City of Agoura Hills

Bicycle Master Plan

FINAL REPORT

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Prepared for: City of Agoura Hills

CONTENTS

1. INTRODUCTION

The Agoura Hills Bicycle Master Plan is organized by the following sections:

- Introduction
- Existing Conditions and Analysis
- Community Engagement
- Recommendations
- Implementation

1.1 Purpose

This comprehensive Bicycle Master Plan (Plan) will provide safer streets for residents that are dependent on bicycling for transportation every day in Agoura Hills. The recommended actions included in this Plan are meant to support and increase bicycling in Agoura Hills and to enhance non-motorized travel infrastructure and create options to support the existing and future population. This Plan includes an inventory of existing bike infrastructure, identifying deficiencies, developing, and prioritizing improvements, and providing a recommended path for implementation.

1.2 Study Area

The City of Agoura Hills is located in Los Angeles County in Southern California and is bordered by Ventura County to the north, City of Calabasas to the east, City of Westlake Village to the west, and unincorporated area to the south. The Ventura Freeway (US 101) is the only major highway running through Agoura Hills, connecting it to other regions in Southern California. According to the United States Census Bureau, Agoura Hills has a population of 20,299 within its eight square mile City boundary. The City has a population density of 2,520 people per square mile in 7,585 households. According to the American Community Survey (ACS) 2019 data[1], over seventy-six percent of workers in Agoura Hills drive to work alone, while thirteen percent work at home and approximately four percent carpooled. These statistics highlight the importance of improving the biking infrastructure in the City. The Plan recognizes the dependence on vehicles and the need to address barriers that prevent bicycle trips from being a viable transportation option as well as safe, especially for the younger and lower-income populations who cannot afford, operate, or choose to forgo vehicle ownership.

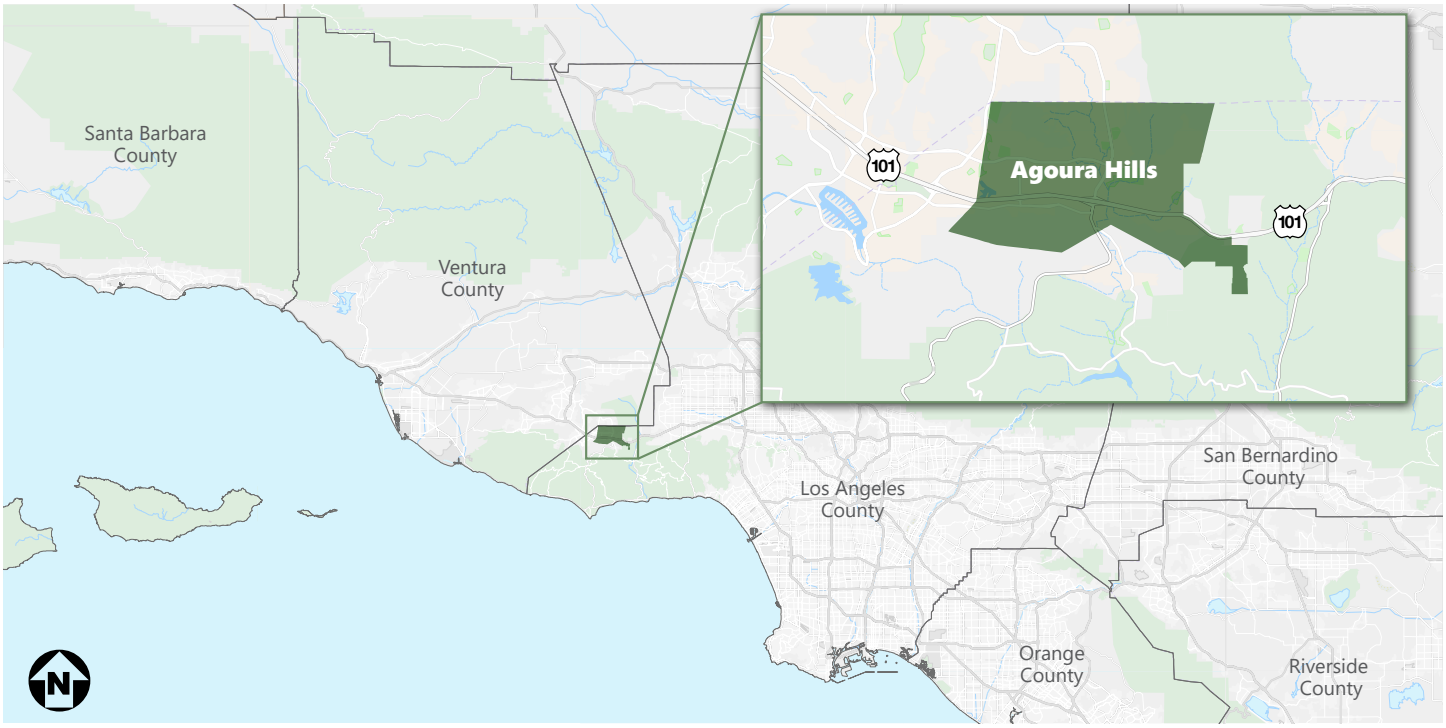


Figure 1: Location Map

[1]https://www.census.gov/programs-surveys/acs/

1.3 Project Goals

1.3.1 Vision Statement:

The City of Agoura Hills Bicycle Master Plan proposes a vision for a diverse network of interconnected bicycle corridors, support facilities, and programs that aim to link local and regional destinations and makes biking more practical and desirable for a broader range of people.

1.3.2 Goals

The project goals were developed during the planning process after gathering information both regionally and locally and reviewing other masterplans within the region.

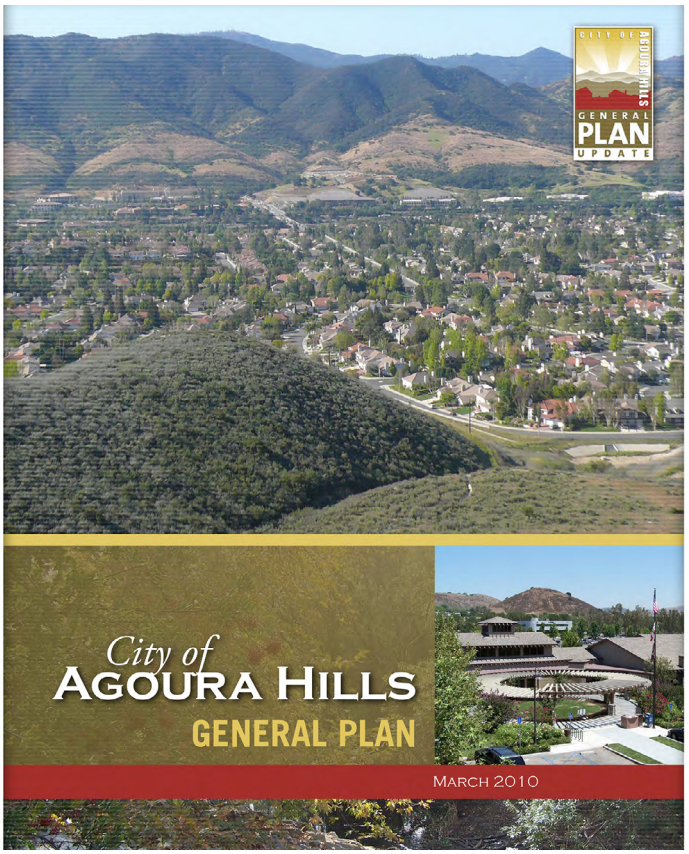
- ✓ **Goal 1: Increase Transportation Choices** by providing viable alternatives to driving and improved equity to include all bikers, those who choose not to drive and those who cannot drive.
- ✓ **Goal 2: Improve Accessibility** through local and regional connectivity. Local connections include residential communities, schools, commercial centers, and parks whereas regional connections include the surrounding communities and recreational trail network.
- ✓ **Goal 3: Improve Safety** by providing separate biking facilities, reducing bicycle collisions, creating greater visibility for bikers, and raising awareness to both bicyclist and road users.
- ✓ **Goal 4: Improve the Public Health** by creating facilities that allow for more biking which is a great exercise that helps maintain good physical and mental well-being.
- ✓ **Goal 5: Enhance Sustainability and Environmental Benefits** by reducing air pollution, greenhouse gas emissions, and noise pollution.

1.4 Planning Context

The Plan incorporates regional and local planning efforts that are directly related to biking and trails. These efforts range from long-range regional planning to neighborhood-specific plans. The following information summarizes the planning documents that were evaluated as part of the development of the Plan. Consideration was taken to understand existing facilities and current planning efforts in neighboring jurisdictions and how those facilities would connect with those in Agoura Hills.

1.4.1 Agoura Hills General Plan

The Agoura Hills General Plan is the primary citywide comprehensive plan that guides future growth. The General Plan contains goals and objectives to guide decisions and preserve the quality of life within the City of Agoura Hills. The Circulation and Land Use elements contain goals and objectives that contribute to the success of this Plan. It should be noted that during the development of this Bicycle Master Plan, the Agoura Hills General Plan was being updated to replace the 5th Cycle Housing Element with the 6th Cycle Housing Element.



1.4.2 Agoura Village Specific Plan

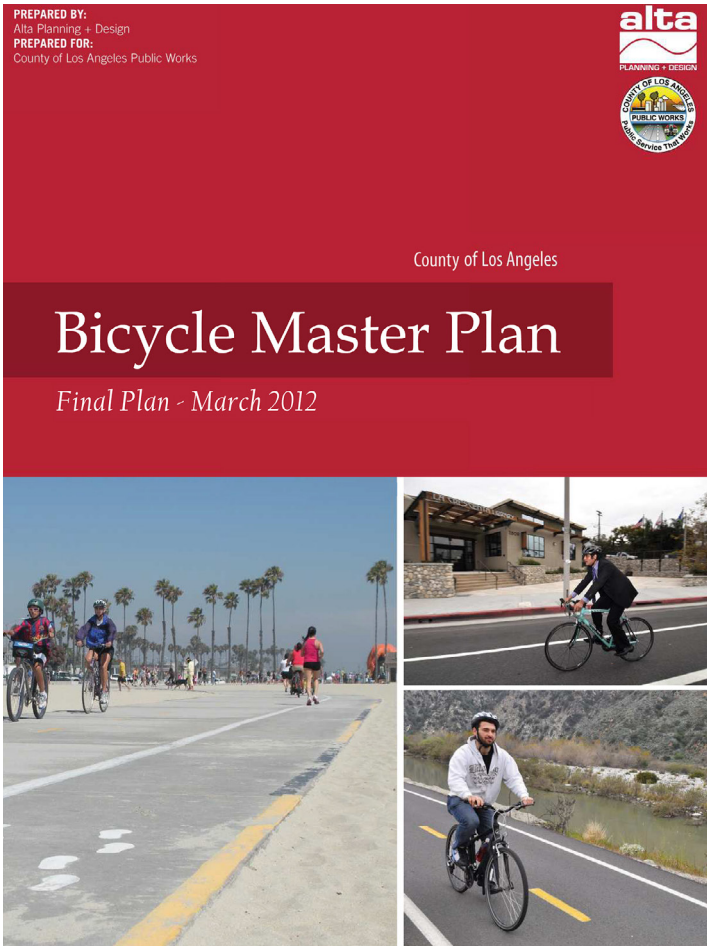
The Agoura Village Specific Plan (AVSP) is a comprehensive document that clearly identifies the vision for the planning area, articulates economic goals, provides regulations and guidelines for new development and redevelopment, traffic, regulatory, and physical issues. It establishes a framework for development within the area that will lead to the creation of a true pedestrian-friendly sense of place in the Village. The Specific Plan area is located about half way between Westlake Village and Calabasas just off of Highway 101 within the City of Agoura Hills. While the General Plan is the primary guide for growth and development in a community, the Specific Plan is able to focus on the unique characteristics of a specialized area by customizing the vision, land uses, and development standards for that particular location.

1.4.3 Ladyface Mountain Specific Plan

This Specific Plan provides the City of Agoura Hills a comprehensive set of plans, policies, regulations and conditions for guiding and ensuring the orderly development and implementation of the Ladyface Mountain Overlay District of the City of Agoura Hills. The purpose of the Specific Plan is to ensure that all the development at the base of Ladyface Mountain is compatible with the unique nature of this natural asset, to encourage the coordinated development of a mixture of business park, commercial and limited residential uses within the study area and to encourage developers to address compatibility of proposed projects with infrastructure capacity.

1.4.4 County of Los Angeles Bicycle Master Plan

The County of Los Angeles Bicycle Master Plan proposes a vision for a diverse regional bicycle system of interconnected bicycle corridors, support facilities, and programs to make bicycling more practical and desirable to a broader range of people in the County. The Plan is intended to guide the development and maintenance of a comprehensive bicycle network and set of programs throughout the unincorporated communities of the County of Los Angeles for 20 years (2012 to 2032). The Plan provides direction for improving mobility of bicyclists and encouraging more bicycle ridership within the County by expanding the existing bikeway network, connecting gaps, addressing constrained areas, providing for greater local and regional connectivity, and encouraging more residents to bicycle more often.

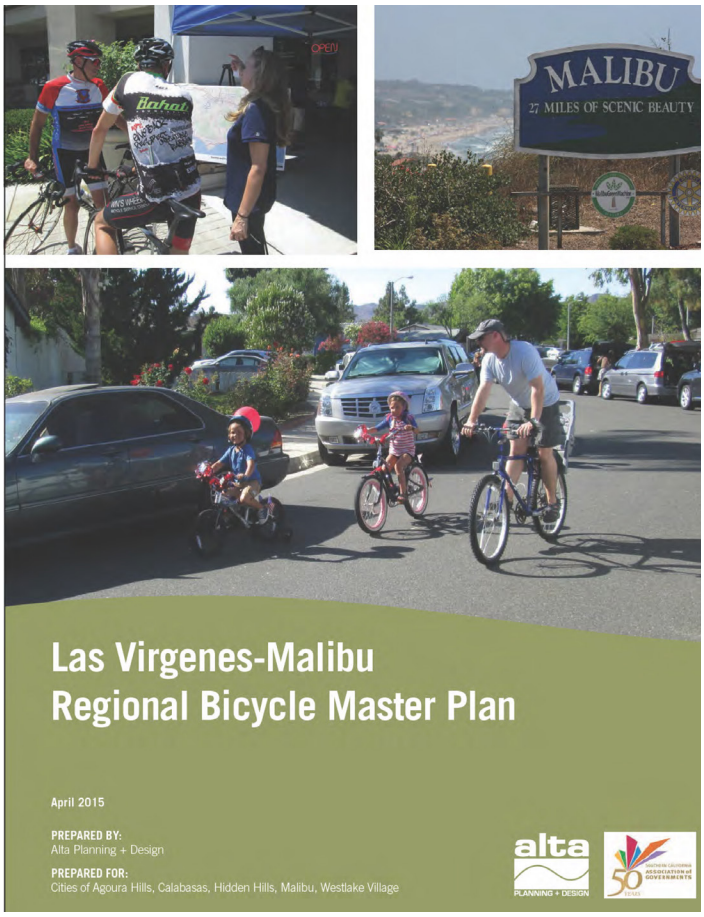


1.4.5 Agoura Hills Citywide Trails & Pathways Master Plan

The Agoura Hills Citywide Trails and Pathways Master Plan serves as a guide to future trail planning design and construction. The purpose of the Plan is to provide a pedestrian, bicycle and equestrian system that links homes, schools, businesses, parks, and natural resources to each other. One of the main benefits of the Plan is to positively impact individuals and improve communities by providing not only recreation and transportation opportunities but also health benefits and an improvement in quality of life.

1.4.6 Las Virgenes-Malibu Regional Bicycle Master Plan

The Regional Bicycle Master Plan is a collaborative effort of the LAS Virgenes-Malibu Council of Governments (LVMCOG) and other agencies to promote bicycling as a safe and attractive transportation choice.



The LVMCOG Regional Bicycle Master Plan identifies potential bicycle transportation facilities within the cities of Agoura Hills, Calabasas, Hidden Hills, Malibu and Westlake Village that will enhance the regional active transportation network.

The LVMCOG Regional Bicycle Master Plan's goal is to engage residents and visitors of the member cities toward healthier and more sustainable living through the development of a comprehensive bikeway network connecting the COG cities to each other, the Santa Monica Mountains National Recreation Area, state and local parks and the Greater Los Angeles and Ventura Counties.

1.4.7 Ventura Countywide Bicycle Master Plan

The Bicycle Master Plan plan was an effort of the Ventura County Transportation Commission (VCTC) in collaboration with communities across Ventura County and published in 2007. The Plan provides a blueprint for bicycle transportation and recreation in Ventura County and was used to inform recommendations for facilities connecting the City of Agoura Hills with Oak Park. An update to the Plan is currently ongoing."

1.5 Primary Guidance

In 2014, the California Department of Transportation (Caltrans) updated the California Manual on Uniform Traffic Control Devices (CA MUTCD) to provide uniform standards and specifications for all official traffic control devices in California. This update is meant to implement Caltrans's 2014 mission to provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability. The purpose of the CA MUTCD is to improve safety and mobility for all travelers by setting minimum standards and providing guidance intended to balance safety and convenience for everyone in traffic, including bicyclists. The CA MUTCD contains the basic principles that govern the design and use of traffic control devices that aim to promote safety and efficiency by providing for the orderly movement of bikeways. Additionally, National Association of State Highway and Transportation Officials (NACTO) guidance was analyzed to ensure flexibility and innovation in the design and operations of streets and highways in California. Much of the guidance provided in the CA MUTCD is consistent with the NACTO Urban Bikeway Design Guide.

