mctc_2018_rtp_am_1_technical_revision.pdf)

<sup>2</sup>Madera CTC 2018 Regional Transportation Improvement Plan - [https://www.maderact.org/sites/default/files/fileattachments/programming/page/2451/mctc\\_2018\\_rtip.pdf](https://www.maderact.org/sites/default/files/fileattachments/programming/page/2451/mctc_2018_rtip.pdf)

<sup>3</sup>Madera Short Range Transit Development Plan (SRTDP) - [https://www.maderact.org/sites/default/files/fileattachments/social\\_services\\_transportation\\_advisory\\_council\\_sstac/page/2151/short\\_range\\_transit\\_plan\\_r.pdf](https://www.maderact.org/sites/default/files/fileattachments/social_services_transportation_advisory_council_sstac/page/2151/short_range_transit_plan_r.pdf)

<sup>4</sup>Madera County Transportation Commission Active Transportation Plan (ATP) - <https://www.maderact.org/transportation/page/active-transportation-plan>

<sup>5</sup>Smart Mobility 2010: A Call to Action for the New Decade - <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/office-of-smart-mobility-and-climate-change/smf-handbook-062210-a-11y.pdf>(Updated Document released in 2020)

<sup>6</sup>City of Chowchilla Downtown Design Guidelines - <https://www.cityofchowchilla.org/DocumentCenter/View/60/Adopted-Downtown-Design-Guidelines-Manual-PDF>

<sup>7</sup>Bicycle Guide for District 6 and Complete Street Elements - <https://dot.ca.gov/caltrans-near-me/district-6/district-6-programs/d6-bicycle-complete-streets>

<sup>8</sup>Towards an Active California - State Bicycle + Pedestrian Plan - [https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/f0020350\\_activeca\\_final-plan-2017-05-18-a11y.pdf](https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/f0020350_activeca_final-plan-2017-05-18-a11y.pdf)

<sup>9</sup>Main Street, California - A Guide for improving Community and Transportation Vitality - <https://dot.ca.gov/-/media/dot-media/programs/design/documents/main-street-3rd-edition-a11y.pdf>



# Report Organization

SR 233/Robertson Boulevard Corridor Planning Study and Downtown Master Plan is organized into five chapters. Each chapter is organized in a way it builds upon the prior, starting from a summary of existing conditions, to identifying needs and opportunities through community engagement and public participation processes, to the final corridor design concepts of the study corridor. The plan ends with outlining various near-term and long-term improvements as developed, organized in a phased implementation plan.

## Chapter 1. Introduction

Introduces the project in detail, describing the purpose and background of the study. It describes the study corridor and its segments, highlighting the emphasis of the study on the Urban Boulevard, i.e., Downtown Chowchilla. It also entails a detailed summary of prior transportation planning and technical studies in the City of Chowchilla and Madera County.

## Chapter 2. Existing Conditions and Opportunities

Summarizes the corridor's existing conditions based on technical analysis and on-site observations. It entails a detailed analysis of the existing infrastructure for all modes of transportation, including motorists, pedestrians, bicyclists, and transit users. It includes identification of deficiencies in the current network, highlighting key assets for prioritized improvements, critical challenges that need to be addressed and potential opportunities that will be further explored during the development of the corridor plan.

## Chapter 3. Community Outreach and Engagement

Summarizes the extensive community outreach and stakeholder engagement conducted to garner input from a wide cross-section of the community. It includes in detail the core concerns and desires identified by various stakeholders in the community. An overview of recurring themes has been summarized to ensure a consistent approach towards improving the study corridor.

## Chapter 4. Corridor Design and Concept Development

Entails near-term and long-term design improvements for the SR 233/Robertson Boulevard study corridor. The Urban Boulevard, i.e., Downtown Chowchilla, is the emphasis area. These improvements and design alternatives are conceptual in nature and are based on City of Chowchilla's Street Design Guidelines.

## Chapter 5. Recommended Projects and Implementation Strategies

Itemizes the near-term and long-term improvements developed for pedestrian, bicycle, and transit users in all the segments of the study corridor. It also includes a summary of the phased implementation approach, the evaluation criteria of multi-modal improvements, planning level cost estimates of projects and potential funding sources and opportunities.





# 2. Existing Conditions and Opportunities

SR 233/Robertson Boulevard is a major truck route serving as an essential thoroughfare through the City of Chowchilla, connecting SR 99 to SR 152. To develop and plan for this corridor aiming to leverage the existing assets, as we identify opportunities to improve the multi-modal connectivity of the corridor, it is very important to understand the existing conditions of the corridor.

This Chapter summarizes the existing conditions on the corridor in order to establish an understanding of the surrounding land uses, key assets, challenges and opportunities that the corridor presents. It begins with a demographic and socio-economic analysis of the City of Chowchilla, followed by a detailed analysis of the existing transportation infrastructure, focusing on pedestrian, bicyclists, transit as well as automobile facilities along the corridor. The source of information in this chapter is from the data provided by the City and the County, along with continuous data collection effort that was conducted. Technical walk audits were conducted by the project team to document existing conditions. All of these sources were combined to develop an accurate picture of the existing conditions along the Robertson Boulevard.

## Demographics and Socio-economics

According to the U.S. Census Bureau Population Estimates (2017), the City of Chowchilla has a population of approximately 18,500. There are about 4,087 housing units in the City. The median age of the population of Chowchilla is 35 years, and approximately 70 percent of the population are high school graduates or higher. There are nearly 3,842 workers that are 16-years of age and older in the City. About 93 percent of these workers travel to work by either car, truck, or van. About four percent of workers bike to work, and the remaining three percent either walk, take a cab, or use a motorcycle. 21 percent of the workers commute to work between 5:30 a.m. to 6:30 a.m., and 27 percent commute between 9:00 a.m. to noon. While 25 percent of commuters get to work within 10 minutes, the mean travel time to commute to work is 23.4 minutes. Roughly 40 percent of workers have three or more vehicles in their households. The majority of the population in the City of Chowchilla are either employed in agricultural, education and health care services, or in arts, entertainment, recreation, and food services. The median annual household income is \$40,938. Eighteen percent of the City population is foreign-born and about 29 percent of individuals live below the poverty line.

The numbers above reaffirm the fact that a significant percentage of the population in Chowchilla commutes using an automobile and a very low percentage of the population bikes, walks, or uses transit. The plan will acknowledge these behaviors of the residents of the City and identify infrastructural interventions that will help encourage the residents to feel safe, walking and biking through the corridor.

## Active Transportation Network

### Walking

Corridor walkability is defined as the ability to walk easily and safely between various origins and destinations through a corridor without being hindered by infrastructure deficiencies such as sidewalk gaps and unsafe crossings. A walkable corridor usually consists of wider sidewalks, clear and safe crossing designations, minimum conflicts with vehicular traffic, a complete provision of Americans with Disabilities Act (ADA)-compliant facilities, and easy access to transit facilities, retail stores, and other services.

In Downtown Chowchilla, continuous sidewalks are available on both sides of Robertson Boulevard (generally between Chowchilla Boulevard and 15th Street). The sidewalks are approximately in the range of 7 to 14 feet in width. Sidewalks are also available on the south side of Avenue 26 from the SR 99 Northbound Ramps to approximately one mile west of Road 19. The sidewalks are of uniform grade and in good condition and are connected via ADA-compliant curb ramps.

Crosswalks are provided across Robertson Boulevard at every intersection near the commercial area between 5th Street and 2nd Street. Pedestrian signal heads

and striped crosswalks are provided across all four approaches at signalized intersections such as Robertson Boulevard/15th Street, Robertson Boulevard/5th Street, and Robertson Boulevard/Chowchilla Boulevard. Continental type crosswalks allow pedestrians to traverse Robertson Boulevard at 13th Street, 10th Street, 8th Street, and 7th Street. These intersections are side-street stop-controlled with no control on Robertson Boulevard approaches. **Figure 2** illustrates the existing pedestrian facilities along the study corridor.

Properly designed and constructed curb ramps at intersection corners and mid-block crosswalks support the accessibility needs of people with walking limitations, other disabilities, and children in strollers. Although curb ramps are present at every intersection within the Downtown core and are generally compliant with ADA standards, observations revealed multiple locations where curb ramps lack truncated domes and do not align with crosswalks. It was also observed that in some locations sidewalks are not maintained and therefore may not meet ADA standards.



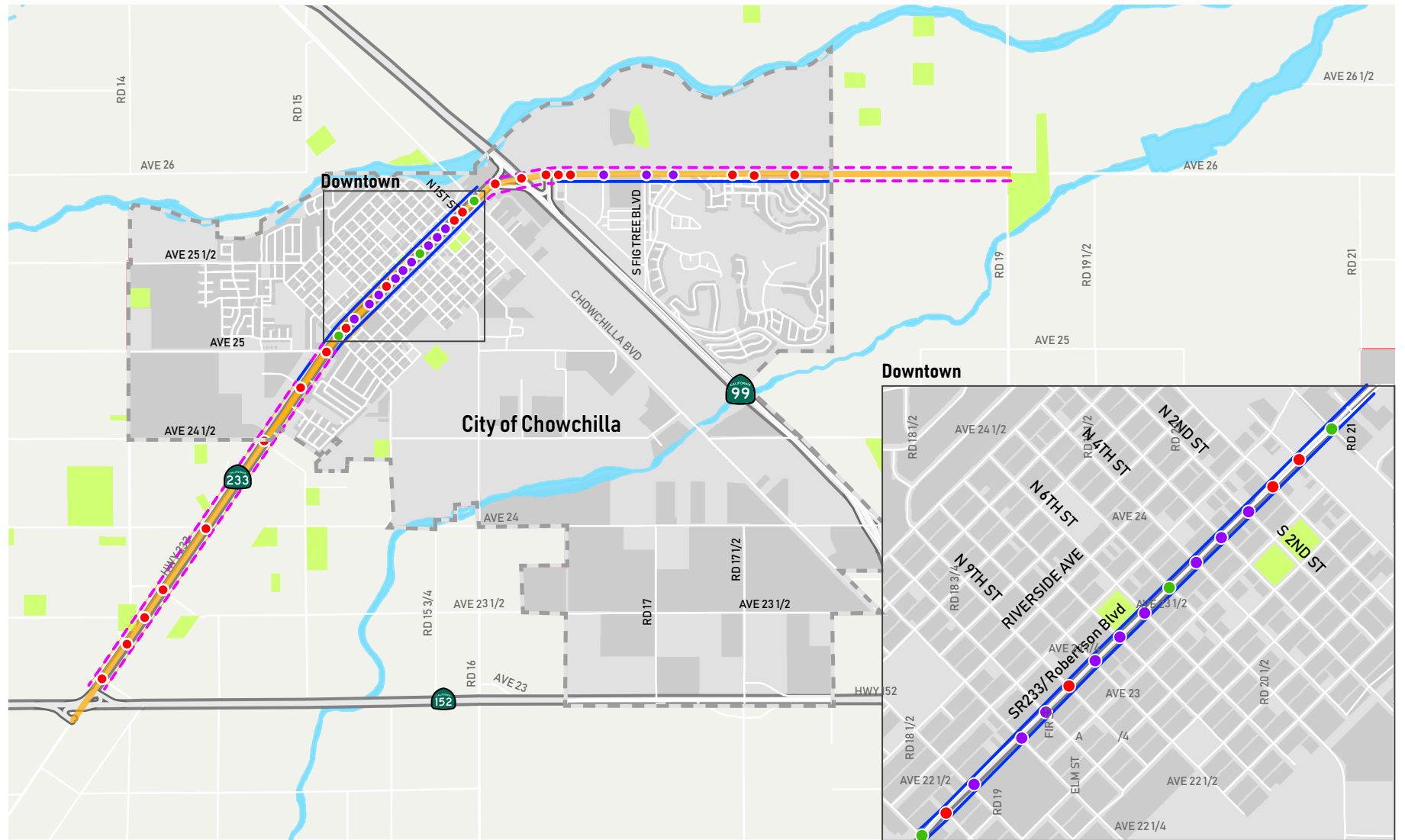
*Sidewalk is not maintained near intersection of Robertson Boulevard/5th Street.*



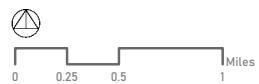
*Curb ramp does not align with crosswalk at intersection of Robertson Boulevard/3rd Street.*



Figure 2. Existing Pedestrian Network



- No Sidewalk
- Continuous Sidewalk
- No Marked Crosswalk
- 1-3 Marked Crosswalks
- 4 Marked Crosswalks
- Chowchilla City Boundary
- Study Corridor



## Bicycling

The Madera County Transportation Commission Active Transportation Plan (ATP) describes the four-bikeway classification, which all meet the design guidelines of the Caltrans Highway Design Manual (HDM), Chapter 1000: Bikeway Planning and Design for multi-use trails. These bicycle facility types are:

- **Class I Bikeway/Shared-Use Path:** Class I bikeways are also referred to as multi-use or shared-use paths. They provide completely separated and paved, exclusive right of way for people to walk and bike.
- **Class II Bikeway/Bike Lanes:** Class II bikeways are striped lanes on roadways for one-way bicycle travel.
- **Class III Bikeway/Bike Route:** Class III bikeways or signed bike routes are where bicyclists share a travel lane with motorists. These are often marked on the roadway with a Sharrow and Shared Roadway sign.
- **Class IV Bikeway/Separated Bikeway:** Class IV separated bikeways are on-street bicycle facilities that are physically separated from motor vehicle traffic by a vertical element or barrier, such as a curb, bollards, or vehicle parking. These can allow for one or two-way travel on one or both sides of the roadway.

The City of Chowchilla recognizes the importance of bicycling for various trip purposes and has proactively enhanced bicycle infrastructure throughout the City. Class II bike lanes are provided along both sides of Avenue 26 between Highway 99 and Fig Tree Road. The remaining portion of Avenue 26 between Fig Tree Road and Road 19 is considered to be a Class III route, however, no sharrow markings or bicycle route signage is provided in this area. Robertson Boulevard is classified as a Class III bicycle route, between 15th Street in the south to Front Street to the

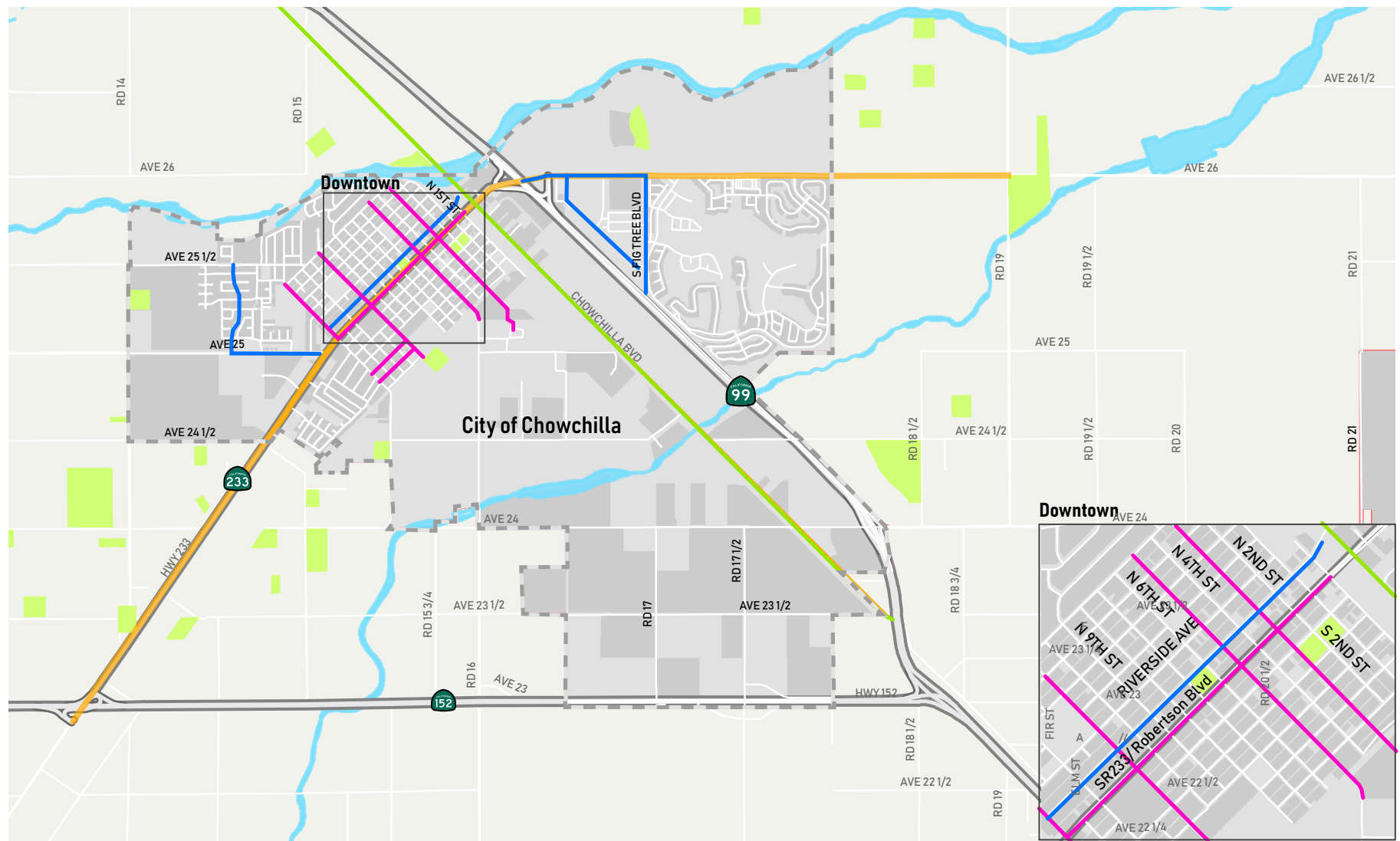
north. This route is designated with bike route wayfinding signs throughout the area. Currently, there are no other bicycle facilities along Robertson Boulevard within the study area, and a connected bicycle network is not provided throughout the City. The Madera ATP proposes to add 5.5 miles of Class I shared-use paths, 10.2 miles of Class II bike lanes, 8.3 miles of Class III bike routes, and 1.5 miles of Class IV separated bikeways accessible within the City of Chowchilla. These proposed facilities include conversions of existing facilities and addition of new facilities on existing or future roadways. **Figure 3** illustrates the existing bicycle facilities within the project study area.



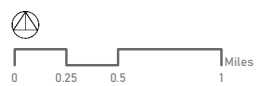
*Class III Bike Route is efficient on S. 5th Street, a minor roadway with light traffic and low speeds. AA*



Figure 3. Existing Bicycle Network



- Class I - Bike Path
- Class II - Bike Lane
- Class III - Bike Route
- Chowchilla City Boundary
- Study Corridor



The majority of bicycle facilities in the study area consist of Class III Bicycle Routes. These facilities are denoted by sharrow markings, “Bike Route” signage, and “Share the Road” signage. However, field observations revealed that while Bike Route signage was present, signs were spaced out at great distances and many were fading. This lack of signage and striping lead to observations of bicyclists riding on the wrong side of the roadway and using crosswalks and sidewalks rather than the Class III facility, as shown below. It should also be noted that Class III Bicycle Routes are efficient and safe in low stress situations such as two-lane, low volume, and low-speed roadways, but they do not accommodate inexperienced to intermediate cyclists on high-volume roadways with higher speeds.



*Class III facility on Robertson Boulevard at Chowchilla Boulevard. This facility does not accommodate all cyclists, due to high traffic volumes and high truck traffic in this area.AA*

## Education Programs Related to Walking and Bicycling

Jurisdictions within the County are dedicated to maintaining safety in their communities. As per the Madera County Transportation Commission Active Transportation Plan (ATP), the following programs are recommended to improve and educate on safe walking and bicycling within the County:

- Safe Routes to School
- Multi-modal Safety Campaign
- Three Foot Passing Law
- Wayfinding programs

Due to the agricultural and rural-based characteristics in the County, schools in unincorporated areas and small communities are limited in financial resources and do not have access to most educational safety programs. The ATP recommends the Safe Routes to School (SRTS) programs to be consolidated into a unified Madera Region SRTS Program to ensure that each school is benefitted from the program. The additional programs are not currently implemented in the region, but are recommended for implementation in the ATP. The Multi-modal Safety Campaign is a program that aims to educate drivers with safe roadway practices to ensure roadways safely serve all modes of transportation. It is also recommended that drivers and cyclists in Madera County are informed on the Three-Foot Passing Law, which requires that drivers pass cyclists on roadways with a buffer of at least three feet. Wayfinding is an important educational component of active transportation, as educated pedestrians and bicyclists are able to identify designated bicycle and pedestrian facilities. The Madera ATP recommends improving wayfinding for on-street and off-street pedestrian and bicycle facilities in the region.

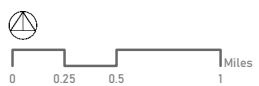
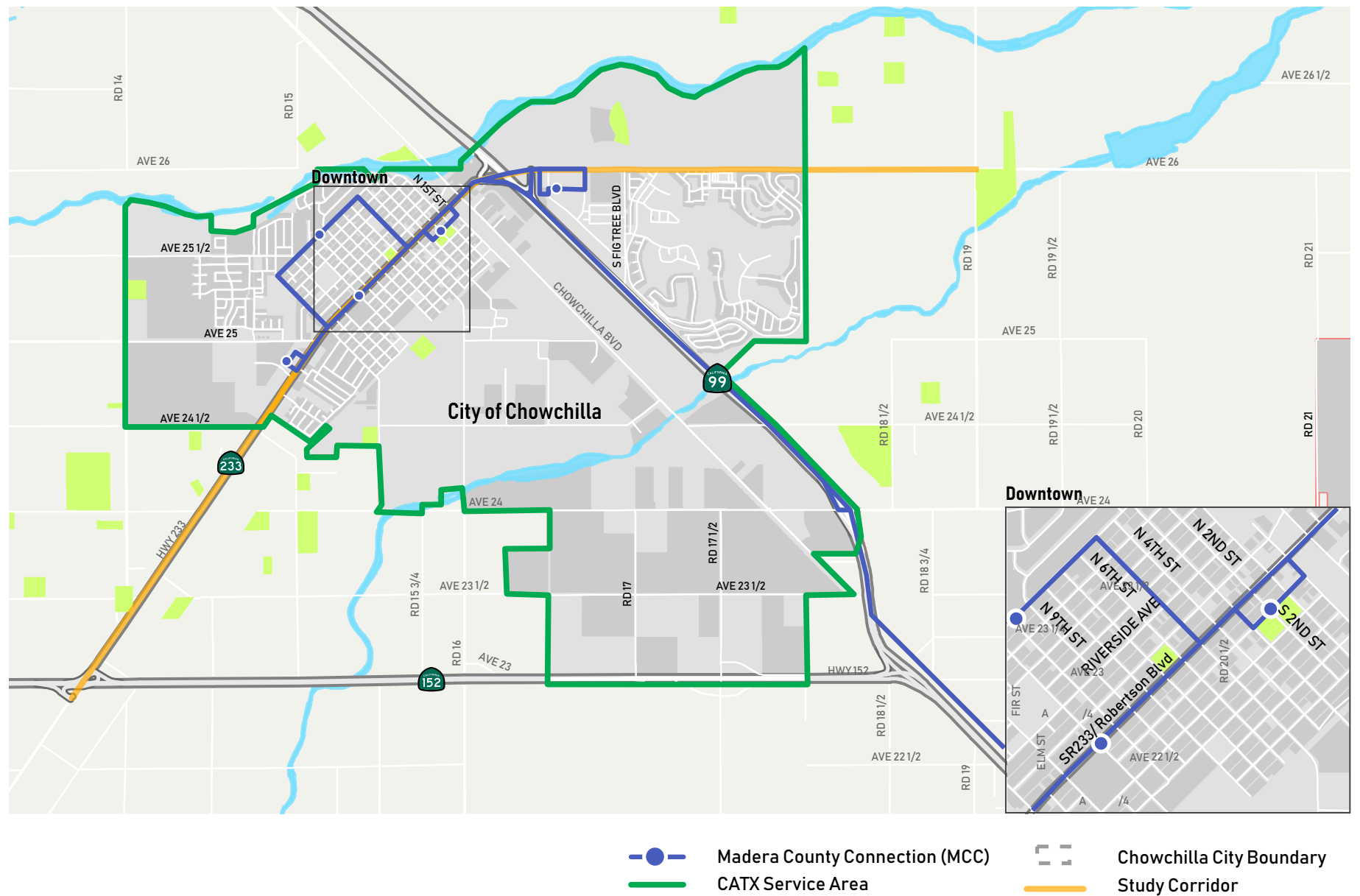
## Public Transportation Network

The study area of SR 233/Robertson Boulevard within the City of Chowchilla receives transit services from the Madera County Connection (MCC) and Chowchilla Area Transit Express (CATX). The MCC is a fixed-route service mainly designed for regional commute trips, and CATX is a demand-response transit service.