1.5.1 Caltrans Highway Design Manual, Chapter 1000: Bicycle Transportation Design

Chapter 1000 of the Caltrans Highway Design Manual serves as the official design standard for bikeways in California. This chapter defines a "bikeway" as a facility that is provided primarily for bicycle travel and recognizes its importance in improving bicycling safety and convenience. Chapter 1000 intends to help accommodate motor vehicle and bicycle

traffic on the roadway system, or as a complement to the road system to meet the needs of bicyclists. This chapter classifies bikeway facilities into five different types that include:

1. Shared Roadway (No Bikeway Designation)

Source: Kimley-Horn

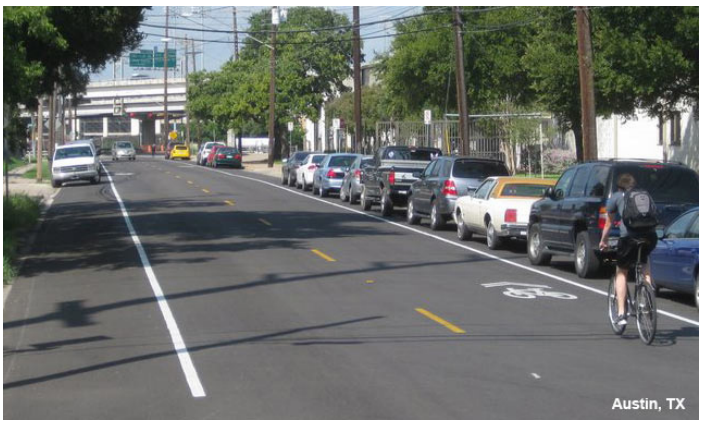
2. Class I Bikeway (Bike Path)

Source: Kimley-Horn

3. Class II Bikeway (Bike Lane)

Source: Kimley-Horn

4. Class III Bikeway (Bike Route)



Source: NACTO

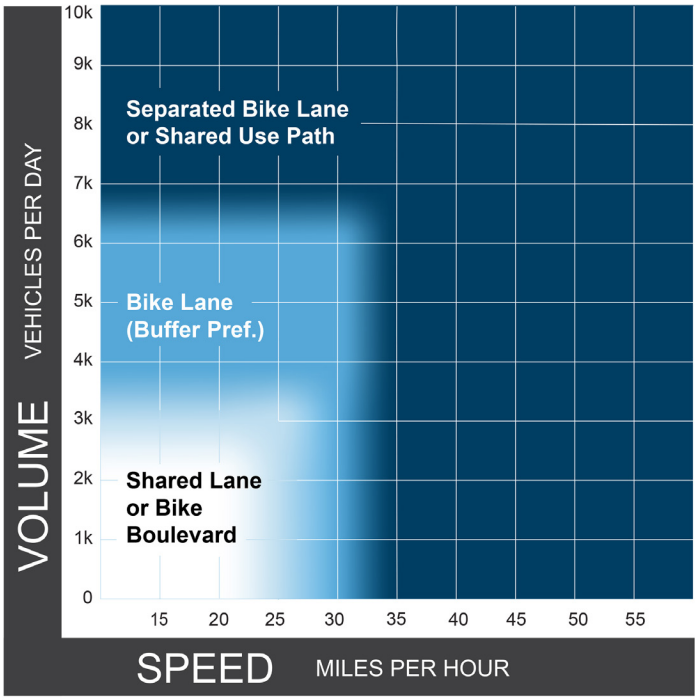
5. Class IV Bikeways (Separated Bikeways)

Source: Kimley-Horn

However, Chapter 1000 states that these designations should not be construed as a hierarchy of bikeways since each bikeway type has its appropriate application. This chapter only provides design guidance for Class I bike paths, Class III bike routes, and trails.

1.5.2 FHWA Separated Bike Lane Planning and Design Guide

This 2015 guide published by the Federal Highway Administration (FHWA) is the most recent national bike lane design guide and for many, the primary national resources for planning and designing bicycle facilities. It captures the state of practice of bicycle facility design within the street right of way. It provides a menu of design options covering typical one and two-way cycle tracks and provides detailed intersection design information covering topics such as turning movement operations, signalization, signage, and on-road markings.



Source: FHWA Bikeway Selection Guide

1.5.3 FHWA Bikeway Selection Guide

This 2019 guide is an important complement to the 2015 FHWA Bike Lane Planning and Design Guide. It has a focus on designing for all ages and abilities. It gives the designer additional tools such as matrices, flow charts, and graphs that facilitate the design of the appropriate bikeway based both on roadway characteristics and the intended type of cyclist.

1.5.4 AASHTO Guide to Bikeway Facilities

The American Association of State Highway and Transportation Officials (AASHTO) bicycle and pedestrian design guides are important national resources for planning, designing, and operating bicycle facilities, especially for bike path design outside a typical road right of way that is not covered in other guides.

1.5.5 NACTO Urban Bikeway and Urban Street Design Guides

The NACTO guides represent the industry standard for innovative bicycle facilities and treatments in the United States. In 2014, Caltrans officially endorsed the NACTO Urban Street Design Guide and Urban Bikeway Design Guide as valuable toolkits for designing and constructing safe, attractive local streets.

1.6 Applicable Legislation

Several pieces of legislation support increased bicycling in the State of California. Much of the legislation addresses greenhouse gas (GHG) reduction and employs bicycling as a means to achieve reduction targets. The most relevant legislation concerning bicycle policy, planning, infrastructure, and programs are described in the following sections.

1.6.1 AB-1358 Complete Streets Act

AB-1358 requires the legislative body of a city or county, upon revision of the circulation element of their general plan, to identify how the jurisdiction will provide for the routine accommodation of all users of the roadway including drivers, pedestrians, cyclists, individuals with disabilities, seniors, and public transit users.

1.6.2 SB-375 Redesigning Communities to Reduce Greenhouse Gases

This bill would require that a metropolitan planning organization (MPO) adopt a sustainable communities strategy as part of its regional transportation plan to reduced greenhouse gas (GHG) emissions from cars and light trucks in a region. SB-375 requires the State Air Resources Board, working in consultation with the MPOs, to provide each region with GHG emission reduction targets for the automobile and light truck sector.

1.6.3 SB-743 CEQA Reform

In 2013, SB-743 was signed into law by California Governor Jerry Brown with a goal of reducing GHG emissions, promoting the development of infill land use projects and multimodal transportation networks, and to promote a diversity of land uses within developments. One significant outcome resulting from this statue is the removal of automobile delay and congestion, commonly known as Level of Service (LOS), as a basis for determining significant transportation impacts under the California Environmental Quality Act (CEQA).

The Governor's Office of Planning and Research (OPR) selected Vehicle Miles Traveled (VMT) as the principal measure to replace LOS for determining significant

transportation impacts. VMT is a measure of total vehicular travel that accounts for the number of vehicle trips and the length of those trips.

VMT also allows for an analysis of a project's impact throughout the jurisdiction rather than only in the vicinity of the proposed project allowing for a better understanding of the full extent of a project's transportation-related impact.

1.6.4 CEQA for Bicycle Plans

Pursuant to Public Resources Code Section 15262 (Feasibility and Planning Studies) guidance, planning documents such as this Plan are statutorily exempt from California Environmental Quality Act (CEQA) analysis since they are planning and conceptual recommendations.

A project involving only feasibility or planning studies for possible future actions which the agency, board, or commission has not yet approved, adopted or funded does not require the preparation of an EIR or Negative Declaration but does require consideration of environmental factors.

Further, the adoption of the plan is a simple organizational or governmental activity and does not commit the City to any specific development or construction activity that may result in a potentially significant impact on the environment. As individual recommendations move forward toward further design and implementation, the City will then need to perform project-specific environmental review in conformance with the provisions of CEQA.

One intended use for the Plan is as part of a nexus study for a Vehicle Miles Traveled (VMT) Mitigation Exchanges and Banking program being explored by the City. This program would allow developers to purchase VMT reduction credits, with the money exchanged applied to bicycle improvement projects identified within the Plan. This future study would also be statutorily exempt from CEQA analysis pursuant to Public Resources Code Section 15262 guidance.

1.6.5 AB-1371 Passing Distance/Three Feet for Safety Act

This statute, widely referred to as the "Three Foot Passing Law," requires drivers to provide at least three feet of clearance when passing bicyclists. If traffic or roadway conditions prevent drivers from giving bicyclists three feet of clearance, they must "slow to a speed that is reasonable and prudent" and wait until they reach a point where passing can occur without endangering the bicyclists. Violations are punishable by fine.

1.6.6 AB-1193 Bikeways

This act amends various code sections, all relating to bikeways in general, specifically by recognizing a fourth class of bicycle facility, cycle tracks.

This bill requires Caltrans to establish minimum safety design criteria for each type of bikeway, and also authorizes local agencies to utilize different minimum safety criteria if adopted by resolution at a public meeting.

1.6.7 AB-1096 Electric Bicycles as Vehicles

Existing law defines a "motorized bicycle" as a device that has fully operative pedals for propulsion by human power and has an electric motor that meets specified requirements. The bill would define an "electric bicycle" as a bicycle with fully operable pedals and an electric motor of fewer than 750 watts and would create three classes of electric bicycles. The bill would prohibit the operation of the most powerful Class 3 electric bicycles on specified paths, lanes, or trails unless that operation is authorized by a local ordinance. The bill would also authorize a local authority or governing body to prohibit, by ordinance, the operation of Class 1 or Class 2 electric bicycles on specified paths or trails.

2. EXISTING CONDITIONS AND ANALYSIS

2.1 Overview

Understanding the existing roadway conditions, land use, and other context-sensitive information in Agoura Hills and the adjacent region is imperative for planning for its future. This chapter includes sections on relevant datasets, such as bicycling mode share, existing and previously proposed bicycle facilities, and bicycle collisions. In addition to physical characteristics, data from the 2019 American Community Survey was used to analyze the commuting characteristics of the City's residents.

2.2 Bicycling Mode Share

Bicycling mode share measures the percentage of resident workers aged sixteen years and over who commute to work by bicycle. According to the U.S. Census 2019 American Community Survey, there are an estimated 10,300 workers in Agoura Hills and 1.3% use a bicycle to commute. Although this percentage is low, the bicycling mode share is almost twice as much than Los Angeles County (0.7% of the population bike to work).

2.3 Existing and Previously Proposed Bicycle Facilities

The existing bicycle facility network in Agoura Hills is comprised of 1.3 miles of bicycle routes and 9.2 bicycle lanes. 87 percent of the bike facilities are dedicated on-street bike lanes (Class II) along Palo Comado Canyon Road, Agoura Road, Reyes Adobe Road, Forest Cove Lane, Kanan Road, and Thousand Oaks Boulevard. The remaining 13 percentage are routes shared with other vehicles (Class III) along Rainbow Crest Lane, Canwood Street and Mainmast Drive.

The existing bicycle facility network is shown in Figure 2.

The previously proposed bicycle facilities documented in the LA County Bicycle Master Plan, Las Virgenes-Malibu Regional Bicycle Master Plan (LVMCOG), and the Agoura Hills Citywide Trails & Pathways Master Plan provided a foundation for the Plan's recommended bicycle network. The existing network was analyzed for connectivity within the City and with other surrounding jurisdictions and was summarized and presented to the City, stakeholders, and public during a workshop to gather additional input on routes they felt were important and should be prioritized.

1.3 Miles

of bicycle routes

9.2 Miles

of bicycle lanes

2.4 Existing Transit Facilities

The Los Angeles County Metropolitan Transportation Authority (Metro) and the City of Los Angeles Department of Transportation (LADOT) provide existing regional public transit services to Agoura Hills. Metro service provides access between Thousand Oaks and Warner Center in the west San Fernando Valley; the LADOT Commuter Express provides service between Downtown Los Angeles and Thousand Oaks/Newbury Park. The following transit lines serve the City of Agoura Hills:

Metro Line 161

Line 161 provides local service between Warner Center and Thousand Oaks. Within the City, this line generally runs along Agoura Road to Roadside Drive to Kanan Road to Thousand Oaks Boulevard. In the AM peak hour, the line operates with 15 to 50 minute headways depending on the direction of travel and 25 to 60 minute headways during the PM peak hour, depending on the direction of travel. The 161 Metro Line stops at multiple locations on

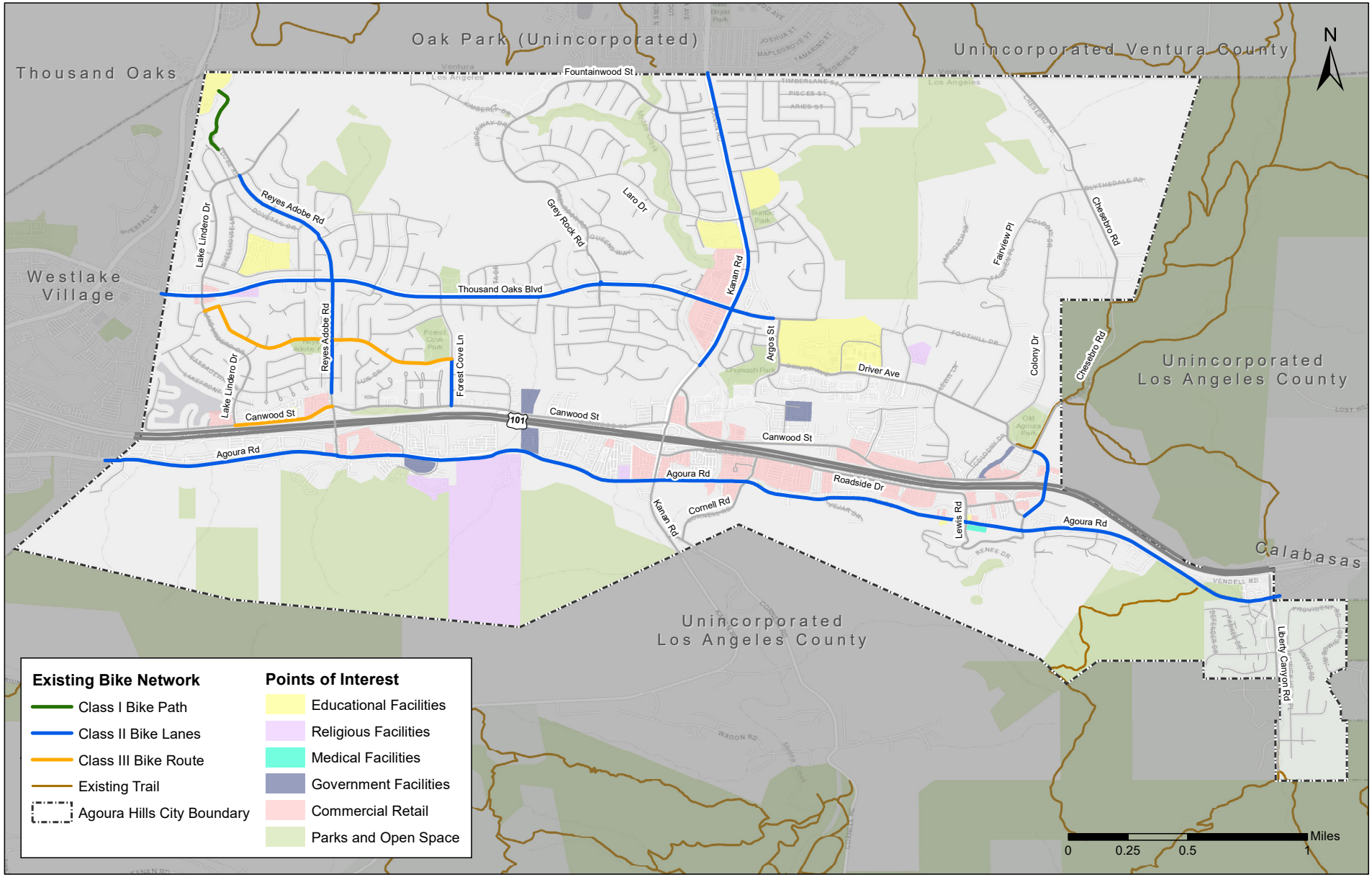


Figure 2: Agoura Hills Existing Bike Network

Agoura Road east of Chesebro Road with one stop along Roadside Drive, two stops along Kanan Road South of Thousand Oaks Boulevard, four stops along Thousand Oaks Boulevard between West City Limits and Kanan Road.

LADOT Commuter Express 422

CE 422 is an express commuter line that travels from Downtown Los Angeles to Thousand Oaks Boulevard. Within the City limits, the line operates on US 101, Kanan Road, and Thousand Oaks Boulevard. Stops are provided locally along Kanan Road and Thousand Oaks Boulevard. During the AM and PM peak periods, this line operates on a 20-minute headway.

LADOT Commuter Express 423

CE 423 is an express commuter line that travels from Downtown Los Angeles to Newbury Park. Within the City limits, the line operates on US 101, Kanan Road, and Thousand Oaks Boulevard. Limited stops are provided at the US 101 park-and ride lots and along Kanan Road and Thousand Oaks Boulevard. During the AM and PM peak periods, this line operates on a 20-minute headway.

The park-and ride lots served by the Commuter Express lines are located in the northwest and southeast quadrants of the US 101/Kanan Road Interchange at the intersections of Kanan Road & Canwood Street and Kanan Road & Roadside Drive.

Kanan Shuttle

The Kanan Shuttle serves Oak Park High School, Medea Creek Middle School and the residential areas near Kanan Road. The Kanan Shuttle is a free way to travel to neighborhood schools and residential areas near Kanan Road. in Oak Park and Agoura Hills.

2.2 Analysis

To develop this Bicycle Master Plan, a thorough analysis of existing conditions in Agoura Hills was conducted that involved GIS analyses, fieldwork, community outreach, surveys, workshops, and meeting with City staff to gather data and input.

2.2.1 Bicycle Collision Analysis

Bicycle collision data was obtained from the Statewide Integrated Traffic Records System (SWITRS) collision dataset managed by the California Highway Patrol (CHP), which captures reported bicycle collisions that resulted in injury or property damage in Agoura Hills in the five-year period of 2015 through 2019. Collision density and locations data are displayed in Figure 3: Bicycle Related Collisions on the following page. Collisions on off-street paths are not reported in the dataset. It is important to note that collisions involving bicyclists are known to be under-reported, and therefore such collisions are likely under-represented in this analysis. During this five-year period (2015-2019), there were fifteen bicycle-related collisions. The majority of these reported injuries resulted in visible injury or complaint of pain.

2.2.2 Connectivity Analysis

To encourage and support bicycling for people of all ages and abilities, a bicycle network should be well connected and should serve people's needs. The connectivity analysis exercise was conducted to identify gaps in the existing bicycle network and helped develop recommendations to close the loops in the network. As part of the connectivity analysis, the project team looked at existing bicycle facilities and connectivity to points of interests such as educational facilities, government facilities, and commercial facilities. Some of the missing connections identified include Canwood Street which serves as the main access road for multiple commercial and government facilities. Another major gap in the bicycle network is on Kanan Road south of Hillrise Road and Reyes Adobe Road south of Passageway Place. Extension of both of these bicycle facilities would close the loop connecting the four major roads (Backbone) in Agoura Hills. The Canwood Street and Kanan Road bicycle facilties extensions also creates a connection to the two Park and Ride lots adjacent to the US 101/Kanan Road interchange. End trip bicycle facilities such as bicycle parking should also be considered at these points of interest.

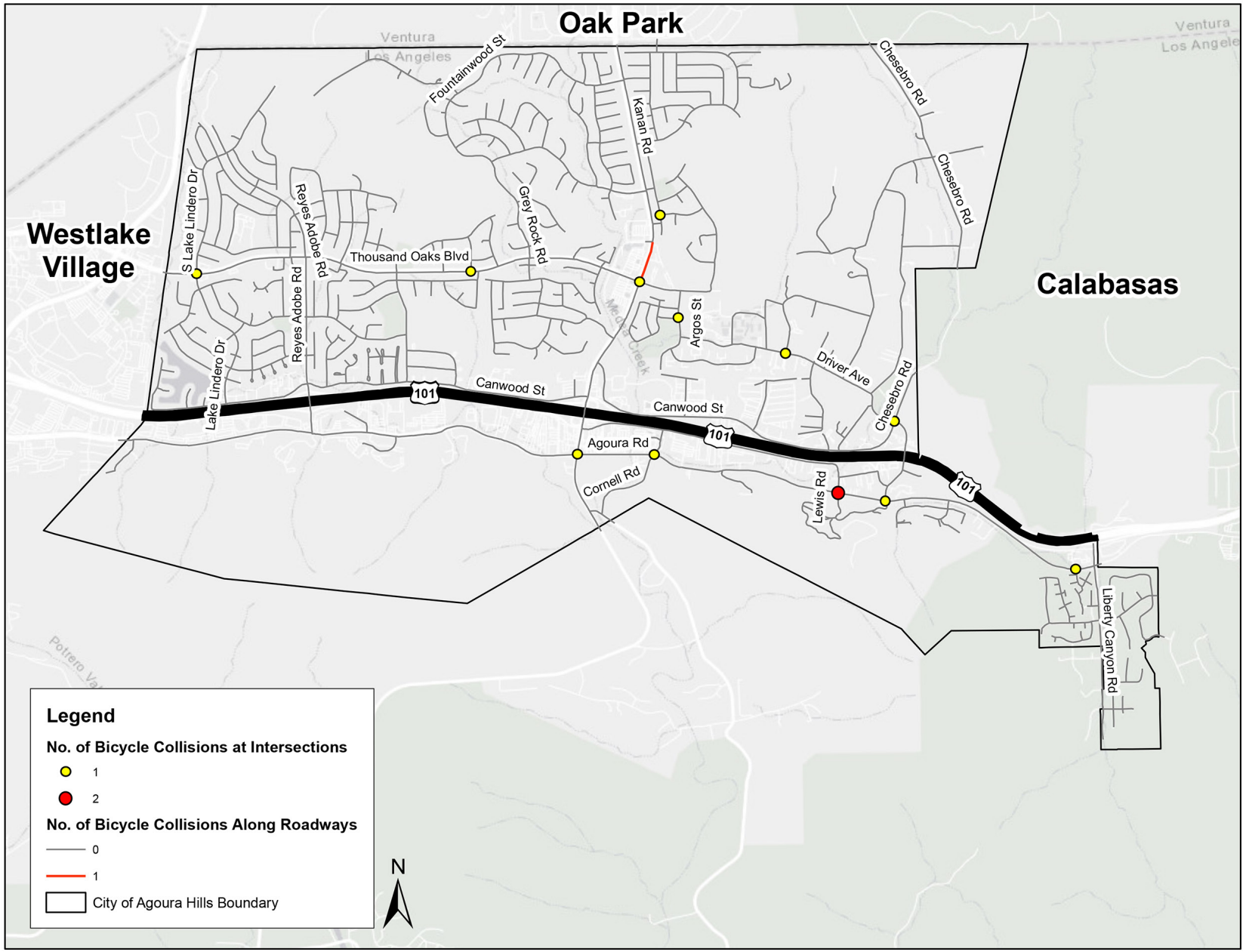


Figure 3: Agoura Hills Bicycle Collision Analysis (2015 - 2019)

3. COMMUNITY ENGAGEMENT

3.1 Overview

The Bicycle Master Plan planning process was conducted in an open and transparent manner to ensure that community members were included throughout the entire course of the project. Community input and involvement were crucial to identify barriers to bicycling. To achieve that, the community engagement process was designed to include the involvement of a broad spectrum of stakeholders working towards a common goal. Stakeholders included residents, City staff, local bicycling advocacy groups, the Las Virgenes Unified School District (LVUSD), the Los Angeles Sheriff's Department, and local businesses.

3.1.1 Community Engagement Strategies

The primary community engagement strategies utilized for the Plan were:

- Online Survey
- Community Workshops
- Online Engagement Tools (Strava Challenge)
- Social Media Announcements
- Project Prioritization Activity

These strategies informed the public about the Plan allowing them to provide meaningful input.

3.1.2 Outreach Materials

As part of the community engagement process, outreach materials were developed to maximize public participation.

Project Branding

To be consistent with the City's branding and graphic requirements, a similar type of branding style was used for this Plan. The project's branding was used in all outreach materials, including activity sheets, worksheet, social media posts, and workshop presentations.

Community Workshop Fact Sheet

Public Engagement Material and Social Media Announcements

The project team developed a fact sheet that was posted on the City website. In addition, the project team developed social media messages, including Instagram, to reach out to interested members of the community.

City of Agoura Hills Instagram Post

3.1.3 Survey

An online survey was prepared and distributed through several channels including social media sites, City website, library, and local bicycle shops to determine current behavior of residents and ways to encourage a mode shift. The survey included questions about why people bike, why people do not bike, and what would encourage people to bike. People were also encouraged to submit any comments or feedback through email. The online survey was made available from January 31, 2022 to February 10, 2022.

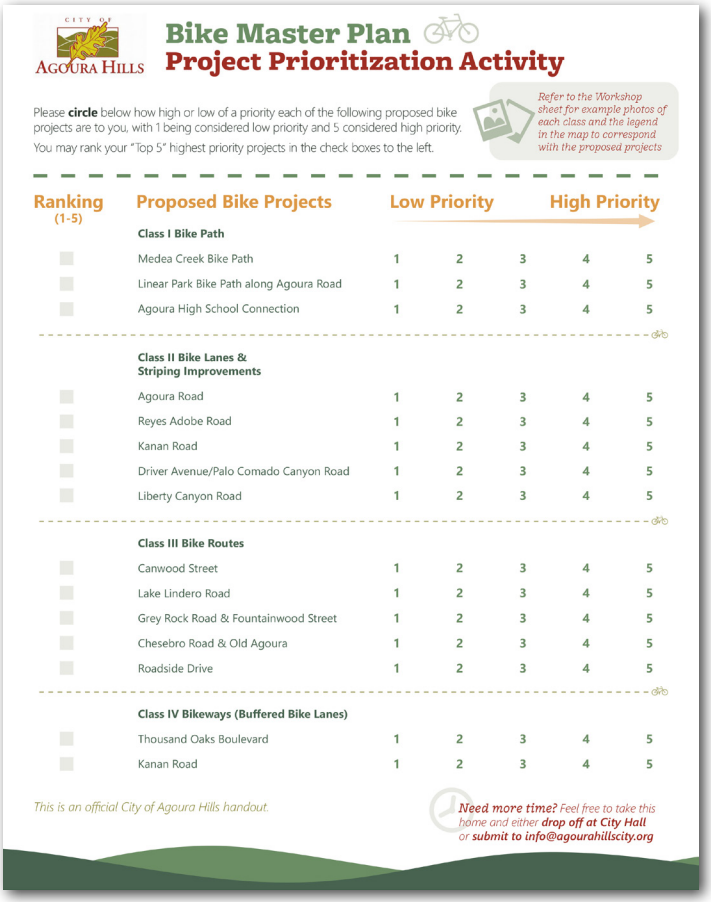
3.2 Community Workshops and Events

Two community workshops and an online Strava challenge were conducted during the planning process to gather input and solicit feedback on recommendations.

3.2.1 Workshop #1

The first workshop was held on March 22, 2022 at the Agoura Hills Recreation and Event Center as well as live streamed on YouTube and Zoom. All were invited to attend the workshop including residents, local bicycle advocacy groups, City staff, City Council members, and Planning Commission members. The project team provided a presentation of the recommendations along with the vision and goals of the project. During the workshop there were several opportunities for questions and comments.

Participants were also asked to complete a prioritization activity where projects were assigned either high or low priority, and participants identified their Top 5 favorite projects of the presented projects. The responses received by the City placed high priority on the projects constituting the "Backbone Network" that includes the four major arterials of Thousand Oaks Blvd, Agoura Rd, Reyes Adobe Rd and Kanan Rd. These projects are a combination of new Class IV bikeways (separated bike lanes), expanded Class II bike lanes, as well as enhanced striping and intersection improvements along existing bike facilities. High priority was also assigned to the Class I bike path alongside Medea Creek, while lower priority was assigned to Class III bike routes within local neighborhoods.



CITY OF AGOURA HILLS

Bike Master Plan
Project Prioritization Activity

Please **circle** below how high or low of a priority each of the following proposed bike projects are to you, with 1 being considered low priority and 5 considered high priority. You may rank your "Top 5" highest priority projects in the check boxes to the left.

Refer to the Workshop sheet for example photos of each class and the legend in the map to correspond with the proposed projects

Ranking (1-5)	Proposed Bike Projects	Low Priority				High Priority
	Class I Bike Path					
☐	Medea Creek Bike Path	1	2	3	4	5
☐	Linear Park Bike Path along Agoura Road	1	2	3	4	5
☐	Agoura High School Connection	1	2	3	4	5
	Class II Bike Lanes & Striping Improvements					
☐	Agoura Road	1	2	3	4	5
☐	Reyes Adobe Road	1	2	3	4	5
☐	Kanan Road	1	2	3	4	5
☐	Driver Avenue/Palo Comado Canyon Road	1	2	3	4	5
☐	Liberty Canyon Road	1	2	3	4	5
	Class III Bike Routes					
☐	Canwood Street	1	2	3	4	5
☐	Lake Lindero Road	1	2	3	4	5
☐	Grey Rock Road & Fountainwood Street	1	2	3	4	5
☐	Chesebro Road & Old Agoura	1	2	3	4	5
☐	Roadside Drive	1	2	3	4	5
	Class IV Bikeways (Buffered Bike Lanes)					
☐	Thousand Oaks Boulevard	1	2	3	4	5
☐	Kanan Road	1	2	3	4	5

This is an official City of Agoura Hills handout.

Need more time? Feel free to take this home and either drop off at City Hall or submit to info@agourahillscity.org

Workshop #1 Project Prioritization Activity Worksheet

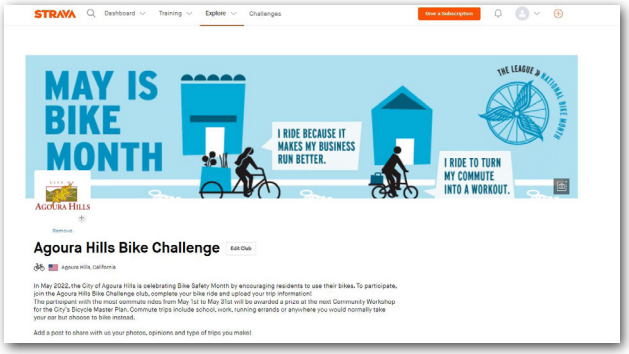
3.2.2 Workshop #2

A second public workshop was held on Tuesday, July 12th, 2022 at the Agoura Hills Recreation and Event Center, also live streamed on Youtube and Zoom. In addition to advertising through City social media accounts and the local newspaper, attendees from the first workshop as well as those who submitted public comments on the Plan were invited to attend. The project team presented updates to the recommendations contained within the draft Plan as well as stakeholder engagement that had taken place since the first public workshop with law enforcement, schools, and City departments.

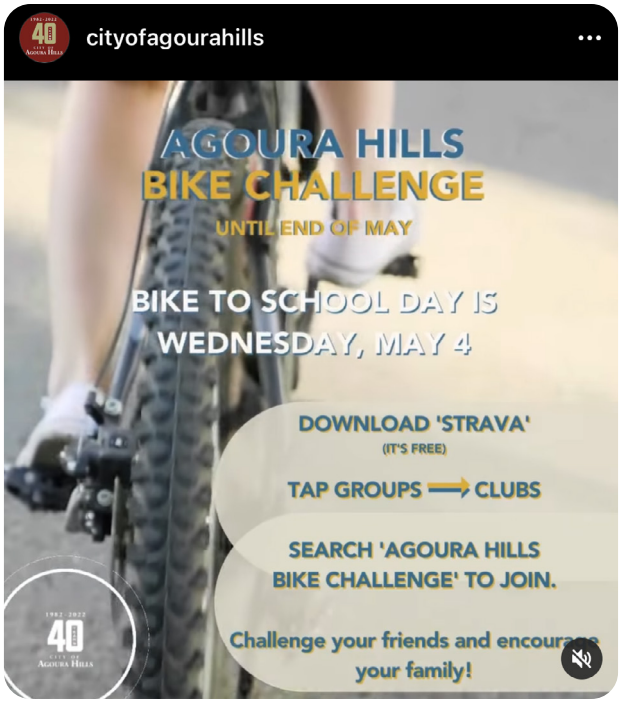
Public Workshop #2

3.2.3 Strava Challenge

National Bike Month is promoted by The League of American Bicyclists and takes place every May. During the month of May, cities across the country organize events and campaigns to educate people about biking and to encourage them to bike more to their destinations. To celebrate National Bike Month, the project team created The Agoura Hills Bike Challenge on the social network Strava®. Strava is a social media platform where runners and bicyclists can track their physical exercise. The Agoura Hills Bike Challenge asked participants to join Strava to track their bicycle rides and encourage participants to use their bicycles anywhere they would normally take their car such as commuting to work, going to school or even running errands. The participant with the most commute rides during the month of May was awarded a prize at the second Community Workshop for the Bike Master Plan.



Strava Challenge Advertisement on City Website



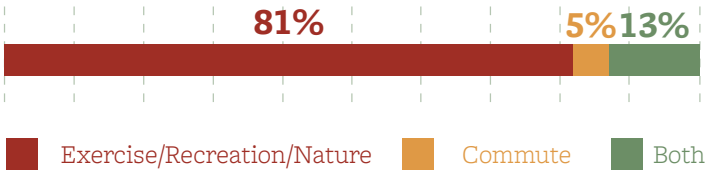
City of Agoura Hills Instagram Post

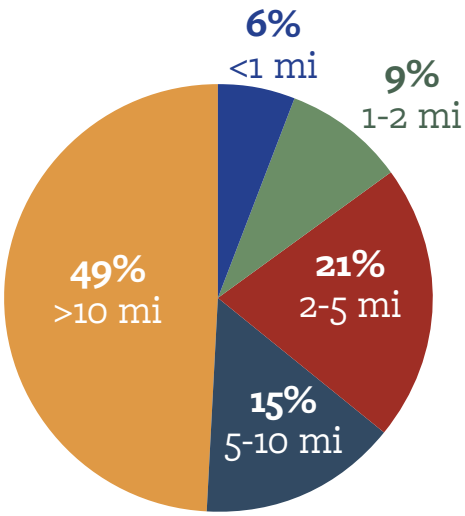
3.3 Survey Summary

Over one hundred people completed the City's survey and approximately 30 comments were submitted separately to the City. The results were analyzed and used for the development of potential projects and bikeway routes. The survey also provided the City with a current view of people's opinions, concerns, and desire for bicycle facilities.

The following figures depict results from the survey. About 81 percent of respondents bike for exercise or recreational purposes, while only 5 percent use the bicycle to commute. This split is evident when examining average distance per bike trip in Agoura Hills.