- MCC offers four total routes with one serving the City of Chowchilla. The Chowchilla-Fairmead route runs from Downtown Madera to Chowchilla on weekdays from 7:00 a.m. to 6:49 p.m. The route makes five round-trips per day and serves one stop in Fairmead at the Baptist Church.
- CATX is a dial-a-ride bus service that provides curb-to-curb transportation within the City of Chowchilla. CATX operates weekdays from 8:00 a.m. to 4:00 p.m. and requires users to call a minimum of two hours prior to when service is needed.

In the City of Chowchilla, bus stops include the Countrywood Shopping Center between Myer Drive and Washington Road, Community Sports Center in the downtown between S 11th Street and S 10th Street, Chowchilla City Senior Bus Center in the downtown between S 1st Street and S 2nd Street and Chowchilla Save Mart at Montgomery Lake Way. The existing public transit network is illustrated in **Figure 4**.

Figure 4. Existing Transit Service Network





# Roadway Network

## Vehicle Lanes and Geometry

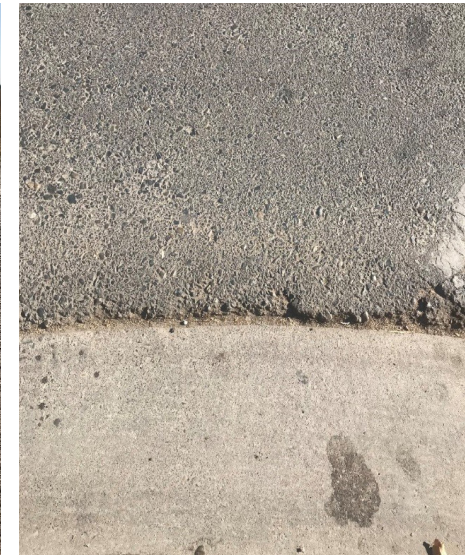
SR 233/Robertson Boulevard extends from Avenue 18 ½ in the south to its terminus at the SR 99 interchange to the north. The roadway continues as Avenue 26 after the SR 99 interchange. The portion of SR 233/Robertson Boulevard between Highway 152 and Palm Parkway is comprised of two 12-foot travel lanes with 10-foot shoulders on either side. Approaching the Robertson Boulevard/15th Street intersection, Robertson Boulevard gradually expands to a 60 feet wide four-lane (two lanes per direction) roadway with a two-way left-turn lane (TWLTL) median. The travel lanes and median are 10 and 14 feet wide, respectively, and eight feet of parking space is provided on each side of Robertson Boulevard. As the roadway approaches the downtown area, the TWLTL median is replaced with left-turn pockets at the intersections. North of Chowchilla Boulevard, Robertson Boulevard reduces to a two-lane roadway until its terminus at the SR 99 Northbound ramps. Avenue 26 is comprised of a two-lane roadway with a 12-foot wide median and five feet wide Class II bike lanes on either side between SR 99 and Fig Tree Road. East of Fig Tree Road, Avenue 26 reduces to a two-lane roadway with the travel lanes gradually reducing to 10 feet in width. Within the project study area, Robertson Boulevard has a posted speed limit that ranges between 30 and 55 miles per hour (mph).

At the SR 152 interchange, SR 233/Robertson Boulevard has a posted speed limit of 55 mph. Robertson Boulevard maintains a consistent posted speed limit of 30 mph between 15th Street and the SR 99 interchange, with reduced speed areas near schools. Avenue 26 has a posted speed limit of 45 mph within the study area.

A speed survey was conducted on Thursday, May 30, 2019 to observe typical weekday conditions. It was observed that while the posted speed limit on Robertson Boulevard between Highway 152 and Cates Court is 55 mph, the 85th percentile speed is 61 mph. The speed survey performed along Avenue 26, east of Road 19, revealed an 85th percentile speed of 63 mph compared to the previously posted speed limit of 45 mph. **Appendix A** contains the speed data collected in the project study area.



*Alligator Cracking on Avenue 26 near Road 19*



*Aggregate Polishing on Robertson Boulevard near 5th Street*

Observations of the study area reveal that there are three common pavement deficiencies present along SR 233/Robertson Boulevard (SR 152 to SR 99) and Avenue 26 (SR 99 to Road 19). These deficiencies include alligator (fatigue) cracking, aggregate polishing, and rutting. Of the three, alligator cracking is the most common and is continuously present throughout the study segment. The alligator cracking and rutting deficiencies are likely due to inadequate structural support in the roadway pavement for the heavy loads experienced from truck traffic.

## Traffic Operations Analysis

**Data Collection** This section summarizes the data collection efforts for the SR 233/Robertson Boulevard Corridor Planning Study and Chowchilla Multi-modal Study. Three primary types of data were collected to support the determination of existing conditions: (1) peak hour turning movement volume counts; (2) 24-hour, average-daily traffic classification counts; and (3) signal timings. Intersection level of service (LOS) analysis was performed using the turning movement data for both the a.m. and p.m. peak hours.

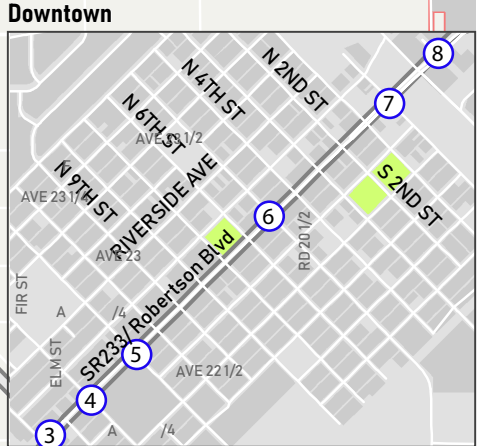
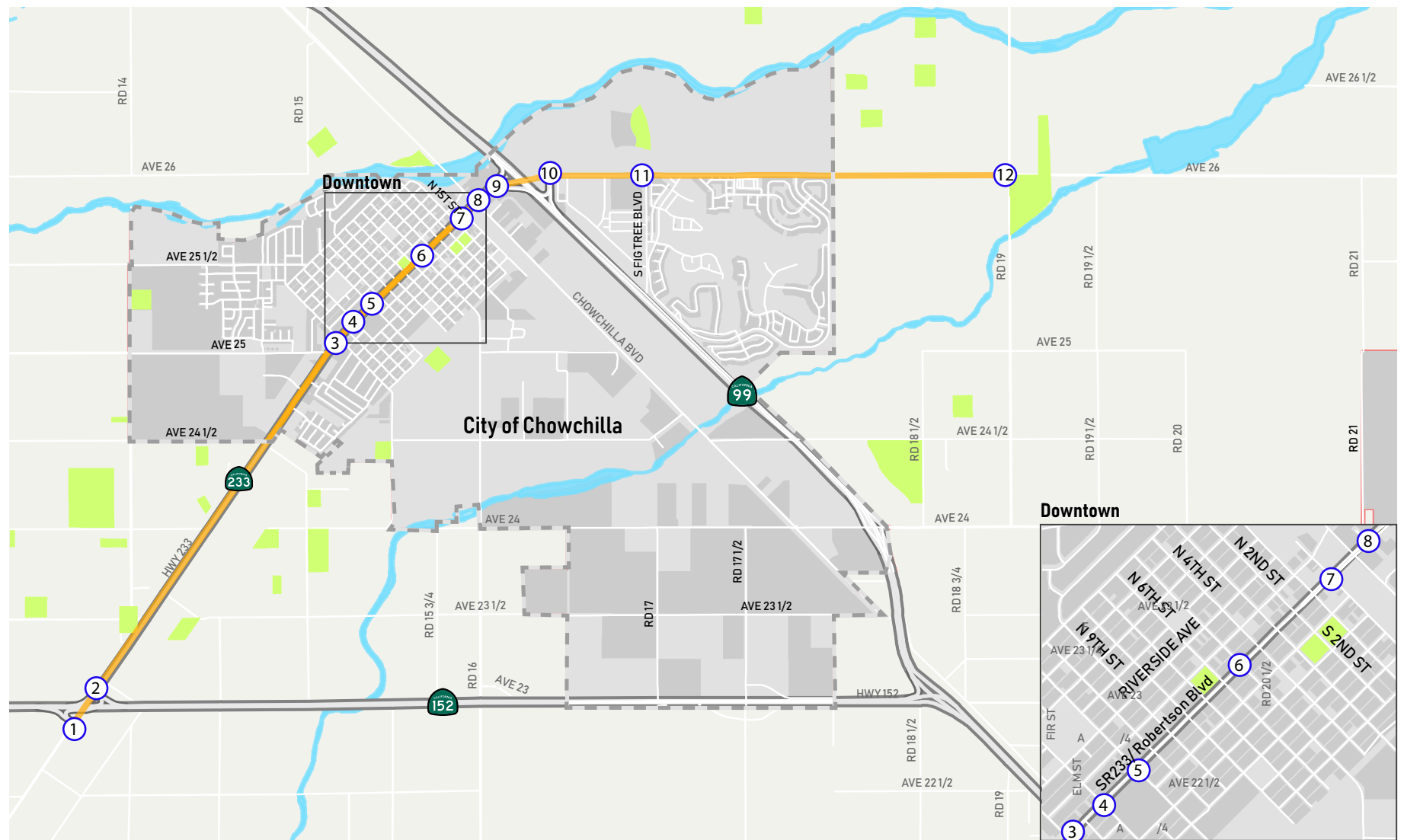
**Study Intersections** TJKM evaluated traffic conditions at 12 study intersections along the Robertson Boulevard corridor. The study intersections were selected in consultation with the MCTC staff. The study intersections and associated traffic controls are as follows:




1. SR 233/Robertson Boulevard / SR 152 Eastbound Ramps (One-Way Stop)
2. SR 233/Robertson Boulevard / SR 152 Westbound Ramps (One-Way Stop)
3. SR 233/Robertson Boulevard / 15th Street (Signalized)
4. SR 233/Robertson Boulevard / 13th Street (Two-Way Stop)
5. SR 233/Robertson Boulevard / 11th Street (Signalized)
6. SR 233/Robertson Boulevard / 5th Street (Signalized)
7. SR 233/Robertson Boulevard / Front Street (Two-Way Stop)
8. SR 233/Robertson Boulevard / Chowchilla Boulevard (Signalized)
9. SR 233/Robertson Boulevard / SR 99 Southbound Ramps (One-Way Stop)
10. SR 233/Robertson Boulevard / SR 99 Northbound Ramps (Two-Way Stop)
11. Avenue 26 / Fig Tree Road (All-Way Stop)
12. Avenue 26 / Road 19 (Two-Way Stop)

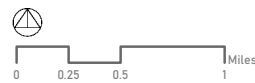
**Figure 5** illustrates the study area and study intersections.



Figure 5. Study Intersections



-  Chowchilla City Boundary
-  Study Corridor
-  Study Intersections





## Turning Movement Counts

TJKM collected the turning movement counts (TMC) for 12 intersections during the a.m. (7:00 – 9:00 a.m.) and p.m. (4:00 – 6:00 p.m.) peak periods on Wednesday and Thursday, May 29 and 30, 2019. These counts were done at each location using manual observation to record the number of vehicles that turn left or right or drive straight through the intersection for each of the intersection approaches. To assure proper data collection on typical traffic days, each day and time were carefully reviewed, and any questionable days/times were eliminated from the data collection schedule. This included identifying school holidays across the City and any events that occurred during the data collection period. During the data collection days and times, no public holidays, special events or weather conditions were observed that could have impacted the usefulness of the collected data.

The data was collected on the days and hours representative of normal traffic conditions. Significant construction impacts were not present during the data collection period, thus no data was disqualified from the process.

**Appendix B** contains the vehicle, pedestrian, and bicycle counts for the study intersections.

## Average Daily Traffic Counts

TJKM collected the average daily traffic (ADT) classification counts for eight study segments within the study area. Two of the eight study segments are located along the study corridor. The counts consist of 24-hour, bi-directional, ADT with vehicle classifications identified. The ADT was conducted during typical weekday conditions, on Wednesday and Thursday, May 29 and 30, 2019. To ensure typical

weekday conditions were reflected, similar procedures as discussed above for the turning movement counts were applied when conducting ADT counts.

**Appendix C** contains the 24-hour, classification ADT counts for the study segments.

## Signal Timing Plans

Signal timing plans were obtained from Caltrans District 6 for the four signalized study intersections. The following key parameters were included in the Synchro analysis to accurately model existing conditions:

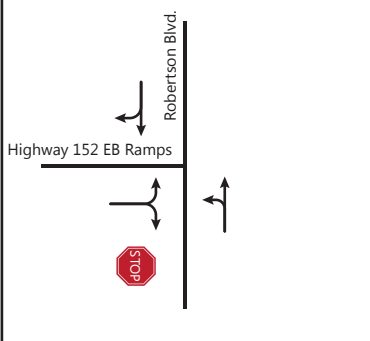
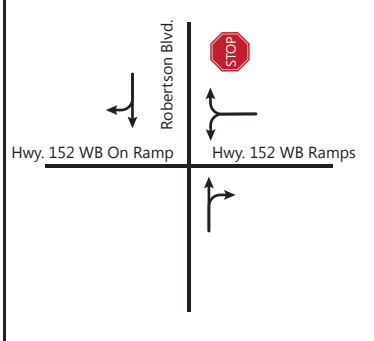
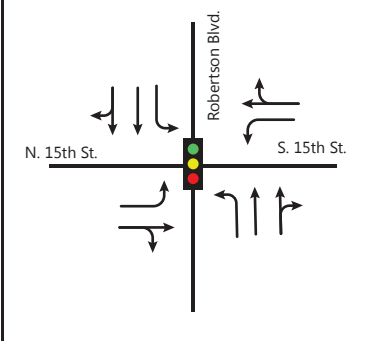
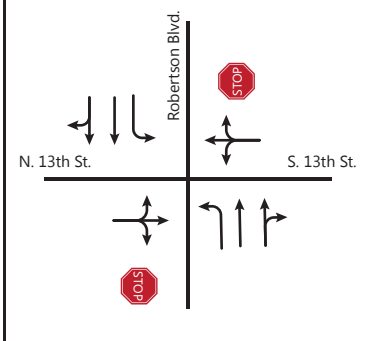
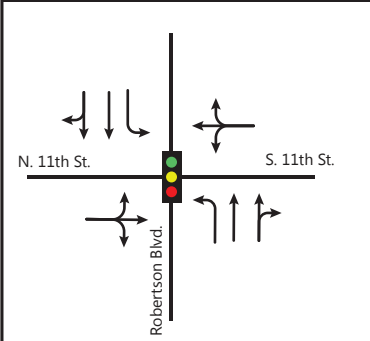
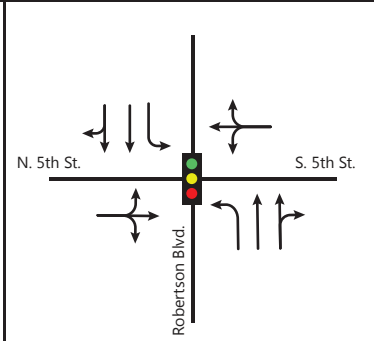
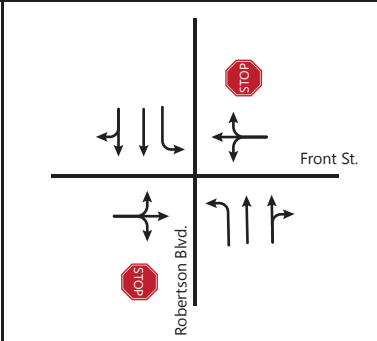
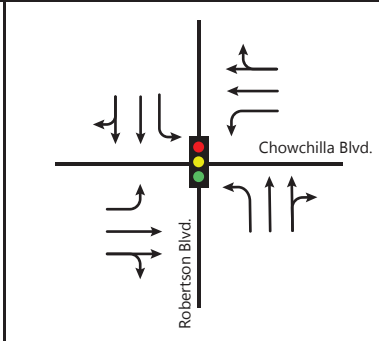
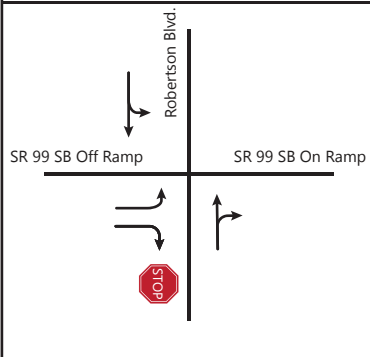
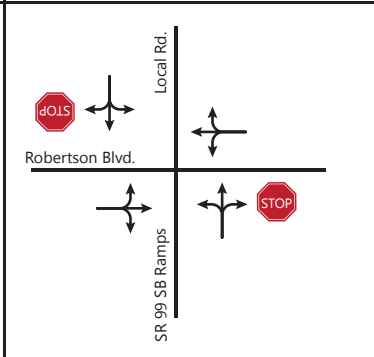
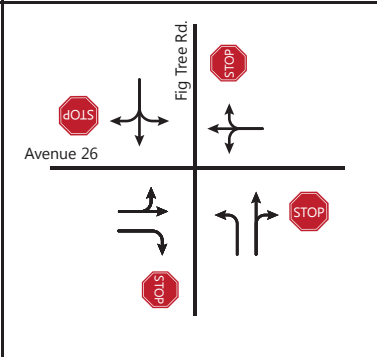
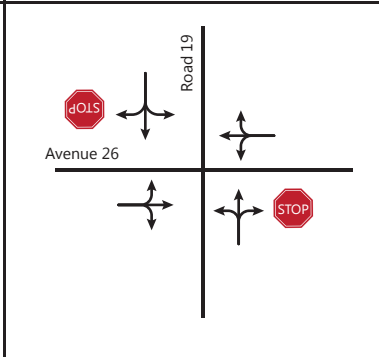
- Walk Time - this is the amount of time for a pedestrian walk phase. Pedestrian phase only come on when the phase has pedestrian calls, or if the phase has pedestrian recall.
- Flashing Don't Walk Time - this is the amount of time for a pedestrian Flash Don't Walk Phase.
- Minimum Green Time - this is the shortest time that the phase can show green.
- Yellow Time - this is the amount of time for the yellow interval.
- Red Time - this is the amount of time for the all red interval that follows the yellow interval. The all red time should be of sufficient duration to permit the intersection to clear before cross traffic is released.
- Vehicle Extension Time - this is also the maximum gap. When a vehicle crosses a detector, it will extend the green time by the vehicle extension time.
- Minimum Gap Time - this is the minimum gap that the controller will use with volume-density operation.
- Phasing - the type of left-turn phasing (protected, split, permissive).



**Appendix D** contains the Caltrans signal timing sheets for the signalized intersections.

**Figure 6** displays the study intersections lane geometry and traffic controls. **Figure 7** and **Figure 8** display the existing peak hour vehicular turning movement volumes and the existing peak hour pedestrian and bicycle volumes, respectively.

**Figure 6. Existing Conditions Lane Geometry and Traffic Controls**

<p><b>Intersection #1</b> Robertson Blvd. / Highway 152 EB Ramps</p> 	<p><b>Intersection #2</b> Robertson Blvd. / Highway 152 WB Ramps</p> 	<p><b>Intersection #3</b> Robertson Blvd. / 15th St.</p> 	<p><b>Intersection #4</b> Robertson Blvd. / 13th St.</p> 
<p><b>Intersection #5</b> Robertson Blvd. / 11th St.</p> 	<p><b>Intersection #6</b> Robertson Blvd. / 5th St.</p> 	<p><b>Intersection #7</b> Robertson Blvd. / Front St.</p> 	<p><b>Intersection #8</b> Robertson Blvd. / Chowchilla Blvd.</p> 
<p><b>Intersection #9</b> Robertson Blvd. / SR 99 SB Ramps</p> 	<p><b>Intersection #10</b> Robertson Blvd. / SR 99 NB Ramps</p> 	<p><b>Intersection #11</b> Avenue 26 / Fig Tree Rd.</p> 	<p><b>Intersection #12</b> Avenue 26 / Road 19</p> 

**Legend**

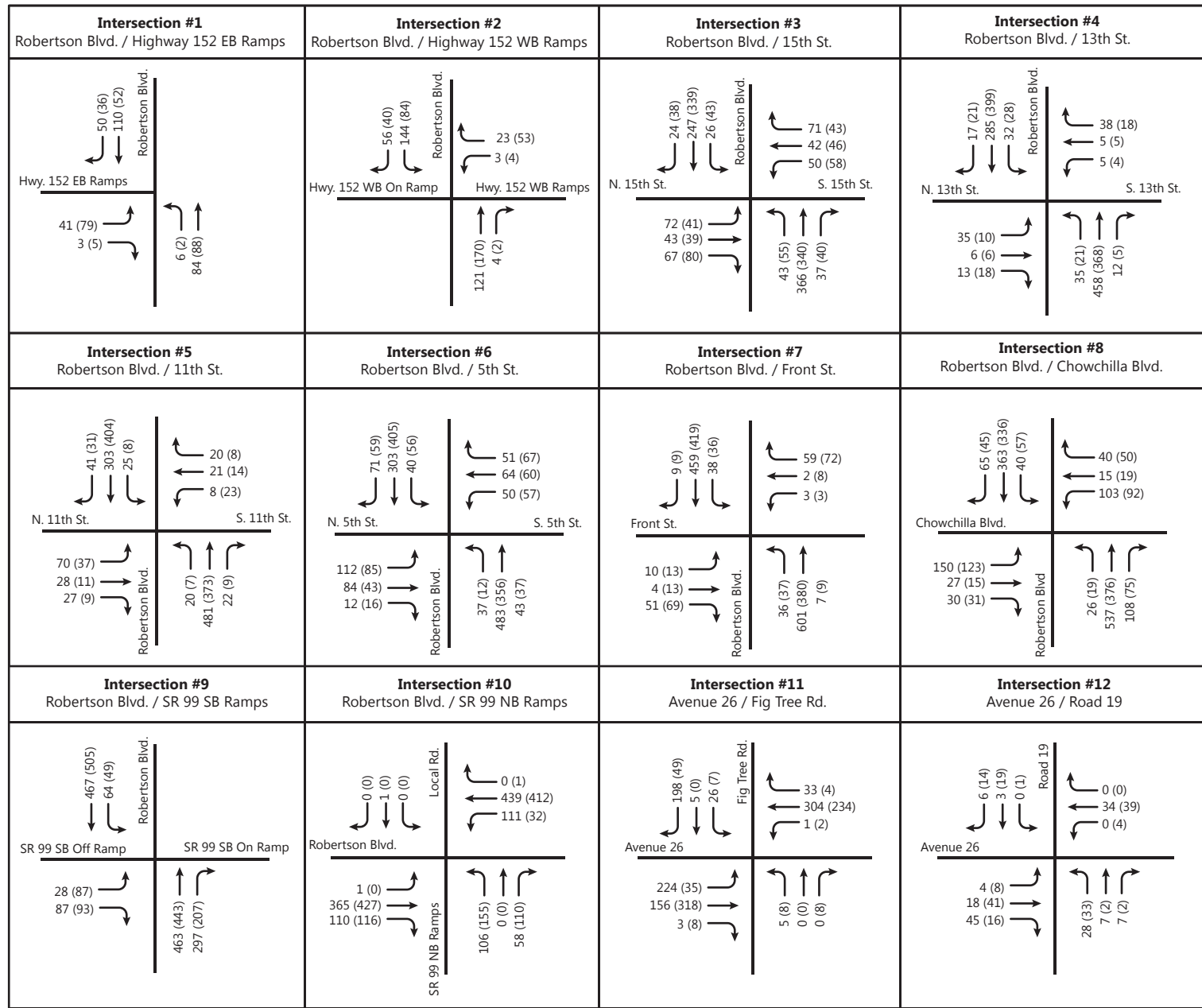


Traffic Signal



Stop Control

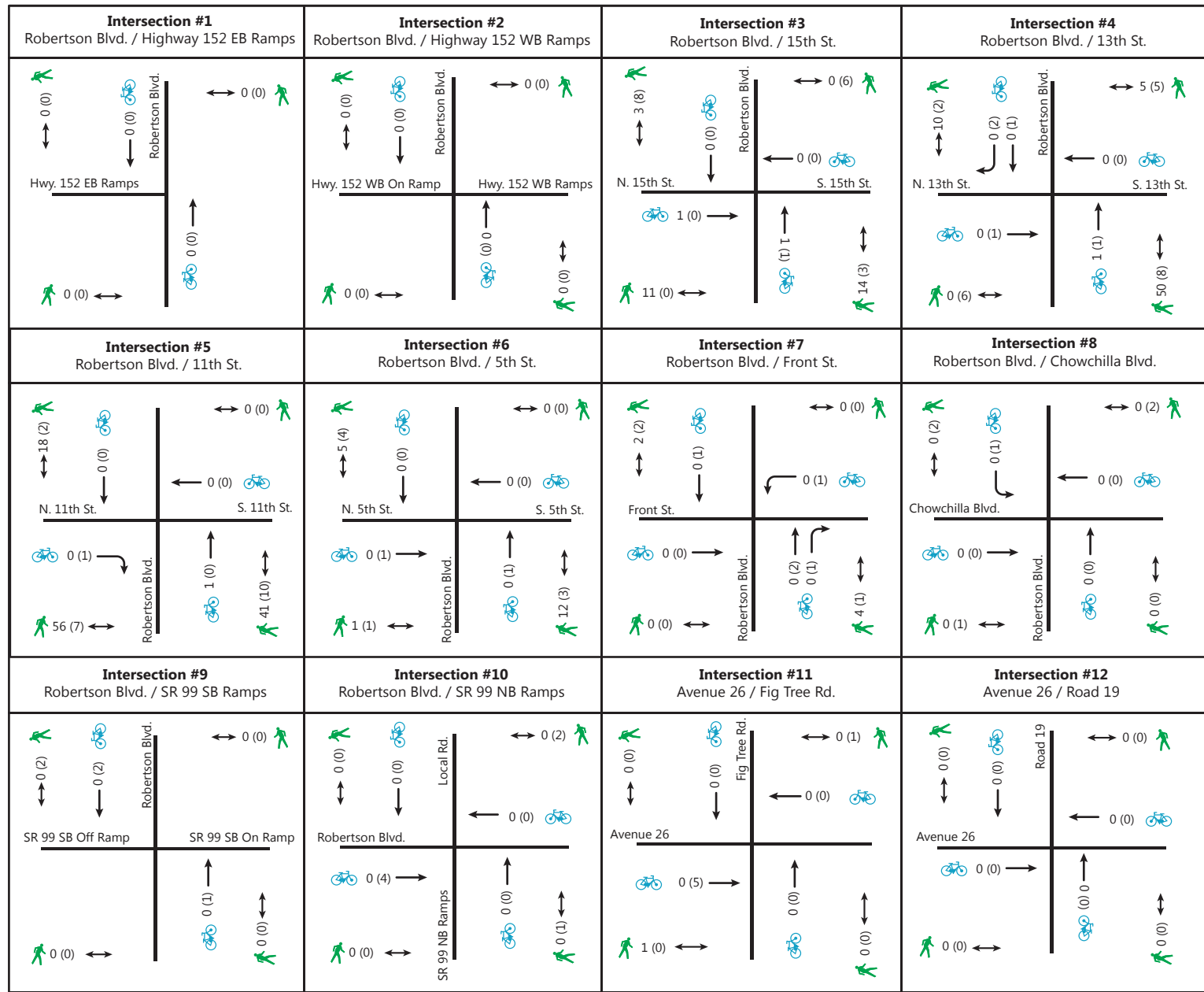
**Figure 7. Existing Conditions Peak Hour Traffic Volumes**