3.3.1 Why do you bike?



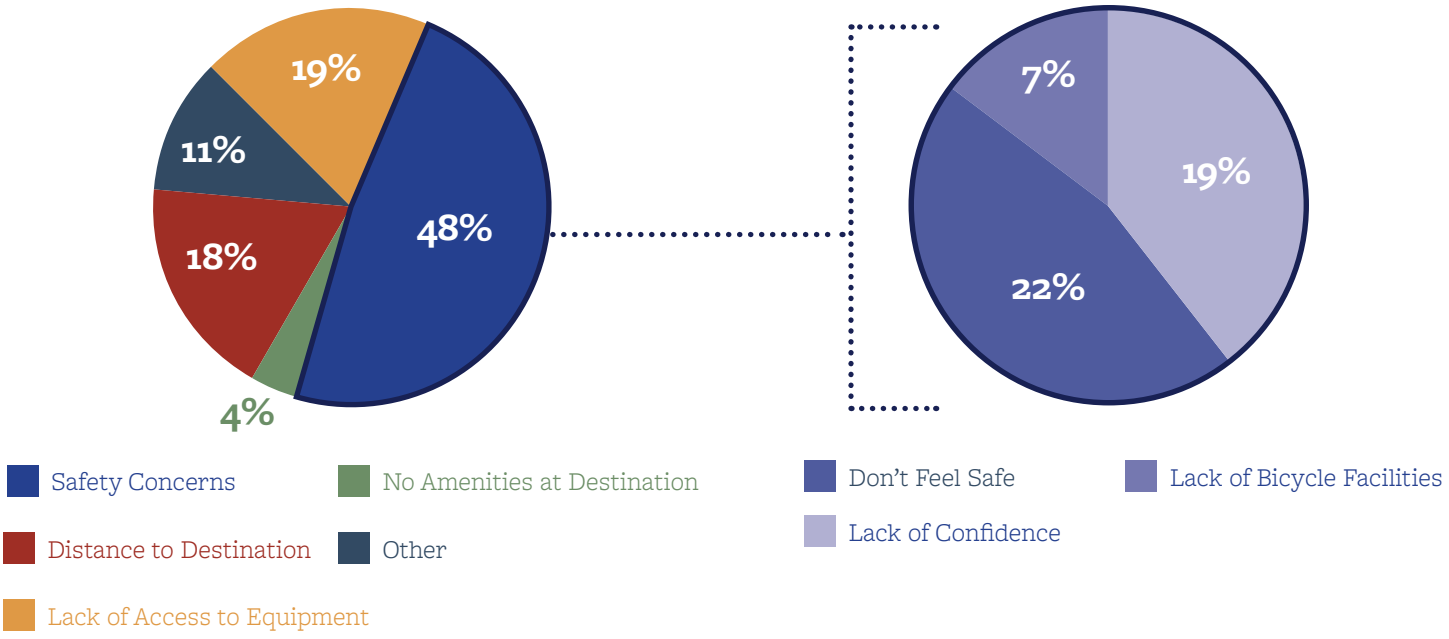


Typical Distance per Bike Trip

3.3.2 Why don't you bike?

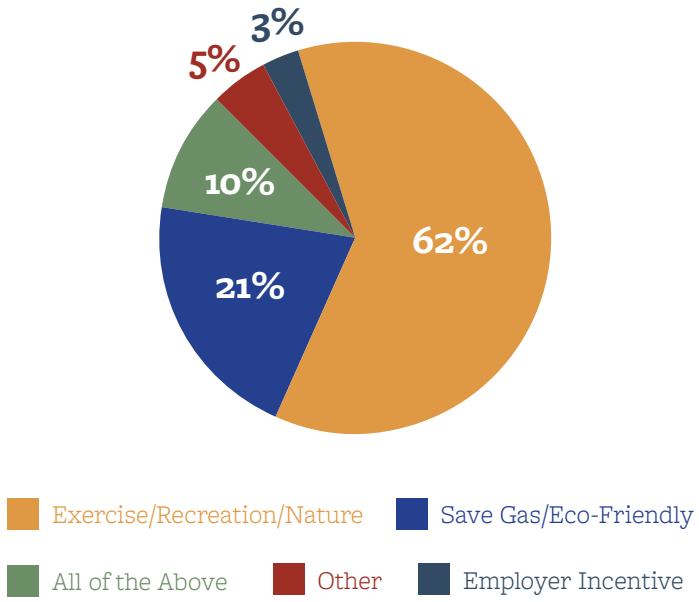
Over 48 percent of respondents choose not to bike due to safety concerns, 19 percent lack access to equipment and 18 percent live far from their work or other destinations.

Of the 48% of participants who have safety concerns, the participants cited they don't feel safe, there is a lack of bicycle facilities, and they have a lack of confidence.



3.3.3 What would motivate you to bike more?

In addition, when asked what would encourage people to bike, the top answer was the opportunity to exercise or spend time in nature, followed by saving gas and being economically friendly and last in the list was employer incentives.



4. RECOMMENDATIONS

4.1 Overview

This chapter addresses the physical improvements recommended to enhance bicycling in Agoura Hills. The chapter contains maps and tables that detail improvement location, extent, and type.

4.1.1 Conventional Bicycle Treatments

As mentioned in the Introduction, there are four types of bikeways recognized by the California Department of Transportation which are summarized visually on the following page.

4.1.2 Enhanced Bicycle Treatments

There are several bicycle treatments that can enhance an existing bicycle facility such as a buffered or separated bicycle lanes, shared lane markings or "Sharrows", and green markings. These enhancements are low cost, easy to install, and provide additional awareness about the likely presence of bicyclists.

Buffered or Separated Bicycle Lanes

Buffered bicycle lanes use roadway striping to provide additional space between the bicycle lane and the traffic lane to provide a more protected and comfortable space for bicyclists than a conventional bicycle lane. The minimum buffer width is two feet, with three feet preferred. Buffered bicycle lanes are considered Class II facilities.

Separated bicycle lanes, sometimes known as protected bicycle lanes, are buffered bike lanes that also include an element of vertical separation from vehicle traffic. The separation may include, but is not limited to, grade separation, flexible delineators, inflexible bollards, a landscaped median, or on-street parking. If using on-street parking as a separation element, it is important to still maintain a horizontal buffer from the parked vehicles to keep bicyclists out of the "door zone" where there is potential danger of vehicle occupants opening doors into bicyclists' path. Separated bicycle lanes are considered Class IV facilities. Buffered bicycle lanes are considered Class II facilities.

Source: NACTO

Shared Lane Markings ("Sharrows")

The shared lane marking is commonly used where parking is allowed adjacent to the travel lane. It is now common practice to center them within the typical vehicular travel route in the rightmost travel lane to ensure adequate separation between bicyclists and parked vehicles.

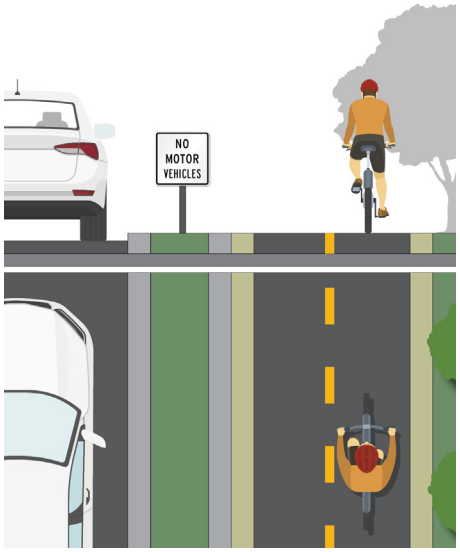
Source: NACTO

Bike Boxes

A bike box is a designated area at the head of a traffic lane at a signalized intersection that provides bicyclists a safe and visible way to wait ahead of queuing traffic during the red signal phase. This positioning helps encourage bicyclists traveling straight through not to wait against the curb for the signal change.

Source: Kimley-Horn

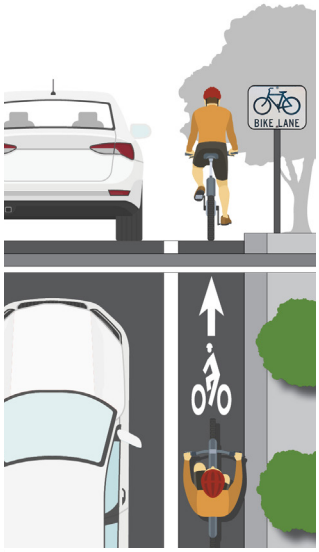
CLASS I
Bike Path



Two-way facilities dedicated to non-motorized users independent of the roadway.

- *10′ minimum width for two-way travel*
- *14′ preferred width if sharing with large volume of pedestrians*
- *2′ shoulder on either side of the Bike Path*
- *5′ minimum separation between the edge of the traveled way and the bike path*
- *Pavement markings and signing recommended*
- *Bike Path must be ADA accessible*

CLASS II
Bike Lane



One-way facility that dedicates some of the roadway right-of-way to bicyclists.

- *4′ minimum width*
- *6′ preferred width*
- *Horizontal buffers shall be provided where feasible*
- *Horizontal buffers are 2′ (minimum) to 3′ (preferred)*
- *Pavement markings and signing recommended*

CLASS III
Bike Route

Designated routes on low-speed, low-volume roadways

- *Provide bike route signing*
- *Provide sharrows every 250′*
- *Routes should be continuous and have minimal turns*
- *Install on collector streets and secondary arterials*

CLASS IV
Separated Bike Lane

On-street bike facilities that includes horizontal and vertical buffer separation from vehicles

- *5′ minimum width*
- *7′ preferred width*
- *Vertical elements may include bollards, flexible posts, or raised island*
- *Horizontal buffers are 2′ (minimum) to 3′ (preferred)*
- *Pavement markings and signing recommended*
- *Bicycle Signals are required at signalized intersections*

Source: Kimley-Horn

Signage and Wayfinding

Signage and wayfinding on all streets and bicycle routes are intended to identify routes to both bicyclists and drivers, provide destination information and branding, and to inform all users of changes in roadway conditions.

Colored Bicycle Lanes

Colored pavement increases the visibility of bicycle routes, identifying potential areas of conflict or transition, and reinforces bicyclists' priority in these areas. Colored pavement can be used as a corridor treatment, along the length of a bicycle lane or within a protected bikeway. Additionally, it can be used as a spot treatment, such as crossing markings at particularly complex intersections where the bicycle path may be unclear. Consistent application of color across a bikeway corridor is important to promote clear understanding for all roadway users.

Source: NACTO

Green Colored Conflict Striping

Intersection or mid-block crossing markings indicate the intended path of bicyclists. Colored striping can be used to highlight conflict areas between bicyclists and vehicles, such as where bicycle lanes merge across motor vehicle turn lanes.

Source: Kimley-Horn

Two-Stage Left Turn Queue Box

Two-stage turn queue boxes can provide a more comfortable left-turn crossing for many bicyclists because they entail two low stress crossings, rather than one potentially high stress one. They also provide a degree of separation from vehicular traffic, because they do not require merging with vehicle traffic to make left turns. Bicyclists wanting to make a left turn can continue into the intersection when they have a green light and pull into the green queue box. Bicyclists then turn 90 degrees to face their intended direction and wait for the green light of a new signal phase to continue through.

Source: Kimley-Horn

Bicycle Signals

Bicycle signals include the typical green/yellow/red signals with signage explaining the signal controls, or special bikeway icons displayed within the signage lights themselves. Near-side bicycle signals may incorporate a "countdown to green" display, as well as a "countdown to red."

Source: NACTO

Bicycle Detection

Bicycle detection is used at intersections with traffic signals to alert the signal controller that a bicycle crossing event has been requested. Bicycle detection can occur either through the use of push buttons or by automated means and are marked by standard pavement symbols.

Source: Kimley-Horn

4.1.3 End-Trip Facilities

End-trip facilities are designated facilities that support those choosing to bike for work or other trips by addressing associated logistical, security, and other concerns. Such examples include secure bike parking or lockers, hygiene facilities, and bike repair stands or centers.

Bicycle Parking

The availability, location, and design of bicycle parking is essential to encouraging mode-shift. Well-designed bicycle parking has the benefit of both preventing theft and creating an orderly appearance to sidewalks and building sites. The availability of bike racks that are conveniently located and functional make the overall experience of bicycling more enjoyable. The most common types of bike parking are the inverted U-rack and the post and ring rack. Bike lockers and secure shelters provide long-term bike parking options.

Source: Los Angeles County Metropolitan Transportation Authority

Showers and Changing Rooms

Showers and changing rooms ensure concerns regarding hygiene are addressed for those biking to work. These can be included at targeted public facilities and encouraged for private employers. Facilities should be clean and spacious, inclusive and secure. Providing toiletries, towel service, and hairdryers or straighteners further serve to improve the experience.

Bike Repair Facilities

Providing a repair stand or kit that include a floor pump and basic tools can help bicyclists sort out simple mechanical problems. These facilities can be provided at certain public facilities such as the library, fire station, and park and ride locations.

Source: Ventura County Fire Department

4.2 Bikeway Recommendations

Through the community engagement process, closing the gaps on the primary arterials, enhancing existing Class II facilities, and providing recreational facilities were some of the top issues for residents. The collision analysis and connectivity analysis in Chapter two identified facilities with collision history and gaps in the existing network. Using the feedback from the community and the results of the analysis, a proposed bicycle network was developed.

The proposed network forms a comprehensive backbone network on primary arterials and low-stress facilities on local streets. The plan recommends a total of 11.5 miles of new bikeways and bikeway improvements.

Of these, 18 percent are Class I multi-use paths, 26 percent are Class IV separated bike lanes (existing Class II), 13 percent are Class II bicycle lanes, and 42 percent are enhancements to existing Class II bicycle lanes.

The recommended bike network is shown in Figure 4.

The recommendations represent a variety of street types that currently lack safe access and mobility for bicyclists. These treatments are important to mending existing safety and connectivity gaps within the City's existing bicycle network. They can be implemented at the interval that best fits funding cycles or to take into consideration the availability of new information, new funding sources, new development, updated collision statistics, etc.

The following project sheets provide a brief description, cross-section of the proposed improvement, and metrics associated with each of the backbone bikeway projects. These project sheets can be used to help guide future development, capital improvement projects, and grant pursuits; however, it should be noted these designs are planning level concepts. Further evaluation regarding feasibility and implementation will be required.

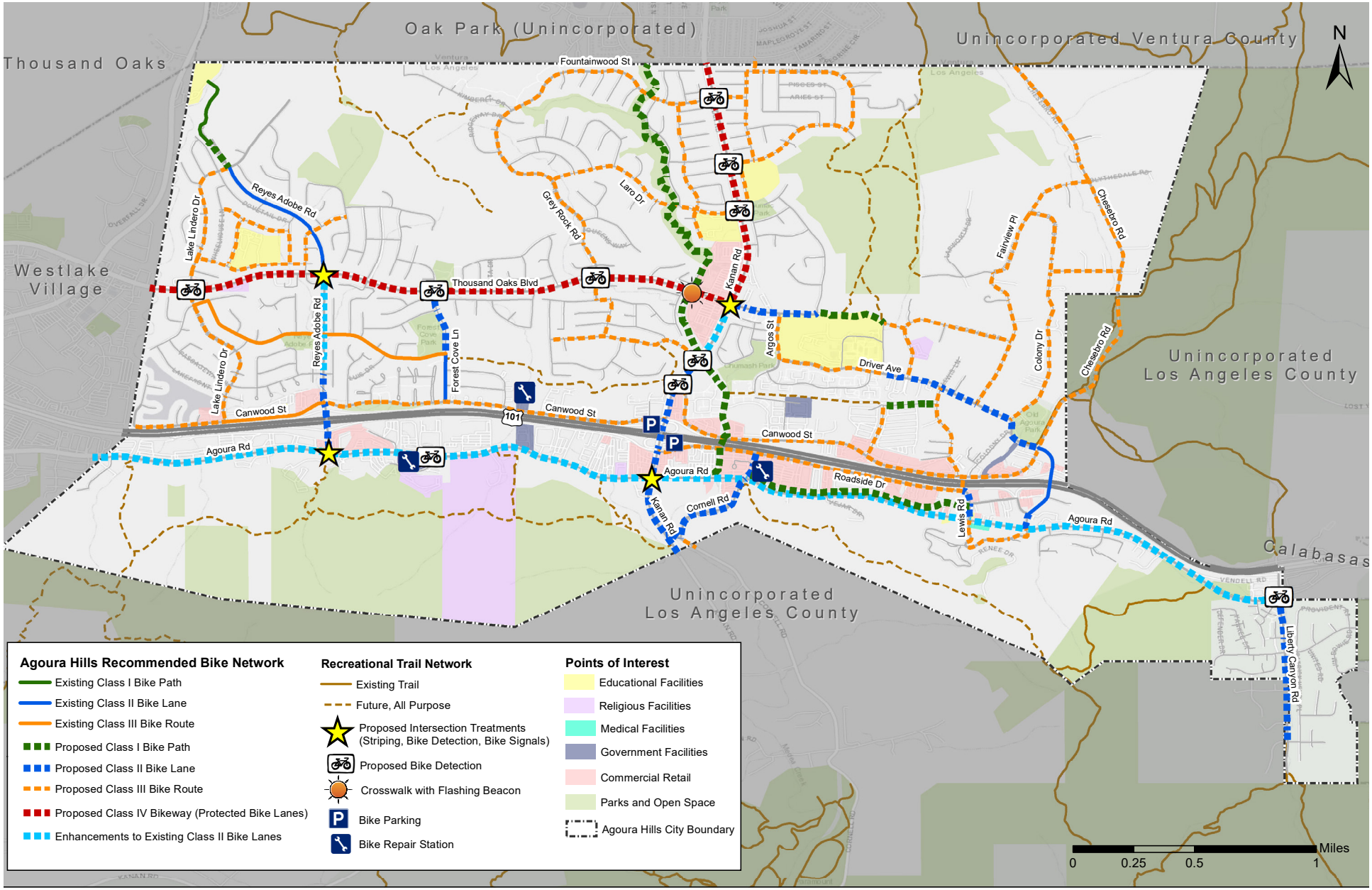


Figure 4: Recommended Bike Network

KANAN ROAD

2.1 Mile Roadway

3 Bicycle Collisons

4 Schools/Parks

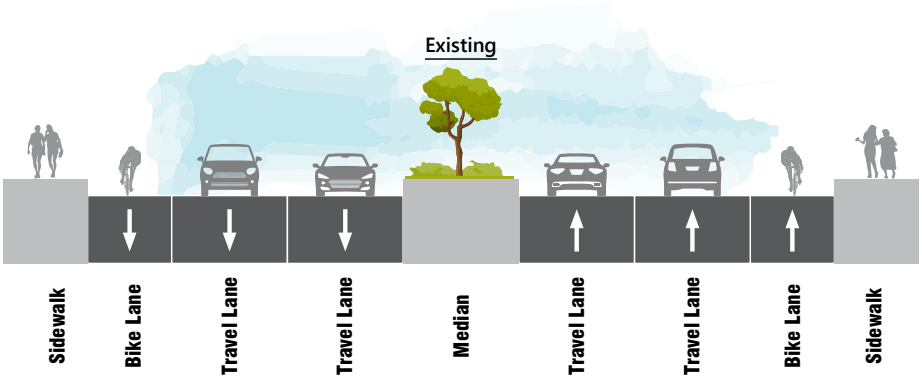
1.3 Miles Existing Bikeway

2.1 Miles Proposed Bikeway Improvements

2 Intersection Improvements/ Treatments

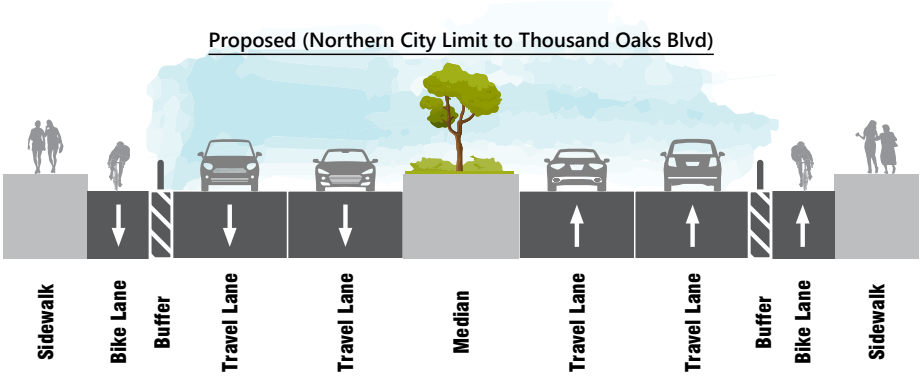
Existing Conditions

Kanan Road is a primary arterial that runs in a north/south direction providing access to Malibu from the south, Oak Park to the north, and access to US 101. There are currently Class II bike lanes between the northern City limits and Hillrise Drive. This route has a total of three reported bicycle collisions.



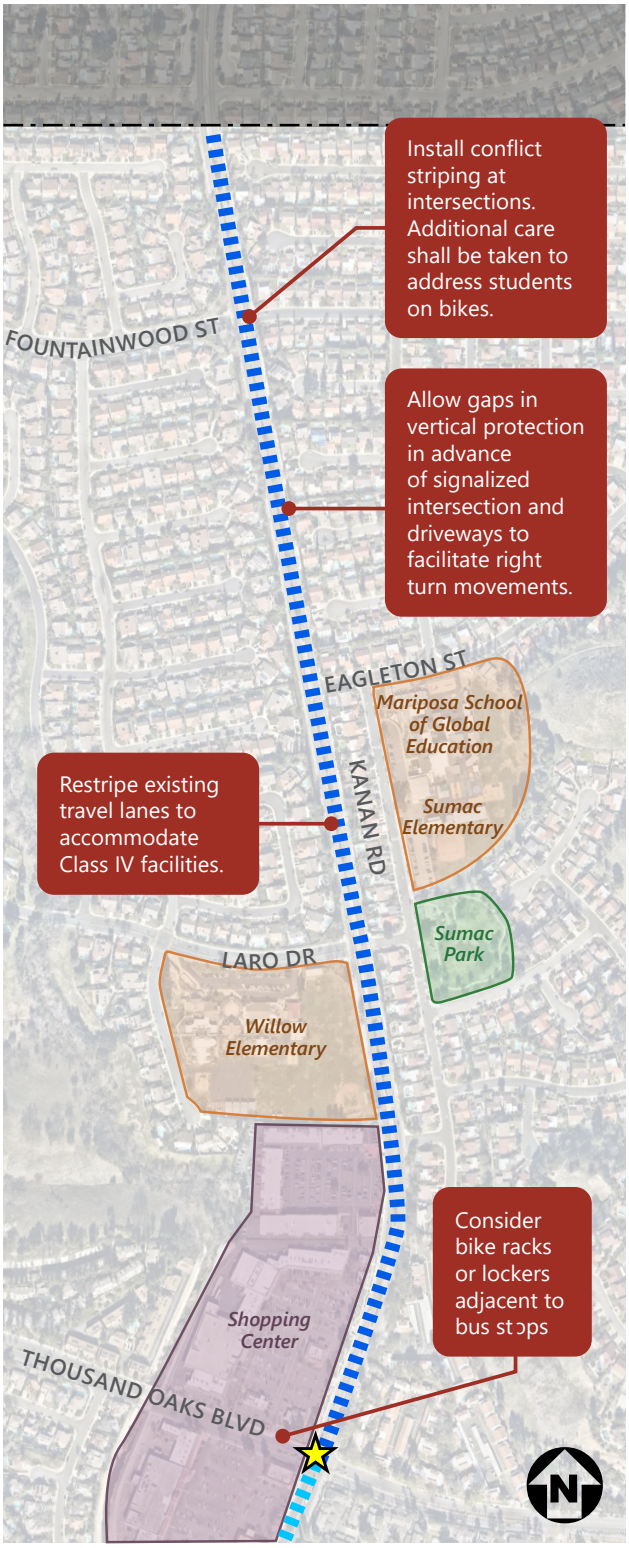
Recommendations

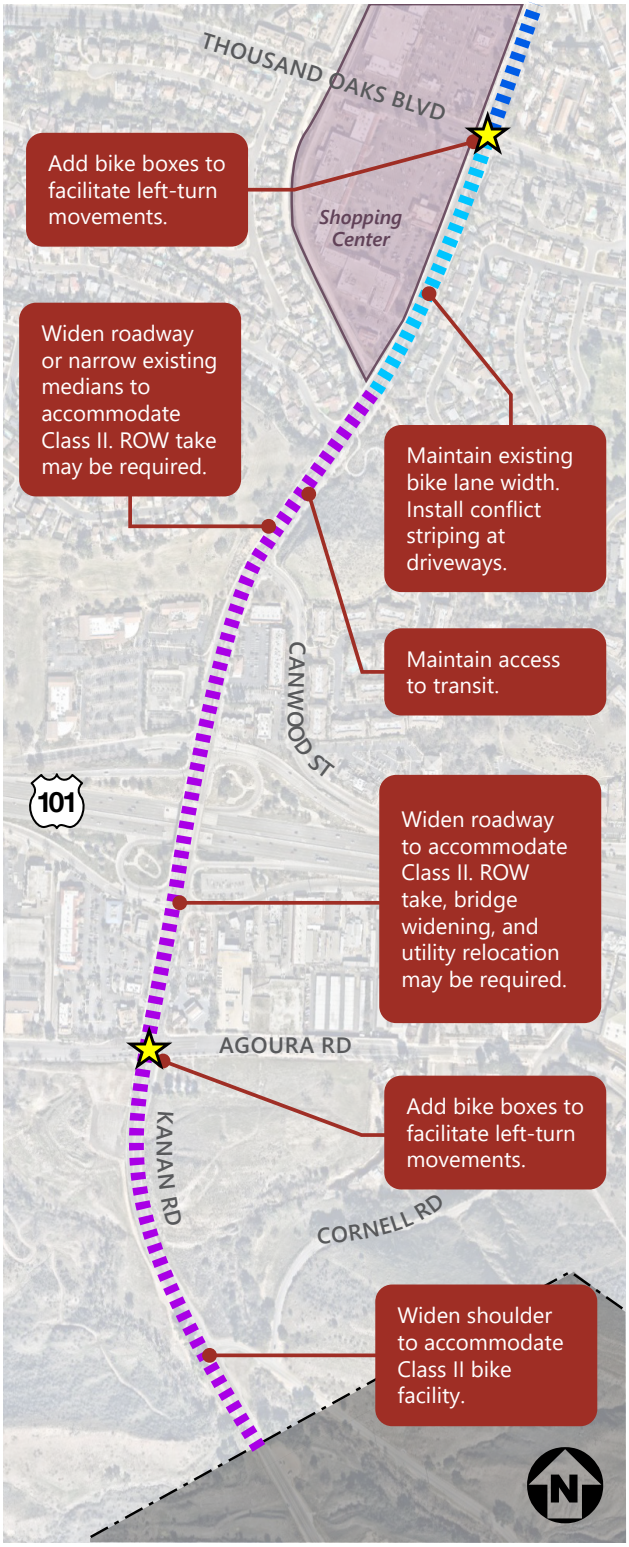
Install Class IV Bikeway between northern City Limits and Thousand Oaks Blvd. The vertical protection in the buffer could either be bollards, flexible posts, or a landscaped median. Install striping enhancements for the existing Class II Bike Lanes on Kanan Rd between Thousand Oaks Blvd and Hillrise Drive. Recommendations also include the installation of Class II Bike Lanes for the road segment between Hillrise Drive and the southern City limit which would require widening of the roadway including the bridge at the US 101/Kanan Rd interchange. Potential upgrades to Class IV protected bikeways along the entire corridor should be investigated pursuant to future studies.



Lastly, install bicycle detection and signals at the intersections of Kanan Road/Thousand Oaks Blvd and Kanan Rd/ Agoura Rd.

KANAN ROAD





- Existing Class II Bike Lane
- Proposed Class II Bike Lane
- Proposed Class IV Bikeway (Separated Bike Lanes)
- Enhancements to Existing Class II Bike Lanes
- Proposed Class I Bike Path
- Proposed Intersection Treatments (Striping, Bike Detection, Bike Signals)
- City Limits

AGOURA ROAD

4.2 Mile Roadway

6 Bicycle Collisons

1 Schools/Parks

4.2 Miles Existing Bikeway

4.2 Miles Proposed Bikeway Improvements

2 Intersection Improvements/ Treatments

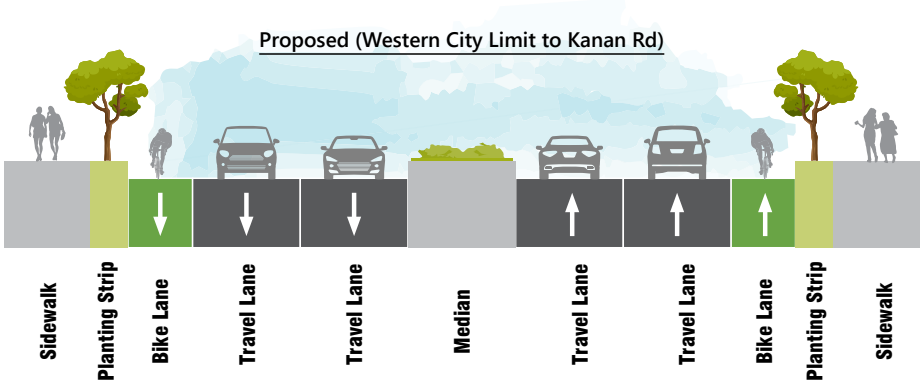
Existing Conditions

Agoura Road is an east/west secondary arterial. Generally, one travel lane in each direction is available between the easterly city limits to just west of Kanan Road; two travel lanes in each direction are provided just west of Kanan Road to the westerly city limits. Most of the segment east of Cornell Road is semi-rural in nature with no curb, gutter, sidewalk, or streetlights. Parking is permitted along this facility from Kanan Road to Cornell Road and in the Old Agoura commercial area. There are existing Class II Bike Lanes along the entire segment of the road. Six bicycle collisions were reported on Agoura Road.

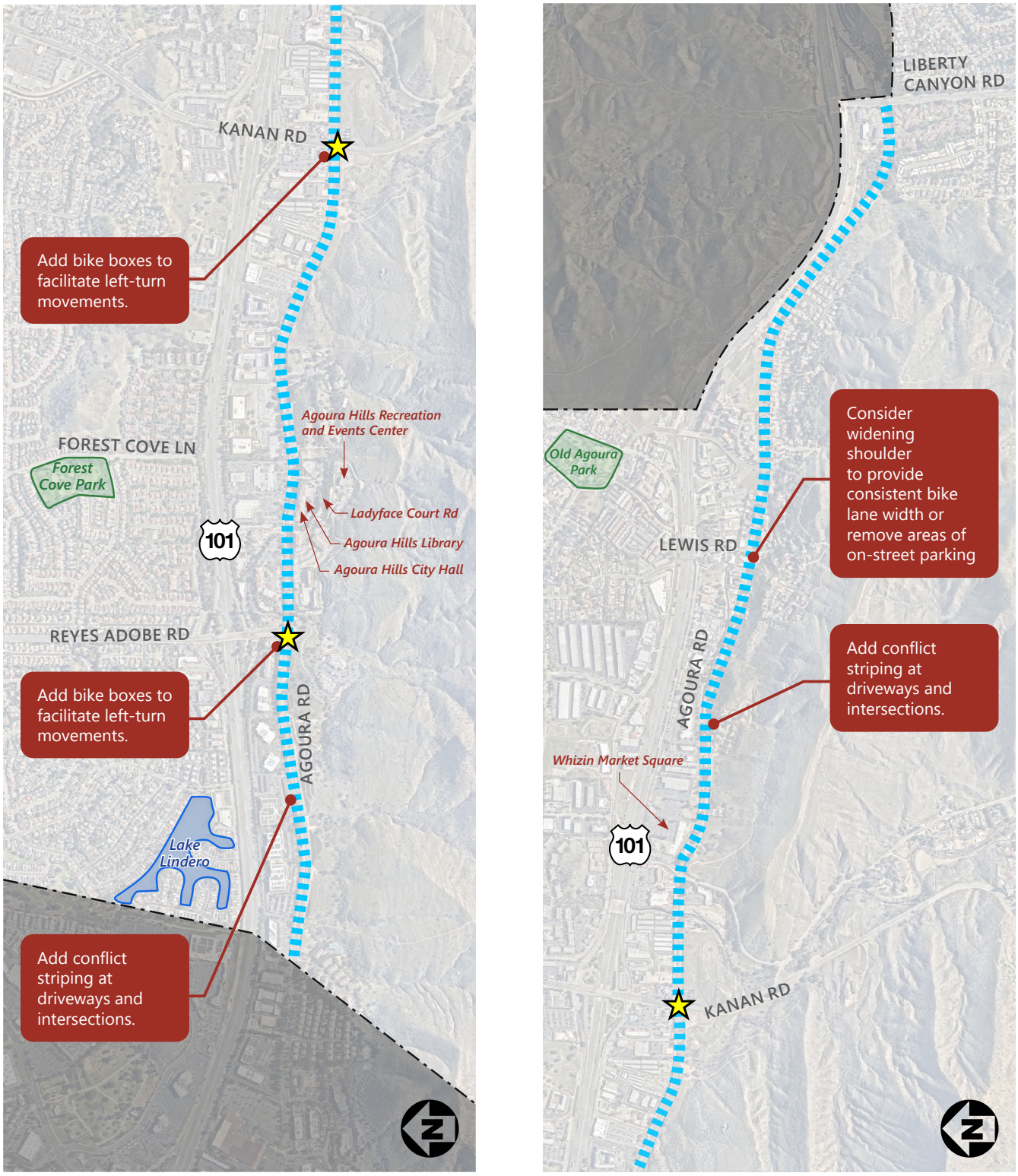
Recommendations

Install conflict striping to the existing Class II Bike Lanes along Agoura Road. Recommendations also include intersection treatments such as striping, bike detection and bike signals at the intersections of Agoura Road/ Reyes Adobe Road and Agoura Road/Kanan Road as well as bike detection at Agoura Road/Ladyface Court.

NACTO - Urban Bikeway Design Guide



AGOURA ROAD



Existing Class II Bike Lane

Proposed Class II Bike Lane

Proposed Class IV Bikeway (Separated Bike Lanes)

Enhancements to Existing Class II Bike Lanes

Proposed Class I Bike Path

Proposed Intersection Treatments (Striping, Bike Detection, Bike Signals)

City Limits

REYES ADOBE ROAD

1.4 Mile Roadway

0 Bicycle Collisons

3 Schools/Parks

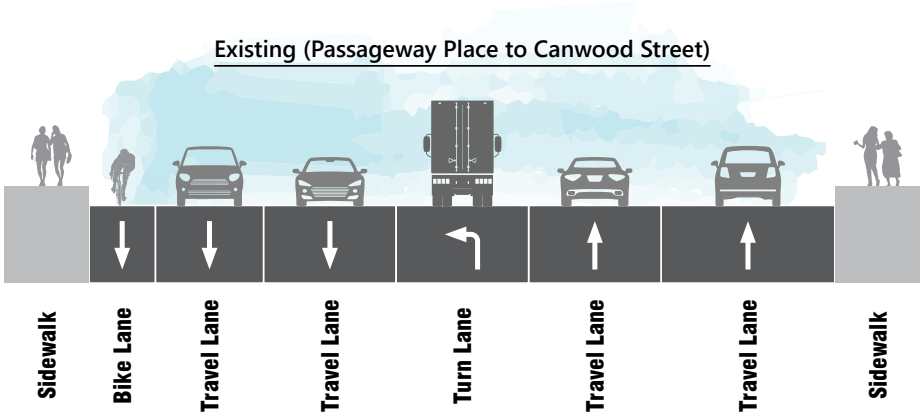
1 Miles Existing Bikeway

0.9 Miles Proposed Bikeway Improvements

2 Intersection Improvements/ Treatments

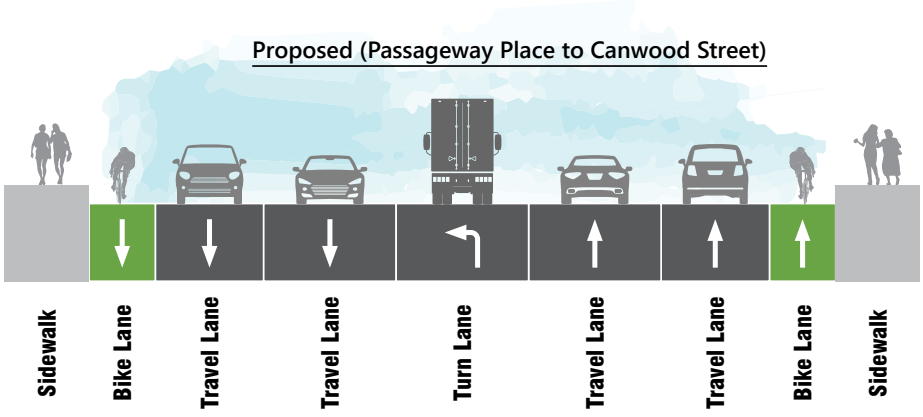
Existing Conditions

Reyes Adobe Road is a north/south secondary arterial There are no driveways along Reyes Adobe Road north of the US-101, and access is limited to the cross streets. Street parking is prohibited along this corridor. There are existing Class II bike lanes along the segment of the road between North City Limits and Passageway Place. No bicycle collisions have been reported on Reyes Adobe Road.