**Legend**

- XX AM Peak Hour Volumes
- (XX) PM Peak Hour Volumes

**Figure 8. Existing Conditions Pedestrian and Bicycle Volumes**



**Legend**

- XX AM Peak Hour Ped/Bike Volumes
- (XX) PM Peak Hour Ped/Bike Volumes
- Pedestrian Crossing volume
- Bicycle Turn Movement Volume

## LOS Analysis

Level of Service Analysis was conducted for the entire study corridor. The results of the analysis are described below.

**Intersection LOS Analysis Results - Existing Conditions** Existing intersection lane configurations and peak-hour turning movement volumes were used to calculate the level of service (LOS) at the study intersections during peak hours. The results of the LOS analysis using the Synchro 10.0 software program for Existing Conditions are summarized in **Table 2**. The LOS and delay are based on average control delay on an intersection-wide basis for signalized and all-way stop-controlled intersections and on the movement with the highest delay for minor street stop-controlled intersections.

Under Existing Conditions, all study intersections operate within acceptable jurisdictional standards during both peak periods, except for the intersections at Robertson Boulevard/SR 99 Southbound Ramps (Intersection #9) and Robertson Boulevard/SR 99 Northbound Ramps (Intersection #10). Both intersections are one- or two-way stop controlled and have relatively low volumes on the side streets, but heavy volumes on the major street provide insufficient gaps for vehicles to turn onto or cross Robertson Boulevard, resulting in extensive delays on the side streets. In the overall context of intersection performance, the average vehicle delay is lower due to the greater number of vehicles able to pass freely through the intersection without delay. **Appendix E** contains the LOS analysis reports from Synchro 10 software.

**Table 2. Intersection Level of Service and Delay for Existing Conditions (2019)**

#	Name	Control	Peak <sup>1</sup>	Existing Conditions	
				Delay (seconds) <sup>2</sup>	LOS <sup>3</sup>
1	Robertson Blvd / Hwy 152 EB Ramps	One-Way Stop	AM	10.9	B
			PM	10.0	A
2	Robertson Blvd / Hwy 152 WB Ramps	One-Way Stop	AM	10.7	B
			PM	10.6	B
3	Robertson Blvd / 15th St	Signalized	AM	16.2	B
			PM	15.9	B
4	Robertson Blvd / 13th St	TWSC	AM	22.7	C
			PM	15.1	C
5	Robertson Blvd / 11th St	Signalized	AM	18.7	B
			PM	12.2	B
6	Robertson Blvd / 5th St	Signalized	AM	16.7	B
			PM	15.5	B
7	Robertson Blvd / Front St	TWSC	AM	16.7	C
			PM	16.3	C
8	Robertson Blvd / Chowchilla Blvd	Signalized	AM	15.8	B
			PM	14.3	B
9	Robertson Blvd / SR 99 SB Ramps	One-Way Stop	AM	16.5	C
			PM	31.7	D
10	Robertson Blvd / SR 99 NB Ramps	TWSC	AM	>50	F
			PM	>50	F
11	Ave 26 / Fig Tree Rd	AWSC	AM	37.6	E
			PM	13.3	B
12	Ave 26 / Rd 19	TWSC	AM	9.5	A
			PM	10.4	B

Notes:

<sup>1</sup>AM – morning peak hour, PM – evening peak hour

<sup>2</sup>Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all way stop-controlled intersections. Total control delay for the worst movement is presented for side-street stop-controlled intersections.

<sup>3</sup>LOS – Level of Service



## Roadway Segment LOS Analysis Results - Existing Conditions

Existing roadway segment configurations and peak-hour Average Daily Traffic (ADT) volumes were used to calculate the LOS at the various study segments along Robertson Boulevard/SR 233. The 24-hour ADT counts at SR 233 between Highway 152 and Cates Court (study segment #1) were conducted on Thursday, May 30, 2019. **Appendix C** contains the ADT for Robertson Boulevard between Highway 152 and Cates Court. Volumes for the remaining study locations, from 15th Street to the SR 99 Ramps, were projected from the 2017 MCTC Traffic Volume Report (August 2017) to current year (2019) conditions with a 0.92% annual growth rate from the MCTC 2018 Regional Transportation Plan (RTP) Model. The peak hour volumes represent the ADT for the highest peak hour out of a 24-hour period. Capacities for the study segments were obtained from the 2012 Florida Department of Transportation Quality/Level of Service Handbook for transitioning areas and areas over 5,000 (population) not in urbanized areas. The results of the LOS analysis using volume-to-capacity (v/c) ratios and thresholds established by the 2040 Chowchilla General Plan are summarized in **Table 3**.

Under Existing Conditions, all study segments operate within acceptable jurisdictional standards, except for the segment of SR 233/ Robertson Boulevard between the SR 99 northbound and southbound ramps, which operates at LOS F during the highest peak hour. The segment is a two-lane bidirectional overpass constrained by two, side-street stop-controlled intersections. SR 99 connects the City of Chowchilla to Merced in the north and Madera in the south. Thus, the segment is likely to experience heavy traffic that exceeds the capacity provided by a two-lane roadway during commute peak periods.

**Table 3. Roadway Segment Level of Service and Delay for Existing Conditions (2019)**

ID	Segment Name	Peak <sup>1</sup>	Existing Conditions			
			Volume <sup>2</sup>	Capacity <sup>3</sup>	v/c <sup>4</sup>	LOS <sup>5</sup>
1	Robertson Blvd (SR 233) b/w Hwy 152 & Cates Ct1	PM	900	1,460	0.62	B
2	Robertson Blvd (SR 233) b/w 15th St & 14th St	UNK	1,141	2,590	0.44	A
3	Robertson Blvd (SR 233) b/w 7th St & 5th St	UNK	1,141	2,590	0.44	A
4	Robertson Blvd (SR 233) b/w 4th St & 3rd St	UNK	1,297	2,590	0.50	A
5	Robertson Blvd (SR 233) b/w Front St & Chowchilla Blvd	UNK	1,245	2,590	0.48	A
6	Robertson Blvd (SR 233) b/w SR 99 Ramps	UNK	1,245	1,200	1.04	F

Notes:

<sup>1</sup>PM – evening peak hour, UNK – unknown peak hour

<sup>2</sup>Volume represents ADT for highest peak hour in a 24-hour period.

<sup>3</sup>Capacity – Peak hour two-way capacity in vehicles per hour (vph).

<sup>4</sup>v/c – volume-to-capacity ratio

<sup>5</sup>LOS – Level of Service



## Collision Analysis

Crash data along the SR 233/Robertson Boulevard study corridor was evaluated for a five-year duration of January 1, 2014 to December 31, 2018. The crash data was received from the Statewide Integrated Traffic Records System (SWITRS), University of California Berkeley's Transportation Injury Mapping System (TIMS) and City of Chowchilla Police Department records. An extensive review of all crashes was conducted based on crash types, collision factor, severity and year of occurrence.

The key findings of this analysis are as follows:

- **Fatal and Severe Injury Collisions:** There were 29 total crashes along the study corridor, including one fatal and three severe injury crashes.
- **Collision Location:** Out of the 29 crashes, 22 crashes occurred at an intersection within the study area.
- **Collision Type:** The most frequently occurring crash type was Head-On collision, numbering at 28 out of the total 29 crashes.
- **Collision Factor:** Most frequently cited collision factor was unsafe speed (28 percent), automobile right-of-way (21 percent), and driving or bicycling under the influence of alcohol or drugs (14 percent).
- **Collision by Year:** Crashes of all severity were highest in 2015 and 2016 with 28 percent of all crashes in each year.
- **Pedestrian and Bicycle Collisions:** There were five pedestrians and two bicyclists injured during the study period.

The following were the highest crash-prone segments or intersections identified on Robertson Boulevard:

- 5th Street to 8th Street / SR 233/Robertson Boulevard
- Chowchilla Boulevard/ SR 233/Robertson Boulevard
- Palm Parkway/ SR 233/Robertson Boulevard
- Avenue 23 1/2 / SR 233/Robertson Boulevard
- 11th to 15th Street/ SR 233/Robertson Boulevard

**Figure 9** represents these high-risk segments of the study corridor.

## Overview

During the five-year study period, 29 crashes were observed to occur within the study area. The majority of these crashes (69 percent) were complaints of pain collisions, while one fatal (three percent), three severe injury (ten percent), and five visible injury (17 percent) collisions also occurred. Intersection and segment collisions make up 76 and 24 percent of the total collisions, respectively. The following chart displays the percentage of intersection and segment collisions.

**Figure 10** displays all collisions along the study corridor.

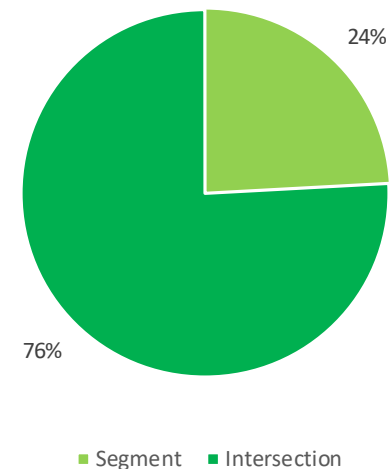
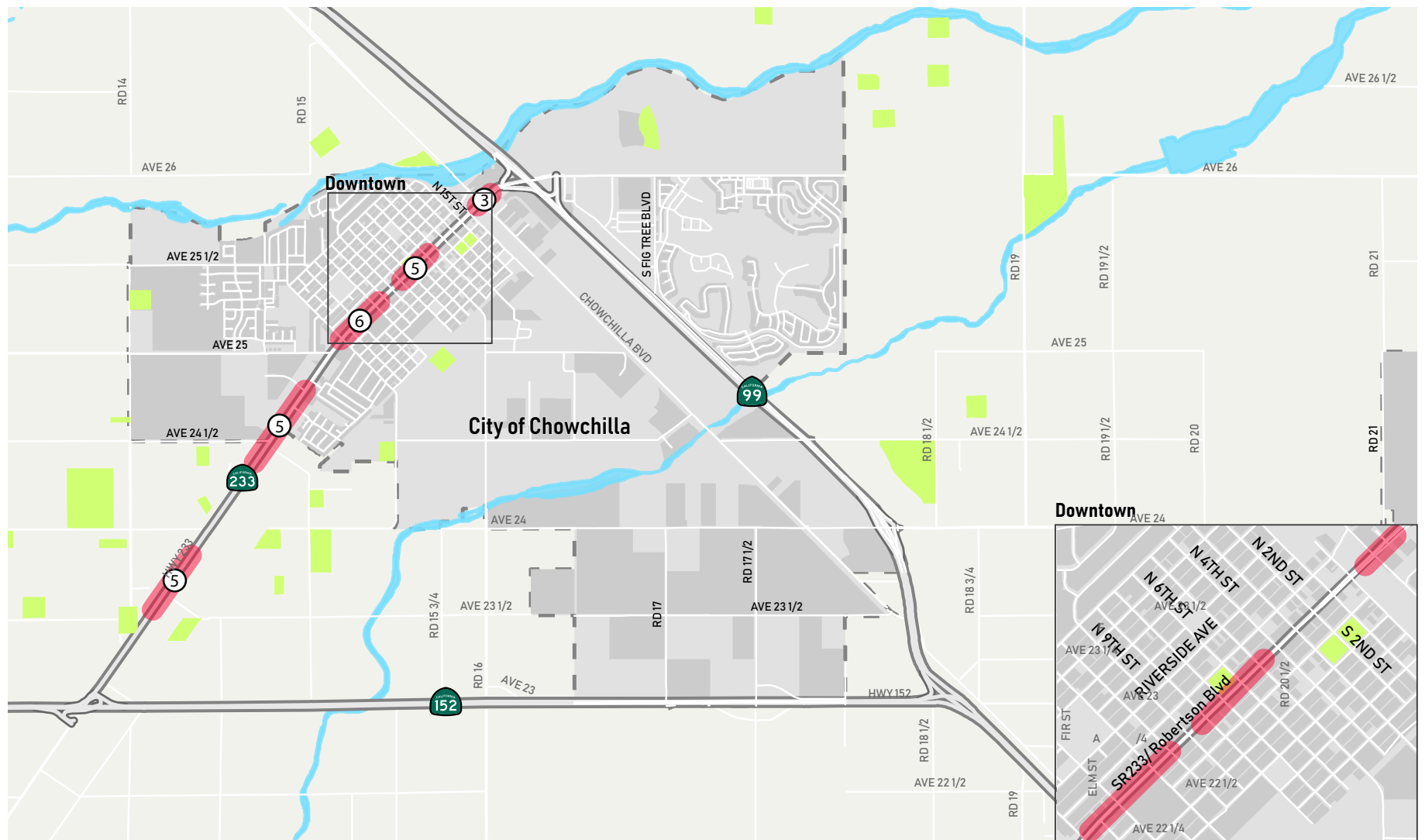


Figure 9. High-risk Segments on SR 233/Robertson Boulevard



- High-risk Segments
- X # of Collisions
- Highway
- Parks
- Rivers
- Chowchilla City Boundary
- Study Corridor

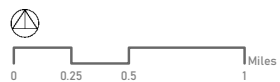


Figure 10. Collisions on Study Corridor



● Collisions

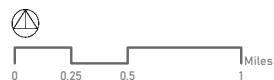
— Highway

■ Parks

— Rivers

--- Chowchilla City Boundary

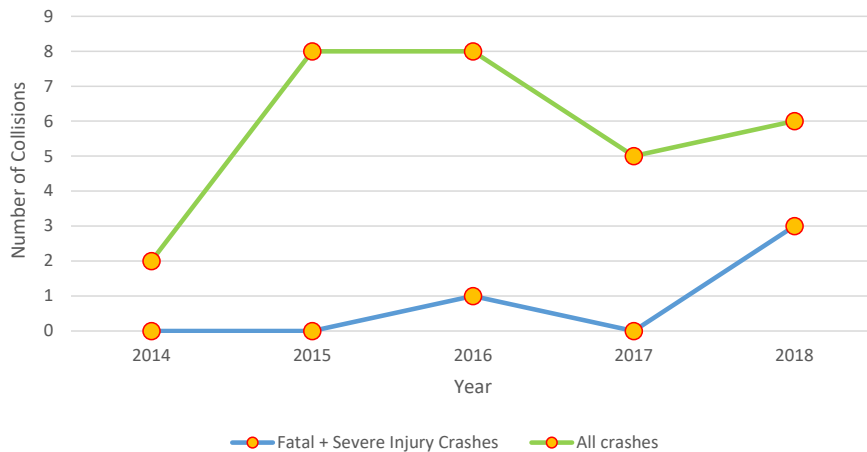
— Study Corridor



## Collisions over Time

**Figure 11** illustrates that a total of eight crashes (28 percent) occurred in the years of 2015 and 2016, followed by six crashes (21 percent) in 2018, five crashes (17 percent) in 2017 and two crashes (seven percent) in 2014. Although the maximum number crashes occurred in the years 2015 and 2016, three of the four fatal and severe injury crashes occurred in 2018.

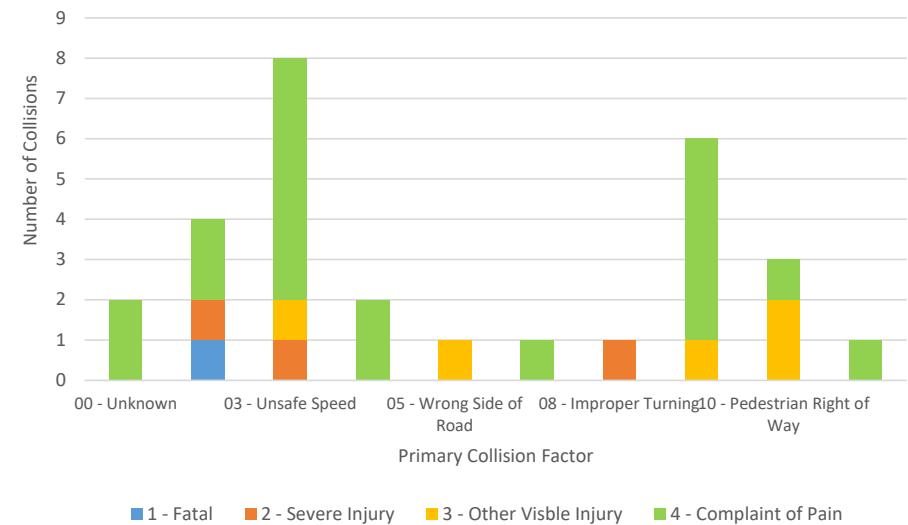
**Figure 11. Collisions Over Time (2014 to 2018)**



## Collision Factor

The analysis shows that most collisions occurred in the study area due to unsafe speed. As shown in **Figure 12**, out of the 29 total collisions, eight (28 percent) were due to unsafe speeds, six (21 percent) were automobile right-of-way violations and 4 (14 percent) were due to driving or bicycling under the influence of alcohol or drugs. Other major factors included pedestrian right-of-way violation and following too closely. The primary collision factor for the fatal incident was driving/bicycling under the influence of alcohol or drugs. The following graph illustrates the relationship between primary collision factors and crash severity.

**Figure 12. Primary Collision Factors**

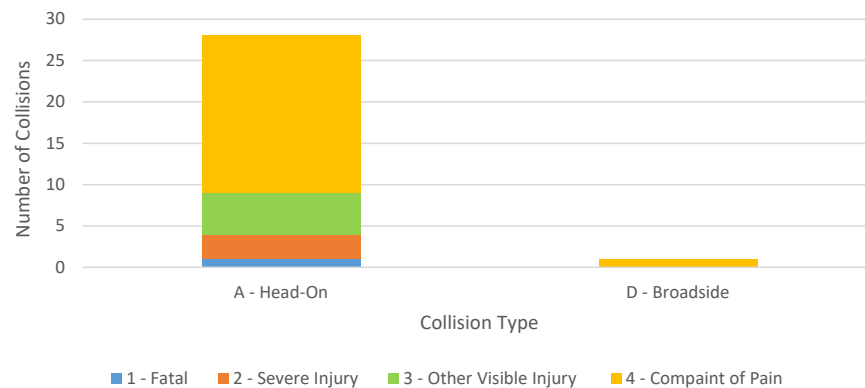


## Collision Type and Severity

Out of the 29 collisions in the study area, head-on was the most frequently occurring type with a total of 28 crashes, along with one broadside crash. Head-on collisions are collisions that occur when two motor vehicles approaching from opposite directions make direct contact. For example, the front of one vehicle collides with the front of another, or prior to impact, one vehicle skids sideways, causing the side of the skidding vehicle to collide with the front of the other. The high occurrence of head-on collisions may imply improper passing, improper turning at intersections and right-of-way issues.

Broadside collisions occur when one motor vehicle strikes another vehicle at an angle greater than that of a sideswipe.

**Figure 13. Collision Type and Severity**

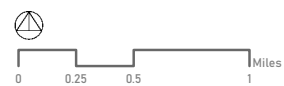


## Pedestrian and Bicycle Collisions

A total of five pedestrians and two bicyclists were injured during the five-year study period. There was one bicycle and two pedestrian collisions observed in each of the years 2015 and 2016, and one pedestrian collision in 2018. All pedestrian and bicycle crashes occurred at intersections and no fatalities resulted. One bicycle collision occurred due to an automobile right-of-way violation while the other occurred due to improper passing, whereas most pedestrian collisions occurred due to pedestrian right of way violations and improper passing. **Figure 14** displays the locations of the pedestrian and bicycle collisions observed.



Figure 14. Pedestrian and Bicyclist Collisions on Study Corridor



## City-Level Analysis

This plan also integrates the analysis of the truck route study and the signage study, conducted as part of the SB-1 grants and managed by the City of Chowchilla, into this Corridor Plan study. A comprehensive analysis of trucking operations on the City streets was conducted in order to identify its effect on pedestrians, bicyclists and other motor vehicles. The signage study was conducted to develop an inventory of all STOP signs throughout the City of Chowchilla and provide recommendations for sign upgrades.

### Truck Route Study

All types and sizes of businesses rely on trucks for the delivery of goods and services to their own sites as well as their customers' destinations. Trucking and freight forwarding businesses play a vital role in boosting commerce and maintaining the health of the economy. Trucks place extraordinary demands and impacts on City streets.

- First, their weight requires stronger pavement structures and bridges than regular vehicles. Even though trucks pay a relatively high annual license fee so that their added impacts can be mitigated with additional maintenance, these fees are split between the state and the jurisdiction where they are registered.
- Second, truck noise and additional emissions contribute to the sense of intrusion and a lowering of the quality of life in residential and retail areas.
- Third, high truck volumes significantly degrade levels of service at signalized intersections because each truck is equivalent to two or three cars.
- Fourth, trucks can lead to increased accidents, due to the fact that trucks have

**Table 4. Weightage and Point Scores for Evaluating Truck Routes**

#	Criteria	Weight	Range Value	Range of Scores
1	Passing through type of corridor	5	Residential: -1 Point Retail: +1 Point	-5 and +5
2	Connecting/proximity to STAA routes	5	Very Close: -1 Point Far away: +1 Point	-5 and +5
3	Adjacent to existing/planned bicycle facilities	3	Adjacent: -1 Point Not Adjacent: +1 Point	-3 and +3
4	Passing through corridors with high truck traffic accidents	2	AR>Statewide: -1 Point No Accidents: +1 Point	-2 and +2
5	Passing through schools and parks	2	Yes: -1 Points No: +1 Points	-2 and +2
6	Passing through intersections	1	LOS D or better: +1 Point LOS E or worse: -1 Point	-1 and +1
7	Passing through intersections with small corner radius	1	Yes: -1 Point No: +1 Point	-1 and +1
8	Passing through roads with Pavement Conditions Index <65	1	Yes: -1 Point No: 1 Point	-1 and +1
9	Corridor identified as a proposed truck route in the Industrial Park Specific Plan	1	Yes: -1 Point No: 1 Point	-1 and +1

larger blind spots and their size may obstruct sight distance for other vehicles. A typical City street is not designed to accommodate trucks in terms of lane widths, shoulder widths, and intersection turning radii.

For these reasons, the City of Chowchilla (City) intends to identify those corridors necessary to serve freight related needs of the City as opposed to serving as bypass routes for the congested regional corridors, state highways and freeways. An evaluation criteria is thus developed to determine and recommend truck routes/restrictions within the City. **Table 4** lists the criteria used to identify truck routes:

About 18 roadway segments in the City were evaluated as potential truck routes. As a result of the evaluation criteria listed above, following segments are recommended to be designated as truck routes within the City of Chowchilla:

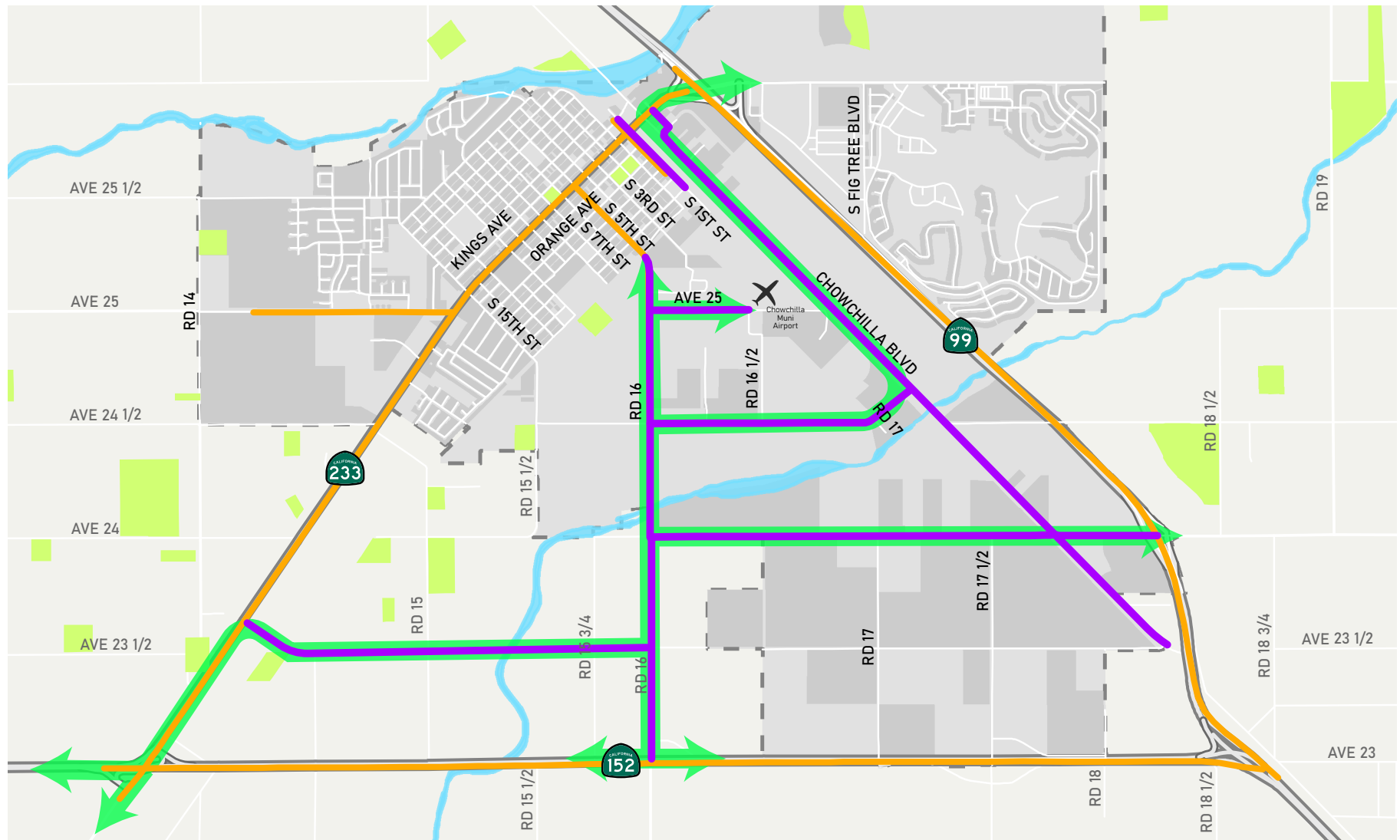
- S. Chowchilla Boulevard, from Robertson Boulevard to City Limits
- Front Street, from Kings Avenue to Colusa Avenue
- Road 16, from Mariposa Avenue to City Limits
- Avenue 24 ½, from Road 16 to Chowchilla Boulevard
- Avenue 25, from Road 16 to Airport Dive
- Avenue 24, from Road 16 to SR 99
- Avenue 23 ½, from SR 233 to Road 16
- Road 16, from Avenue 24 to SR 152

**Figure 15** illustrates the proposed truck route segments.

SR 233/Robertson Boulevard continues to function as a regional truck route. The existing conditions of lane widths, truck volumes, truck-turning radius along with the analysis and results from this study were utilized in developing the design concepts and alternatives for the SR 233/Robertson Boulevard. The Truck Route Study technical memorandum can be found in **Appendix F**.

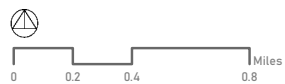


Figure 15. Proposed Truck Routes in the City of Chowchilla



- Truck Routes - Proposed
- Truck Routes - Existing
- ↔ Truck Circulation - Proposed

- Highway
- Parks
- Rivers
- Chowchilla City Boundary



## Stop Sign Inventory Plan

The stop sign analysis was conducted for the City of Chowchilla to increase public safety by identifying deficiencies in all stop signs within the City limits. The analysis evaluated each sign in the inventory for its conditions, position and retroreflectivity standards, as per the California Manual for Uniform Traffic Control Devices (CA MUTCD). The sign panel/sign sheeting Type XI (retroreflective sign) should be used on State Routes. **Table 5** lists the number of signs maintained by the City and the number of signs maintained by Caltrans:

**Table 5. Stop Signs Maintained by City of Chowchilla and Caltrans**

Maintained By	Number of Signs
City	319
Caltrans	21
Total Stop Signs	340

For the purpose of this analysis, only City maintained signs were considered for replacement. The signs surveyed are listed as follows:

- Signs that failed retroreflectivity test.
- Signs that passed retroreflectivity test but are damaged, faded or vandalized.
- Sign posts that “need replacement”. Sign posts that need replacement include posts that are bent, loosely grounded or corroded.

The stop signs were assessed based on their retroreflectivity assessment and the sign posts conditions evaluation. In some cases, signs were found to be in acceptable condition but have damaged posts that need replacement. In other instances, traffic sign as well as the post need to be replaced.

The analysis findings suggest that:



*A sign which failed the retroreflectivity test.AA*

- A total of 40 signs failed the retroreflectivity test.
- A total of 32 signs passed the retroreflectivity test but were damaged, vandalized or faded.
- One sign post was in poor condition.

Out of the total of 319 City maintained signs surveyed, it is recommended that 72 signs and one sign post be replaced. The total cost of replacement is estimated to be \$18,250(2019 Dollar amount). The details of the replacement are as follows:

- Replacement of 40 signs that failed the retroreflectivity test. The cost of replacement is estimated to be \$10,000.
- Replacement of 32 signs that passed the retroreflectivity test but are damaged, vandalized or faded. The cost of replacement is estimated to be \$8,000.
- Replacement of one sign post that was rated as “needs replacement”. The cost of replacement is estimated to be \$250.

The analysis elements, data and the results of the Stop Sign Inventory Plan are considered and integrated into the designing and concept development of SR 233/Robertson Boulevard. The Stop Sign Inventory Plan with details such as unique ID, sign direction, sign condition, etc. can be found in **Appendix G**.

# Summary of Needs and Opportunities

## Pedestrian Facilities

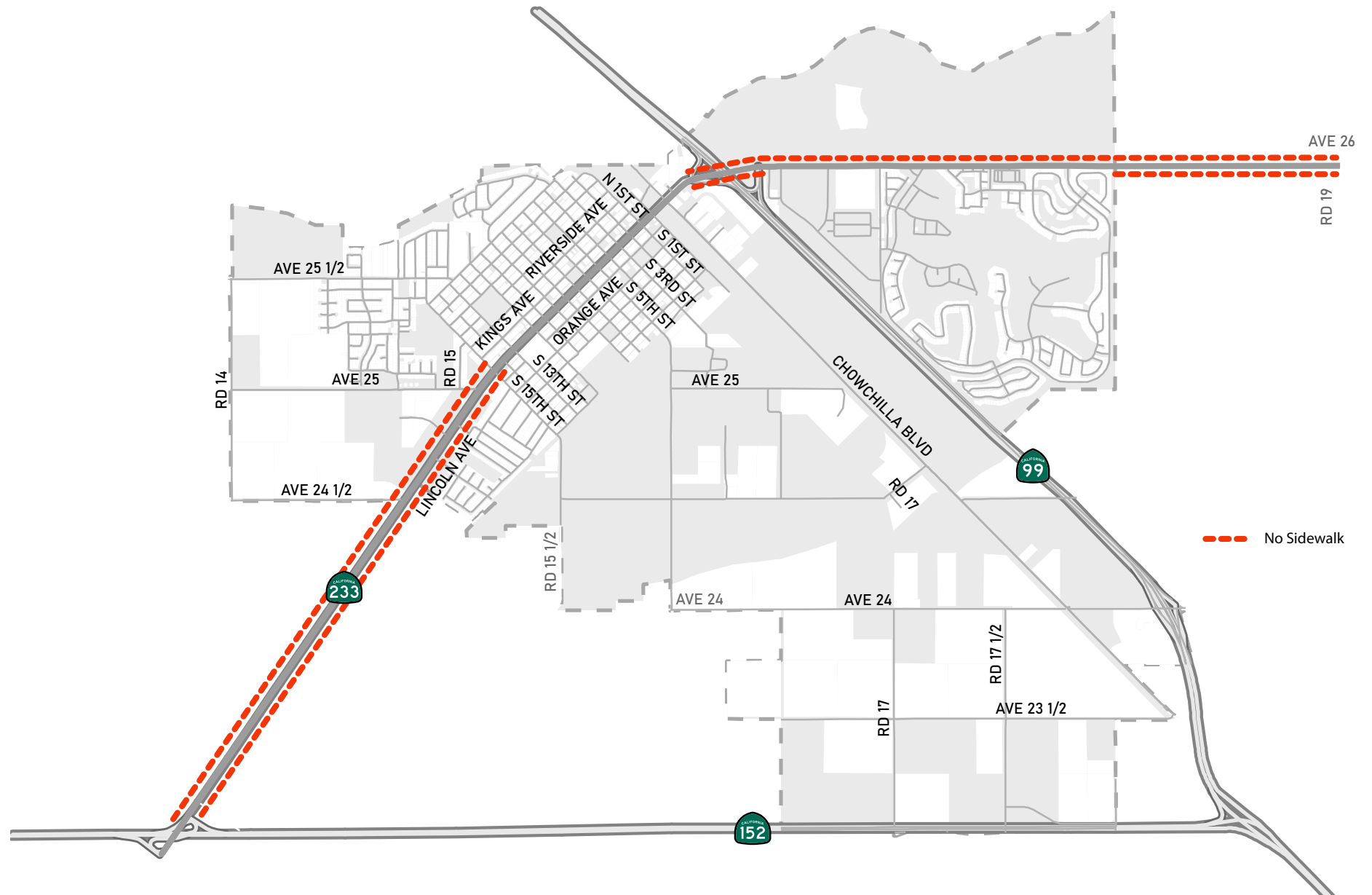
Pedestrian facilities include sidewalks, crosswalks, mid-block crossings, shared-use pathways, curb ramps, pedestrian signal heads, and other features that are reserved primarily for pedestrian use. The study corridor provides pedestrian facilities, however many locations have missing, outdated and/or damaged pedestrian facilities that do not create a safe and comfortable pedestrian network.

Along the study corridor, sidewalks are missing from both sides of Robertson Boulevard between SR 152 and Myer Drive, and the SR 99 southbound on ramp and northbound off ramp; from the north side between the SR 99 northbound off ramp and Road 19; and from the south side between 1,050 feet east of Golf Drive West and Road 19. Between SR 152 and Myer Drive, pedestrians will walk along the shoulders, which are approximately eight feet wide. North of Myer Drive, sidewalks front businesses, but significant gaps are observed on the west side of the roadway between the County Wood Shopping Center northern driveway and the Hope Fellowship Church, and on the east side of the roadway between Myer Drive and the Schoettler Tire Shop. Continuous sidewalks are provided on both sides of Robertson Boulevard between 15th Street and the SR 99 southbound on ramp; however, outdated and damaged sidewalks are observed on the east sidewalk just north of 5th Street, between 3rd Street and 2nd Street, and between 1st Street and Front Street, and on the west side at the Chowchilla Taco Shop and just north of 2nd Street. **Figure 16** illustrates the segments in which sidewalks are missing.





Figure 16. Pedestrian Needs: Sidewalks



A marked crosswalk reinforces pedestrian right-of-way at intersections. Note that a warrant analysis is required in determining the need for a marked crosswalk. A crosswalk warrant analysis is generally based on several variables, including proximity to pedestrian generators, spacing of adjacent marked crossing locations, and safety considerations. The following describes the presence and absence of marked crosswalks along the study corridor (summarized in **Figure 17**).

No marked crosswalks are present on side streets at about 17 side-street stop-controlled intersections, along Robertson Boulevard. The locations feature sidewalks and curb ramps, but do not provide a marked crosswalk. Additionally, there are crosswalks observed to be faded, missing, or do not meet ADA standards for width. Faded and ADA non-compliant crossings are observed at:

- Robertson Boulevard/N 7th Street – Crosswalk across N 7th Street is approximately 5 feet wide
- E Robertson Boulevard/Montgomery Lake Way – Crosswalk across Montgomery Lake Way is faded
- E Robertson Boulevard/Fig Tree Road – Crosswalks and intersection striping are faded
- E Robertson Boulevard/Clubhouse Drive – Crosswalk across Clubhouse Drive is faded
- E Robertson Boulevard/Lakes RV Resort – Crosswalk across Lakes RV Resort is faded

No marked crosswalks are found at the following signalized and all-way stop-controlled intersections:

- North leg of Robertson Boulevard at Robertson Boulevard/11th Street
- South leg of Fig Tree Road at E Robertson Boulevard/Fig Tree Road

Curb ramps are missing or insufficient at the southern quadrant of Robertson Boulevard/Front Street. However, many curb ramps, although present, do not align with crosswalks and lack ADA-compliant detectable warning surfaces (i.e. truncated dome surfaces).

During the field visit on Thursday, August 15, 2019, pedestrians were observed mainly in the downtown area and to be using signalized pedestrian crossings over the uncontrolled crossings. Additionally, the community provided the following issues regarding pedestrian facilities in the project study area:

- Improved sidewalks and street lighting near schools, especially Wilson Middle School as many families walk to the school for events
- Need for connected pedestrian network with less gaps in sidewalk facilities
- More signage – Pedestrians feel unsafe crossing Robertson Boulevard at uncontrolled crossings as many vehicles do not stop for them
- Need for crosswalks that safely connect pedestrians to public parks
- Improved pedestrian access to Radiant School
- Beautification to pedestrian network to downtown area
- Update damaged pedestrian infrastructure to be ADA-compliant

The project team also sought insight on pedestrian facilities via the online survey. Although 38-39 percent of survey respondents rated the sidewalk availability and locations are in good conditions and the crosswalk availability and locations as fair conditions, the vast majority of survey respondents said they would most like to see improvements to pedestrian facilities along Robertson Boulevard.

Figure 17. Pedestrian Needs: Crosswalks



## Bicycle Facilities

Bicycle facilities include bicycle parking, bicycle detectors, bike boxes, and four bikeway types. The bikeway types include Class I shared-use paths, Class II bike lanes, Class III bike routes and Class IV separated bikeways, which are described in the Bicycle Network section of the Existing Conditions Chapter.

Along the SR 233/Robertson Boulevard study corridor, Class III bike route signs are provided between 15th Street and Front Street, and Class II bike lanes are provided between SR 99 and Fig Tree Road. The Class III bike route on Robertson Boulevard is denoted by “Bike Route” signs and lacks sharrow striping and “Share the Road” signage. The two facilities are not connected with a significant gap observed between Front Street and SR 99. Additionally, bike facilities are not present along Robertson Boulevard between SR 152 in the south and 15th Street to the north. In the surrounding study area, exceptionally faded Class II bike lanes are observed along Kings Avenue, Washington Road (Avenue 25), Santa Cruz Boulevard and Fig Tree Road, and Class III bike routes lacking sharrow striping are observed along North 15th Street, Colusa Avenue, Alameda Avenue, 11th Street, 5th Street and 3rd Street.

During the field visit bicyclists were observed to be using sidewalks and riding on the wrong sides of the road. Additionally, the community provided the following issues regarding bicycle facilities and cyclists in the project study area:

- Need for more education on proper bike etiquette – cyclists ride on the wrong side of road and ride in circles in middle of roadways/intersections
- Safer bicycle facilities along Robertson Boulevard as most cyclists use sidewalks

- Bicycle Kitchen service for bicycle repairs, services, and education
- Bicycle access across SR 99 overpass

The project team also sought insight on bicycle facilities via the online survey.

Only 10 percent of respondents identified they would like to see bicycle facilities improvements along Robertson Boulevard and bicycle facility improvements were ranked as the third lowest priority.

## Transit Facilities

Transit services along the study corridor are provided by the Madera County Connection (MCC) and Chowchilla Area Transit Express (CATX). Two regional transit stops exist along Robertson Boulevard, which are served by the Chowchilla/Fairmead route of the MCC on weekdays between 7:00 a.m. and 6:49 p.m., connecting the City of Chowchilla to the cities of Fairmead and Madera. A transit stop on 11th Street provides a bus shelter with seating, but lacks signage, maps, schedules, etc. There is no signage identifying the transit stop at the Countrywood Shopping Center. Four other transit stops are located on surrounding streets near the study corridor.

During the field visit transit stops on SR 233/Robertson Boulevard were observed to be empty and lack information regarding transit services, schedules and routes. During the first community workshop, held on Thursday, September 12, 2019, the community identified that they preferred the Dial-a-Ride transit services provided by CATX. Additionally, the following issues regarding transit services and facilities in the project study area were identified via public outreach events:

- Need for direct transit service to Merced

- Provide informational pamphlet of all transit services in the County
- Update MCC transit app
- More information and education on available transit services to the general public

The project team also sought insight on transit services via the online survey. Although 55 percent of survey respondents rated transit amenities on Robertson Boulevard as poor, only 1.4 percent of respondents used transit as their primary mode of transportation and transit improvements were ranked as the lowest priority issue by the survey respondents.



*Transit shelter at Robertson Boulevard/11th Street*      *Bus stop signage at Trinity Avenue/S. 2nd Street*

# 3. Community Outreach and Engagement

The purpose of community outreach was to provide residents, community groups and key stakeholders with opportunities to be involved, informed, and stay actively engaged in the SR 233/Robertson Boulevard Corridor Planning Study. MCTC, the City of Chowchilla, and Caltrans District 6 were committed to providing opportunities for Madera County and Chowchilla residents, business-owners, truck operators, employees, and community groups to stay informed and get involved with the project, including individuals and groups who may be underrepresented due to socioeconomic status, disabilities, ethnicity/race, Limited English Proficiency (LEP), etc.

## Public Participation and Outreach Plan

A Public Participation and Outreach Plan was developed to strategically conduct community outreach throughout the timeline of the project. The goals of the outreach plan were as follows:

**Establish Project Awareness and Understanding.** The community has an early awareness of the project and is informed of the purpose, objectives, and timeline of the project. This may be done through flyers, announcements, emails, and outreach meetings/events.

**Obtain Substantial and Diverse Turnout.** Several individuals from different community groups participate in public outreach events. Those who participate feel informed, engaged, and encourage other community members to participate in such events and meetings for this project and future City/County projects.

**Solicit & Receive Input from Public.** Outreach events involve exchange of ideas, concerns, and public opinions. Project team receives input and feedback, from the community, that is helpful to project development.

**Establish Community Trust.** A relationship is established between the public and MCTC, City of Chowchilla, Caltrans District 6, and TJKM. The community feels that getting involved with City/County projects and events is an effective use of their time.

**Meet Community Needs.** Multi-modal concepts address community concerns and meet the needs of current and future traffic conditions. Public feedback is obtained and implemented in an effective manner. A community consensus is met and support of the final plan is obtained.

The objectives of the outreach were to:

- Solicit and summarize concerns pertaining to multi-modal facilities and cut-through traffic, using various outreach methods and platforms;
- Provide the public with technical knowledge on data, analysis, and corridor improvement strategies;
- Identify holistic corridor issues based on community concerns and technical analysis;
- Develop implementable strategies and improvement projects which public concerns are fully incorporated; and
- Refine planned strategies and projects based on feedback and suggestions.

## Principles

The following principles outline key factors of an effective outreach plan:



- **Inform stakeholders and public about project and outreach events;**
- **Assess existing and future conditions, issues, and community concerns;**
- **Deliver a solution to identified issues;**
- **Solicit community feedback and support; and**
- **Implement finalized plan and improvements.**

## Target Audience

The target audience for the public outreach of this project were those who reside, work, or are involved with the City of Chowchilla and Madera County. It is important that the target audience accurately represents the city/county demographics and those directly impacted by improvements such as:

- Chowchilla/Madera County residents;
- Businesses located along SR 233/Robertson Boulevard and within project area;
- Residents located along SR 233/Robertson Boulevard and within project area;
- Pedestrians, cyclists, and transit users who traverse SR 233/Robertson Boulevard;
- Truck firms/independent operators; and
- Underrepresented community members and groups.

## Major Outreach Tools

The following were the mediums used to conduct outreach:



**Project Theme** The project theme served as an identification tool and was visible on all outreach materials.

**Stakeholder Advisory Committee (SAC)** The SAC was formed and informed with project updates and provided input throughout the project. The SAC had representation from the following entities:

- MCTC
- City of Chowchilla
- Caltrans District 6





- 5-7 key stakeholders from Chowchilla businesses and residential communities

The Committee was responsible for monitoring project progress, provide strategic guidance to the project team, and serve as a decision-making body. The Committee had meetings throughout the project timeline, typically after public outreach events and before deliverables.

To obtain successful and effective public participation various modes of communication were implemented throughout the timeline of the project. The following methods will be used to inform and engage the public:

**Project Website** The project website was established in August 2019 (<https://www.chowchillacorridorplan.com/>) and has provided the public and stakeholders an information portal for background reports, status updates and a platform to participate in online surveys and provide input. All project-related documents were provided. The website also included presentations from the workshops and stakeholder advisory meetings, as well as recordings of the second Stakeholder Advisory Committee (SAC) meeting and the second public workshop which were both held virtually due to COVID-19.

**Online Surveys** The online surveys were conducted throughout the project timeline and served to collect community feedback in a convenient way. Surveys were used to identify areas of concern, prioritize alternatives, address key topic areas, and receive feedback about the conceptual designs as developed. Survey results were summarized descriptively and statistically, and were also presented at various stakeholder and community meetings.