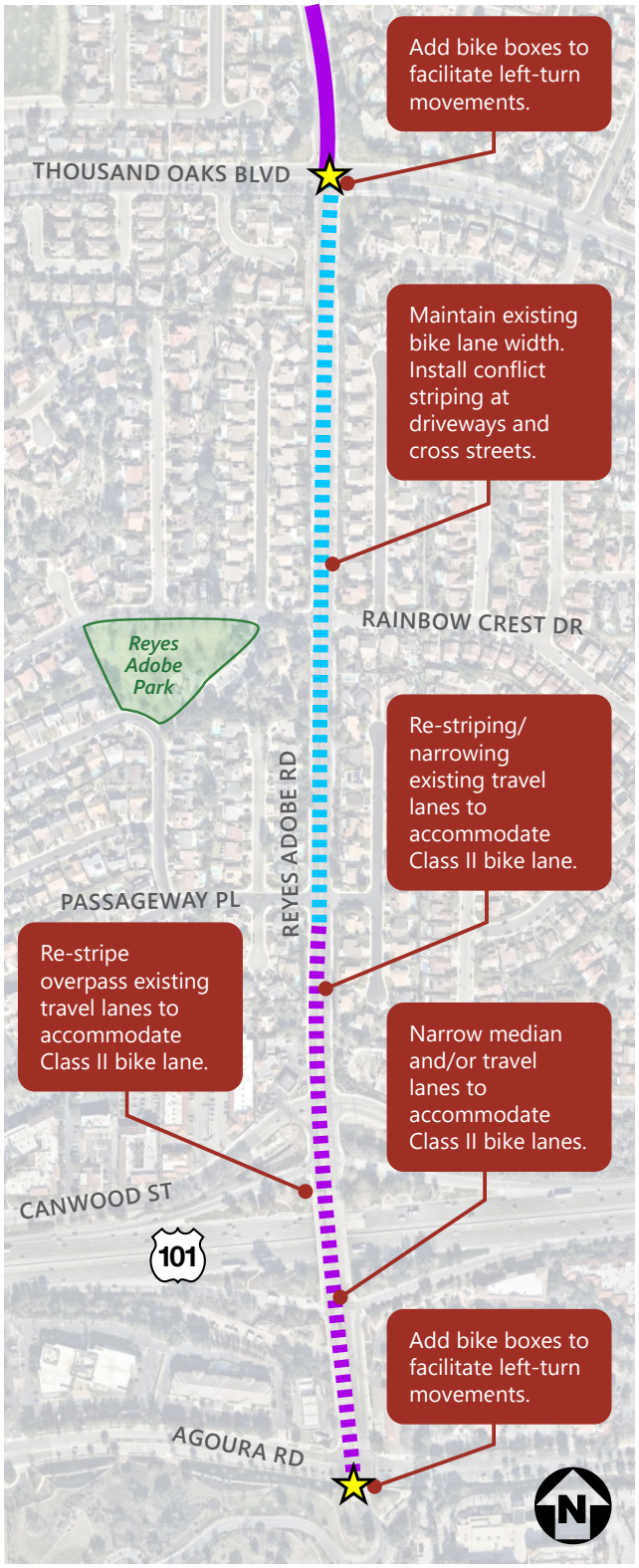


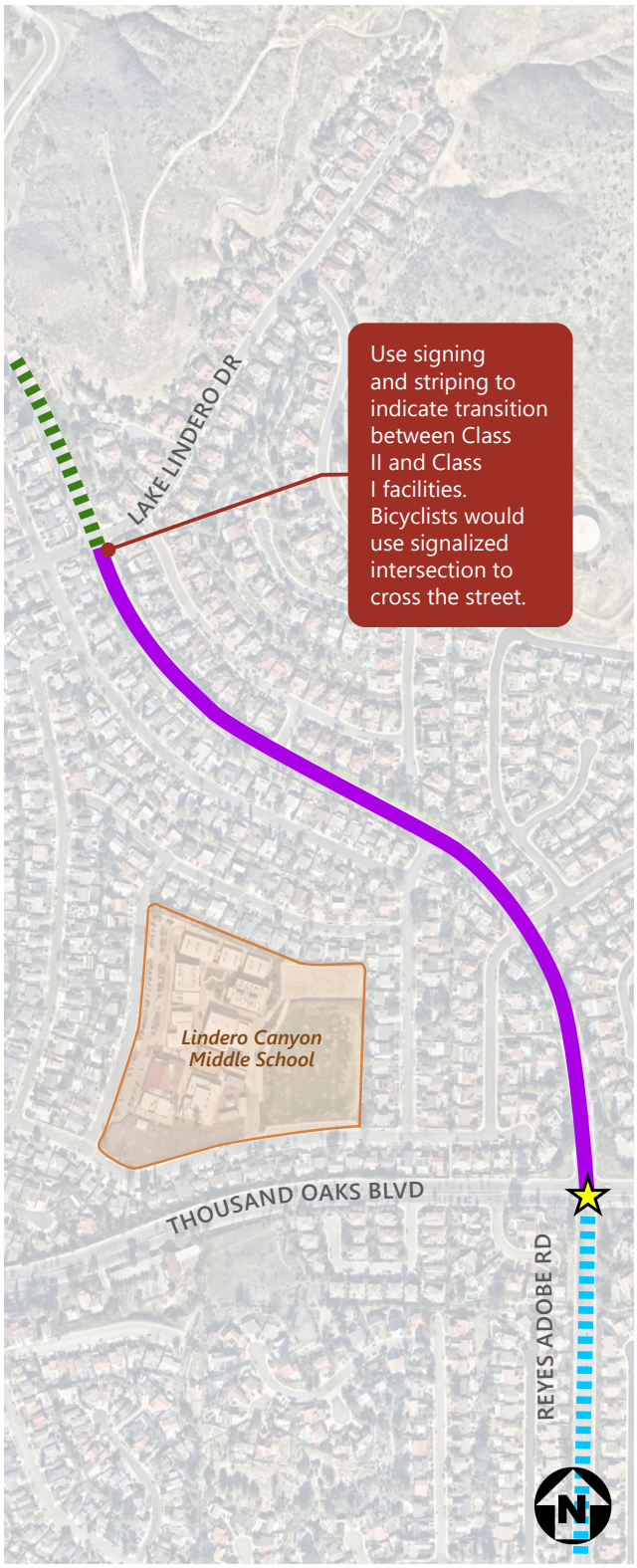
Recommendations

Install Class I Bike Path north of Lake Lindero Drive to the northern City limit. This proposed Class I Bike Path would tie into the existing bike path at Yerba Buena Elementary School. Recommendations also include restriping Reyes Adobe Road from Passageway Place to Agoura Road to include new Class II Bike Lanes by narrowing the width of the travel lanes. In addition, striping enhancements to existing Class II bike lanes along the roadway between Thousand Oaks Boulevard and Passageway Place should be implemented. Intersection treatments along this road include striping, bike detection and bike signals at the intersections of Reyes Adobe Road/Thousand Oaks Boulevard and Reyes Adobe Road/Agoura Road.



REYES ADOBE ROAD





- Existing Class II Bike Lane
- Proposed Class II Bike Lane
- Proposed Class IV Bikeway (Separated Bike Lanes)
- Enhancements to Existing Class II Bike Lanes
- Proposed Class I Bike Path
- Proposed Intersection Treatments (Striping, Bike Detection, Bike Signals)
- City Limits

THOUSAND OAKS BOULEVARD

2.3 Mile Roadway

3 Bicycle Collisons

3 School/Parks

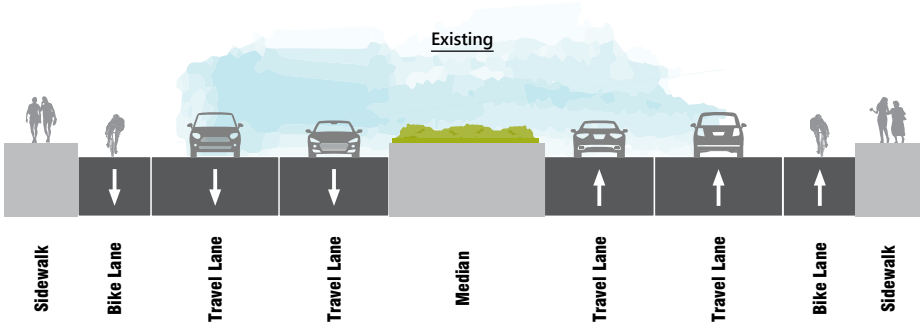
2.2 Miles Existing Bikeway

2.3 Miles Proposed Bikeway Improvements

2 Intersection Improvements/ Treatments

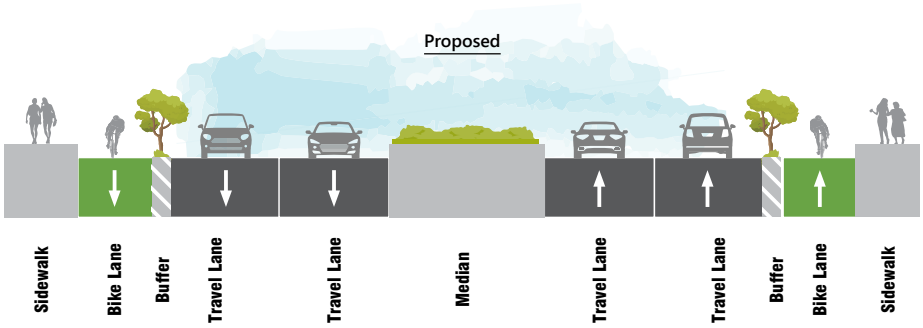
Existing Conditions

Thousand Oaks Boulevard is an east/ west primary arterial. There is limited access to developments along this corridor; parking is prohibited west of Kanan Road. Class II Bicycle Lanes are provided on both sides of Thousand Oaks Boulevard between the Western City Limits and Argos Road. Three bicycle collisions were reported on Thousand Oaks Boulevard.

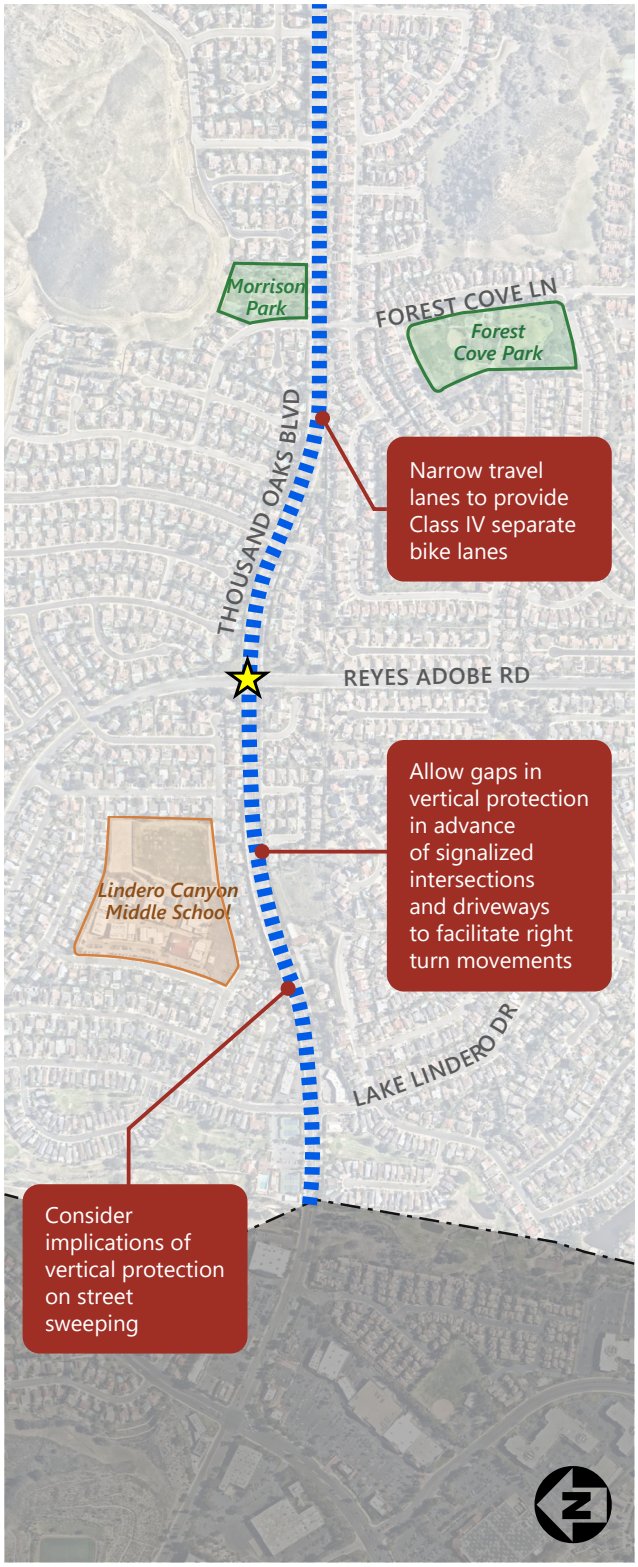


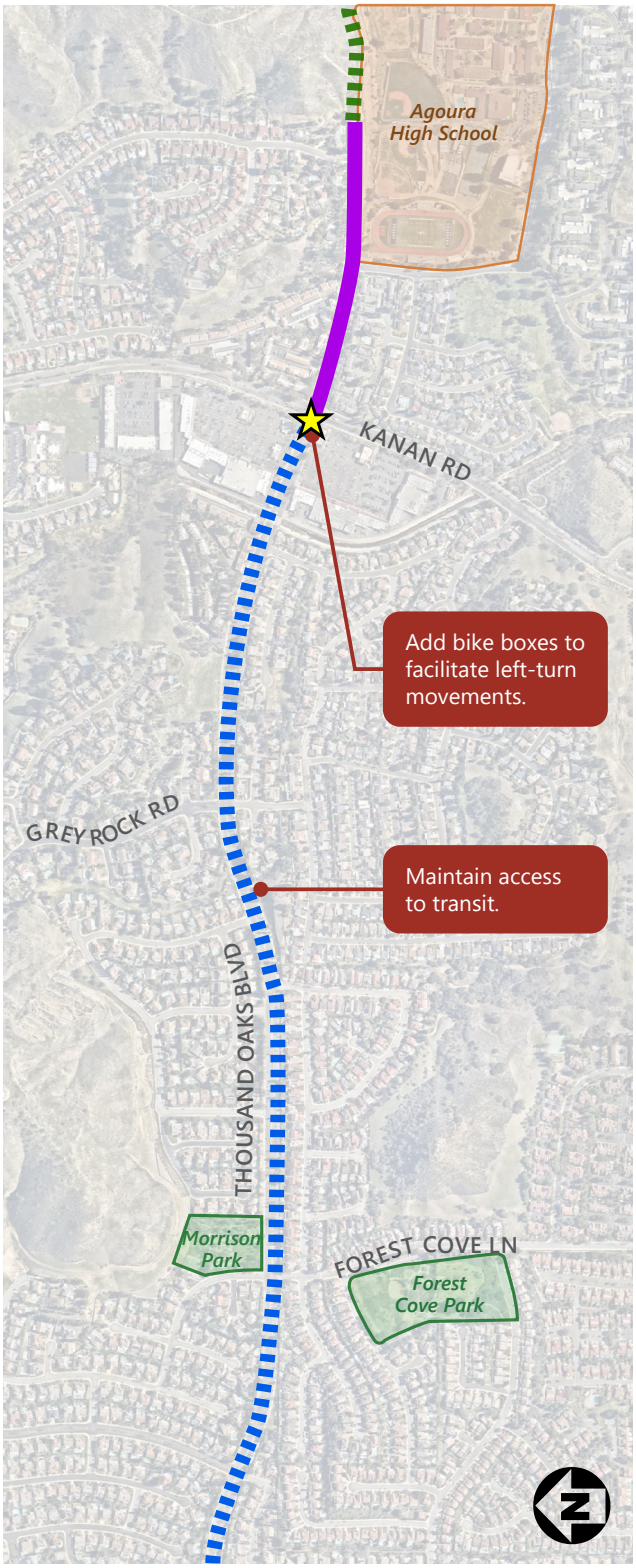
Recommendations

The Thousand Oaks Boulevard proposed improvements include upgrading the existing Class II Bike Lanes to Class IV Bikeway with separated Bike Lanes. The vertical protection in the buffer could either be bollards, flexible posts, or a landscaped median. Install a Class I Bike Path at the eastern terminus to allow for connectivity to future bike facilities along neighboring streets. Intersection treatments include striping, bike detection and bike signals at the intersections of Reyes Adobe Road/Thousand Oaks Boulevard and Kanan Road/Thousand Oaks Boulevard.