Flyers, business cards, and digital graphics distributed during the outreach processAA



Screenshot of the project website



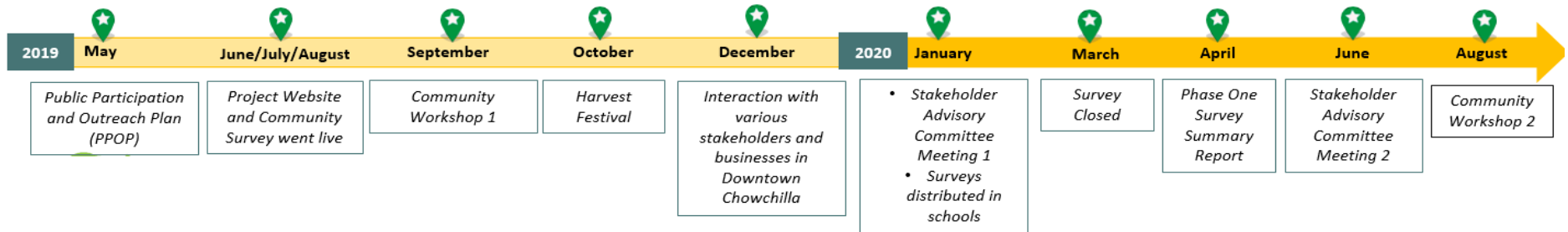
**Media Relations** Regular postings were made to recruit participants and share news/opportunities for online participation in surveys on the following social media channels:

- Facebook
- NextDoor
- Project Website
- City of Chowchilla Website
- MCTC Website
- eBlasts/eNews

- Project Overview
- FAQ
- Project Area Map
- Exhibits
- Outreach flyers/posters
- Meeting/Event materials and presentations
- Spotlight Section of City utility bills and newspaper

**Bilingual Outreach** Dissemination of information regarding the project, meetings, workshops, and key outcomes were made available in English and Spanish including, but not limited to, the following:

Additionally, bilingual staff was present at all public outreach events and workshops to ensure that all community members can participate in discussions, surveys, and collaborative efforts. Below is a brief timeline of the community outreach that was conducted throughout the timeline of the project:



Community Outreach throughout the project timeline





## Pop Up Events

The project team attended the Harvest Festival help by the Chowchilla Memorial Healthcare District. The project team set-up the exhibits and computers with the online survey and invited residents to view exhibit boards, fill-out the online survey, and ask any questions to the project planning team. Bi-lingual staff were available for Spanish speaking residents and project cards for participants to share with other residents were handed out.



*Public Input and Survey Data Collection at the Harvest Festival*



*Community Engagement at the Harvest Festival*



## Community Workshops & Walkshops

Community Meetings were held at the Chowchilla City Hall as well as virtually as the project progressed. The workshop format included a project overview presentation and map exhibit stations (both background maps and example corridor concepts) for participants to view and provide comments and feedback to the project team. Materials were provided in English and Spanish along with translation available. Due to COVID-19, the walkshops were not possible and the format for public input was transferred to an interactive online format.



**Chowchilla Multimodal**

# COMMUNITY WORKSHOP

**ABOUT THE PROJECT**

The Madera County Transportation Commission (MCTC) is commissioning a Public Participation and Outreach Plan and a Corridor Planning Study/Downtown Master Plan of SR 233/Robertson Boulevard from SR 152 to Rd 19, with an emphasis area in Downtown Chowchilla.

Funded by the SB-1 Sustainable Communities Planning fund, this project encourages local multimodal transportation and land use planning while addressing the needs of the community.

**PLEASE JOIN US:**  
**Thursday, September 12, 2019**  
 5:30 p.m. - 7:30 p.m.

**LOCATION:**  
 City Council Chambers, Chowchilla City Hall  
 130 S 2nd St, Chowchilla, CA 93610

**TAKE OUR SURVEY!**

or Visit: [www.chowchillacorridorplan.com](http://www.chowchillacorridorplan.com)

**FOR MORE INFORMATION**  
 Contact Project Manager  
 Evelyn Espinosa  
 Phone : (559) 675-0721  
 Email : [evelyn@maderactc.org](mailto:evelyn@maderactc.org)

Logos: City of Chowchilla, Madera CTC, SB1, TJKM

Community Workshop Flyer

## Flyer Postings

Flyers informing the public about upcoming outreach events were developed in English and Spanish. It was posted at key public areas like the City Hall, Chowchilla Water District, Chowchilla Library, Chowchilla Senior Center, Ronald Reagan Elementary School, Wilson Middle School, Chowchilla High School, Chowchilla Alternative Edu Center, Veterans Memorial Park, and R C Wisener Park. The flyers included other outreach tools like project website link, QR code for surveys, and City/County contact person(s).



Project Information Flyer on Transit



# Community Workshops

To ensure continuous public engagement, there were two community workshops held during the timeline of the project. The first community workshop was held at the onset of the project, where the community reviewed the existing condition analysis and gave input on the major issues along the corridor. The first community workshop was held on September 12, 2019 at the Chowchilla City Hall. The following **Table 6** summarizes the comments as received:



Community Visioning from Community Workshop 1



Snapshots from the Community Workshop 1



Snapshots from the Community Workshop 1

**Table 6. Community Workshop 1 Summary**

Mode of Transport/ Facility	Public Comments
<b>Bicycle</b>	<ul style="list-style-type: none"> <li>• Biking etiquette is an issue. Biking education is needed for both bicyclists and motorists</li> <li>• Bridge overcrossing for bicyclist needs improvement</li> <li>• Bicyclists safety improvements are required near Wilson Middle School</li> </ul>
<b>Pedestrian</b>	<ul style="list-style-type: none"> <li>• Sidewalks and crosswalks need upgrades (particularly 15th Street to Front and West of 15th) – this includes uneven and/or no sidewalks</li> <li>• Additional signal crossings are required</li> <li>• Additional high school/school crossings are required</li> <li>• Intersection at 5th &amp; Robertson Boulevard near Senior Center needs improvements</li> <li>• Pedestrian safety improvements are required near Wilson Middle School</li> </ul>
<b>Automobile</b>	<ul style="list-style-type: none"> <li>• Traffic safety is a concern on Robertson Boulevard</li> <li>• Existing freeway congestion</li> <li>• Congestion/traffic queuing at Robertson Boulevard/SR 233 @ SR 99</li> <li>• Truck route designation hurts Downtown businesses</li> <li>• Roadway flooding is a concern in the corridor, especially near 2nd, 3rd &amp; 5th Streets</li> </ul>
<b>Transit</b>	<ul style="list-style-type: none"> <li>• Connections are needed to Merced, Planada &amp; LeGrand</li> <li>• Senior bus once per weeks for shopping is not enough</li> <li>• Transit service needs to be synced with service in Merced</li> </ul>
<b>Parking</b>	<ul style="list-style-type: none"> <li>• Parking is an issue in Downtown Chowchilla</li> <li>• More parking is needed on Robertson Boulevard</li> </ul>

The second public workshop was held virtually on August 18, 2020. The workshop entailed a presentation of the conceptual design alternatives developed for Robertson Boulevard, in an attempt to address various issues as identified in Workshop 1. The project team used tools to highlight each improvement suggested in each concept to aid to the community’s understanding and answer questions on the alternative corridor design concepts. The following are a few concerns that were expressed:

- Installation of landscaped medians was not supported.
- Impacts to traffic flow in the alternatives that reduce a number of lanes.
- Left-turning movement for bicyclists using protected bike lanes.
- Sidewalk improvements should be prioritized - specifically upgrades and connectivity.
- Concerns around ADA compliance, pedestrian and bike improvements at the intersection of Robertson Boulevard with SR 99 were highlighted.

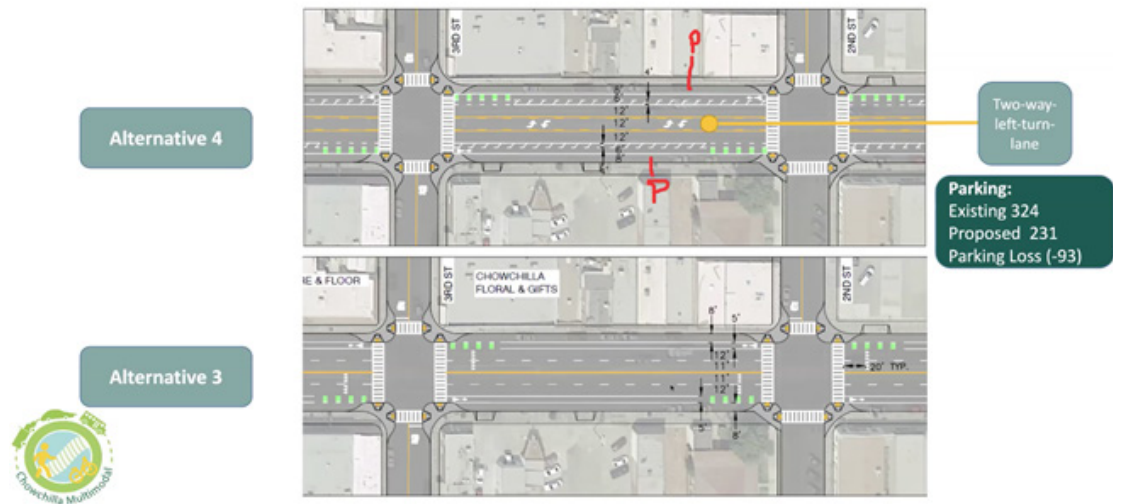






Outreach Post on Madera CTC Twitter Page

## Segment C, Alternative 4: Two way left-turn lane



Outreach Meeting 2 Presentation and Public Input Snapshot





## Stakeholder Advisory Committee (SAC)

The Stakeholder Advisory Committee was a group of representatives from the City of Chowchilla, MCTC, Madera County Health Department and various other representatives from the community. They served as champions of this project in their communities, constantly helping the project team garner maximum community input. The first SAC meeting was held on January 22, 2020 at the Chowchilla City Hall. The SAC participated in an open discussion forum, and their concerns as expressed have been summarized in the **Table 7** below:

**Table 7. Stakeholder Advisory Committee Meeting 1**

Topic	SAC Comments
Issues on Robertson Boulevard	<ul style="list-style-type: none"> <li>• Safety for pedestrians &amp; bicyclists are primary issues</li> <li>• The 99/Robertson overpass continues to be a source of congestion</li> <li>• Non-compliance with ADA is an issue along the corridor</li> <li>• Rail line and train halt blocks the corridor and causes traffic line up with a wait time of about 45 minutes</li> <li>• Differing opinions on how parking should be handled in on the corridor; some prefer a reduction in parking to provide better protection for bicyclists, while business owners would like better parking facilities to attract more customers</li> </ul>
Plan Implementation	<ul style="list-style-type: none"> <li>• The Committee requested that the project phasing be considered in the implementation and funding plan</li> <li>• The Consultant team suggested that the implementation plan will include early, mid and long-term projects. Identification of low-cost improvements that could be implemented in short term will be key to the implementation process.</li> </ul>
Public Outreach	<ul style="list-style-type: none"> <li>• Project flyers can be distributed in schools, paper survey to be provided to students to take home and return</li> <li>• Focus group discussion can be conducted at schools</li> <li>• Student Outreach events like Bike Rodeo, Junior Fair Stampede</li> </ul>

The second SAC meeting was held virtually on June 15, 2020. This meeting was held virtually due to COVID-19. The focus of this meeting was to allow the stakeholders to view the potential conceptual corridor alternatives and to work with the project team refine these concepts. The SAC supported all the alternatives, and mentioned that they correctly addressed the issues identified and facilitate for safe mobility for all modes of transportation throughout the corridor. The following are a few concerns as expressed:

- Concerns regarding the removal of parking in one of the conceptual designs for Downtown Chowchilla corridor and mixed views were expressed regarding the sufficiency of parking supply on Robertson Boulevard. It was suggested that a parking survey should be conducted to determine the whether removal or decrease in parking supply would be an issue or not.
- Pedestrian safety around Wilson Middle School was discussed.
- Conceptual alternatives that include a median and bulb-outs along the corridor might lead to right-of-way issues during certain historic City events like the WWII Airplane Parade during the Spring Festival , the Chowchilla Stampede event, Christmas Parade, High School Homecoming rallies, etc.
- On-demand signals for crossing along with good night lighting and marking would be beneficial improvements for the corridor of Robertson Boulevard.





Stakeholder Advisory Meeting 1 Snapshot

## Summary of Community Needs and Priorities

The starting point to identifying improvements along the Robertson Boulevard was to develop a list of community needs and priorities. All the community needs and priorities were identified and synthesized to develop the conceptual design alternatives. Each element as identified were confirmed by the community, during two rounds of community workshop, online surveys, Stakeholder Advisory Committee (SAC) meetings and various community member discussions including Chowchilla’s Historical Society, that were held during the timeline of the project. The following are the elements identified as the most pressing community needs (**Table 8**):

**Table 8. Summary of Community Needs and Priorities**

Mode of Transport/Facility	Needs and Opportunities
<b>Pedestrian</b>	<ul style="list-style-type: none"> <li>• Provision of improved and connected sidewalk facility along the corridor, especially near pedestrian activity zones</li> <li>• Ensure that the entire corridor is made accessible for all users and is ADA compliant</li> <li>• Promote provision of street lighting along sidewalks to ensure safety during low-light hours</li> <li>• Increase multi-modal choices by adding more frequent as well as shorter crosswalks, creating a connected network for pedestrians</li> <li>• Identify and implement traffic calming techniques along the corridor for safe pedestrian mobility</li> <li>• Ensure improvements are consistent along the corridor</li> </ul>
<b>Bicyclists</b>	<ul style="list-style-type: none"> <li>• Provision of connected bicycle facility</li> <li>• Provision of protected/separated bicycle facility along the corridor</li> <li>• Ensure improvements are consistent along the corridor</li> </ul>
<b>Transit</b>	<ul style="list-style-type: none"> <li>• Increase frequency of service to other destinations in the region/County</li> <li>• Coordinate existing service with other transit service in various cities in the region/County</li> <li>• Increase frequency of Senior Bus service</li> <li>• Better bus stop amenities</li> </ul>
<b>Automobile</b>	<ul style="list-style-type: none"> <li>• Increase parking along the corridor, especially in Downtown Chowchilla</li> <li>• Minimize cut-through traffic through the City</li> <li>• Road-diet shouldn’t be considered as it can lead to congestion</li> </ul>

# 4. Corridor Design and Concept Development

This chapter includes near-term and long-term design improvements for the SR 233/Robertson Boulevard study corridor. These improvements and the resulting design alternatives are conceptual in nature and are based on City of Chowchilla's Street Design Guidelines. Building from the in-depth existing conditions analysis and community and stakeholder input, this chapter identifies specific improvements envisioned for the entire study segment. The design alternatives also takes into consideration the analysis and results of the Truck Route study conducted as a part of this plan. As a result of the study, the alternatives along the corridor are planned and designed considering the continued movement of trucks and thus corridor characteristics like lane widths and truck turning radii are designed up to standard. Because of the varied existing conditions and right-of-way all along, the corridor has been divided into seven segments. **Figure 18** illustrates the segment divisions along Robertson Boulevard:



Figure 18. SR 233/Robertson Boulevard - Segment Divisions



## Basis of Design

The following design guidelines establish the minimum requirements and best practices to ensure safe and comfortable travel for bicyclists, motorists, and pedestrians for the length of the corridor. It should also be noted that roadway improvements on State Route should be designed as per Caltrans Standards, including parking, bike lane, sidewalk, landscape, etc.

### Vehicle Lanes

**Lane Width:** The minimum travel lane width shall be 11 feet. Where there is sufficient right of way, the minimum outer travel lane width shall be 12 feet to accommodate truck and transit vehicles.

**Vehicle Design Speed:** The vehicle design speed of this corridor varies for each segment shown below in **Table 9**. Lane shifts, curve Radii, and other roadway geometry elements should be installed in accordance with the design speed.

**Table 9. Vehicle Design Speed by Segment**

Segment	Vehicle Design Speed (mph)	Posted Speed Limit (mph)
A: State Route 152 Highway Connector	55	55
B: Transition Zone from Highway Connector to Urban Boulevard	40	40
C: Downtown Chowchilla: Urban Boulevard	30	30
D: State Route 99 Connection Ramps	30	30
E: Suburban Street	45	45
F: Transition Zone from Suburban Street to Rural Highway	45	45
G: Rural Highway	55	55

**U-Turns:** Prohibit vehicle U-turns where 37 feet of clear space cannot be provided.

### Parking Lanes

**Parking Width:** The minimum parking width should be 8 feet wide.

**Parking Restrictions:** Parking should be prohibited at least 20 feet from the edge of intersections to provide adequate sight distance.

### Bicycle Lanes

**Class II Bicycle Lanes:** Class II bicycle lanes should be minimum 5 feet wide. Where there is sufficient right of way, bicycle shall be 6 feet wide with minimum 2-foot buffer.

**Class IV Bicycle Lanes:** Class IV bicycle lanes should be minimum 6 feet wide. Where there is sufficient right of way, bicycle shall be 5 feet wide with minimum 3-foot buffer. Buffers should be protected with vertical separation devices such as bollards, concrete medians, or planters.

**Green Pavement Marking:** Green pavement marking enhancements should be installed at points of high conflict including share right turn lanes, driveways, bus stop, and other high conflict locations.



## Pedestrian Facilities

**Continuous Sidewalks:** A minimum 6-foot wide sidewalk shall be provided throughout the corridor to ensure a continuous path of travel for pedestrians. New sidewalks shall be installed to fill in any gaps in continuity.

**Curb Ramps:** Where possible, install directional curb ramps (two ramps per corner) to align with direction of crosswalks. All curb ramps shall be ADA compliant.

**Intersection Bulbouts:** Bulbouts should be installed where feasible to reduce pedestrian crossing distance and improve pedestrian safety.

**Uncontrolled Intersection Crossings:** To improve pedestrian crosswalk safety, Rectangular Rapid Flashing Beacons (RRFB's) and high visibility crosswalks are recommended at intersections with high pedestrian activity. Where traffic studies warrant it, Pedestrian Hybrid Beacons (PHB's) are also recommended. Adding crosswalks that are crossing State Routes should meet the Caltrans crosswalk warrant criteria and Caltrans approval.



*Rectangular Rapid Flashing Beacons*



*Bulbouts*



*Pedestrian Hybrid Beacon*





## Additional Curbside Management Enhancements

Managing curbside is an essential element for vibrant, walkable and an economically thriving Downtown. Curbside serve at the nexus of transportation, land use and economic development. Curbside enhancements can be temporary and iterative, serving the needs of the multi-modal traffic as well as the Downtown businesses that are aligned along. They can serve as vibrant social spaces with food trucks, restaurant patios, parklets, public art installations that encourage people to interact and congregate. It can also include aesthetic enhancements such as planted boulevard stops and planter boxes.

Curbside along the corridor through Downtown Chowchilla can also serve as “flex zones”, which entails rather than designating fixed uses for all portions along the Downtown, flexible areas can be designated to accommodate for different purposes, during different times of the day. For example, a section of the segment could be combined with commercial as well as passenger loading zones, to allow for efficient use of the curb space, depending on the varying demands at different times of the day. As Downtown Chowchilla segment on SR 233/Robertson Boulevard aims to serve multi-modal mobility of both people and goods, following are some curbside enhancements and treatments that can be used and expanded upon:

- **Parklets:** public platforms essentially converting on-street parking into public seating platforms, outside of local businesses and restaurants, with additional greenery and bike racks. They are typically administered through partnerships between the City, and the adjacent retail and businesses.
- **Living Previews:** temporary installation of some or all of a proposed project improvement along the corridor, including pop-ups that can allow for residents



*Parklets<sup>1</sup>*



*Living Preview of a protected bikeway and a parklet<sup>1</sup>*

to view, observe, interact and comment on the project, simulating greater public participation along with testing a pilot. The treatments could include curb extensions, bulb outs, parklets, etc.

<sup>1</sup>SOURCE: ITE's Curbside Management Practitioners Guide



## Visioning Concepts

The basis of design for pedestrian, bicyclists, auto and parking elements have been further applied to the existing conditions along Downtown Chowchilla, on SR 233/

Robertson Boulevard Corridor. The following are a few concepts developed as a part of the community visioning process, to envision the future of the study corridor.



Existing Conditions: Robertson Boulevard between 7<sup>th</sup> Street and 8<sup>th</sup> Street.



Visioning Concept 1: Landscaped median with parking protected bikeway



Visioning Concept 2: Landscaped median with protected bikeway



Visioning Concept 3: Two-lane roadway with on-street parking and Class II bicycle lane

## SR 233/Robertson Boulevard Corridor Concepts

The following sections describe the proposed improvements and alternatives for each segment of the corridor. The plan drawings and sections pertaining to the improvements for each segment of the corridor can be found in **Appendix H**.

## Downtown Chowchilla: Urban Boulevard

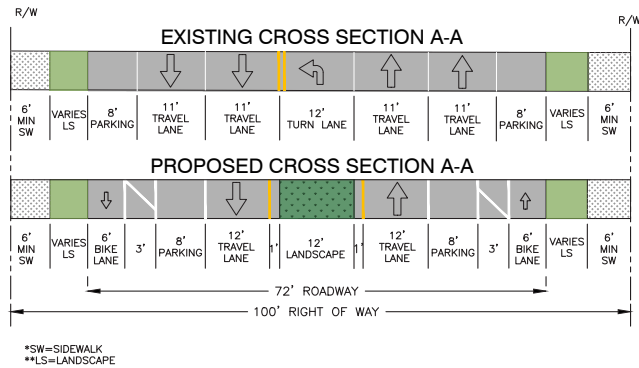
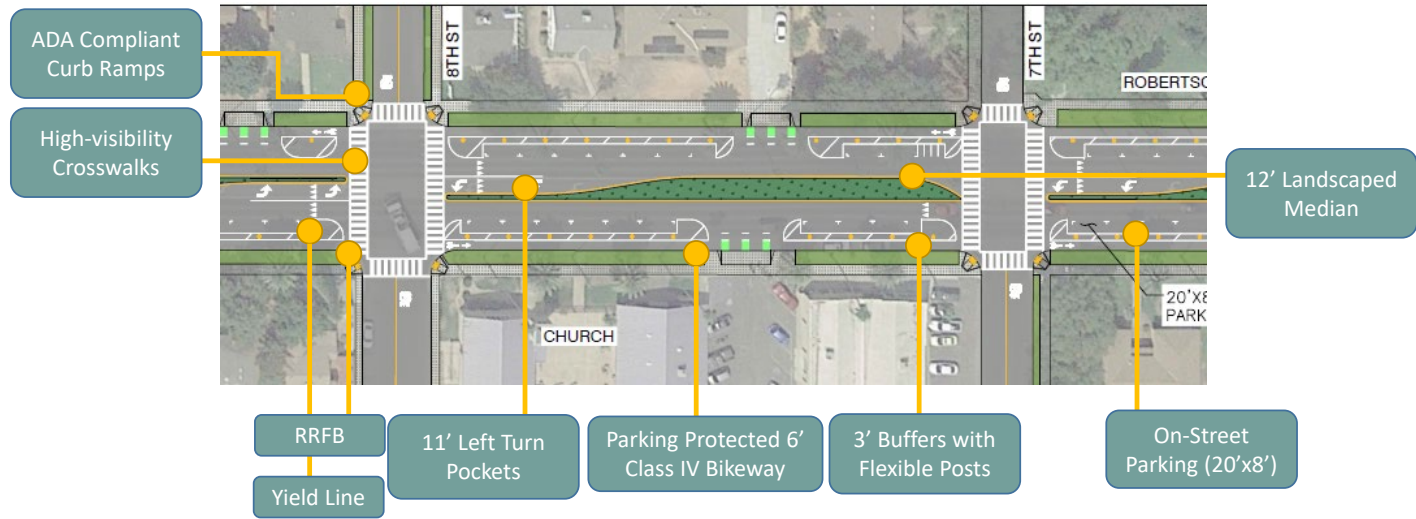
This section of Robertson Boulevard serves as the main thoroughfare in and out of the City serving businesses within Downtown Chowchilla, along with pedestrian, residential and truck route traffic. There are six proposed alternatives for this 1.2 mile section of roadway from 15th Street to Front Street. The following alternatives aim to repurpose this roadway into a multi-modal corridor by adding bike lanes and enhanced pedestrian features. **Table 10** summarizes the alternatives:

**Table 10. Downtown Chowchilla Alternative Summary**

Alternatives	Travel Lanes	Pedestrian Facility	Bike Facility	Median	Parking	Other Improvements
<b>Existing</b>	2 Travel lanes (per direction)	Sidewalks (6 feet min)	Bike route	Turn lanes	Yes; Total number: 324	
<b>Alt. 1</b>	1 Travel lane (per direction)	Sidewalks (6 feet min)	Parking protected bike lanes	Landscaped median (turn lanes at intersection)	Yes; Total number: 227 Change: -97	Yield limit lines; RRFB
<b>Alt. 2</b>	2 Travel lanes (per direction)	Sidewalks (6 feet min)	Buffered bike lanes	Landscaped median (turn lanes at intersection)	None; Total number: 0 Change: -324	Yield limit lines; RRFB
<b>Alt. 3</b>	2 Travel lanes (per direction)	Sidewalks (6 feet min)	Bike lanes	Landscaped median (Segment between 15th St and 11th St) None (Segment between 11th St to Front St)	Yes; Total number: 231 Change: -93	Yield limit lines; Bulbouts
<b>Alt. 4</b>	1 Travel lane (per direction)	Sidewalks (6 feet min)	Buffered bike lane	Two way left turn lanes	Yes; Total number: 231 Change: -93	Yield limit lines; Bulbouts
<b>Alt. 5</b>	1 Travel lane (per direction)	Sidewalks (6 feet min)	Protected bike lanes	None	Yes; Total number: 110 Change: -214	Yield limit lines; Bulbouts
<b>Alt. 6</b>	2 Travel lanes (per direction)	Sidewalks (6 feet min)	Two-way cycle track on one side	None (majority of the corridor) Turn lanes	Yes; Total number: 180 Change: -114	Yield limit lines; Bulbouts; RRFB's

# Alternative 1: Road Diet and Parking Protected Bikeway

The proposed improvements of this alternative aim to create Class IV parking protected bike lanes to create safe biking conditions while minimizing impacts to available parking in the Downtown area.