THOUSAND OAKS BOULEVARD





- Existing Class II Bike Lane
- Proposed Class II Bike Lane
- Proposed Class IV Bikeway (Separated Bike Lanes)
- Enhancements to Existing Class II Bike Lanes
- Proposed Class I Bike Path
- Proposed Intersection Treatments (Striping, Bike Detection, Bike Signals)
- City Limits

MEDEA CREEK

2
Mile Roadway

0
Bicycle Collisons

1
Schools/Parks

0
Miles
Existing Bikeway

2
Miles
Proposed Bikeway
Improvements

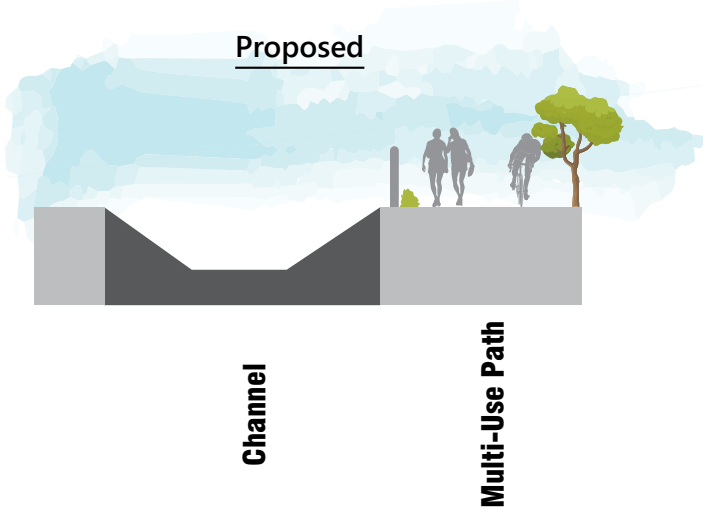
2
Intersection
Improvements/
Treatments

Existing Conditions

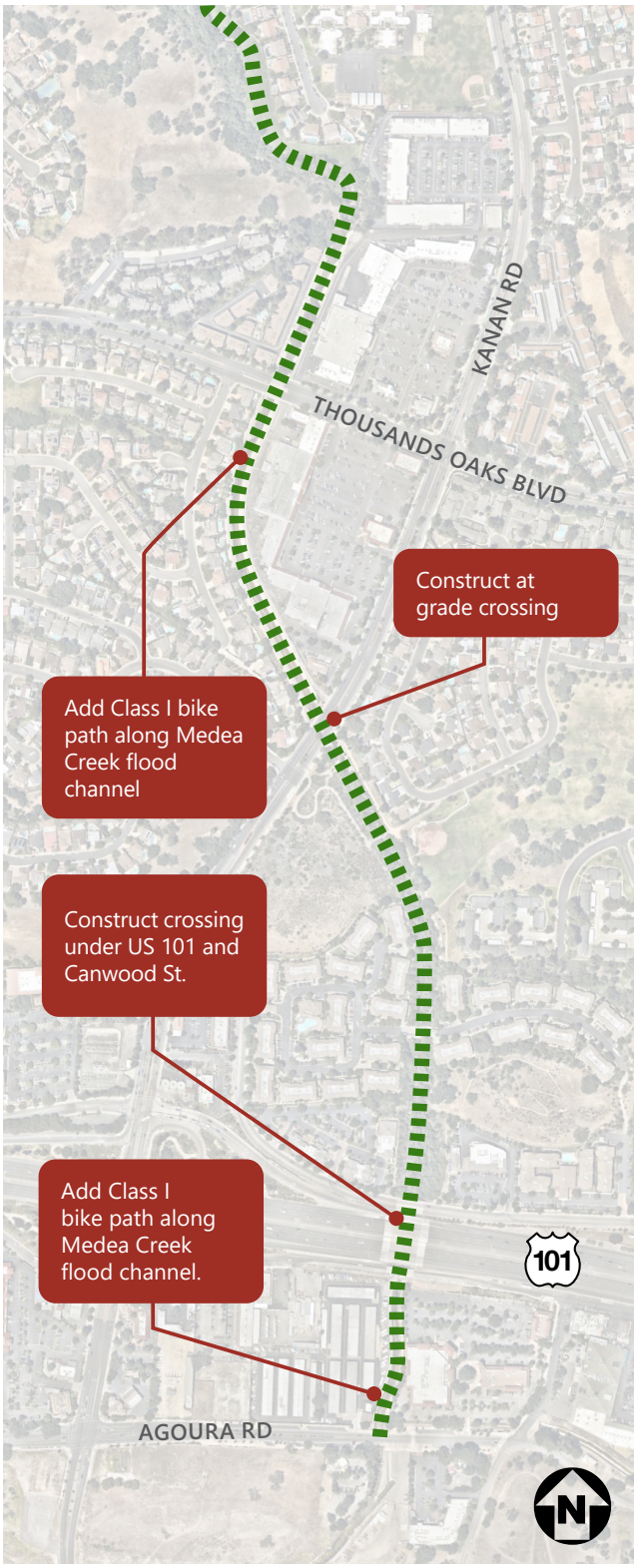
Medea Creek is one of the primary creeks that flow through the City of Agoura Hills. Medea Creek flows through the center of Agoura Hills, encompassing unimproved and improved channels and an open space. Medea Creek traverses the entire City in a north/south direction. Currently, there are no dedicated bicycle or pedestrian facilities adjacent to the creek within the City. A paved multi-use path exists north of the City limits in Oak Park.

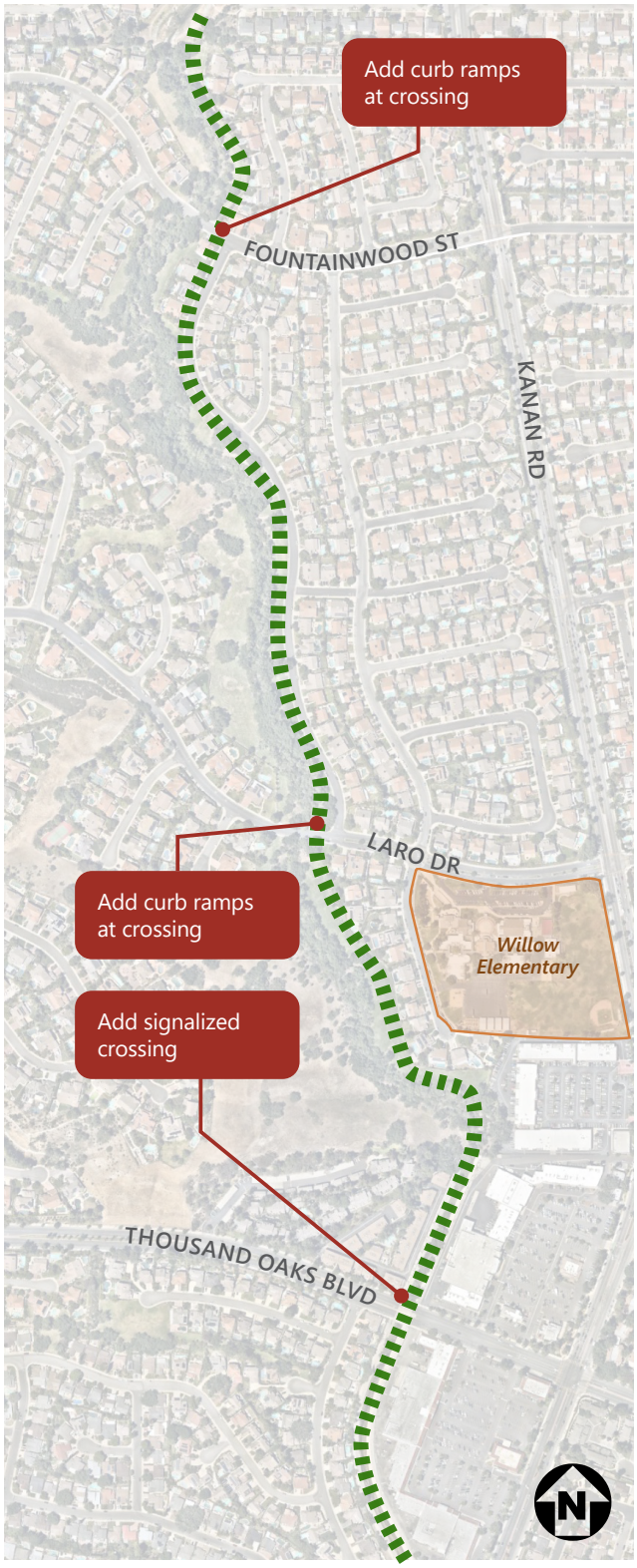
Recommendations

The proposed Medea Creek bicycle facility would provide bicycle and pedestrian access to a linear scenic walk and pathway system along Medea Creek and offer a low-stress north-south alternative corridor to Kanan Road. Install Class I bike path for pedestrians and bicyclists adjacent to Medea Creek connecting the residential neighborhoods in the north part of the City to the Agoura Village area on Agoura Road. The bike path would be located along the naturalized portion of the creek as it traverses Morrison Ranch and continues to the concrete flood channel behind the Twin Oaks and Agoura Meadows shopping centers at Kanan Road and Thousand Oaks Boulevard. A controlled crossing such as a pedestrian hybrid beacon (HAWK) is recommended for the crossing at Thousand Oaks Boulevard. The bike path would then cross Kanan Road at grade near Hillrise Drive and cross under Highway 101 and terminate at Agoura Road.



MEDEA CREEK





- Existing Class II Bike Lane
- Proposed Class II Bike Lane
- Proposed Class IV Bikeway (Separated Bike Lanes)
- Enhancements to Existing Class II Bike Lanes
- Proposed Class I Bike Path
- Proposed Intersection Treatments (Striping, Bike Detection, Bike Signals)
- City Limits

4.3 Programs

The following sections offer some background on the changing "state of practice" in bicycle programming, namely the increased integration of programs and projects, culminating in a comprehensive menu of bicycle programs.

4.3.1 Six E's

In order to realize local goals and objectives, communities should take a multifaceted approach to support the development of a safe, comfortable, and connected bicycle network. The principles articulated through the "Six Es" developed by the League of American Bicyclists (Engineering, Education, Encouragement, Enforcement, Equity, and Evaluation) can help create successful programs.

4.4 Engineering

The Public Works Department is responsible for building and maintaining all public streets in Agoura Hills and ensures that the community can travel around the City safely and efficiently. A variety of engineering tools can be used to reduce traffic congestion, decrease vehicular speeds, and enhance bicycle safety and comfort. Some examples of engineering and traffic enhancements that provide a safer environment for bicyclists include:

- Traffic control signs
- High visibility pavement markings
- Signal timing
- Traffic safety monitoring

4.5 Education

According to the Statewide Integrated Traffic Records System (SWITRS) bicycle collision dataset, there were 15 bicycle-related collisions between 2015-2019 in Agoura Hills. Collisions involving bicyclists are known to be under-reported, and therefore such collisions are likely under-represented. The City should consider carrying out public education campaigns to improve bicyclist safety. These education campaigns can help teach motorists, pedestrians, and bicyclists how to share the road safely. Examples of potential education campaigns include:

4.5.1 Safety Assemblies

Safety assemblies can be organized as interactive gatherings or festivals that consist of various stations throughout a school gymnasium or park. Each station can have a bicycle, pedestrian, and teen driver safety component that allows students to participate in various activities while learning the basics of "on the road" safety.

4.5.2 Bike Safety Workshops

A class intended to build habits and skills, and an in-depth exploration of rights and responsibilities of bicyclists, including an "on bike" maneuvers class intended to increase confidence.

4.5.3 Pedestrian and Bike Traffic Safety Fairs

An obstacle course to teach pedestrians and bicyclist how to identify different street signs and use street infrastructure to increase safety. Youth and children navigate the obstacle course.

4.5.4 Family Cycling Education

Family-friendly interactive training and infrastructure tour intended to increase the confidence of pedestrians and bicyclists.

4.5.5 Safety Resource Event

Safety resource distribution events where people learn about the importance of wearing a helmet. Participants receive free helmets and bike lights and are taught about the bicycle rules of the road, as well as how to be visible and predictable when riding.

4.5.6 Bike and Maintenance and Ride Workshops

Bike maintenance and ride workshops can include a series of classes for teenagers. These classes teach riders how to fix and ride a bicycle. Participants learn the rules of the road, as well as their rights and responsibilities as bicyclists.

4.5.7 Motorist-Targeted Messaging

Bus shelter advertising and portable changeable message

signs can be an effective tool to inform motorists of bicycling safety. Such messaging can also encourage drivers to be more cognizant when sharing the road with cyclists.

4.6 Encouragement

Vehicle usage can be decreased in part by actively encouraging residents and visitors to bike for a variety of trips and purposes. Encouragement is about making bicycling more fun, healthy, and easy to do. To achieve this, the City, along with other local organizations, can organize a series of activities and events that promote bicycling as a mode of transportation and highlight its health benefits.

4.6.1 National Bike Month in May

During the month of May, cities across the country organize events and campaigns to educate people about biking and to encourage them to bike more to their destinations. Activities such as Bike Week, Bike to Work, and Bike Fridays can be organized and promoted.

4.6.2 Open Streets Events

Open Street Events provide families and friends an opportunity to walk, bike, skate, or scooter down streets in their city free of cars. Open street events like Reyes Adobe Days are being held in the City of Agoura Hills annually.

4.6.3 Employer Incentives

As identified in the City of Agoura Hills Transportation Assessment Guidelines (2020), developers are encouraged to implement employer incentive programs to reduce the number of motorized vehicle trips and miles generated by a development. Examples of employer incentives include cash-out programs for employees who carpool or use transit to commute.

4.7 Enforcement

Enforcement, especially when it targets high-risk behaviors and maximizes educational benefits, will help make road users more compliant and make both driving and bicycling behaviors more predictable.

4.7.1 Coordinate with Sherriff Department

The Public Works Department should begin coordinating with the Los Angeles Sherriff's Department (LASD) on a monthly or quarterly basis to discuss the latest concerns regarding bicycle safety in Agoura Hills. During these meetings, the City and LASD shall discuss specific locations with potential conflict areas between vehicles and bicyclist, complaints received from the community regarding bicycle safety, and develop content for social media posts regarding road safety.

4.7.2 Targeted Enforcement

Many law enforcement departments employ targeted enforcement to educate drivers, bicyclists, and pedestrians about applicable traffic laws and the need to share the road. These efforts are an effective way to expand mobility education, such as in the form of a brochure, social media post, or even a portable changeable message sign.

4.7.3 Implement a Bicycle Diversion Program

A bicycle diversion program allows for adult bicyclists who commit traffic violations to receive reduced fines in exchange for taking a bicycle education class. It could encourage bicycling by treating violations as opportunities to educate people, as well as to impart confidence and skills.

4.8 Equity

The BMP prioritizes the safety of Agoura Hills residents whose primary mode of transportation is biking. Special emphasis is given to streets where the risk for collisions is greater. This plan intends to reduce barriers for bicyclists while mitigating potentially harmful long-term impacts. Strategies and practices to address bicycle inequities include:

4.8.1 Consider the Transportation Needs of Traditionally Underserved Populations

Recognize the importance to address the barriers that prevent trips from being safe, especially for the younger and lower income populations who cannot afford, operate, or choose to forgo vehicle ownership.

4.8.2 Encourage Public Involvement

Collaboration with the community is an integral part of the planning process. Individuals, especially those belonging to traditionally underserved communities, need to be empowered to participate in the transportation planning processes and have their needs heard.

4.9 Evaluation

To improve programs and ensure that the bicycle conditions in Agoura Hills are adequate, audits, traffic-safety data collection, analysis, and reporting are necessary. Additionally, surveys allow the City to gain input from users on existing issues and potential solutions. Some ways to evaluate and monitor programs and infrastructure include:

4.9.1 Create or Assign City Staff as Bicycle Liaison

A bicycle liaison would assist the City's Public Works' Department in reviewing development projects and capital improvement projects . The liaison would also assist with completing grant applications, maintaining a prioritized list of improvements, researching appropriate funding sources, and updating cost estimates. This investment in staff is often returned since this position is usually responsible for securing state and federal funding.

4.9.2 Bicycle Advisory Committee

Many municipalities have developed bicycle or active transportation advisory committees to address bicycling, walking and some address overall mobility, including transit. This group can act as a community liaison and support City staff, volunteers, and advocate efforts to address issues concerning local bicycling as well as regularly evaluate the progress of improvements in this Bicycle Master Plan..

4.9.3 Conduct Bicycle Counts and Review Collision Data

Conduct regular bicyclist counts throughout the City to determine baseline mode share on the roadway network. Conducting counts would allow the City to collect information on where the most bicycling occurs. This data assists the Cityin prioritizing and justifying projects when funding is solicited and received. Counts can also be used to study bicycling trends throughout the City. Analysis that could be conducted includes:

- Changes in volumes before and after projects have been implemented
- Prioritization of local and regional projects
- Quantify air quality improvements with increased bicycle use.

Counts should be conducted at the same locations and at the same times every year.

The City should track collision data and provide regular reports of traffic collisions should be presented to the advisory committee. Traffic collisions involving bicyclists should be regularly reviewed and analyzed to develop plans to reduce their frequency and severity.

Any such plans should include Sheriff Department involvement and should be monitored to determine their effectiveness.

4.9.4 Update Bicycle Friendly Community Designation

Bicycle Friendly Community designation is part of a program offered by the League of American Bicyclists (LAB) intended to provide communities with guidance on becoming more bicycle friendly and to award recognition for their achievements. Bicycle Friendly Community designation provides a standard by which the City of Agoura Hills can measure its progress toward bicycle friendliness. It could be a function of city staff to develop the application.

4.9.5 E-Bikes

As electric motor-assisted bicycles, or e-bikes, become more popular and common on City streets, the City should reevaluate its policies guiding what facilities are appropriate for e-bikes and ensure that e-bike users are exhibiting proper behavior while sharing the road with others. Of particular concern is the increased use of e-bikes among students who may be unaware of or disregard the rules of the road. Reference California Vehicle Code section 406(a) for more information on the various classes of e-bikes and how the state regulates their use in consideration to age restrictions, helmets, and allowable speeds.

5. IMPLEMENTATION

This chapter supports the implementation of the Plan's recommendations by providing the following information:

- Project prioritization and planning-level cost estimates for the entire proposed bicycle network.
- An overview of potential funding sources for those proposed projects.
- An overview of the typical transportation project life cycle, outlining the next steps that each proposed project would follow to fruition.

Serving as a long-term vision for the City, implementation of the plan will take place incrementally over the coming years. During that time, regular revisitation of project prioritization should be undertaken to ensure the plan continues to align with community needs. Updates to the plan and recommended projects may be necessary if conditions within the community change.

Similarly, the effectiveness of bicycle programs is maximized by actual project implementation. This Plan provides a prioritization of the projects to help the City prioritize projects as funds become available.

5.1 Project Options

The recommended bicycle network was divided into projects and the projects were evaluated based on key measures of demand, deficiencies, and implementation factors to guide the phasing of improvements. The Plan utilized some of the prioritization criteria found in Los Angeles County Bicycle Master Plan as well as developed criteria based on the Plan's goals and objectives.

5.1.1 Project Evaluation Criteria

The Los Angeles County Bicycle Master Plan divided the evaluation criteria into two categories. The first category is utility which focused on factors related to people's tendency to use the proposed network. The second category is implementation which focused on factors related to delivering the project.

The utility evaluation factors include connections to existing and proposed bikeways, connections to key destinations such as schools, libraries, parks, recreation centers, and transit hubs, bicycle crashes, and community support of the proposed facilities obtained through the public outreach process. The Plan added factors such as regional connectivity and presence of existing bikeway facilities. Table 1 summarizes the utility evaluation factors and point ranges used to calculate a measure of usefulness of the proposed bikeway projects.

Table 1: *Bicycle Network Evaluation Utility Factors and Points*

Utility Factor	Point Range
Connects to Existing Bikeway Facility: **Class I Bike Path = 20 points** **Class II/III On-Street Bikeway = 15 points**	**0 to 20**
Connects to Proposed Bikeway Facility	**0 or 10**
Alternative Route Availability	**0 or 10**
Gap Closure	**0 or 30**
Connects to Transit Station	**0 or 20**
Connects to K-12 School	**0 or 20**
Existing Bikeways Facilities	**0 or 20**
Connects to Park, Library or Recreational Facility	**0 or 20**
High Rate of Collisions	**0 or 5**
Public Input	**0 or 10**
Maximum Total Points	**165**

Based on: Los Angeles County Bicycle Master Plan

The second category of the evaluation criteria focused on implementation-oriented factors, such as project cost, project coordination, travel lane removal, parking removal, and other considerations. These implementation factors are intended to measure issues, challenges, and the degree of difficulty of implementing the proposed bikeway projects. Table 2 summarizes these implementation-oriented factors and the point range assigned for each.

Table 2: *Bicycle Network Implementation Factors and Points*

Implementation Factor	Point Range
Project Cost was ranked as follows: Less than $100,000 = 20 points $100,000 to $500,000 = 15 points $500,000 to $1,500,000 = 10 points $1,500,000 to $3,000,000 = 5 points Greater than $3,000,000 = 0 points	0 to 20
Project Coordination	0 or 10
Requires Travel Lane Removal	0 or 5
Requires Reduction in Width of Landscaped Median	0 or 5
Requires Street Widening of Paved Surface	0 or 5
Requires Parking Removal	0 or 5
Maximum Total Points	**50**

Based on: Los Angeles County Bicycle Master Plan

Each project was evaluated under each factor and assigned a point value. The scores from the evaluation were then tabulated to generate an overall project score for each corridor. Based on the overall project scores, the bikeway projects were sorted into three tiers. For funding and implementation purposes, the proposed bikeway projects were organized into three tiers based on score. The first tier of bikeway projects is composed of those scoring in the top quarter percentile of project options, while the third tier is composed of bikeway projects scoring in the bottom quarter percentile. The second tier of bikeway projects composes the remaining projects scoring in between. Table 3 provides the project options scored by tier. Further description of the scoring approach is attached in Appendix A.

It should be noted that certain facilities require varying levels of maintenance over their lifetime depending on the materials chosen and their interaction with motorists. Striping associated with bike facilities will deteriorate more quickly in intersections and in close proximity to vehicle turning movements, though thermoplastic will last longer than paint. Similarly, Class IV protected bikeways will require more frequent maintenance as delineators and bollards will require replacement if struck by vehicles, while any vegetation associated with landscaped medians will require upkeep. Impacts to street cleaning should also be considered.

Table 3: *Project Options Table*

	Facility	From Street	To Street	Class	Length (Miles)	Construction Cost	Score
Tier 1	Driver Avenue/Palo Comado Canyon Road	Easterly Road	Chesebro Road	II	0.7	$300,000	152
	Kanan Road	Hillrise Drive	Southern City Limits	II	1.1	$10,000,000	136
	Agoura Road	Western City Limits	Liberty Canyon Road	Class II Striping Improvements	4.2	$470,000	131
	Medea Creek Bike Path	Agoura Road	Northern City Limits	I	2.0	$13,280,000	130
	Thousand Oaks Boulevard	Kanan Road	Carell Avenue	II	0.3	$20,000	125
Tier 2	Liberty Canyon Road	Agoura Road	Southern City Limits	II	0.6	$200,000	120
	Kanan Road	Thousand Oaks Boulevard	Northern City Limits	IV	1.0	$400,000	117
	Chesebro Road	Palo Comado Canyon Road	Northern City Limits	III	1.3	$30,000	115
	Agoura High School Connection	Thousand Oaks Boulevard	Fountain Place	I	0.2	$2,000,000	110
	Reyes Adobe Road	Agoura Road	Passageway Lane	II	0.3	$600,000	110
	Lake Lindero Road	Canwood Street	Thousand Oaks Boulevard	III	0.6	$20,000	110
	Roadside Drive	Kanan Road	Lewis Road	III	1.1	$30,000	110
Tier 3	Driver Avenue/Argos Street	Thousand Oaks Boulevard	Easterly Road	III	0.6	$20,000	100
	Grey Rock Road & Fountainwood Street	Thousand Oaks Boulevard	Kanan Road	III	1.9	$50,000	100
	Thousand Oaks Boulevard	Western City Limits	Kanan Road	IV	2.0	$1,500,000	96
	Canwood Street	Lake Crest Drive	Driver Avenue/Palo Comado Canyon Road	III	3.0	$70,000	95
	Reyes Adobe Road	Thousand Oaks Boulevard	Passageway Lane	Class II Striping Improvements	0.4	$80,000	90
	Linear Park Bike Path	Cornell Road	Lewis Road	I	0.8	$5,110,000	75

5.2 Funding Sources

This section explores various funding opportunities that will support the implementation of the recommended bicycle network. The City of Agoura Hills will pursue funding for costs associated both with physical infrastructure as well as for programmatic education, enforcement, and evaluation needs. Potential funding sources from federal, state, and regional sources are listed as well as an explanation for how the City plans to incorporate development fees into funding for project implementation. All prospective projects are recommended for implementation within the next 10 years as funding becomes available, though more expensive and complicated projects may take longer to implement. In addition, many funding sources are highly competitive, and it is not possible to determine exactly which projects will be funded by which sources and to what degree.

5.2.1 Federal Sources

The following is a list of federally administered funding sources that may be applicable for implementation of recommended projects.

- **Congestion Mitigation and Air Quality Program (CMAQ) -** Federally designated air quality containment areas receive funding by formula to program local and regional projects. A large percentage of projects funded by this program include active transportation infrastructure and programming.
- **Federal Transportation Improvement Program (FTIP) -** The Transportation Improvement Plan (TIP) is a federally mandated listing of transportation projects that will be funded with federal, state or local funds over the next four years. The TIP includes regionally significant and/or federally funded transit, highway, local roadway, bridge, freight, bicycle, and pedestrian capital and non-capital projects. All transportation projects must be listed in an approved TIP in order to access federal or state funding.
- **Highway Safety Improvement Program (HSIP) -** The HSIP is federally allocated to the state for roadway safety projects through a competitive program administered by Caltrans.
- **Safe Routes to School (SRTS) -** There are two Safe Routes to School Programs, one federally funded, and the other state funded. The federal version of this grant program funds state, local, and regional agencies. Non-profit organizations, school districts, public health departments, and Native American tribes are eligible in partnership with a city, county, metropolitan planning organization, or a regional transportation planning agency. Targeted beneficiaries are K-8 schools.
- **Safe Streets and Roads for All -** This program provides funding directly to local and tribal governments for improvements to reduce crashes and fatalities, especially for cyclists and pedestrians.
- **Surface Transportation Block Grants -** This program provides funding that may be used by states and local agencies for a wide range of projects to preserve and improve the condition and performance of surface transportation, including highway, transit, intercity bus, bicycle, and pedestrian projects.

5.2.2 State Sources

The following is a list of State-administered funding sources that may be applicable for implementation of recommended projects.

- **Active Transportation Program (ATP) -** This program is intended to encourage increased use of active modes of transportation and funds bicycle and pedestrian improvement projects with funds prioritized for projects in disadvantaged communities or that improve local equity. Eligible projects include bicycle and pedestrian improvements and planning. SB 1 augmented the ATP with an extra $100 million annually to the program.

- **Local Partnership Program (LPP) -** This "self-help" program provides local and regional transportation agencies that have passed sales tax measures, developer fees, or other imposed transportation fees to fund road maintenance and rehabilitation, sound walls, and other transportation improvement projects. Most transportation improvements are eligible.
- **Local Streets and Roads -** Cities and counties receive funds for road maintenance, safety projects, railroad grade separations, complete streets, and traffic control.
- **Recreational Trails Program (RTP) -** This program provides funds annually for recreational trails and trails-related projects and is administered at the federal level by the Federal Highway Administration (FHWA) and the state level by the California Department of Parks and Recreation (DPR). Motorized projects are administered by the Department's Off-Highway Motor Vehicle Recreation Division and non-motorized projects are administered by the Department's Office of Grants and Local Services.
- **Safe Routes to School (SRTS) -** The state version of this program only funds city and county applicants. The target beneficiaries of the state program are students K-12.
- **Sustainable Transportation Planning Grants -** Funded by Caltrans, these grants are awarded to cities and counties to begin or complete planning for resilience, to reduce greenhouse gas emissions, and sometimes just to get up to speed with state climate goals.
- **Office of Traffic Safety Grants (OTS) -** OTS grants target educational programs that raise awareness of traffic safety for drivers, pedestrians, and bicyclists.

5.2.3 Municipal Sources

The following is a list of locally administered funding sources that may be applicable for implementation of recommended projects.

- **City/County Local Gas Taxes -** City/County Local Gas Taxes are subventions local agencies receive directly from the state gas tax and are used for transportation-related purposes.
- **Developer Fees -** In order to satisfy state mandates to mitigate increases in vehicle miles traveled from new development, the City can collect an exaction from the private sector for new developments constructed in their jurisdiction to help fund improvements on the regional active transportation system.
- **General Fund Revenues -** The General Fund and miscellaneous local road funds are general fund revenues dedicated for transportation purposes. These revenues are based on information provided in the State Controller's annual reports for local street and road expenditures and revenues.
- **Measure R/Measure M Funds -** under Los Angeles Metropolitan Transportation Authority's (Metro) voter-approved sales tax initiatives, certain percentages of collected taxes are returned to local municipalities to be used for a variety of localized projects. These projects include street repairs, local bus service, signal improvements, sidewalk repairs and expansion, and new or improved bike infrastructure.

5.3 Project Life Cycle

This section describes the typical life cycle process that transportation projects undergo from conception to completion. The four general phases that are discussed here are: Planning and Evaluation, Preliminary Design and Environmental Review, Final Design, and Construction. A fifth phase, Operations and Maintenance, is important for more complicated transportation projects but does not typically apply to local active transportation facilities. While this process is sequential in nature, each phase is interdependent and not intended to exist in isolation. Work on each task often overlaps and proceeds in tandem to ensure continuity and collaboration.

Below is a brief overview of each phase and the tasks that are relevant to the implementation of projects recommended in this plan.

5.3.1 Planning And Evaluation Phase

The goal of this phase is to determine existing conditions, solicit public input, and propose future developments through a formal plan. This plan will ultimately lead to specific projects for which grant funding can be applied for to proceed to the next phase.

5.3.2 Preliminary Design & Environmental Review

Preliminary design is the stage in which general project design concepts are determined. It includes all that is necessary to determine project feasibility, consider alternatives to the project and decide upon a project alignment, and consider any environmental impacts and possible mitigation of said impacts. Another round of public outreach is done to address concerns and ensure support for the project design.

5.3.3 Final Design

The final design stage comprises the preparation of construction plans and detailed specifications for construction work to be performed. This includes the acquisition of any needed right-of-way for the project alignment, the identification of any utilities that will be affected by the construction process and require relocation, and the publication of final cost estimates for completion of work.

5.3.4 Construction

The construction phase involves the final stages necessary to realize the project on the ground. This includes posting a request for proposals (RFP) for contractors to bid on, selecting a contractor, the physical construction process, and final inspections and delivery of the project.

Planning and Evaluation Phase

- Purpose & Need
- Draft Plan Document
- Public Outreach
- Plan Adoption
- Grant Applications

Preliminary Design & Environmental Review

- Project Scoping & Identification
- Feasibility & Alternatives Analysis
- Preliminary Design Plans
- Environmental Impact Review
- Public Outreach

Final Design

- Final Design Plans
- Right-of-Way Acquisition
- Utility Relocation
- Final Cost Estimates

Construction

- Bidding & Contracts
- Physical Construction
- Inspections & Delivery

APPENDIX A

A.1 Project Scoring Criteria (Based on: Los Angeles County Bicycle Master Plan)

Sixteen different criteria were used to assign scores for each project. The criteria fall under two main category themes: Utility and Implementation. Next to the scores listed in Table I-2 through Table I- 4 are two sub-scores which display the breakdown between Utility score and Implementation score.

The first category, Utility Criteria - for which there are 10 inputs for a maximum of 145 points - considers a project's usefulness toward enhancing the current bicycle network and providing service to key land uses. The second category, Implementation Criteria - for which there are 6 inputs for a maximum of 50 points - considers projects with fewer implementation obstacles.

A.1.1 Utility Criteria

Connects to Existing Bikeway Facility (0, 15, or 20 points)

Points were awarded if a project makes a connection to an existing bicycle facility. For projects connecting to an existing Class I facility, the full 20 points were awarded. For projects connecting to existing on-street bicycle facilities, 15 points were awarded.

Connects to Proposed Bikeway Facility (0 or 10 points)

Points were awarded to projects connecting with other proposed bicycle facilities.

Alternative Route Availability (0 or 10 points)

Points were awarded if a project did not have a parallel existing facility running along a similar span for the extent of the project within a distance of several blocks. If a bicycle project was proposed over an existing bicycle facility (for instance, if an existing Class III were proposed to become a Class II), points were not awarded.

Connects to Mass Transit Station (0 or 20 points)

Points were awarded if a proposed project was adjacent to a Metro or MetroLink Station or if a proposed project provided an extension of an existing facility adjacent to a Metro or Metro Link Station.

Connects to K-12 School (0, 10 or 20 points)

Points were awarded if a proposed project was adjacent to a K-12 School. If multiple schools were adjacent to a proposed project, then the full 20 points were awarded. If a single K-12 school was adjacent to a proposed project, then 10 points were awarded.

Connects to Park, Library or Recreation Center (0, 10 or 20 points)

Points were awarded if a proposed project was adjacent to a park, library or recreation center. If more than one of these land uses were adjacent to a proposed project, then the full 20 points were awarded. If only one of these uses was adjacent to a proposed project, then 10 points were awarded.

Collision Analysis (0 or 5 points)

Proposed bicycle projects were scored for this criterion by summing together all of the bicycle crashes which fall along the extent of the proposed project to obtain a total number of crashes along the project extent. To normalize, the total number of crashes was divided by the length of the project, to obtain a crash per mile figure.

After this data was collected for all proposed projects, the totals were divided into five categories separated by Natural Breaks, and the projects within the top quantile of the natural breaks categories received the points.

Community Support (0 to 10 points)

Points were awarded if a proposed project was recognized by at least one community member as a priority. If more than one comment was received supporting the proposed project, then 10 points were awarded. If only one comment was received supporting the proposed project, then 5 points were awarded. Community support input was collected through the public comment process undertaken for the preparation of this Plan.

Gap Closure (0 or 30 points)

Points were awarded if a proposed project helps connecting two existing bicycle facilities and hence closes a gap.

Existing Bikeway (0 or 20points)

Points were awarded if there is no existing bikeway on the roadway segment.

A.1.2 Implementation Criteria

Project Cost (0-20 points)

Points were awarded to proposed projects on the basis of project cost. Points and project cost were assigned an inverse relationship-projects received higher points for being lower cost. Points were awarded as shown in Table 1.

Cost of Proposed Project	Point Received
$100,000 or less	20
$100,001 to $500,000	15
$500,001 to $1,500,000	10
$1,500,000 to $3,000,000	5
Greater than $3,000,000	0

Table 1: Project Cost Scoring Criteria

Project Coordination (0 or 10 points)

Projects were awarded with points for this criterion if jurisdictional coordination was not required for implementation of the project.

Requires Travel Lane Removal (0 or 5 points)

Projects were awarded points if travel lane removal was not required.

Requires Reduction in Width of Landscaped Median (0 or 5 points)

Projects were awarded with points if the median width reduction was not required.

Requires Street Widening of Paved Surface (0 or 5 points)

Projects were awarded with points if widening the roadway was not required.

Requires Parking Removal (0 or 5 points)

Projects were awarded with points if parking removal was not required.

Project Scoring Criteria Table

	Facility	UTILITY CRITERIA										IMPLEMENTATION CRITERIA						Score
		Connects to Existing Bike Lane	Connects to Future Bike Lane	Alternate Route Availability	Connects to Mass Transit	Connects to Park/ Library/Rec Center	Collision Analysis	Connects to K-12 School	Community Support	Gap Closure	Existing Bikeway	Cost	Project Coordination	Requires Travel Lane Removal	Requires Reduction in Width of Landscape Median	Requires Street Widening	Requires Parking Removal	
CLASS 1	Medea Creek Bike Path	15	10	10	20	10	0	10	5	0	20	0	10	5	5	5	5	**130**
	Linear Park Bike Path	0	10	0	0	10	0	0	5	0	20	0	10	5	5	5	5	**75**
	Agoura High School Connection	0	10	10	0	10	0	10	10	0	20	10	10	5	5	5	5	**110**
CLASS II	Agoura Road (Enhancements)	15	10	10	20	20	1	0	10	0	0	15	10	5	5	5	5	**131**
	Reyes Adobe Road (Enhancements)	15	10	0	0	10	0	0	10	0	0	15	10	5	5	5	5	**90**
	Reyes Adobe Road (South of Passageway Lane)	15	0	10	0	0	0	0	10	30	20	10	0	5	0	5	5	**110**
	Kanan Road	15	10	10	20	10	1	0	10	30	20	0	0	5	0	0	5	**136**
	Driver Avenue/Palo Comado Canyon Road	15	10	10	0	10	2	10	5	30	20	15	10	5	5	5	0	**152**
	Thousand Oaks Boulevard e/o Kanan Rd	15	10	10	0	0	0	10	10	0	20	20	10	5	5	5	5	**125**
	Liberty Canyon Road	15	0	10	20	10	0	0	5	0	20	15	10	5	5	5	0	**120**
CLASS III	Canwood Street	0	10	10	0	0	0	0	10	0	20	15	10	5	5	5	5	**95**
	Driver Avenue/Argos Street	0	10	10	0	0	0	10	0	30	0	20	0	5	5	5	5	**100**
	Lake Lindero Road	15	10	10	0	0	0	0	5	0	20	20	10	5	5	5	5	**110**
	Grey Rock Road & Fountainwood Street	15	10	0	0	0	0	0	5	0	20	20	10	5	5	5	5	**100**
	Chesebro Road	15	10	10	0	10	0	0	10	0	20	20	0	5	5	5	5	**115**
	Roadside Drive	0	10	0	20	0	0	0	10	0	20	20	10	5	5	5	5	**110**
CLASS IV	Thousand Oaks Boulevard	15	10	0	20	10	1	0	10	0	0	10	0	5	5	5	5	**96**
	Kanan Road	15	10	0	20	10	2	20	10	0	0	10	0	5	5	5	5	**117**

CITY OF

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