## Proposed Improvements

- Removal of one travel lane
- Installation of new bicycle lane and buffer
- Installation of new 12-foot median with intersection left turn lane openings to separate the two directions of travel

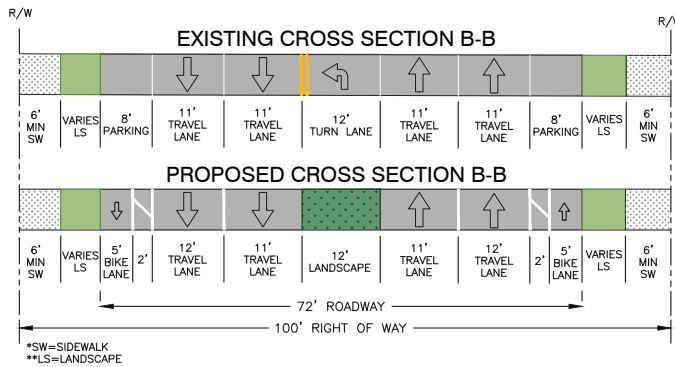
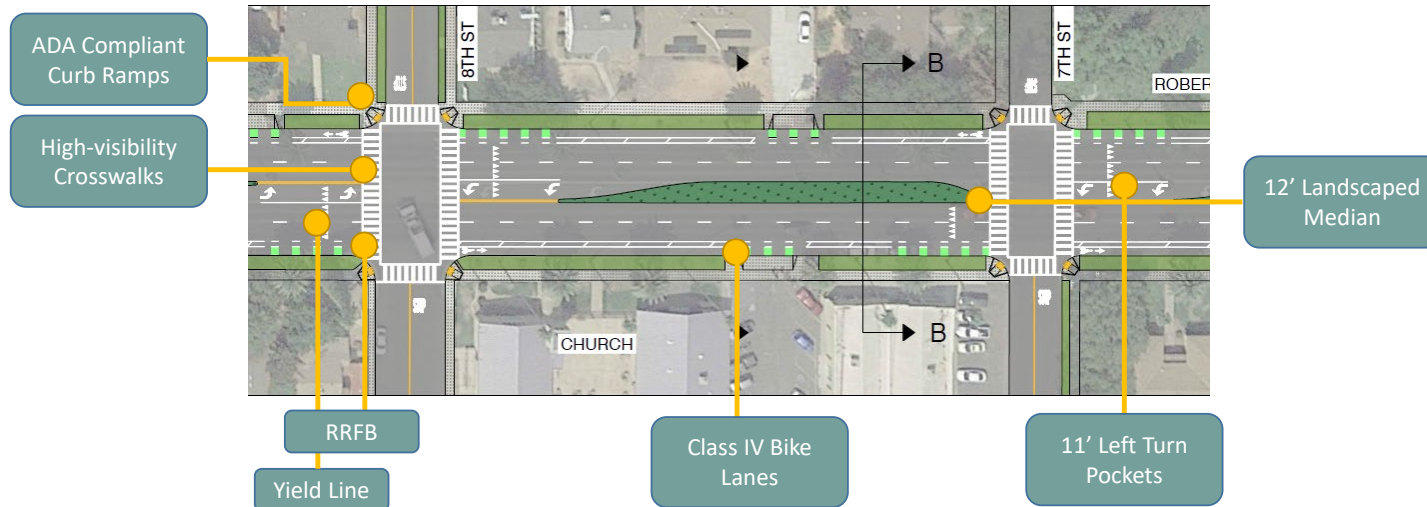
Benefits:	Drawbacks:
<ul style="list-style-type: none"> <li>• Increase bicycle safety and level of comfort</li> <li>• Increase bicycle ridership</li> <li>• Maintains parking within Downtown area</li> </ul>	<ul style="list-style-type: none"> <li>• Removing one travel lane could potentially increase congestion</li> <li>• Landscaped median would prohibit driveway access and U-turns which could alter driver's routes and traffic patterns</li> </ul>





## Alternative 2: Separated Bikeway on a Four Lane Corridor

The proposed improvements of this alternative aims to maintain the existing vehicular capacity of the roadway while also providing a higher degree of protection to the bicyclists.



## Proposed Improvements

- Maintains the existing travel lanes
- Removal of the existing parking lanes
- Installation of a 5-foot bike lane with 2-foot buffer
- Installation of a 12-foot median with intersection left turn lane openings to separate the two directions of travel

### Benefits:

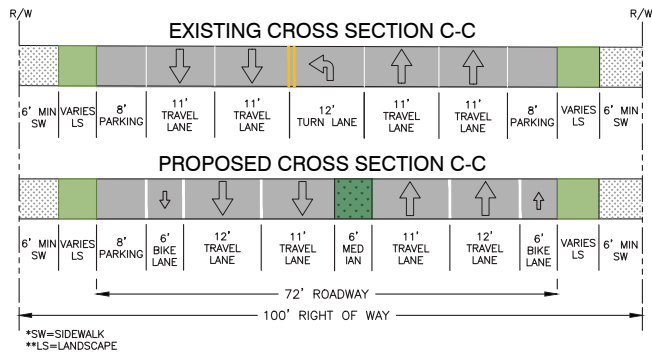
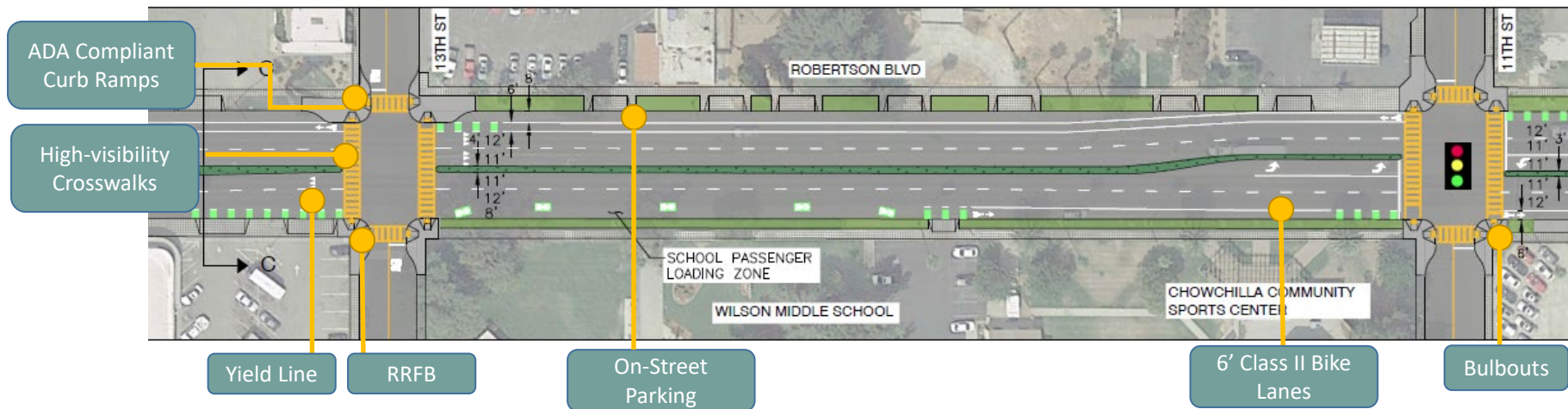
- Increase bicycle safety and level of comfort increasing bicycle ridership
- Maintains existing travel lanes
- Reduces conflict points generated from parking and mid-block left turn movements
- Travel time along corridor could potentially be improved

### Drawbacks:

- Removing parking can increase vehicle traffic on adjacent streets
- Landscaped median would prohibit driveway access and u-turns which could alter driver's routes and traffic patterns

### Alternative 3: Class II Bikeways and Bulbouts (15th Street to 10th Street)

This alternative concept proposes two distinct lane geometries along this roadway divided between 15th street to 11th street and 11th street to Front Street. The alternative includes Class II bikeways along the corridor. In order to maintain a continuous bikeway at locations along school frontage where school drop-off zones exist (between 13th and 11th Street), an option to relocate the drop-off zones on the side streets is viable and recommended by Caltrans.



### Proposed Improvements (15th Street to 10th Street)

- Installation of 6-foot bike lanes
- Removal of one side of on-street parking
- Removal of the left turn lane
- Installation of a 6-foot landscaped median separating opposite lanes of travel
- Maintains existing travel lanes

#### Benefits:

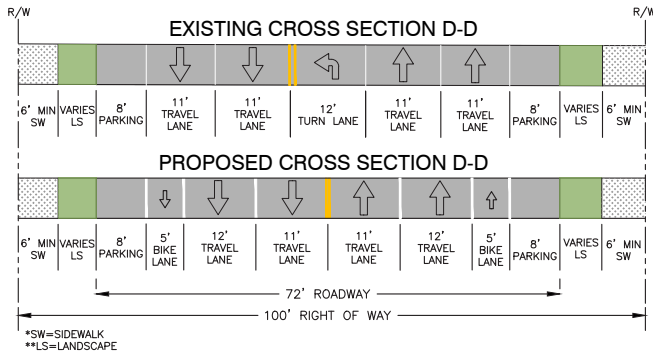
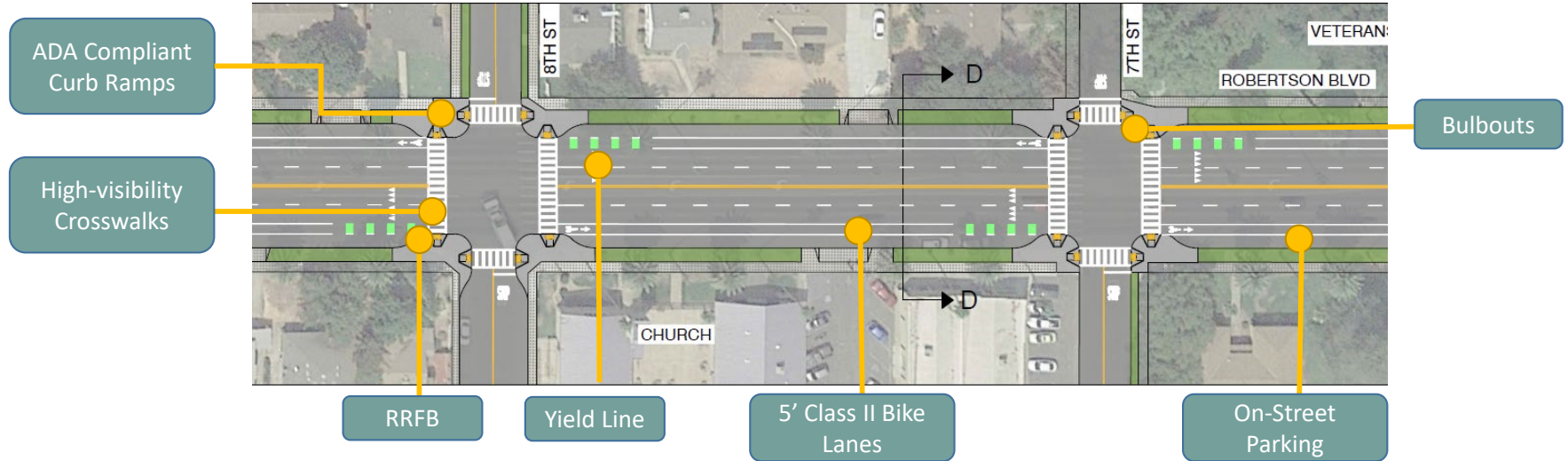
- No change in the number of travel lanes
- Increase bicycle safety and comfort
- Retains parking on one side

#### Drawbacks:

- Does not provide a buffer for bike lane
- Bike lane is narrower than other alternatives
- Removes all left turn lanes from 14th Street to 10th Street



### Alternative 3: Class II Bikeways and Bulbouts (10th Street to Front Street)



### Proposed Improvements (10th Street to Front Street)

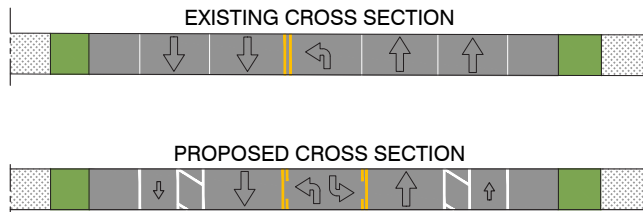
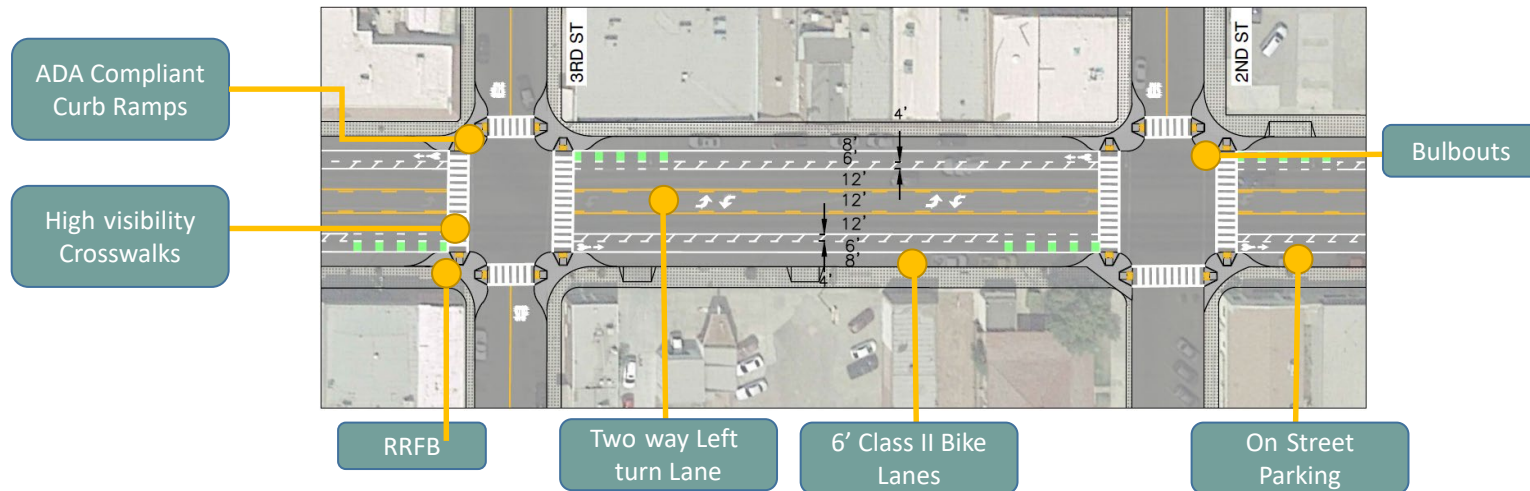
- Removal of the the left turn lane
- Installation of reduced size bike lanes
- Maintain existing parking lanes on both the sides of the roadway segment
- Maintain existing travel lanes
- Both sections of this alternative would require either the prohibition of left turns on Roberston Boulevard or the potential reduction in traffic flow caused by left turn movements from a through lane

Benefits:	Drawbacks:
<ul style="list-style-type: none"> <li>• No change in the number of travel lanes</li> <li>• Increase bicycle safety and comfort</li> </ul>	<ul style="list-style-type: none"> <li>• Does not provide a buffer for bike lane</li> <li>• Bike lane is narrower than other alternatives</li> <li>• Removes all left turn lanes from 10th Street to 1st Street</li> </ul>



## Alternative 4: Two-way Left-turn Lane

Alternative 4 proposes a road diet in order provide a greater buffer for bicyclists while also providing parking and left turn access.



### Proposed Improvements

- Installation of two-way center left turn lane
- Removal of one travel lane
- Installation of a 6-foot bike lane with a 4-foot buffer
- Maintain existing parking lanes
- Removal of existing left turn lanes

#### Benefits:

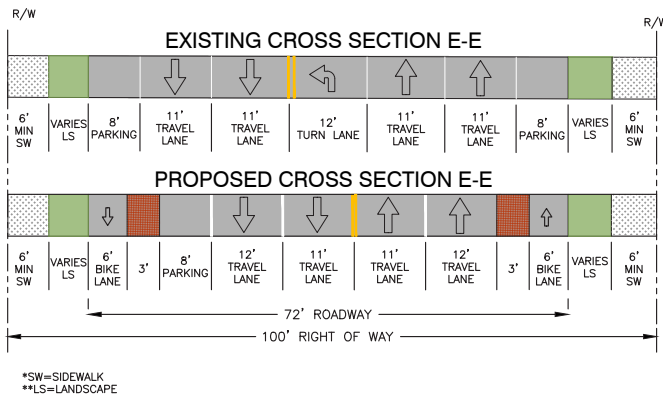
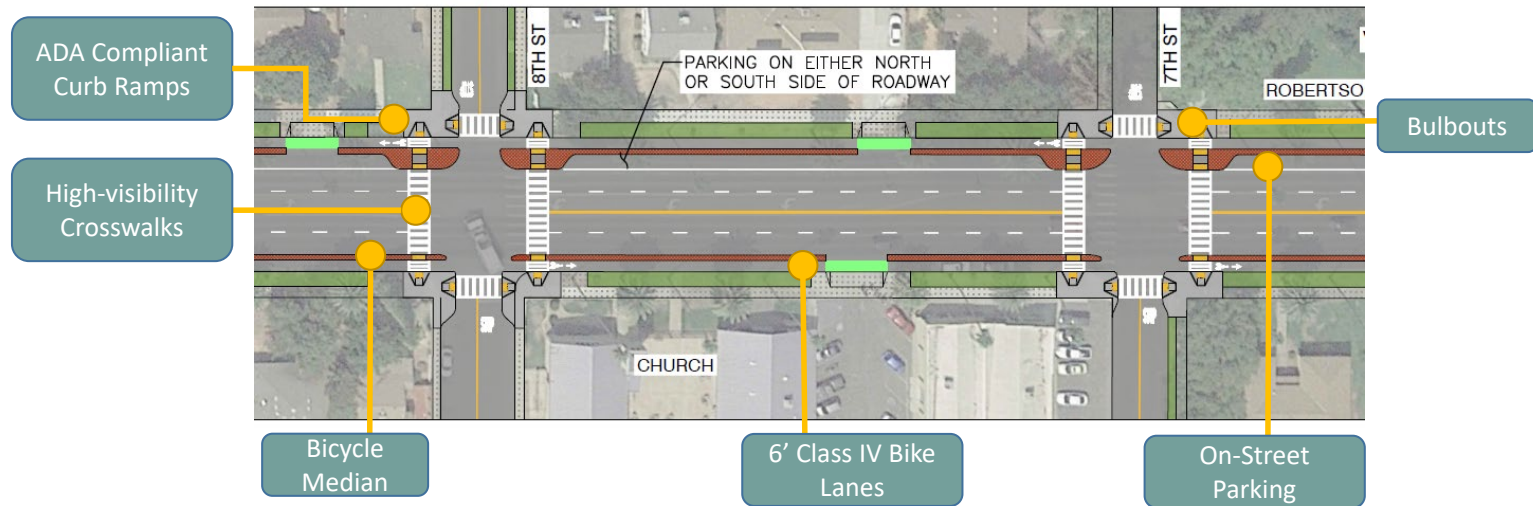
- Increases bicycle safety and comfort
- Provides a greater bicycle buffer
- Increases pedestrian safety by installing bulbouts
- Parking lane adjacent to the curb allows motorists to not occupy the travel lane when parking, reducing congestion

#### Drawbacks:

- Removing one travel lane could potentially increase congestion

## Alternative 5: Protected bike lanes with no left-turn lane

The proposed improvements of this alternative aim to provide an increased level of safety to bicyclists while maintaining the existing vehicular capacity of the roadway.



## Proposed Improvements

- Removal of left turn lane
- Installation of a 6-foot bike lane with a 3-foot landscaped buffer
- Maintain existing travel lanes
- Removal of the left turn lanes would require either the prohibition of left turns along Roberston Boulevard or the potential reduction in traffic flow caused by left turn movements from a through lane

### Benefits:

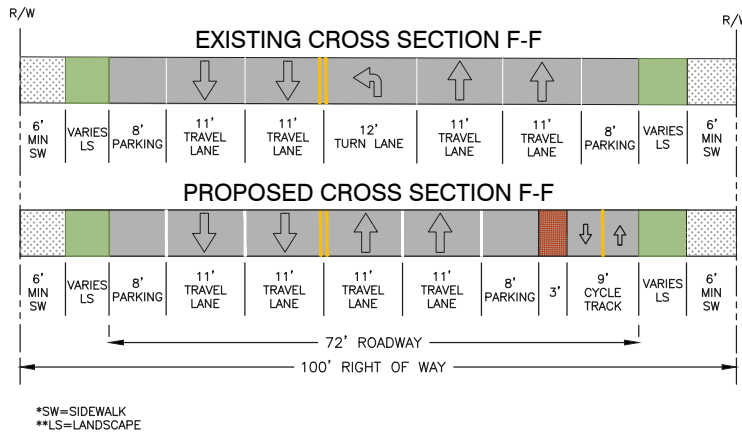
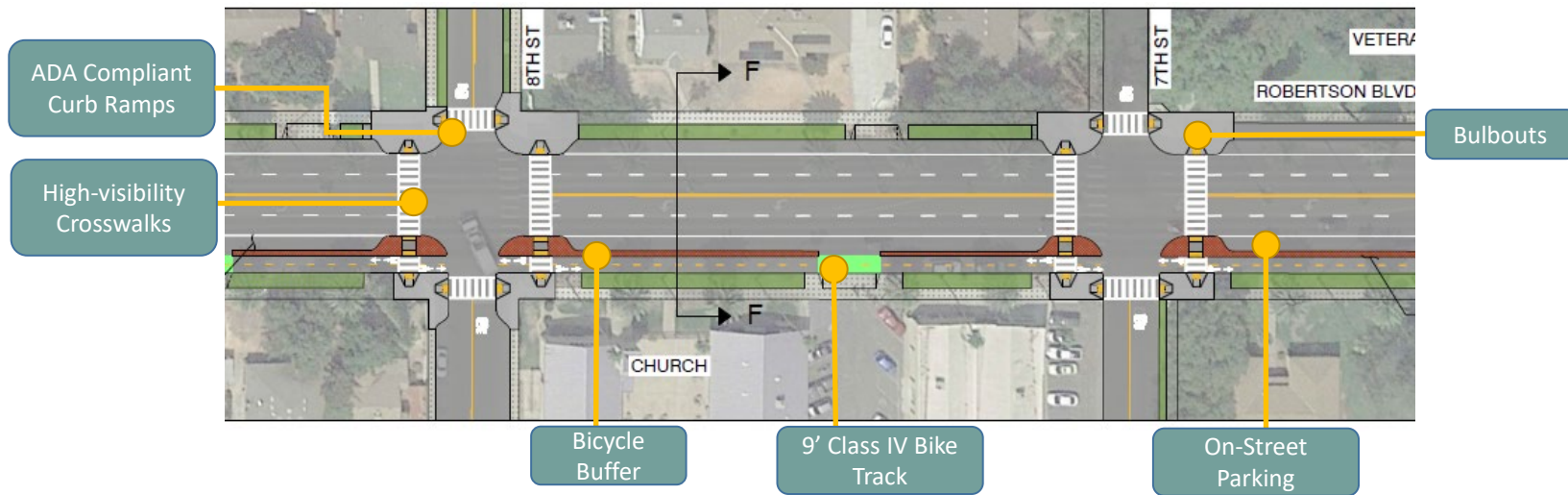
- Increase bicycle safety and comfort
- Provides a greater level of protection for cyclists
- Increase pedestrian safety by installing bulbouts

### Drawbacks:

- All the left turn lanes from 14th Street to 1st Street will be removed, potentially increasing congestion
- Reduces parking to only one side of the street which could alter driver's routes and traffic patterns

## Alternative 6: Two-way Bike Track

Alternative 6 proposes the installation of a two-way cycle track on one side of the road in order to maintain the number of travel lanes and reduce the impact on parking.



### Proposed Improvements

- Removal of the left turn lane
- Installation of a 9-foot two-way cycle track with 3-foot median buffer
- Maintain existing left turn lane where turn volumes are particularly high.
- Removal of parking to accommodate left turn lanes
- Maintain existing travel lanes

#### Benefits:

- Increase bicycle safety and comfort
- Provides a greater level of protection for cyclists
- Increase pedestrian safety by installing bulbouts
- Maintains existing travel lanes

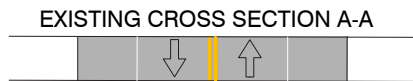
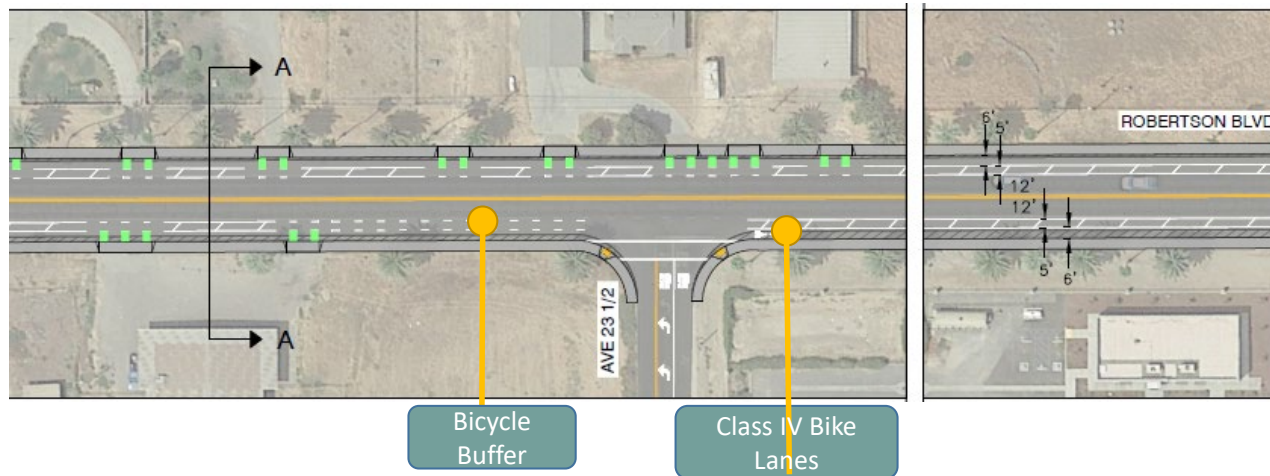
#### Drawbacks:

- Only key intersections will have left turn lanes
- Cycle track on one side of the street may require out of directional travel for cyclists to access destinations and routes



# State Route 152 Highway Connector

This section of roadway serves as the connecting road between the City limits of Chowchilla and the State Route 152 Highway Ramps.



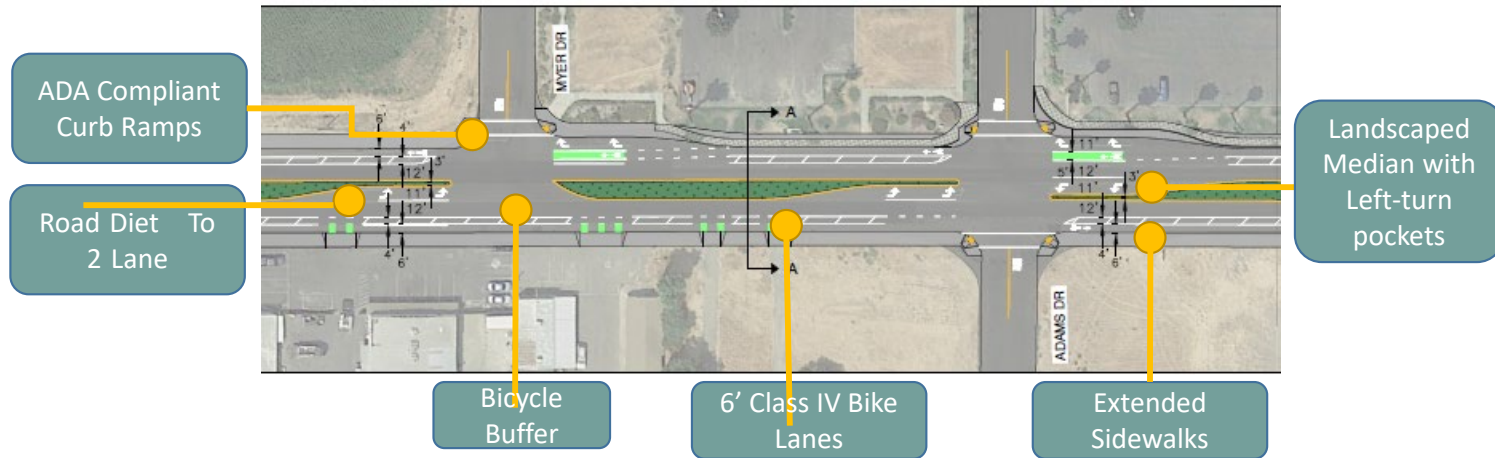
## Proposed Improvements

- Installation of buffered bike lanes
- Installation of new sidewalks
- Increase each travel lane width by one foot
- Replace the shoulder with a five-foot buffer

Benefits:	Drawbacks:
<ul style="list-style-type: none"> <li>• Increase pedestrian safety and circulation</li> <li>• Increase bicycle safety and circulation</li> </ul>	<ul style="list-style-type: none"> <li>• Road widening can only be done in the long term</li> <li>• Potential near-term improvements would not provide facilities for pedestrians</li> <li>• Improvements may not achieve full utilization due to low population density</li> </ul>

## Transition Zone from Highway Connector to Urban Boulevard

This section of Robertson Boulevard serves as the transition zone between Downtown Chowchilla and the Chowchilla city limit. There are two proposed alternatives for this 0.5 mile section of roadway from Palm Parkway to 15th Street.



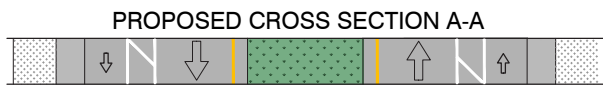
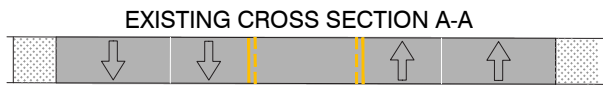
### Alternative 1: Road Diet

## Proposed Improvements

- Widening of the sidewalk
- Installation of Class IV barrier protected 6 foot bike lanes with a 5-foot buffer
- Removal of a vehicle travel lane
- Installation of a 4-foot sidewalk extension
- Installation of a 14-foot landscaped median with intersection left turn lanes
- Removal of existing center turn lane

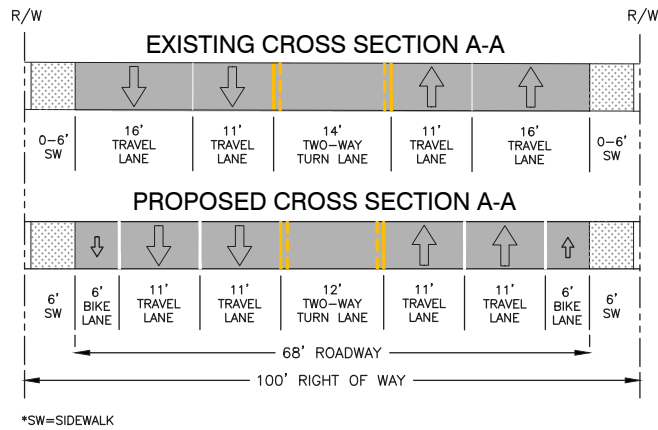
- Increase pedestrian safety and circulation
- Increase bicycle safety and circulation

- Removing a travel lane may potentially increase congestion
- Landscaped median would prohibit driveway access and U-turns which could alter driver's routes and traffic patterns





## Transition Zone from Highway Connector to Urban Boulevard



### Alternative 2: Four Lane Roadway with a Two-way Center Turn Lane

## Proposed Improvements

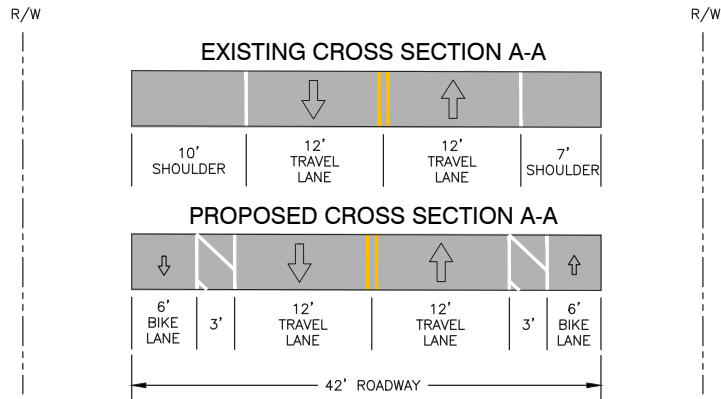
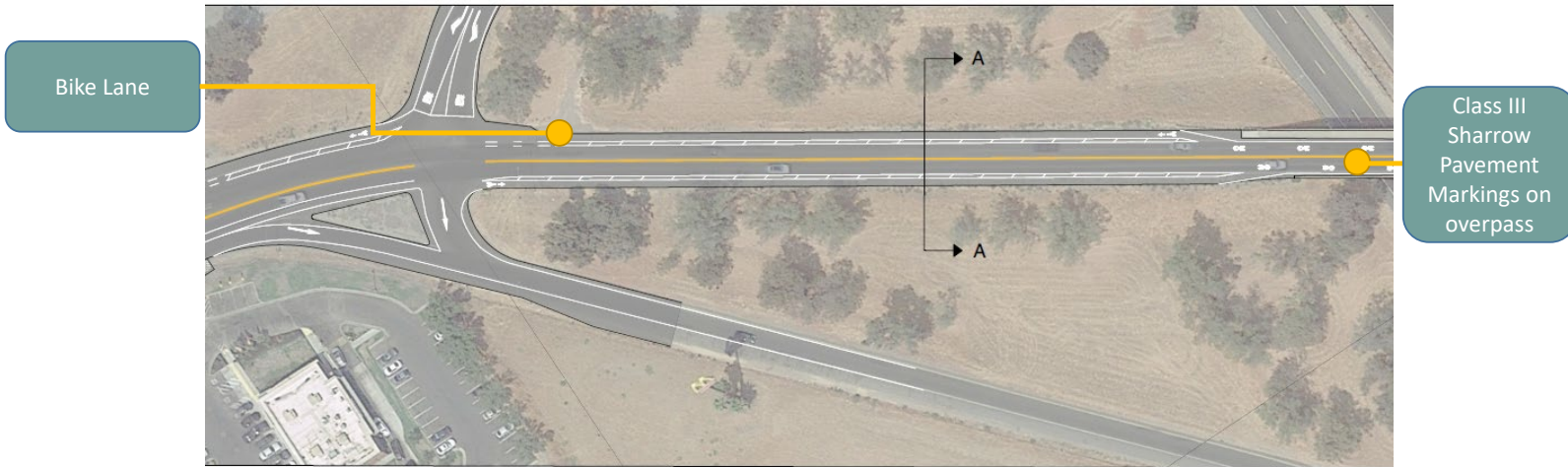
- Reduction of the existing travel lane widths to 11-foot
- Installation of 6-foot bike lanes
- Installation of new sidewalks where there are gaps
- Maintain existing travel lanes

- Increase bicycle safety and circulation
- Increase pedestrian safety and circulation
- Maintains existing travel lanes and two way left turn lane

- Does not provide a buffer for bicycles
- Streetscape improvements cannot be accommodated

# State Route 99 Connector Ramps

This section of roadway runs between the State Route 99 on and off ramps and passes over the State Route 99 Highway.



## Proposed Improvements

- Removal of existing shoulders
- Installation of 6-foot bike lanes with 3-foot buffers
- Reduction of the existing travel lane widths to 11-foot
- Maintains existing travel lanes
- Because the width of the roadway narrows at the State Route 99 overcrossing bridge, bicyclists will temporarily be required to merge into the vehicle lane and share the road until the roadway widens again at the opposite side of the bridge

### Benefits:

- Increase bicycle safety and circulation
- Maintains existing travel lanes

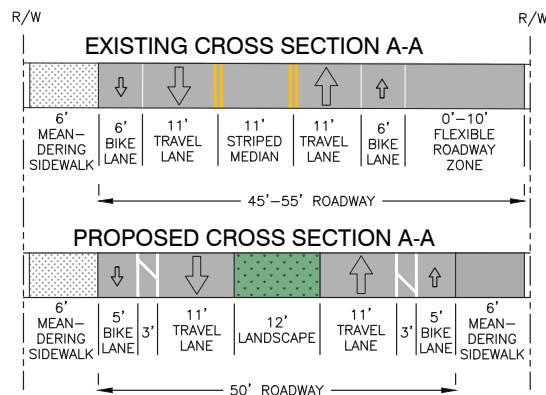
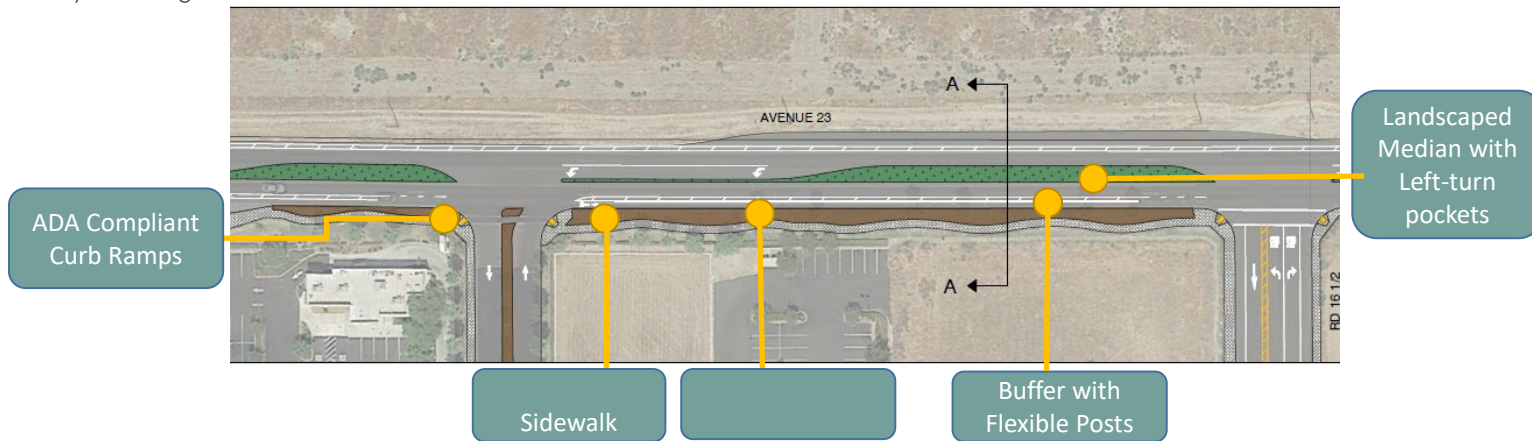
### Drawbacks:

- Limited roadway width will preclude the ability to install improvements on a bridge overpass
- Additional safety measures needed to provide safe and comfortable bicycle travel in areas required to merge with vehicular traffic



## Suburban Street

Avenue 26 serves as the main roadway for Chowchilla’s suburban population residing east of SR 99. There are three proposed alternatives for this 0.5 mile section of roadway from the SR 99 NB ramps to Fig Tree Road. Each alternative proposes a new meandering sidewalk to be installed on the north side of the roadway to mirror the existing meandering sidewalk on the south side of the roadway. Because the existing width of the roadway is not uniform throughout this segment, each alternative would also require roadway widening work.



### Alternative 1

## Proposed Improvements

- Installation of 5-foot bike lanes with 3-foot buffers
- Installation of new meandering sidewalks on the northside of the roadway
- Installation of a new landscaped median
- Maintains existing travel lanes

#### Benefits:

- Increase bicycle safety and circulation
- Increase pedestrian safety and circulation
- Maintains existing travel lanes
- Provides streetscaping elements

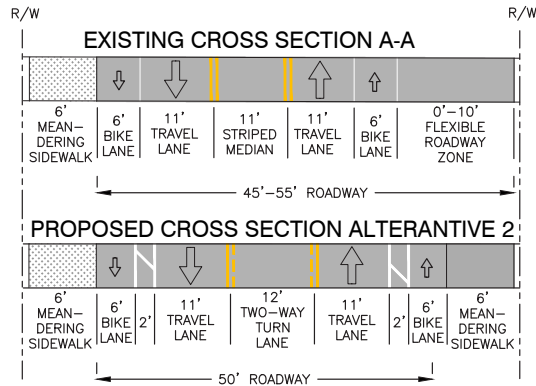
#### Drawbacks:

- Increases cost of installation and maintenance for landscaped median compared to striped median

## Alternative 2

### Proposed Improvements

- Installation of a 6-foot bike lane with 2-foot buffer
- Installation of new meandering sidewalks on the northside of the roadway
- Convert existing median into a two-way left turn lane
- Maintain existing travel lanes



#### Benefits:

- Increase bicycle safety and circulation
- Increase pedestrian safety and circulation
- Maintains existing travel lanes
- Center turn lane provides flexibility for installing future driveways or intersections

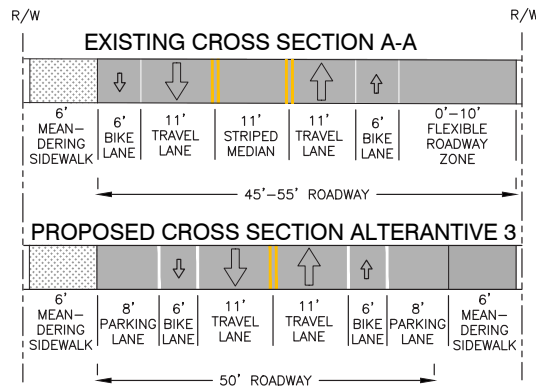
#### Drawbacks:

- No aesthetic benefit like streetscaping

## Alternative 3

### Proposed Improvements

- Removal of existing flexible roadway zone
- Installation of 6-foot bike lanes
- Installation of new meandering sidewalks on the northside of the roadway
- Removal of the existing striped median
- Installation of on-street parking



#### Benefits:

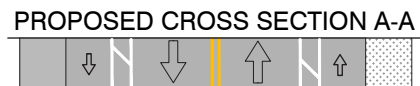
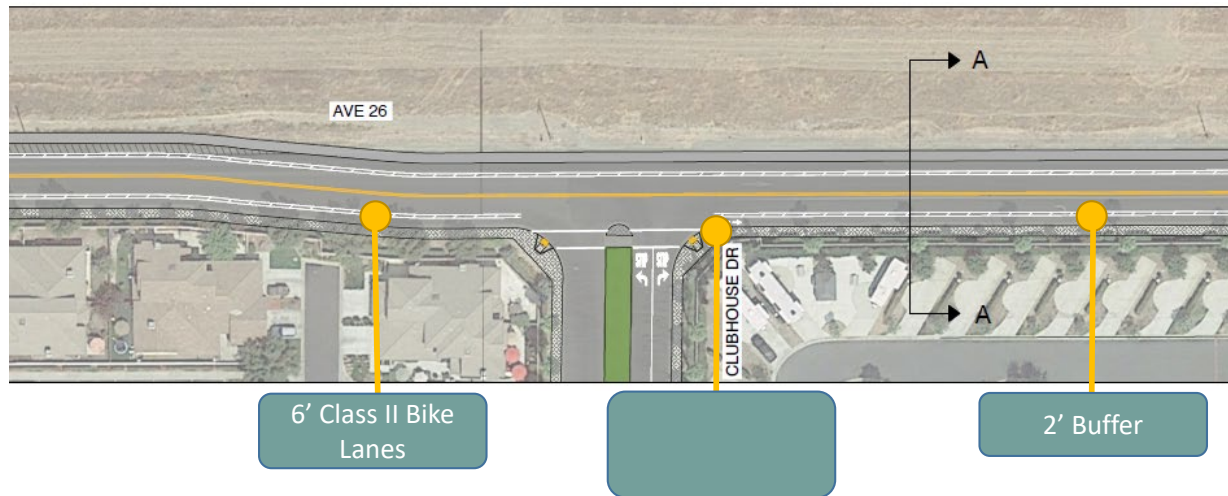
- Increase bicycle safety and circulation
- Increase pedestrian safety and circulation
- Maintains existing travel lanes
- Additional parking can serve future needs

#### Drawbacks:

- No aesthetic benefit like streetscaping
- Bike lanes have no buffer and placement near parking can lead collisions due to dooring
- Removal of the median and left turn lanes can potentially slow down traffic

## Transition Zone from Suburban Street to Rural Highway

This section of Avenue 26 is the main roadway serving the suburban population of eastern Chowchilla and transitions to rural highway at the city limits. The proposed improvements for this 1.1 mile section of roadway from Fig Tree Road to the City limits (delineated by the irrigation channel west of 19073 Avenue 26) involves roadway widening to install new bike lanes and installing new sidewalk.



### Proposed Improvements

- Installation of a 6-foot bike lane with 2-foot buffer
- Installation of new sidewalks on the north side of the roadway
- Reduction of existing travel lane width to 11-foot
- Removal of the existing shoulder

#### Benefits:

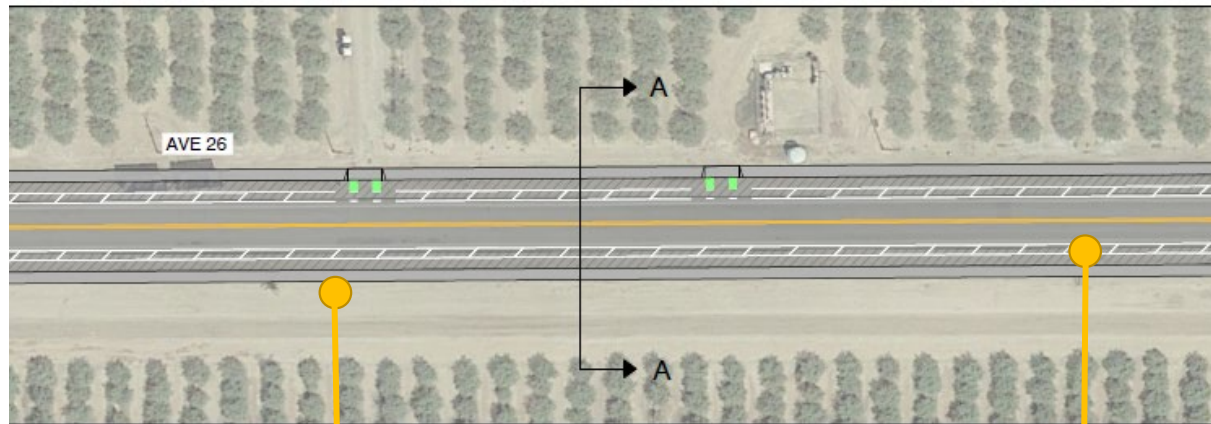
- Increase bicycle safety and circulation
- Increase pedestrian safety and circulation
- Bicycle lanes can be installed in the near term

#### Drawbacks:

- Installation of new sidewalks and buffers for the bike lanes will require road widening and can only be completed in the long term

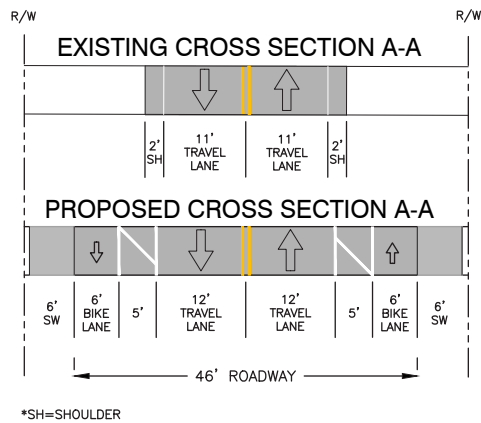
## Rural Highway

This section of roadway of Avenue 26 connects Avenue 19 to the beginning of the city limits of Chowchilla. The proposed improvements for this 1-mile section of roadway includes the installation of bike lanes in order to extend the city-wide bike route.



6' Class IV Bike Lanes

5' Buffer



## Proposed Improvements

- Installation of 6-foot bike lanes with 5-foot buffers
- Installation of new sidewalks
- Maintains existing travel lanes

### Benefits:

- Increase bicycle safety and circulation
- Increase pedestrian safety and circulation

### Drawbacks:

- Improvements would require road widening and can only be completed in the long term
- Due to low population density bike and pedestrian improvements may not achieve full utilization

# 5. Recommended Projects and Implementation Strategies

The study includes development of conceptual alternatives and design recommendations that serve as a step towards reimagining Robertson Boulevard as a multi-modal corridor that will serve all its users. Performance measures for project evaluation and prioritization have been identified and are aligned to the overarching goals of this project.

The project specific improvements along the corridor have been phased into near-term and long-term improvements. Project cost for each phase of improvements along with the total project cost has been calculated. Various state, county and regional funding opportunities have also been identified. How the improvements are actually implemented segment by segment will largely depend on the efforts of the agencies involved and the funding. The chapter ends with next steps that the agencies can take towards the design, construction and implementation of this plan.

## Performance Measures

With the development of various alternatives for the entire corridor of Robertson Boulevard, traversing through the City of Chowchilla, it is critical to be able to identify improvements and develop projects that will provide the highest level of benefit to those using the corridor. It is therefore important to develop key performance objectives and indicators that will appropriately reflect the projects benefits to the community and associated costs. Performance measures is a list of numerous qualitative and quantitative measures that that will help agencies assess the potential social, economic, environmental benefits of the projects before implementation. They help promote informed decision making by relating community goals to the measurable effects of the transportation improvements. These performance measures are aligned with the overarching objectives and goals of the SB -1 Sustainable Communities Strategies Grant Program. The overarching mission of the Sustainable Transportation Planning Grant is to:

**Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.**



It is also key to select performance measures that are related to the associated goals of this project. The following are the overarching community goals for the identified corridor improvements:

1. **Equity:** All of these overarching objectives should promote transportation solutions that focus on and prioritize the needs of communities most affected by poverty, air pollution and climate change, and promote solutions that integrate community values with transportation safety and performance while encouraging greater than average public involvement in the transportation decision making process.
2. **Preservation:** Preserve the transportation system through protecting and/or enhancing the environment, promoting energy conservation, improving the quality of life, and/or promoting consistency between transportation improvements and State and local planning growth and economic development patterns.
3. **Mobility/Connectivity:** Increase the accessibility of the system and mobility of people as well as freight.
4. **Safety:** Increase the safety and/or security of the transportation system for motorized and active transportation users.

5. **Sustainability:** Promote reliable and efficient mobility for people, goods, and services, while meeting the State's GHG emission reduction goals, preserving the State's natural and working lands, and preserving the unique character and livability of California's communities.
6. **Consistency:** The alignment of the project with the goals of the general plan, city-level, county-level and regional bicycle and pedestrian improvement plans.
7. **Innovation:** The project projects the use of technology and innovative designs to improve the performance and social equity of our transportation system and provide sustainable transportation options.
8. **Economy:** The project improvements support the economic vitality of the area (i.e. enables global competitiveness, enables increased productivity, improves efficiency, increases economic equity by enabling robust economic opportunities for individuals with barriers to employment and for Disadvantaged Business Enterprises (DBEs), etc.)

**Table 11** lists the suggested performance measures serving the aforementioned community goals:



**Table 11. Performance Measures**

Goal	Criteria	Points	Metrics	Source	Total Points	
Equity	Project serves disadvantaged residents	0	CalEnviroScreen Score Results 1-20%	CalEnviroScreen 3.0	10	
		5	CalEnviroScreen Score Results 21-40%			
		10	CalEnviroScreen Score Results 41%+			
Equity	Project accommodates all modes of transportation	0	Inconsistencies between modes	Project Plans; City Data	10	
		5	3 out of 4 - Auto, Bike, Ped and Transit			
		10	4 out of 4 - Auto, Bike, Ped and Transit			
Equity	Project meets the needs of the community	0	Not Community-identified	Public Engagement Activities	5	
		5	Community-identified			
Preservation	Project emphasizes on the preservation of the existing system	0	Doesn't preserve the existing systems	Project Plans; Inventory Data	5	
		5	Preserves and complements the existing systems			
Mobility/ Connectivity	The project connects residents to major destinations, including schools, parks, commercial centers, and employment centers	0	Not within 500 feet of any destinations	City Data; Previous Plans; NAICS coded employment data	12	
		4	Within 500 feet of 1 destination			
		8	Within 500 feet of 2-4 destinations			
		12	Within 500 feet of 5+ destinations			
	Pedestrian Connectivity		0	0 - 25% connected network of pedestrian facility	Project Analysis	10
			5	25 - 75% Connected network of pedestrian facility		
			10	75 - 100% Connected network of pedestrian facility		
	Bicyclist Connectivity		0	No protected/segregation	Project Description; LTS Analysis Future Conditions	10
			5	Buffered Bike Lane		
			10	Parking protected/Cycle track		
The project improves or retains traffic flow along the corridor		0	LOS stays consistent, if not better	Project Analysis	10	
		5	LOS improves at some study intersections (half or less) - D			
		10	LOS improves at all study intersections - C or better			
The project reduces congestion along the corridor		0	Queue lengths exceed storage space	Project Analysis	5	
		5	Queue lengths are within storage space			



Goal	Criteria	Points	Metrics	Source	Total Points
Safety	Collisions	0 5	No reduction in the number of bike and ped collisions Reduction in the number of ped and bike collisions to 0	SWITRS, CHP Data	5
	Project is accessible to all ages and abilities	0 5	Does not meet AAA threshold Meets AAA threshold	NACTO AAA threshold	5
	Project recommends traffic calming solutions to enhance safety for all modes of transportation	0 5 10	Does not recommend traffic calming solutions Recommends traffic calming solutions (1-3) Recommends traffic calming solutions (>=4)	Project Analysis	10
Sustainability	Project improves air quality	0 5	Project increases or does not have any decrease in emissions Project decreases PM 10 and/or PM2.5 emissions	CMAQ Cost-Effectiveness Calculation	5
		0 5	No Yes		
Consistency	Project alignment with prior planning efforts	0 5	No Yes	City/State/Regional Plans	5
Innovation	Project uses technology and innovative designs to enhance safety and connectivity	Low 0 Medium 5 High 10	Project does not include innovative designs or technology Project includes technology that is commonly known and implemented Innovative designs and technology is fully deployed in the project scope	NACTO Emerging Technology and Innovation FHWA ITS Joint Program FHWA ITS Safety and Operations	10
Economy	Access to Jobs	Low 0 Medium 5 High 10	Travel time to work; Number of jobs within 0.25 mile	US Census demographic and jobs data	10
	Retail Impacts	Low 0 Medium 5 High 10	Retailer's Sales Tax Data; measuring sales before and after project implementation	Sales Tax Receipts, Shoppers Surveys	10

These performance measures have been utilized to gauge and identify a preferred alternative for Downtown Chowchilla that best serves the needs of the community and is most aligned to the overarching goals of the project. The evaluation results in the scoring matrix as listed in **Table 12** identify Alternative 6 as the most preferred alternative.

**Table 12. Downtown Chowchilla - Urban Boulevard - Scoring Matrix**

Goal	Criteria	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
Equity	Project serves disadvantaged residents	10	10	10	10	10	10
	Project accommodates all modes of transportation	10	10	10	10	10	10
	Project meets the needs of the community	5	0	5	5	5	5
Preservation	Project emphasizes on the preservation of the existing system	0	5	5	0	0	5
Mobility/ Connectivity	The project connects residents to major destinations, including schools, parks, commercial centers, and employment centers	12	12	12	12	12	12
	Pedestrian Connectivity	10	10	10	10	10	10
	Bicyclist Connectivity	10	5	0	5	5	10
	The project improves or retains traffic flow along the corridor	0	0	5	0	0	5
	The project reduces congestion along the corridor	0	0	0	0	0	10
Safety	Collisions	N/A	N/A	N/A	N/A	N/A	N/A
	Project is accessible to all ages and abilities	5	5	5	5	5	5
	Project recommends traffic calming solutions to enhance safety for all modes of transportation	5	5	5	5	5	10
Sustainability	Project improves air quality	N/A	N/A	N/A	N/A	N/A	N/A
Consistency	Project alignment with prior planning efforts	5	5	5	5	5	5
Innovation	Project uses technology and innovative designs to enhance safety and connectivity	0	5	5	0	5	10
Economy	Access to Jobs	N/A	N/A	N/A	N/A	N/A	N/A
	Retail Impacts	N/A	N/A	N/A	N/A	N/A	N/A
<b>Total</b>		<b>72</b>	<b>72</b>	<b>77</b>	<b>67</b>	<b>72</b>	<b>102</b>

Notes: For all the criteria scored N/A, future conditions and data post implementation is required.



## Description of Projects

This section lists the major planning level improvements for each of the segment of the SR 233/Robertson Boulevard. The list includes pedestrian, bicycle, automobile, as well as, transit improvements. The Downtown Chowchilla segment serving as the major thoroughfare along the corridor, with many commercial, industrial, institutional, and residential land uses, is a major generator of pedestrian and bicyclist traffic

along the corridor. Thus, improvements to enhance pedestrian and bicyclist safety and connectivity to major destinations has been given priority. **Table 13** lists the major improvements along the corridor segments, by mode of travel.

**Table 13. List of Major Improvements per Segment along SR 233/Robertson Boulevard**

Segment	Pedestrian Improvements	Bicyclist Improvements	Auto Improvements	Transit Improvements
<b>Downtown Chowchilla: Urban Boulevard</b>	<ul style="list-style-type: none"> <li>• RRFB System Installation</li> <li>• High Visibility Crosswalks</li> <li>• Bulbout Installation</li> <li>• ADA Compliant Curb Ramps</li> </ul>	<ul style="list-style-type: none"> <li>• Class IV Cycle Track</li> <li>• Signing Modifications</li> </ul>	<ul style="list-style-type: none"> <li>• Traffic Signal Modifications</li> <li>• Pavement Marking Upgrades</li> </ul>	<ul style="list-style-type: none"> <li>• Bus Stop Upgrades</li> </ul>
<b>State Route 152 Highway Connector</b>	<ul style="list-style-type: none"> <li>• ADA Compliant Curb Ramps</li> <li>• Sidewalk Installation</li> <li>• Crosswalk Marking Upgrades</li> </ul>	<ul style="list-style-type: none"> <li>• Class IV Bike Lane</li> <li>• Signing Modifications</li> </ul>	<ul style="list-style-type: none"> <li>• Wider Travel Lanes</li> <li>• Driveways</li> <li>• Signing Modifications</li> </ul>	N/A
<b>Transition Zone from Highway Connector to Urban Boulevard</b>	<ul style="list-style-type: none"> <li>• ADA Compliant Curb Ramps</li> <li>• Sidewalk Installation</li> <li>• Crosswalk Marking Upgrades</li> </ul>	<ul style="list-style-type: none"> <li>• Class II Bike Lane</li> <li>• Signing Modifications</li> </ul>	<ul style="list-style-type: none"> <li>• Pavement Marking Upgrades</li> <li>• Driveways</li> <li>• Signing Modifications</li> </ul>	N/A
<b>State Route 99 Connector Ramps</b>	<ul style="list-style-type: none"> <li>• ADA Compliant Curb Ramps</li> <li>• Crosswalk Marking Upgrades</li> </ul>	<ul style="list-style-type: none"> <li>• Class II Bike Lane</li> <li>• Class III Bike Lane</li> <li>• Signing Modifications</li> </ul>	<ul style="list-style-type: none"> <li>• Pavement Marking Upgrades</li> </ul>	N/A
<b>Suburban Street</b>	<ul style="list-style-type: none"> <li>• ADA Compliant Curb Ramps</li> <li>• Sidewalk Installation</li> </ul>	<ul style="list-style-type: none"> <li>• Class IV Bike Lane</li> <li>• Signing Modifications</li> </ul>	<ul style="list-style-type: none"> <li>• Pavement Marking Upgrades</li> <li>• Signing Modifications</li> </ul>	<ul style="list-style-type: none"> <li>• Bus Stop Upgrades</li> </ul>
<b>Transition Zone from Suburban Street to Rural Highway</b>	<ul style="list-style-type: none"> <li>• ADA Compliant Curb Ramps</li> <li>• Sidewalk Installation</li> <li>• Crosswalk Marking Upgrades</li> </ul>	<ul style="list-style-type: none"> <li>• Class II Bike Lane</li> <li>• Signing Modifications</li> </ul>	<ul style="list-style-type: none"> <li>• Pavement Marking Upgrades</li> <li>• Signing Modifications</li> </ul>	N/A
<b>Rural Highway</b>	<ul style="list-style-type: none"> <li>• ADA Compliant Curb Ramps</li> <li>• Sidewalk Installation</li> </ul>	<ul style="list-style-type: none"> <li>• Class IV Bike Lane</li> <li>• Signing Modifications</li> </ul>	<ul style="list-style-type: none"> <li>• Wider Travel Lanes</li> <li>• Driveways</li> <li>• Signing Modifications</li> </ul>	N/A





## Project Phasing and Cost Estimates

This section provides a summary of the recommendations as listed in the preceding sections. It categorizes the suggested recommendations into near-term and long-term improvements. Near-term improvements are core design elements that represent the most pressing needs of the community and are important to be initiated now. In most cases, these improvements can be made without making changes to most of the existing infrastructure. Thus, they can be quickly implemented and at a lower cost. Some examples of near-term improvements include crosswalk marking upgrades, bike lane striping and signing modifications. Long-term improvements will require more resources and represent the ultimate state of the corridor as planned in this study. These improvements will require more funds and time to implement. Some examples of long-term improvements include ADA compliant curb ramps, installation of a sidewalk and bus stop shelter upgrades.

The near-term improvements are designed in such a way that the jurisdictions can build off of them as they move towards long-term improvements. The long-term improvements are essentially a next-step to the short-term improvements. This approach will allow jurisdictions to incrementally make changes to the segments on this corridor as and when funding becomes available. **Table 14** lists the pedestrian, bicyclists, automobile, and transit improvements and categorizes them into near-term and long-term improvements.

**Table 14. Near-term and long-term improvements**

Mode	Near-term Improvements	Long-term Improvements
<b>Pedestrian</b>	<ul style="list-style-type: none"> <li>• Crosswalk Marking Upgrades</li> <li>• High Visibility Crosswalks</li> <li>• RRFB System Installation</li> </ul>	<ul style="list-style-type: none"> <li>• ADA Compliant Curb Ramps</li> <li>• Sidewalk Installation</li> <li>• Bulbout Installation</li> </ul>
<b>Bicyclist</b>	<ul style="list-style-type: none"> <li>• Bike Lane Striping</li> <li>• Bike Lane Pavement Markings</li> <li>• Signing Modifications</li> </ul>	<ul style="list-style-type: none"> <li>• Bike Lane Barriers</li> </ul>
<b>Auto</b>	<ul style="list-style-type: none"> <li>• Signing Modifications</li> <li>• Pavement Marking Upgrades</li> <li>• Traffic Signal Modification</li> </ul>	<ul style="list-style-type: none"> <li>• Driveways</li> </ul>
<b>Transit</b>	<ul style="list-style-type: none"> <li>• Signing Modifications</li> </ul>	<ul style="list-style-type: none"> <li>• Bus Stop Shelter Upgrades</li> </ul>

In addition to identifying the near-term and long-term improvements, planning level cost estimates have also been developed for each segment on the study corridor. These estimates will help inform each agency of the cost of the improvements as suggested in the conceptual designs. All the corridor improvements as suggested in the near-term and the long-term phase, are estimated to cost approximately \$25 million. Detailed project cost estimates of improvements along each segment of the entire corridor are listed in **Appendix I. Table 15** lists the cost of improvements per segment per phase along with the total project cost of all the improvements.

**Table 15. Project Cost Estimates by Corridor Segment**

Segment	Near-term Improvements	Long-term Improvements	Total Project Cost	ROW	Joint Responsibility
Downtown Chowchilla: Urban Boulevard	\$1,028,100	\$4,375,100	\$5,403,200	Caltrans	Caltrans, Chowchilla
State Route 152 Highway Connector	\$352,900	\$8,131,700	\$ 8,484,600	Caltrans	Caltrans, Chowchilla, Madera County
Transition Zone from Highway Connector to Urban Boulevard	\$195,100	\$ 2,651,700	\$ 2,846,800	Caltrans	Caltrans, Chowchilla
State Route 99 Connector Ramps	\$65,700	\$118,000	\$183,700	Caltrans	Caltrans, Chowchilla
Suburban Street	\$113,050	\$930,550	\$1,043,600	Caltrans	Caltrans, Chowchilla
Transition Zone from Suburban Street to Rural Highway	\$163,100	\$2,155,600	\$2,318,700	Caltrans	Caltrans, Chowchilla
Rural Highway	\$146,850	\$4,938,550	\$5,085,400	Madera County	Caltrans, Madera County
<b>Total</b>	<b>\$2,064,800</b>	<b>\$23,301,200</b>	<b>\$25,366,000</b>		



## Funding Opportunities

The implementation of the SR 233 Robertson Boulevard will likely require multiple sources of funding. A key starting point to apply for funding is the near-term improvements which can then be followed by the long-term improvements that will bring the community's, County's and the City's vision of the entire corridor into reality. The idea behind the phasing and combined funding approach helps the agency to apply for various types of funding for various parts of the design and construction process. Potential funding sources have been described and organized by the funder type below:

### State Grants

- **SB1:** Senate Bill 1 (SB 1) dedicated approximately \$1.5 billion per year in new formula revenues, Road Maintenance and Rehabilitation Account (RMRA), apportioned by the State Controller to cities and counties for road maintenance and rehabilitation, safety projects, grade separations, complete streets components, and traffic control devices. Each year, cities and counties must submit a proposed project list adopted at a regular meeting by their council that is then submitted to the California Transportation Commission. The funds can be programmed to eligible projects at the City's discretion.
- **California Active Transportation Program (ATP):** The Active Transportation Program (ATP) was created by Senate Bill 99 to encourage increased use of active modes of transportation, such as walking and biking. While ATP is one of the most competitive statewide and regional grant funding sources, the SR 233 corridor may be a strong contender. Parts of the project study area is located within a SB 535 designated Disadvantaged Community and an AB 1550 designated Low Income Community.
- **Caltrans Highway Safety Improvements Program (HSIP):** HSIP intends to address areas with serious document safety records. The primary metric for this is a cost-benefit ratio that heavily weights fatal and severe injuries. Since the corridor has had one fatality and three severe injuries, it may score well for this grant. This grant is primarily used to fund specific safety countermeasures and may not be able to fund non-safety project elements, such as landscaping. A Local Roads Safety Plan, Systemic Safety Plan, or Vision Zero Plan will be required for HSIP Cycle 11, which will likely be issued in Spring 2022.
- **Urban Greening Grant:** California voters passed the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of in November 2006. The Urban Greening Grant Program funds projects that reduce greenhouse gas emissions by sequestering carbon, decreasing energy consumption and reducing VMT. Urban Greening Grant funds projects that increased non-motorized access to community destinations concurrently with improving water quality and storm water management, as well as the planting of shade trees. A minimum of 25% of the fund must go towards disadvantaged communities. The Urban Greening Grant Round 4 was announced March 2020, round 5 will likely be in two to three years. The City could submit an application to fund landscape and street trees and bicycle and pedestrian facilities within the project area.
- **State Highway Operations and Protection Program:** The purpose of the State Highway Operations and Protection Program (SHOPP) is to maintain the integrity of the State Highway System (SHS). Funding for this program is provided through state and federal gas tax revenues. This funding source is specific to Caltrans and is not a grant program. Projects are nominated for funding within each Caltrans District office. Proposed projects are sent to



Caltrans Headquarters for programming on a competitive basis statewide. Individual Districts are not guaranteed a minimum level of funding. SHOPP projects are based on statewide priorities within each program category (i.e. safety, rehabilitation, operations, etc.) within each Caltrans District. Eligible projects must be consistent with the State's Transportation Asset Management Plan (TAMP). The SHOPP is updated every even year, with the 2020 SHOPP being adopted by April 2020. The City could approach Caltrans District 6 regarding improvements to SR233, including pavement rehabilitation, crosswalks, bulb-outs, medians, lighting, and traffic signals. If these elements are consistent with the TAMP and the District agrees, the improvements could be included in future SHOPP allocations.

- **State Transportation Improvement Program:** The State Transportation Improvement Program (STIP) is the largest funding program in the state. It consists of a combination of state and federal funds allocated to each county and can fund a wide variety of public improvements. Eligible projects can be both on and off the SHS. A Project Study Report (PSR) or equivalent is required for projects to be eligible for STIP funds. The counties, for Madera County it is MCTC, nominate projects for the STIP through the Regional Transportation Improvement Program (RTIP). STIP is updated every even year and programs projects over a five-year period. For the 2020 STIP, MCTC submitted the RTIP in December 2019 and the STIP will be adopted in March 2020. The City can discuss with MCTC the opportunity to receive STIP funds for projects in the study area for the 2022 STIP. STIP funds could be used for the design and construction of sidewalks, bulb-outs, crosswalks, pedestrian actuated crossings, bicycle facilities, pavement rehabilitations, landscaping and street trees, and traffic signals. A PSR would need to be prepared prior to MCTC's submission of the RTIP.

## County and Regional Grants:

- **Measure T:** Madera County voters approved the extension of the ½ cent sales tax, named Measure T. The City could elect to apply future Measure T program funds towards the implementation of this project. Potential options include using Regional Transportation Program funds for pavement rehabilitation and signal improvements. Local Transportation Program funds can be used for pavement rehabilitation, sidewalks, bulb-outs, crosswalks, pedestrian actuated-crossings, bicycle facilities, traffic signals, and landscape enhancements.
- **Congestion Mitigation and Air Quality:** The Congestion Mitigation and Air Quality Improvement (CMAQ) Program is to fund transportation projects or programs that will contribute to attainment of maintenance of National Ambient Air Quality Standards (NAAQS). MCTC, acting in its role as a Metropolitan Planning Organization (MPO), programs CMAQ funds for projects within the County. MCTC issues a call for projects every other year for CMAQ funds. For the most recent, 2019 Cycle, MCTC made 85% of CMAQ competitively available and 15% of the funds were apportioned to each local jurisdiction. The next call for projects is anticipated in Summer 2021. The City could elect to submit an application for CMAQ-eligible improvements including sidewalk improvements, bulb-outs, crosswalks, pedestrian actuated crossings and bicycle facilities. These improvements in the project area reduce traffic congestion and improve air quality.



## Next Steps

The implementation of the improvements as recommended in the plan, is designed to be very flexible. As the improvements are phased, the near-term improvements can be first implemented as and when funding is secured. The near-term and long-term improvements complement one another, and the implementation of long-term improvements will essentially be an addition to the already implemented near-term improvements. This gives the jurisdictions an opportunity to incrementally implement improvements on the corridor as and when funding becomes available.

The plan also represents a very unique partnership between Caltrans, MCTC and the City of Chowchilla. Along with implementing the corridor design improvements, all STOP signs along Robertson Boulevard and in its vicinity will also need to be removed, replaced, or refreshed as per recommendations from the Stop Sign Inventory Plan. As a result of the analysis conducted in Truck Route Study, the conceptual design alternatives support the continued functioning of SR 233/ Robertson Boulevard as a truck route.

Community and stakeholder involvement and engagement efforts were consistently conducted throughout the development of this plan. It is recommended that the partner agencies continue the outreach until the final design plan stage is reached. This approach of implementation should benefit all the agencies involved as well as the stakeholders and community members that are directly affected by it. As observed earlier, the next step for the City of Chowchilla is to pursue near-term and low-cost improvements such as upgrading markings and signage. The following are also some immediate next steps that MCTC, as the metropolitan planning agency, and the partnering and corresponding implementing agencies can take to go forward with the plan implementation and apply for funding:

1. Identify state and federal grants with their deadlines in 2021 /2022 and identify the near-term or long-term improvements that are eligible.
2. Develop improvement combinations that can be implemented using low-cost materials and other maintenance funds.
3. A detailed traffic analysis of future conditions should be conducted, in case the chosen improvement includes implementation of a road-diet. In addition, a detailed safety analysis should be provided to Caltrans for review prior to any proposed future work.
4. Prioritization of community needs, as the plan identifies should be the key driver of selecting corridor upgrades.
5. Begin the Caltrans Encroachment Permit process to obtain approval for design and construction.
6. Prepare environmental analysis using the 35% drawings as provided as a part of this plan, to clear a path for implementation.
7. Coordinate between agencies internally, to identify any upcoming roadway improvement efforts, or development projects surrounding the corridor.